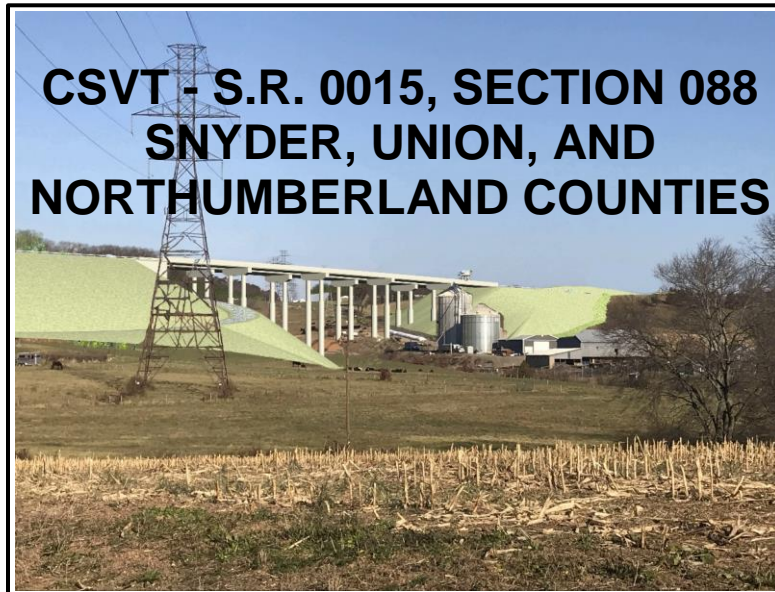




SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT ASH BASIN FOCUS AREA



**CSVT - S.R. 0015, SECTION 088
SNYDER, UNION, AND
NORTHUMBERLAND COUNTIES**

MAY 31, 2018

PREPARED BY

**U.S. DEPARTMENT OF TRANSPORTATION,
FEDERAL HIGHWAY ADMINISTRATION,
AND
PENNSYLVANIA DEPARTMENT OF TRANSPORTATION DISTRICT 3-0**





**SUPPLEMENTAL
ENVIRONMENTAL ASSESSMENT
ASH BASIN FOCUS AREA**

**CSVT - S.R. 0015, SECTION 088
SNYDER, UNION, AND
NORTHUMBERLAND COUNTIES**

MAY 31, 2018

PREPARED BY

**U.S. DEPARTMENT OF TRANSPORTATION,
FEDERAL HIGHWAY ADMINISTRATION,
AND
PENNSYLVANIA DEPARTMENT OF TRANSPORTATION DISTRICT 3-0**



R95-0129.003

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT ASH BASIN FOCUS AREA

for the



S.R. 0015, Section 088
Snyder, Union, And
Northumberland Counties


PREPARED BY

U.S. Department of Transportation,
Federal Highway Administration,
and
Pennsylvania Department of Transportation District 3-0

Pursuant to 42 U.S.C. 4332(2)(c)
and, as applicable:

Executive Order 11990, Protection of Wetlands; Executive Order 11988, Floodplain Management;
Executive Order 12898, Environmental Justice; and 49 U.S.C. Section 303(c) – Section 4(f)

Approved By: _____


Keith Lynch, Director of Program Development
Federal Highway Administration, Pennsylvania Division

Date: _____

6/1/2018

The following persons can be contacted for information regarding the project:

Matthew Beck, P.E.
Assistant Plans Engineer
PennDOT District 3-0
715 Jordan Avenue
Montoursville, PA 17754-0218
Telephone: 570-368-4256
Email: matbeck@pa.gov

Deborah Suci Smith
Senior Environmental Protection Specialist
U.S. Department of Transportation (US DOT)
Federal Highway Administration (FHWA) – Pennsylvania Division
228 Walnut Street
Harrisburg, PA 17101-1720
Telephone: 717-221-3785
Email: deborah.suci.smith@dot.gov

Table of Contents

	PAGE
1.0 INTRODUCTION.....	1
1.1 PROJECT LOCATION AND DESCRIPTION	4
1.2 PROJECT HISTORY AND BACKGROUND.....	4
1.3 PROJECT PURPOSE AND NEED	7
1.4 CURRENT PROJECT STATUS.....	10
2.0 ALTERNATIVES CONSIDERED	11
2.1 ASH BASIN FOCUS AREA ALTERNATIVES CONSIDERED	11
2.2 ENVIRONMENTAL AND ENGINEERING COMPARISON	13
2.3 ALTERNATIVES DISMISSED.....	18
3.0 ENVIRONMENTAL RESOURCES, IMPACTS, AND MITIGATION.....	20
3.1 SOILS AND GEOLOGY	21
3.2 GROUNDWATER RESOURCES.....	23
3.3 SURFACE WATER RESOURCES	25
3.4 FLOODPLAINS.....	26
3.5 WETLANDS.....	26
3.6 VEGETATION AND WILDLIFE	27
3.7 THREATENED AND ENDANGERED SPECIES	28
3.8 AGRICULTURAL RESOURCES.....	29
3.9 ARCHAEOLOGY RESOURCES.....	30
3.10 HISTORICAL RESOURCES	30
3.11 MUNICIPAL, INDUSTRIAL, AND HAZARDOUS WASTE FACILITIES	31
3.12 LAND USE.....	31
3.13 COMMUNITY FACILITIES AND SERVICES.....	32
3.14 PLANNED DEVELOPMENT	32
3.15 ENVIRONMENTAL JUSTICE	32
3.16 RESIDENTIAL DISPLACEMENTS	33
3.17 TAX BASE IMPACTS	33
3.18 NOISE	33
3.19 AIR QUALITY	34
3.20 SECONDARY AND CUMULATIVE IMPACTS	34
3.21 UTILITY IMPACTS.....	35
3.22 CONSTRUCTION IMPACTS	35
3.23 VISUAL QUALITY.....	36
4.0 PUBLIC INVOLVEMENT AND AGENCY COORDINATION	38
4.1 PUBLIC AND PUBLIC OFFICIALS MEETINGS.....	38
4.2 AGENCY COORDINATION	40
5.0 IDENTIFICATION OF THE PREFERRED ALTERNATIVE	42

List of Appendices

- APPENDIX A – PA DEP CORRESPONDENCE
- APPENDIX B – VISUAL RENDERINGS
- APPENDIX C – MUNICIPAL CORRESPONDENCE

List of Figures

NO.	DESCRIPTION	PAGE
1	REGIONAL SETTING	2
2	SOUTHERN/NORTHERN SECTION LIMIT OF DISTURBANCE (DAM/RC5)	3
3	ASH BASIN FOCUS AREA	5
4	ASH BASIN FOCUS AREA ALTERNATIVES	8
5	NO CHANGE DAM ALTERNATIVE AND EASTERN ALTERNATIVE.....	22

List of Tables

NO.	DESCRIPTION	PAGE
1	ENVIRONMENTAL SUMMARY – ASH BASIN FOCUS AREA	14
2	ENGINEERING SUMMARY – ASH BASIN FOCUS AREA	16
3	ENVIRONMENTAL SUMMARY – NO CHANGE DAM ALTERNATIVE AND EASTERN ALTERNATIVE.....	20
4	ENGINEERING SUMMARY – NO CHANGE DAM ALTERNATIVE AND EASTERN ALTERNATIVE.....	21
5	SUMMARY OF WETLAND IMPACTS BY VEGETATIVE CLASSIFICATION.....	27
6	PUBLIC INVOLVEMENT/AGENCY COORDINATION SUMMARY	39
7	ENVIRONMENTAL SUMMARY – SOUTHERN SECTION.....	43

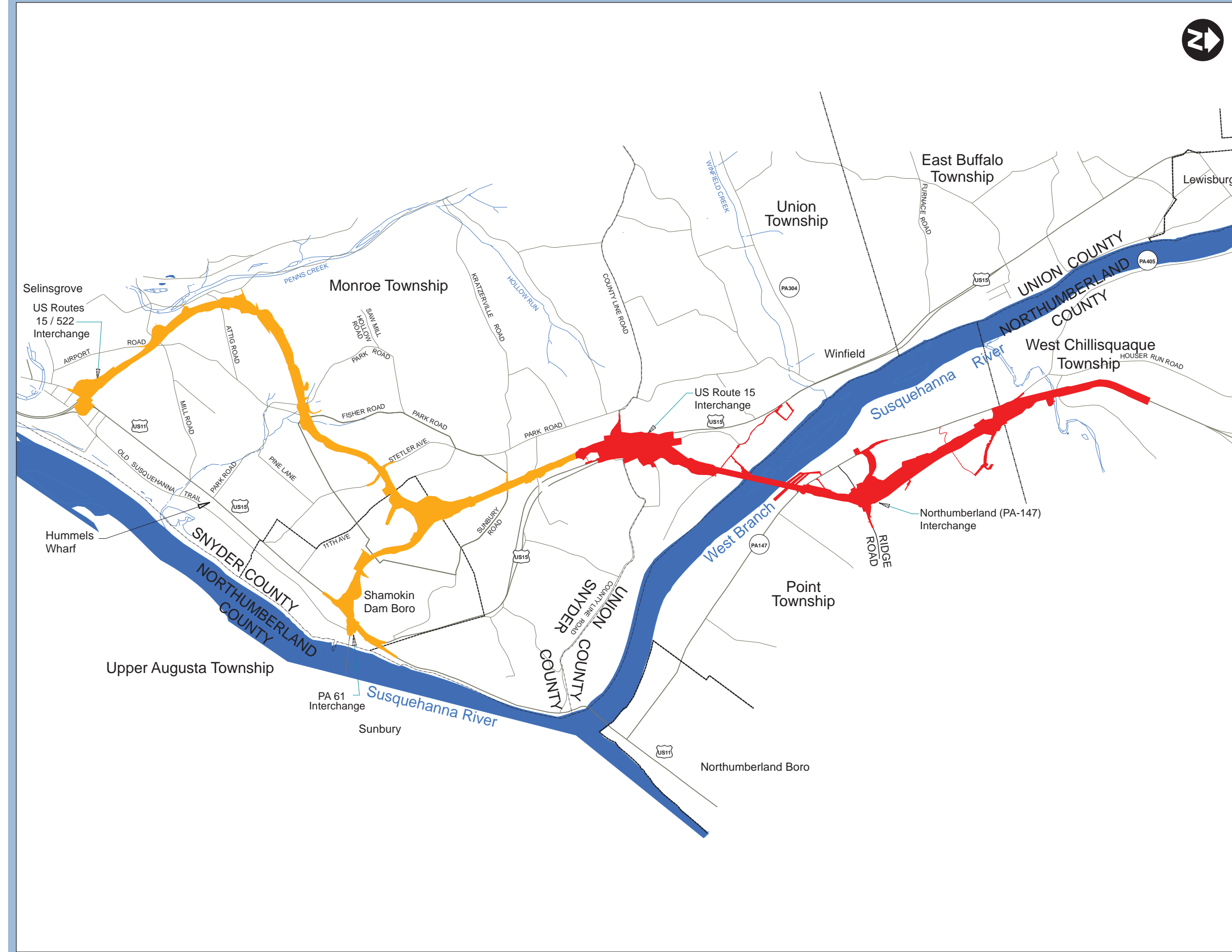
1.0 Introduction

The Central Susquehanna Valley Transportation (CSVT) Project entails the construction of approximately 12.4 miles of new, limited-access, four-lane highway extending from the existing U.S. Routes 11/15 Interchange in Monroe Township (north of Selinsgrove) in Snyder County to PA Route 147 in West Chillisquaque Township (at a location just south of the PA Route 45 interchange near Montandon) in Northumberland County (Figure 1). The new highway includes a connector to PA Route 61 in Shamokin Dam and a new bridge crossing over the West Branch Susquehanna River extending from Union Township, Union County, to Point Township, Northumberland County (Figure 2).

The Federal Highway Administration (FHWA) and Pennsylvania Department of Transportation (PennDOT), in cooperation with the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (U.S. EPA), and Pennsylvania Department of Environmental Protection (PA DEP), completed a Final Environmental Impact Statement (FEIS) for the project to fulfill the requirements of the National Environmental Policy Act (NEPA) of 1969. A Record of Decision (ROD) was prepared and issued by FHWA in October 2003. PennDOT prepared FEIS/ROD Reevaluation No. 1 in 2005-2006 to document design changes and assess associated environmental impact differences. FEIS/ROD Reevaluation No. 1 (which FHWA approved on May 10, 2006) concluded that a supplemental NEPA document was not warranted.

Pre-construction activities progressed until July 2008 when PennDOT placed the project on hold. At the time, the statewide transportation funding situation could not support allocating sufficient funds to complete the entire project. The hold allowed PennDOT to pursue funding options without losing the past investment in the project. The funding situation changed with Pennsylvania's passage of a comprehensive transportation funding plan (Act 89) in November 2013. As a result, PennDOT reactivated pre-construction activities for the project. Final design activities resumed for the Northern Section in late 2013 and began for the Southern Section in early 2015. PennDOT prepared FEIS/ROD Reevaluation Nos. 2 and 3 in 2014-2016 to document design changes and assess associated environmental impact differences. Both FEIS/ROD Reevaluation Nos. 2 and 3 (which FHWA approved on June 30, 2015, and June 22, 2016, respectively) concluded that a supplemental NEPA document was not warranted.

Following the initiation of final design for the Southern Section and subsequent geotechnical testing, PennDOT and FHWA, in consultation with PA DEP and other environmental agencies, determined that the project alignment must be modified between Fisher Road and Sunbury Road to avoid constructing the new highway on two existing fly ash waste basins, as previously approved. During the development of the FEIS, preliminary engineering studies had indicated that construction on the ash basins would be feasible. At that time, the basins had been closed fairly recently and it was expected that the water level in the basins would fall, allowing construction to be performed on top of mostly dry ash. However, the more detailed recent studies have shown that the ash remains saturated and cannot support the highway. Therefore, PennDOT developed and studied ash basin avoidance alternatives. Since these alternatives were not assessed in the approved FEIS/ROD, a supplemental NEPA document was required. This Supplemental Environmental Assessment (EA) document was prepared pursuant to 23 Code of Federal Regulations (CFR) 771.130(c), and it assesses the impacts of the alignment change, new information, and new circumstances. The EA outlines the alternatives analyses, identifies the Preferred Alternative, and documents the environmental impacts and mitigation for the preferred realignment within the Ash Basin Focus Area. The EA also includes documentation in support of a permit application for involvement with waters of the United States (including wetlands) that is required under Section 404 of the Clean Water Act.

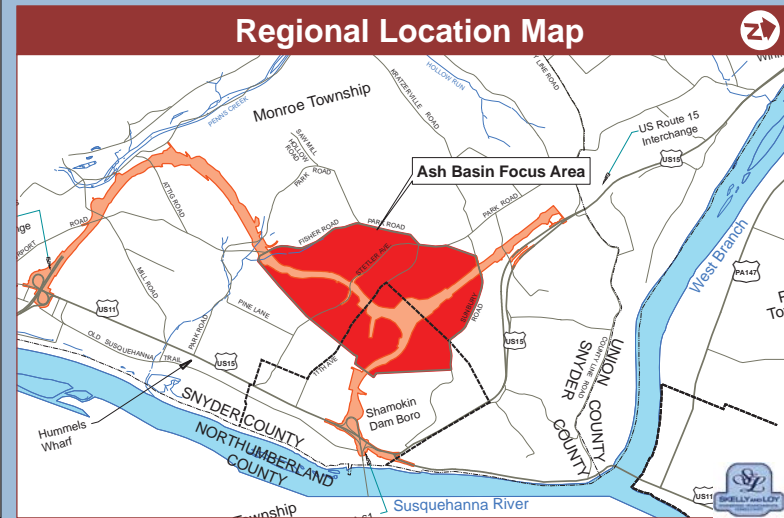
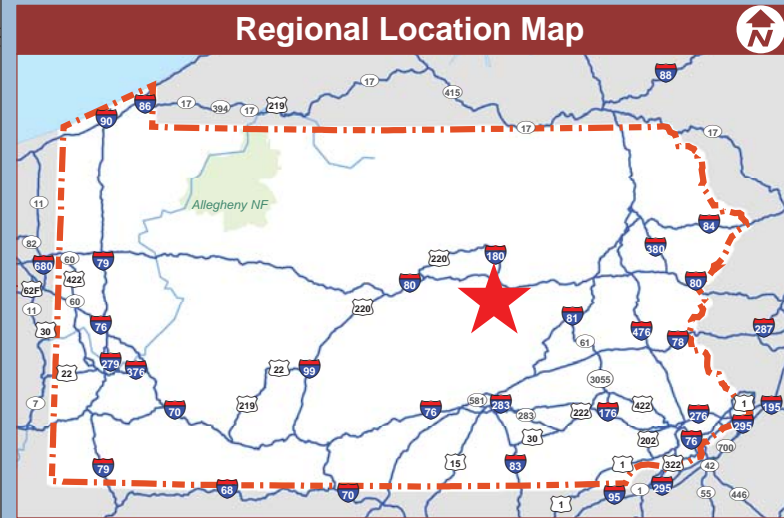


Legend

SECTION

- Northern
- Southern

0 1,400 2,800 4,200 5,600
Feet



1.1 Project Location and Description

The overall CSVT Project Location and Description is provided in the preceding Section 1.0, Introduction, which was summarized from the CSVT Project's FEIS (dated July 2003). More detailed discussion on the project location and description can be found within the FEIS, which is available through the Resources page on the project's website (<http://www.csvt.com/resources/links/>).

The overall CSVT Project was split into Section 1 (currently referred to as the Southern Section) and Section 2 (currently referred to as the Northern Section) for the FEIS. Section 1 spans from the existing U.S. Routes 11/15 Interchange near Selinsgrove to County Line Road/U.S. Route 15 near Winfield. Section 2 encompasses the design north of County Line Road/U.S. Route 15 near Winfield, incorporating the proposed interchange with U.S. Route 15, West Branch Susquehanna River crossing, and connection onto PA Route 147 (refer to Figure 2).

PennDOT has determined that a roughly two-mile-long portion of the Southern Section alignment (between Fisher Road and Sunbury Road) must be modified to avoid constructing the new highway on two existing fly ash waste basins, as previously planned. To accomplish this, the project team has developed and evaluated avoidance alternatives within an Ash Basin Focus Area as outlined on Figure 3. All of the avoidance alternatives presented in Section 2.0, Alternatives Considered, were designed within this focus area, and the impacts presented are for the portion of the project within this region (i.e., not for the entire project area).

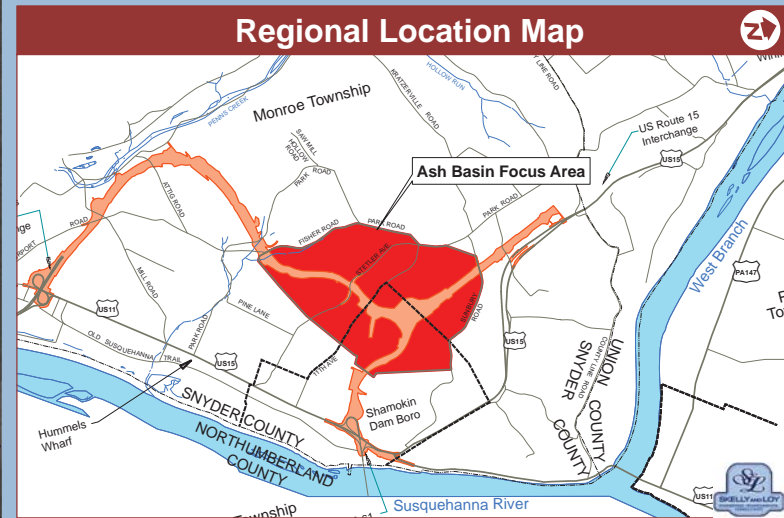
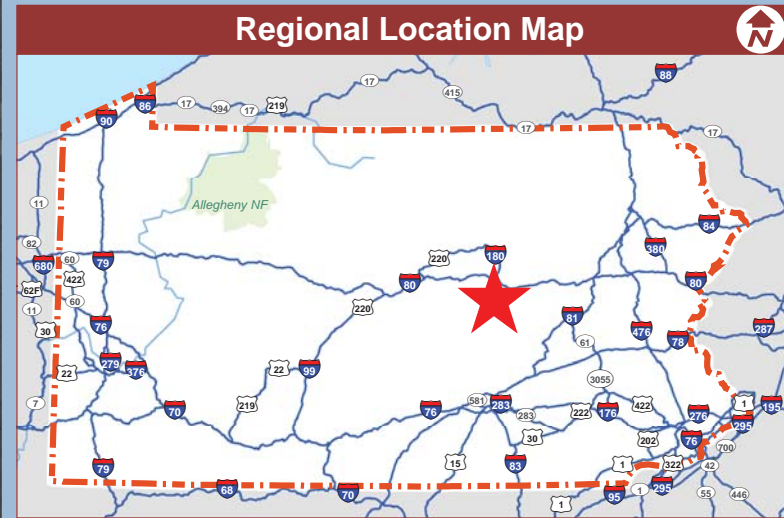
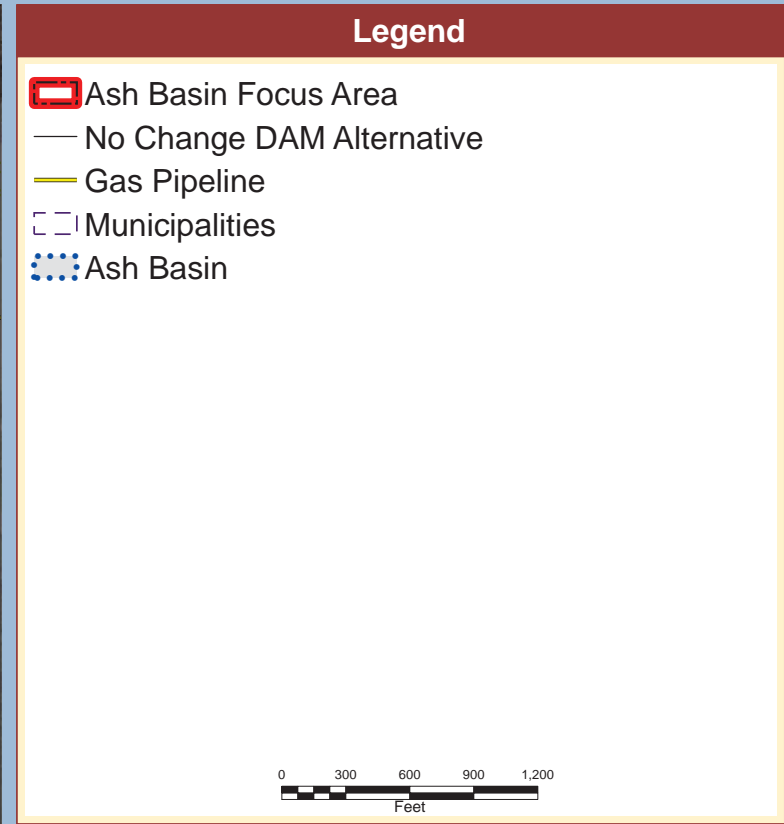
1.2 Project History and Background

1.2.1 Overall CSVT Project

The following Project History and Background narrative was summarized from the CSVT Project's FEIS (dated July 2003). More detailed discussion of the history and background for the overall CSVT Project can be found within the FEIS, which is available through the Resources page on the project's website (<http://www.csvt.com/resources/links/>).

Improvements to the U.S. Route 15 corridor have been ongoing since the 1960s. For years the citizens, public officials, and business interests of the Central Susquehanna Valley have been petitioning for relief from increasing traffic congestion and the high volume of trucks on their roadway network, including U.S. Route 15 and the other primary roadways of U.S. Routes 11/15, U.S. Route 11, and PA Route 147.

FHWA and PennDOT, in cooperation with the USACE, U.S. EPA, and PA DEP, prepared a FEIS for the CSVT Project to fulfill the requirements of the NEPA. The FEIS was approved for public review in July 2003. After consideration of the received comments, a ROD was prepared and issued by FHWA on October 31, 2003. The ROD identified Alternative DA Modified Avoidance (DAMA) in Section 1 (Southern Section) and RC5 in Section 2 (Northern Section) as the Selected Alternative for the CSVT Project (refer to Figure 2). DAMA was so named because it was designed to avoid the Simon P. App farm, which was determined to be eligible for the National Register of Historic Places (NRHP). One of the commitments of the ROD included a provision for PennDOT to reevaluate the areas of impact should conditions in the study area change prior to construction, particularly with respect to the Simon P. App property.



In 2005, the App farm was determined not eligible for the NRHP based on a revised historic farm context, and Alternative DA Modified (DAM) was subsequently identified as the new Selected Alternative in Section 1 to further reduce project impacts (refer to FEIS/ROD Reevaluation No. 1, which was approved by FHWA in May 2006 and is available through the Resources page on the project's website, <http://www.csvt.com/resources/links/>).

Pre-construction activities progressed until July 2008 when PennDOT placed the project on hold. At the time, the statewide transportation funding situation could not support allocating sufficient funds to complete the entire project. The hold allowed PennDOT to pursue funding options without losing the past investment in the project. The funding situation changed with Pennsylvania's passage of a comprehensive transportation funding plan (Act 89) in November 2013. As a result, PennDOT reactivated pre-construction activities for the project. Final design activities resumed for the Northern Section in late 2013 and began for the Southern Section in early 2015. From 2014 through 2016, FEIS/ROD Reevaluation Nos. 2 and 3 (available through the Resources page on the project's website, <http://csvt.com/resources/links/>) were prepared to address environmental impact changes associated with final design refinements in both the Northern and Southern Sections of the project.

1.2.2 Ash Basin Focus Area

The previously proposed alignment for the Southern Section (the No Change DAM Alternative) crossed two inactive fly ash waste basins that were previously utilized by PPL and are currently owned by Talen Energy (which merged with Riverstone Holdings in late 2016). The ash basins are disposal facilities for fly ash that was generated from the burning of coal at the former coal power plant along the Susquehanna River in Monroe Township. The basins were created decades ago by constructing dams across existing valleys, and the fly ash was mixed at the plant with water and pumped to the basins. There is no lining between the ash and the original ground surface below it. The maximum depth of the fly ash (along the No Change DAM Alternative) is approximately 100 feet in the Southern Ash Basin and approximately 75 feet in the Northern Ash Basin.

While originally avoided during the initial development of the CSVT Project, potential Southern Section alignments crossing the ash basins were later developed with support from environmental agencies and the public. The new highway was proposed to traverse the ash basins during the development of the FEIS in order to make use of the undeveloped lands and reduce impacts to residences, farmlands, and other resources. Preliminary engineering studies in the late 1990s/early 2000s indicated that construction on the basins was feasible. At that time, the basins had been closed fairly recently and it was expected that the water level in the basins would fall, allowing construction to be performed on top of mostly dry ash. Further, more detailed studies were planned to be completed during final design, which was ultimately delayed by lack of funding.

Following the eventual start of final design, geotechnical studies performed in 2016 identified unexpected conditions in the two ash basins. Specifically, testing indicated that the fly ash has very little strength and the water levels within the basins have not dropped substantially since the Northern Ash Basin was closed in the late 1980s and the Southern Ash Basin was closed in the late 1990s, as saturated fly ash was encountered within ten feet below the surface in both basins. The saturated fly ash has a consistency similar to a milkshake and is a soft, weak, and compressible material that cannot support the weight of a highway without excessive and potentially detrimental settlement and deformation. In addition, based on the updated data, construction of the highway over the ash basins would present a risk of groundwater contam-

ination in nearby wells and aquifers, both during and after construction, since there is no liner between the original ground surface and the fly ash. Since 2008, fly ash basins throughout the country have come under increased scrutiny from government regulators, such as the U.S. EPA, due to documented cases of contaminated groundwater around fly ash basins as well as a dam failure at one ash basin location. During final design coordination, PA DEP strongly recommended that PennDOT realign the Southern Section, noting major concerns regarding construction within the basins which included potential impacts to groundwater and private water supplies, substantial stormwater management challenges, and potential adverse impacts to the regulated basin dams. A copy of PA DEP's January 19, 2017, letter outlining those concerns is included in Appendix A. Finally, if the CSVT Project were to be constructed on the ash basins, the Commonwealth of Pennsylvania and its citizens would assume perpetual liability for the basins and their dams.

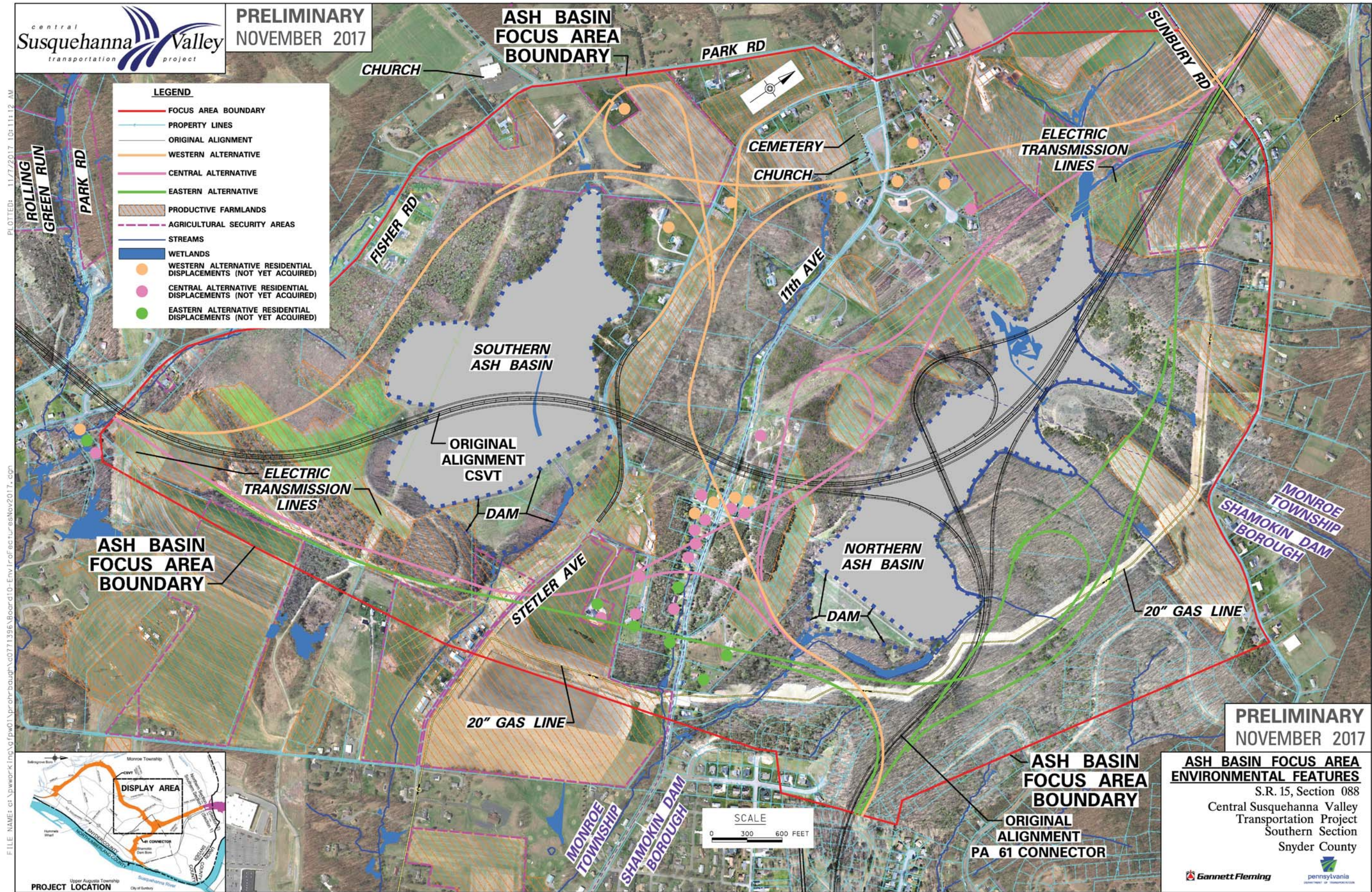
Based on the engineering and environmental risks identified above, the project team evaluated several different construction methods for building the new highway across the ash basins, including geotechnical improvements within the ash, removal of the ash, and bridging over the ash. However, each of those options was dismissed due to the risk of groundwater contamination, the perpetual public liability, the uncertainty of acceptable results, being cost-and/or time-prohibitive, and/or other engineering reasons. PennDOT and FHWA, in consultation with PA DEP and other environmental agencies, therefore determined that the project alignment must be modified between Fisher Road and Sunbury Road to avoid constructing the new highway on the ash basins. To accomplish this, the project team developed an Ash Basin Focus Area (Figure 3) and avoidance alternatives (Figure 4).

This Supplemental EA document outlines the alternatives analyses, identifies the Preferred Alternative, and documents the environmental impacts and mitigation for the preferred realignment. The changes in the project design and likely impacts for the Ash Basin Focus Area have not been evaluated or considered previously; therefore, a supplemental NEPA document is warranted. As studies to date do not suggest that any impacts would rise to the level of significance, PennDOT and FHWA have elected to prepare this EA to determine if the anticipated impacts are significant.

1.3 Project Purpose and Need

The following Purpose and Need narrative was summarized from the CSVT Project's FEIS (dated July 2003) and the Traffic Analysis update completed for FEIS/ROD Reevaluation No. 2 (June 2015), which are available through the Resources page on the project's website (<http://www.csvt.com/resources/links/>). More detailed Purpose and Need information can be found in the CSVT Project Needs Analysis Report (June 1996), FEIS (July 2003), FEIS Technical Support Data Files, and latest Traffic Analysis (January 2015).

A comprehensive Needs Analysis conducted for this project in 1995 and 1996 revealed substantial current and future transportation problems in the Central Susquehanna Valley. The study determined that each major roadway in the study area experienced substantial congestion, a high volume of trucks in the traffic stream, and multiple access points that serve as potential points of conflict. In addition, continued growth is anticipated for the Central Susquehanna Valley, causing greater impediments to safe and efficient traffic flow throughout the entire study area. The conclusions of the Needs Analysis indicated the following.



- Nearly all of the primary traffic routes in the study area will be congested by 2020.
- Six miles of the primary roadways in the study area exceed the statewide average crash rate.
- Eight miles of the primary roadways in the study area exceed the statewide average fatal crash rate.
- Almost 50% of the crashes on the primary roadways involved a truck.
- High truck volumes and through traffic volumes cause conflicts on the study area roadways.

1.3.1 Confirmation of Project Purpose and Need

After the CSVT Project was reactivated in late 2013, an update to the traffic analyses presented in the project's FEIS (dated July 2003) was completed to confirm the project's purpose and need remained valid. The updated analyses were based on 2010 census data and 2014 traffic counts, and they ultimately substantiated that the previously determined needs are still valid. More detailed discussion of those updated analyses is presented in FEIS/ROD Reevaluation No. 2 (June 2015), which is available through the Resources page on the project's website (<http://csvt.com/resources/links/>). The following paragraphs summarize more recent studies that are particularly relevant to the portion of the project within the Ash Basin Focus Area.

During the FEIS studies, a survey was conducted of motorists and truck drivers at several locations in the study area to determine traffic characteristics and major origins and destinations of study area motorists. The results of the study indicated that 34% of all northbound motorists on U.S. Routes 11/15 desire to cross the Susquehanna River to travel to and from Sunbury or other points east. To accommodate this movement, a mid-point connection to the existing roadway network was incorporated in the CSVT design via the PA Route 61 Connector. This direct connection to PA Route 61 in Shamokin Dam was determined to be a critical element to fully address the project needs.

In early 2017, additional studies were performed to confirm the traffic patterns. The conclusion was that the PA Route 61 Connector remains a critical link for the CSVT Project. The project team obtained origin and destination information in the form of percentages of trips taken between zones within the vicinity of the CSVT Project. Data for weekdays during the period of June 2015 to November 2016 were obtained for the same traffic zones established during the FEIS analysis.

The updated origin and destination data show that the travel patterns are similar today as they were at the time of the FEIS. Without the PA Route 61 Connector, traffic volumes on the new CSVT highway would drop by 15%-20%, future volumes on U.S. Routes 11/15 between Selinsgrove and Shamokin Dam would increase by 20%-25%, and future volumes on PA Route 147 through Northumberland would increase by 25%-30%. Based on the updated data, the PA Route 61 Connector will attract 15,000 to 20,000 vehicles per day by 2044, and the connector therefore remains a critical element in addressing the project needs by removing that traffic from the existing road network.

1.3.2 Conclusion

The conclusions of the CSVT Project Needs Analysis originally completed in 1996 indicated that there is a need to reduce congestion, provide for future growth, and improve safety for the users of the roadway system. The updated traffic information collected and analyzed since 2014 substantiates that the previously determined needs are still valid. Therefore, the purposes of the CSVT Project are to:

1. reduce current congestion on study area roadways;
2. improve safety for the users of the roadway system through better accommodation of all traffic, with particular attention to separating trucks and through traffic from local traffic; and
3. ensure sufficient capacity for the growth in population and employment that is expected for the study area.

1.4 Current Project Status

As described in Section 1.1, Project Location and Description, the CSVT Project was divided into two sections, Section 1 (Southern Section) and Section 2 (Northern Section), to facilitate the development and evaluation of alternatives during the preliminary engineering and FEIS process (refer to Figure 2). Each project section is proceeding separately through the final design and construction project development phases. Sufficient funds are programmed (through the mid-2020s) on PennDOT's Transportation Improvement Program and Twelve Year Program to fully fund all phases of the project.

Construction of the Northern Section began in early 2016, and PennDOT has awarded three of four planned construction contracts for that section. Upon its completion, PennDOT currently plans to open the Northern Section individually to traffic, while the Southern Section is still in development. Opening of the Northern Section mainline highway is currently anticipated in 2022. Meanwhile, final design of the Southern Section was initiated in 2015.

2.0 Alternatives Considered

In general, alternatives development within the Ash Basin Focus Area (Figure 3) first considered the project purpose and need along with appropriate engineering design criteria. Potential solutions were then analyzed for their ability to minimize impacts to sensitive environmental features including natural, cultural, and socioeconomic resources. The alternatives analysis process included the following specific steps:

1. Determined alignment must be modified
2. Obtained feedback from public, local officials, and environmental agencies
3. Developed preliminary alternatives based on above feedback
4. Obtained feedback from public, local officials, environmental agencies, and other stakeholders
5. Developed detailed alternatives based on above feedback
6. Evaluated alternatives' impacts on environmental resources (including natural, cultural, and socioeconomic resources)
7. Evaluated alternatives' engineering characteristics (including cost and ability to meet project needs)
8. Compared alternatives based on environmental impacts and engineering characteristics and identified recommended Preferred Alternative
9. Obtained feedback from public, local officials, and environmental agencies

2.1 Ash Basin Focus Area Alternatives Considered

Through the alternatives analysis process outlined above, PennDOT developed three alternatives within the Ash Basin Focus Area. All three alternatives require the realignment of about two miles of the No Change DAM Alternative's mainline highway as well as the PA Route 61 Connector.

The Ash Basin Focus Area Alternatives have been named based on the corridor in which they are located. The alternatives are shown together on Figure 4. The Western Alternative (shown on in tan) passes west of both ash basins. The Central Alternative (shown in pink) passes between the two ash basins. The Eastern Alternative (shown in green) passes east of both ash basins. The No Change DAM (shown in black) bisects both ash basins.

For each alternative, the mainline is designed as a four-lane, limited-access highway with a 36-foot-wide median, 4% maximum grades, 10-foot-wide outside shoulders, 4-foot-wide inside shoulders, and a design speed of 70 miles per hour (mph). The PA Route 61 Connector is designed as a two-lane, limited-access highway with auxiliary lanes, a 10-foot-wide median,

5% maximum grades, 10-foot-wide outside shoulders, 4-foot-wide inside shoulders, and a design speed of 50 mph.

2.1.1 Western Alternative Description

The Western Alternative (shown on Figure 4 in tan) begins at Fisher Road and turns north, heading to the west of the Southern Ash Basin. Curving around the northern end of the Southern Ash Basin, the Western Alternative then heads in a northeasterly direction, crossing under Stetler Avenue and over 11th Avenue and tying into the No Change DAM Alternative as it crosses under Sunbury Road. The PA Route 61 Connector heads in a westerly direction, passing south of the Northern Ash Basin and then proceeding between the Northern and Southern Ash Basins, crossing over 11th Avenue. The CSVT/PA Route 61 Connector Interchange is located north of the Southern Ash Basin.

2.1.2 Central Alternative Description

The Central Alternative (shown on Figure 4 in pink) begins at Fisher Road and continues in an easterly direction, passing south of the Southern Ash Basin. Curving around the southern end of the Southern Ash Basin, the Central Alternative then heads in a northerly direction between the Northern and Southern Ash Basins, crossing over Stetler Avenue and 11th Avenue and tying into the No Change DAM Alternative as it crosses under Sunbury Road. The PA Route 61 Connector heads in a westerly direction, passing south of the Northern Ash Basin. The CSVT/PA Route 61 Connector Interchange is located between 11th Avenue and the Northern Ash Basin.

2.1.3 Eastern Alternative Description

The Eastern Alternative (shown on Figure 4 in green) begins at Fisher Road and continues in an easterly direction. Passing south of the Southern Ash Basin, the Eastern Alternative crosses over Stetler Avenue and 11th Avenue before passing south of the Northern Ash Basin. The Eastern Alternative then curves around the eastern side of the Northern Ash Basin, heading in a northwesterly direction and tying into the No Change DAM Alternative as it crosses under Sunbury Road. The PA Route 61 Connector heads in a northerly direction, passing east of the Northern Ash Basin. The CSVT/PA Route 61 Connector Interchange is located east of the Northern Ash Basin.

2.1.4 No Change DAM Alternative Description

The No Change DAM Alternative (shown on Figure 4 in black) is the previously proposed alignment that was designed to cross the Southern and Northern Ash Basins. From Fisher Road, the alignment curves north and crosses the Southern Ash Basin approximately 700 feet west of the dam. The No Change DAM Alternative crosses under Stetler Avenue and over 11th Avenue before it transitions onto the Northern Ash Basin and then heads in a northwesterly direction and crosses under Sunbury Road. The PA Route 61 Connector heads in a northerly direction onto the Northern Ash Basin, passing east of the dam. The interchange for the PA Route 61 Connector is primarily located within the limits of the Northern Ash Basin.

2.2 Environmental and Engineering Comparison

2.2.1 Environmental Impact Comparison

During the development of the FEIS, the roadway alignment was deliberately placed on the closed ash basins to avoid displacing residential structures or impacting agricultural lands and other environmental resources (e.g., forested habitat). In general, the No Change DAM Alternative has the least impact to these resources. Shifting the alignment off the ash basins results in increases in impacts for several resources. The change in impact varies with the resource and with each avoidance alternative. A comparison of the environmental impacts for each of the alternatives is summarized in Table 1. Figure 4 outlines the Ash Basin Focus Area Alternatives and the existing environmental features.

2.2.1.1 *Natural Resources*

The environmental impacts associated with each alternative vary, depending on the surrounding landscape. When comparing the three new Ash Basin Focus Area Alternatives, the Eastern Alternative has higher impacts to streams and forested land cover than the other two alternatives, which are characterized as having higher residential displacements, noise impacts, and impacts to agricultural lands. There is a tradeoff between natural resources impacted by the Eastern Alternative and impacts to residential areas and productive farmland associated with the Central/Western Alternative. The increase in stream impacts associated with the Eastern Alternative is a result of several small, intermittent or ephemeral streams that feed into the existing channel around the Northern Ash Basin. They are not perennial streams producing wild trout; they are essentially drainages with limited flow and habitat. The Eastern Alternative has less wetland impacts when compared to the other realignment alternatives and results in an overall reduction in wetland impacts when compared to the No Change DAM Alternative.

The Pennsylvania Department of Conservation and Natural Resources (PA DCNR) Pennsylvania Natural Diversity Index – Heritage Geographic Information System (PNDI-HGIS) database was accessed to determine if the project area supports threatened or endangered species or their habitats. The PNDI-HGIS search acts as a coordination effort with the PA DCNR (Bureau of Forestry), Pennsylvania Game Commission (PGC), Pennsylvania Fish and Boat Commission (PFBC), and United States Fish and Wildlife Service (USFWS). The November 2, 2017, review (PNDI-603833) of the CSVT Southern Section determined that there were three potential conflicts, involving the PFBC, PA DCNR, and USFWS. Additional project information and mapping were provided to PA DCNR and PFBC, and those agencies subsequently cleared the project of threatened and endangered species conflicts. The PGC indicated that there are potential impacts to state and federally listed species which are under the jurisdiction of both the PGC and the USFWS. As a result, the PGC defers comments on potential impacts to federally listed species to the USFWS. No further coordination with the PGC was therefore required.

Through the development of the CSVT Project, the USFWS has identified concerns regarding potential impacts to Indiana Bats and Northern Long-Eared Bats. FHWA and PennDOT consulted with the USFWS for the Southern Section of the CSVT Project and implemented the National Programmatic Biological Opinion (BO) to address the potential concerns regarding the Northern Long-Eared Bat. Implementation of the National Programmatic BO concludes that the proposed CSVT Project is likely to adversely affect Northern Long-Eared Bats but is not likely to jeopardize the continued existence of the species. The USFWS approved the use of the National Programmatic BO for the CSVT Project in October 2016.

**TABLE 1
ENVIRONMENTAL SUMMARY – ASH BASIN FOCUS AREA**

		*No Change DAM Alternative	Western Alternative	Central Alternative	Eastern Alternative	
Total Area/Required Right-of-Way (Acres)		161.8	166.4	163.6	165.8	
Farmlands	Agricultural Security Area (Acres)	8.2	43.9	26.2	25.8	
	Productive Farmland (Acres)	Hummel Bros.	51.9	48.4	69.8	33.7
		Stump Valley	11.7	8.2	5.9	12.1
		J. Godek	1.3	12.2	9.1	4.4
		M. Thomas	0.3	0.0	0.0	0.0
		Total	65.2	68.8	84.8	50.1
	Statewide Importance Soils	59.1	79.3	75.1	71.8	
Prime Farmland Soils	18.9	37.4	25.8	42.3		
Natural Resources	Wetland (Acres)	1.6	1.8	1.6	1.1	
	Streams (Linear Feet)	5,444	4,228	4,017	6,073	
	Wooded (Acres)	63.7	62.0	71.0	94.0	
	Hedgerow (Acres)	0.0	0.5	0.2	0.4	
	Old Field (Acres)	50.8	10.7	9.9	12.8	
	Threatened and Endangered Species Suitable Habitat	Northern Long-Eared Bat	Northern Long-Eared Bat	Northern Long-Eared Bat	Northern Long-Eared Bat	
Cultural Resources	High Prehistoric Archaeology Probability (Acres)	0.0	0.7	0.8	1.9	
	Historic Resources	0	0	0	0	
Potential Waste Areas		3	0	2	1	
Recreational Areas/Section 4(f) Resources		0	0	0	0	
Noise Impacted Residences		54	67	48	48	
Residential Displacements	New	--	8	10	6	
	Needed - Not Yet Acquired	4	12	14	7	
	Needed - Already Acquired	5	2	4	0	
	Not Needed - Already Acquired	0	3	1	5	
	Total	9	17	19	12	
Planned Residential Developments	Weatherfield Development – Approved (Acres)	0	0.8	0.8	1.1	
	Grayston Property – Conceptual (Acres)	0	0	0	3.5	
	Broschious Property – Approved (Acres)	13.6	13.7	13.7	12.8	
	Total (Acres)	13.6	14.5	14.5	17.4	
Public Opinion (volume of comments received)	Positive	-	Medium	Low	High	
	Negative	-	Medium	Medium	High	

* No Change DAM Alternative impacts were assessed for comparative purposes and reflect impacts only within the Ash Basin avoidance Focus Area – they are a subset of impacts assessed in the FEIS.

Consultation with the USFWS regarding the use of the National Programmatic BO for the Southern Section will continue as project development proceeds.

In addition to the consultation regarding the Northern Long-Eared Bat, the USFWS, in October 2016, also identified potential concerns regarding the Indiana Bat in the Southern Section. FHWA and PennDOT, in consultation with the USFWS, performed a mist net survey in the summer of 2017 to address the potential Indiana Bat concerns. The mist net survey was

completed in July and August 2017, and no state or federal threatened or endangered bats were captured, including Indiana Bats. A summary of the results of the mist net survey effort was forwarded to the USFWS in the fall of 2017, and a formal report was provided in January 2018 as part of the consultation efforts. Additionally, there is no critical bat habitat or hibernaculum within the CSVT Project area. Based on the survey results, the USFWS concluded in February 2018 that the Southern Section may affect, but is not likely to adversely affect, the Indiana Bat.

Forest land is potential habitat for the Northern Long-Eared Bat and Indiana Bat. Forest land impacts for the different alternatives include:

- Eastern Alternative: 94.0 acres;
- Central Alternative: 71.0 acres;
- Western Alternative: 62.0 acres, and
- No Change DAM Alternative: 63.7 acres.

2.2.1.2 Agricultural Resources

Agricultural operations within the Ash Basin Focus Area include Hummel Brothers, J. Godek, Stump Valley Farms, and M. Thomas. The Hummel Brothers farming operation, based on Stetler Avenue between the two ash basins, is located at the heart of the Ash Basin Focus Area. These seventh-generation farmers actively farm the majority of the agricultural fields within the Ash Basin Focus Area. While the Eastern Alternative passes directly north of their base of operation, it has the least impact on the productive farmland they use for their business. Although this alternative bisects a pasture they lease from Talen Energy and cuts through a portion of their property east of Stetler Avenue, the impacts to their operation would be less than the Western and Central Alternatives since those require the acquisition of several tracts of their highly productive farmland. The Godek and Stump Valley Farms operations consist of leased pasture and crop fields located at the northern limits of the focus area. The Godek operation would be more severely impacted with the Western Alternative since it bisects the associated pasture, while the Eastern Alternative impacts the operation the least. The Stump Valley Farms operation has more leased crop acreage impacted with the Eastern Alternative. The No Change DAM Alternative has similar impacts on productive farmlands to the Western Alternative. Of the three new Ash Basin Focus Area Alternatives, the Eastern Alternative has the least impact on productive farmland and farming operations.

2.2.1.3 Socioeconomic/Cultural Resources

Including properties previously acquired to accommodate the No Change DAM Alternative, the Western Alternative requires 17 residential displacements whereas the Central Alternative requires 19 and the Eastern Alternative requires 12. There are fewer displacements with the Eastern Alternative because a large amount of the alignment is in undeveloped wooded land adjacent to the Northern Ash Basin. The Western Alternative also has the higher number of homes impacted by traffic noise due to the residential landscape. In addition, based on current FHWA traffic noise standards and PennDOT guidelines, noise mitigation (i.e., noise barriers) would not be likely for these areas given the low density and spacing of the homes. The Central and Eastern Alternatives have a similar number of noise-impacted residences. The location of the impacts varies between homes on Sunbury Road for the Eastern Alternative versus homes along 11th Avenue and Stetler Avenue for the Central Alternative.

Several potential waste sites were identified within the Ash Basin Focus Area that would require additional studies during final design to confirm, identify, and quantify the material. The Eastern Alternative would impact one location, while the Central Alternative would impact two potential locations.

Several areas have high potential for archaeological resources within the Ash Basin Focus Area based on the previously developed predictive model. Preliminary field reconnaissance of these areas has not identified any resources, and the alternatives are similar in regard to their impact to potential archaeological resources. Consistent with the Programmatic Agreement for the project, PennDOT will conduct a Phase I investigation within the limit of disturbance during final design.

2.2.2 Engineering Comparison

A comparison of the engineering characteristics of each alternative is presented in Table 2. In general, all three new Ash Basin Focus Area Alternatives are similar in earthwork and roadway length. Notable differences between the alternatives are the weave length, bridge area, estimated cost, utility impacts, potential for acid-bearing rock, and the PA Route 61 Connector usage.

TABLE 2 ENGINEERING SUMMARY – ASH BASIN FOCUS AREA					
		No Change DAM Alternative	Western Alternative	Central Alternative	Eastern Alternative
Earthwork	Cut	2.16 M CY	2.21 M CY	1.91 M CY	1.89 M CY
	Fill	1.54 M CY	2.55 M CY	2.07 M CY	2.21 M CY
Roadway Length ¹	Mainline	19,424 LF	21,509 LF	19,553 LF	19,798 LF
	Ramps	16,912 LF	16,845 LF	15,152 LF	16,669 LF
Weave Length ²	PA Route 61 NB	4,800 LF	5,500 LF	3,200 LF	1,440 LF
	PA Route 61 SB	3,700 LF	6,000 LF	2,800 LF	1,590 LF
Bridge Area		106 K SF	91 K SF	191 K SF	145 K SF
Utility Relocation	UGI Gas Line	0 LF	350 LF	350 LF	3,500 LF
	PPL Electric Transmission Line	2,320 LF	4,990 LF	10,800 LF	3,230 LF
Ash Basin Focus Area Construction Cost		\$181 M	\$110 M	\$127 M	\$120 M
Ash Basin Focus Area Total Cost ³		\$192 M	\$118 M	\$139 M	\$131 M
PA Route 61 Connector Usage vs. No Change DAM Alternative		--	30% less traffic removed from existing road network	10% more traffic removed from existing road network	30% more traffic removed from existing road network
Stormwater Management (SWM)		Most challenging; requires diversion of all stormwater off ash basins	Requires average number and size of SWM features	Requires average number and size of SWM features	Requires large number and size of SWM features
Geotechnical Considerations		Excessive and potentially detrimental settlement and deformation of highway within ash basins	Potential for acid rock; Steepened slope below Northern Ash Basin dam; Blasting restrictions needed near dams	Steepened slope below Northern Ash Basin dam; Blasting restrictions needed near dams	Steepened slope below Northern Ash Basin dam; Realigned spillway channel below Northern Ash Basin dam; Blasting restrictions needed near dams

NOTES:
 (1) Mainline includes CSVT and PA Route 61 Connector; ramps include side roads
 (2) Distance along PA Route 61 Connector between CSVT and U.S. Routes 11/15 Interchange
 (3) Total Cost = Ash Basin Focus Area Construction Cost + Right-of-Way Cost + Utility Relocation Cost
 Construction cost for No Change DAM Alternative includes \$70 million for ash basin geotechnical ground modification

2.2.2.1 Weave Length

Weave length is the distance between successive entrance and exit ramps. It is where vehicles are frequently changing lanes in order to either enter or exit the highway. The longer the weave length, the easier it is for vehicles to find a gap and change lanes. The No Change DAM, Western, and Central Alternatives have greater weave lengths along the PA Route 61 Connector between the CSVT mainline highway and existing U.S. Routes 11/15 than the Eastern Alternative. At 1,440 linear feet (LF) northbound and 1,590 LF southbound, the Eastern Alternative's weave lengths are less than the American Association of State Highway and Transportation Officials (AASHTO) recommended 2,000 LF length, though they do exceed the 300 LF minimum length and have been confirmed through analysis to provide an acceptable Level of Service (LOS) through the project design year (2044).

2.2.2.2 Bridge Area

The Central Alternative requires longer bridges than the other two realignment alternatives and equates to roughly double the bridge area than what is required for the Western and No Change DAM Alternatives.

2.2.2.3 Utility Impact

Impacts to major local utilities (refer to Figure 5 for utility locations) involve the relocation of existing PPL electric transmission lines (69 and 230 kilovolt [kV]) as well as the relocation of a recently constructed UGI Sunbury Pipeline natural gas line that feeds the Panda Hummel Station Power Plant. Utility relocations identified are anticipated based on initial coordination with the utility companies and are therefore preliminary. Where required, anticipated utility right-of-way was included in the anticipated limit of disturbance and accounted for in the impact calculations for each alternative.

The No Change DAM Alternative does not impact the UGI line. Each of the new Ash Basin Focus Area Alternatives requires the relocation of both PPL transmission lines as well as the UGI gas line. The PA Route 61 Connector portion of the Western and Central Alternatives crosses the UGI gas line south of the Northern Ash Basin and requires approximately 350 feet of the pipeline to be lowered. The Eastern Alternative requires approximately 3,500 feet of the UGI gas line to be relocated, requiring replacement right-of-way.

All of the realignment alternatives cross PPL electric transmission lines, requiring relocation and replacement right-of-way to accommodate the relocated lines. Currently, 69 kV and 230 kV lines traverse the Ash Basin Focus Area within the same right-of-way. The Eastern Alternative has the least impact on PPL right-of-way and would need a small section of replacement right-of-way west of Stetler Avenue on the Hummel farm (approximately 3,200 feet). The Central Alternative requires the longest relocation because the alternative follows the utility right-of-way between both basins, and approximately 10,800 feet of relocation is necessary. The PA Route 61 Connector portion of the Western Alternative requires approximately 5,000 feet of replacement PPL right-of-way. The utility relocation lengths presented in Table 2 reflect the relocation of both the 69 kV line and the 230 kV line.

2.2.2.4 PA Route 61 Connector Usage

The distance the traveling public is required to drive on the PA Route 61 Connector affects how many vehicles will use the facility. The longer the travel distance using the PA

Route 61 Connector, the more likely motorists will continue to use the existing road network. The Western Alternative will have the longest travel times on the PA Route 61 Connector whereas the Eastern Alternative will have the shortest. It is projected that the Eastern Alternative will attract 30% more traffic onto the PA Route 61 Connector than the No Change DAM Alternative and that the Western Alternative will attract 30% less traffic than the No Change DAM Alternative. The Central Alternative is projected to attract 10% more traffic onto the PA Route 61 Connector than the No Change DAM Alternative.

2.2.2.5 Estimated Costs

The estimated cost of each Ash Basin Focus Area Alternative was determined by totaling estimated costs of right-of-way acquisition, utility relocations, and highway construction for the portion of the project within the focus area. The cost of the Central Alternative is estimated to be \$139 million; this is higher than the Western and Eastern Alternatives, primarily due to the larger amount of bridge area required to construct this alternative. The Eastern Alternative, estimated at \$131 million, has costs associated with the relocation of the UGI gas line. The Western Alternative, estimated at \$118 million, has the lowest cost. Overall, the No Change DAM Alternative, estimated at \$192 million, has the highest cost due to the geotechnical treatments required to construct the highway across the ash basins (which would result in various engineering and environmental risks as explained in Section 1.2.2, Ash Basin Focus Area).

2.2.2.6 Potential for Acid-Bearing Rock

Acid-bearing rock is rock that contains iron sulfide, such as pyrite. It can produce acid at a quick rate when it is excavated into smaller pieces and exposed to air and water, potentially causing environmental issues similar to acid mine drainage. When acid-bearing rock is encountered in an excavation operation, typical treatments required to prevent those issues include minimizing the amount of rock to be exposed to air and water, mixing the excavated rock material with lime and encapsulating it, and treating stormwater runoff from exposed rock slopes. Soil borings and laboratory testing were performed along the three realignment alternatives. Based on that subsurface exploration program, construction of the Western Alternative has some potential to encounter acid-bearing rock north of Fisher Road. The borings and tests showed no potential for encountering acid-bearing rock along the Eastern and Central Alternatives.

2.3 Alternatives Dismissed

Through the alternatives development and analysis process described above, the project team, the public, local officials, and environmental agencies collaborated to develop the best solution to avoid the ash basins while minimizing impacts. The Western and the Central Alternatives were dismissed from further consideration based on the engineering and environmental comparisons presented in the previous section. The Eastern Alternative was advanced for consideration because it:

- better meets the traffic needs of the project through increased usage of the PA Route 61 Connector and the associated removal of more traffic from the existing road network;
- has the least impact to residences;

- has the least impact to farmlands;
- has the least impact to wetlands;
- has noise impacts that are less than the Western Alternative and similar to the Central Alternative.

The following Environmental Resources, Impacts, and Mitigation Section compares impacts within the Ash Basin Focus Area anticipated with the Eastern Alternative and the No Change DAM Alternative (as defined in the FEIS and refined in subsequent FEIS/ROD Reevaluations).

3.0 Environmental Resources, Impacts, and Mitigation

This Environmental Assessment compares the anticipated impacts of the Eastern Alternative and the No Change DAM Alternative for the CSVT Southern Section within the Ash Basin Focus Area. The same resources analyzed in the FEIS were analyzed in this Environmental Assessment. The following Environmental Summary and Engineering Summary tables (Tables 3 and 4) provide a comparison of the two project alternatives within the focus area.

TABLE 3 ENVIRONMENTAL SUMMARY – NO CHANGE DAM ALTERNATIVE AND EASTERN ALTERNATIVE			No Change DAM Alternative	Eastern Alternative
Total Area/Required Right-of-Way (Acres)			161.8	165.8
Farmlands	Agricultural Security Area (Acres)		8.2	25.8
	Productive Farmland (Acres)	Hummel Bros.	51.9	33.7
		Stump Valley	11.7	12.1
		J. Godek	1.3	4.4
		M. Thomas	<u>0.3</u>	<u>0.0</u>
		Total	65.2	50.1
	Statewide Importance Soils		59.1	71.8
Prime Farmland Soils		18.9	42.3	
Natural Resources	Wetland (Acres)		1.6	1.1
	Streams (LF)		5,444	6,073
	Wooded (Acres)		63.7	94.0
	Hedgerow (Acres)		0.0	0.4
	Old Field (Acres)		50.8	12.8
	Threatened and Endangered Species Suitable Habitat		Northern Long-Eared Bat	Northern Long-Eared Bat
Cultural Resources	High Prehistoric Archaeology Probability (Acres)		0.0	1.9
	Historic Resources		0	0
Potential Waste Areas			3	1
Recreational Areas/Section 4(f) Resources			0	0
Noise-Impacted Residences			54	48
Residential Displacements	New		--	6
	Needed - Not Yet Acquired		4	7
	Needed - Already Acquired		5	0
	Not Needed - Already Acquired		<u>0</u>	<u>5</u>
	Total		9	12
Planned Residential Developments	Weatherfield Development – Approved (Acres)		0	1.1
	Grayston Property – Conceptual (Acres)		0	3.5
	Broschious Property – Approved (Acres)		<u>13.6</u>	<u>12.8</u>
	Total (Acres)		13.6	17.4
Public Opinion (volume of comments received)		Positive	--	High
		Negative	--	High

**TABLE 4
ENGINEERING SUMMARY –
NO CHANGE DAM ALTERNATIVE AND EASTERN ALTERNATIVE**

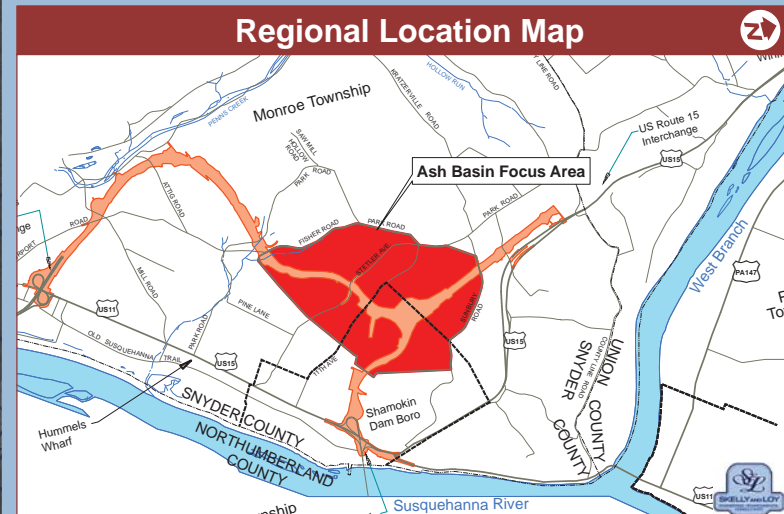
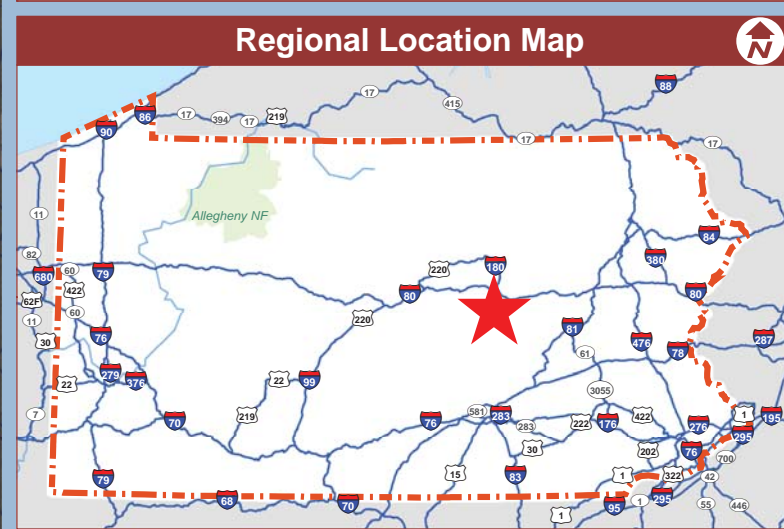
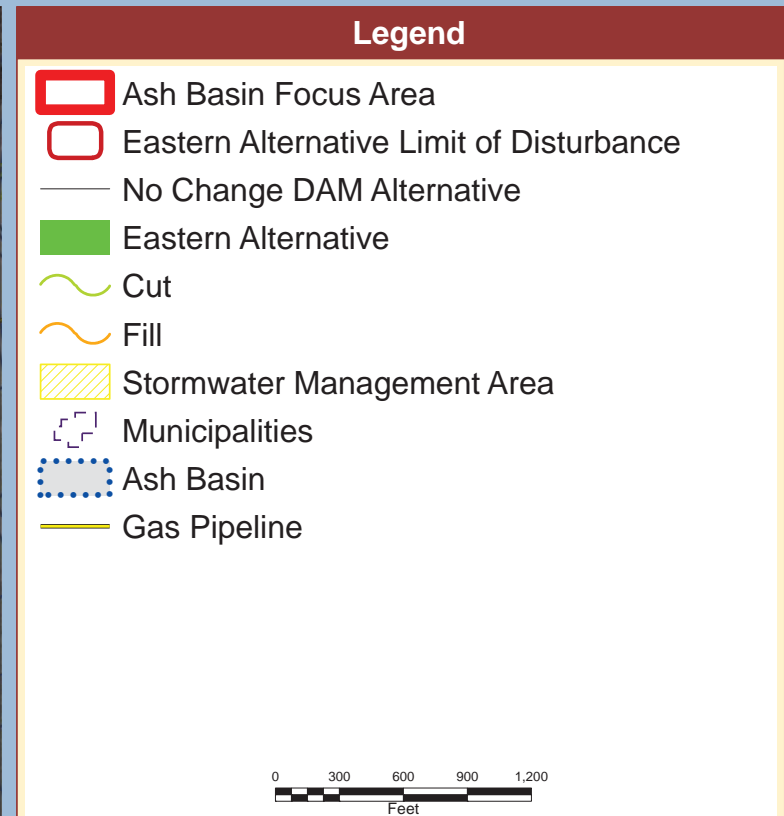
		No Change DAM Alternative	Eastern Alternative
Earthwork	Cut	2.16 M CY	1.89 M CY
	Fill	1.54 M CY	2.21 M CY
Roadway Length ¹	Mainline	19,424 LF	19,798 LF
	Ramps	16,912 LF	16,669 LF
Weave Length ²	PA Route 61 NB	4,800 LF	1,440 LF
	PA Route 61 SB	3,700 LF	1,590 LF
Bridge Area		106 K SF	145 K SF
Utility Relocation	UGI Gas Line	0 LF	3,500 LF
	PPL Electric Transmission Line	2,320 LF	3,230 LF
Ash Basin Focus Area Construction Cost		\$181 M	\$120 M
Ash Basin Focus Area Total Cost ³		\$192 M	\$131 M
PA Route 61 Connector Usage vs. No Change DAM Alternative		--	30% more traffic removed from existing road network
Stormwater Management (SWM)		Most challenging; requires diversion of all stormwater off ash basins	Requires large number and size of SWM features
Geotechnical Considerations		Excessive and potentially detrimental settlement and deformation of highway within ash basins	Steepened slope below Northern Ash Basin dam; Realigned spillway channel below Northern Ash Basin dam; Blasting restrictions needed near dams
<p>NOTES:</p> <p>(1) Mainline includes CSVT and PA Route 61 Connector; ramps include side roads</p> <p>(2) Distance along PA Route 61 Connector between CSVT and U.S. Routes 11/15 Interchange</p> <p>(3) Total Cost = Ash Basin Focus Area Construction Cost + Right-of-Way Cost + Utility Relocation Cost Construction cost for No Change DAM Alternative includes \$70 million for ash basin geotechnical ground modification</p>			

In addition to the tables, the following sections provide a summary of the existing conditions, impacts, and mitigation for each of the different environmental topics. Each section compares the Eastern Alternative and the No Change DAM Alternative only within the limits of the Ash Basin Focus Area (Figure 5). The study methodologies and additional supporting information are provided in the CSVT FEIS (July 2003) and CSVT Ash Basin Focus Area – Environmental Technical Report (May 2018), which are available through the Resources page on the project’s website (<http://csvt.com/resources/links/>).

3.1 Soils and Geology

3.1.1 Existing Conditions

The Ash Basin Focus Area begins at Fisher Road in the Trimmers Rock Formation and passes through an area primarily underlain by the Irish Valley Member of the Catskill Formation near the ash basins. The northern end of the focus area is characterized by a region of low relief hills underlain by the Sherman Creek Member of the Catskill Formation. These formations are not anticipated to pose unusual complications to construction efforts.



Based on Pennsylvania Bureau of Topographic and Geologic Survey Open-File Miscellaneous Investigation, OFMI-05-01.1, none of the geologic formations underlying the Ash Basin Focus Area is identified as a potential acidic rock unit. However, during the final design subsurface exploration program, pyrite was observed within the matrix of rock samples obtained from the Trimmers Rock Formation to the southwest of the Ash Basin Focus Area. Laboratory test results on the Trimmers Rock Formation samples do not indicate that there is potential for acid-bearing rock conditions to occur along the No Change DAM or Eastern Alternatives. Rock samples from the borings conducted in the Sherman Creek and Irish Valley Members of the Catskill Formation were reviewed for indicators of potential acid-bearing rock (i.e., dark gray/black shale and minerals such as pyrite). No dark gray/black shale or minerals such as pyrite were observed in the rock samples obtained from the Sherman Creek and Irish Valley Members of the Catskill Formation.

3.1.2 Impacts

The Irish Valley Member and the Sherman Creek Member of the Catskill Formation can exhibit poor cut-slope stability properties, especially in areas where the rock is weathered or fractured. Both the Eastern Alternative and the No Change DAM Alternative encounter these formations. In addition, there are some highly erodible soils in the focus area. Both alternatives would require cut and fill construction activities through these formations and soil series, and the impact in the non-ash basin areas would be similar. The No Change DAM Alternative would require fill impacts over the ash basins, and the increased load could result in impacts to the subsurface geology. The ash basins are unlined. The Eastern Alternative avoids the ash basins and therefore would avoid any potential geologic or subsurface impacts associated with fills and loads from the ash basins.

3.1.3 Mitigation

A comprehensive geotechnical and soils testing program will be implemented on the Preferred Eastern Alternative during the final design phase to determine the actual physical characteristics of the soils to be disturbed. From this testing, soil thicknesses and suitable uses (as construction and embankment materials) will be determined. Erodibility factors will also be determined from the testing program.

Erosion and sedimentation pollution control practices will be used to minimize impacts to receiving watercourses. Guidelines provided by PA DEP and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) will be followed for the control of sediment. Additional borings and other subsurface exploration activities will also determine information related to the rock underlying the soil for use in final design.

3.2 Groundwater Resources

3.2.1 Existing Conditions

Shamokin Dam Borough operates its own public water supply for areas within the Borough. Shamokin Dam draws its drinking water from the Susquehanna River utilizing a raw-water intake system which is located in the river at the Fabridam Park. The areas outside of Shamokin Dam Borough within the Ash Basin Focus Area are not serviced by public water. Data extracted from the Pennsylvania Groundwater Information System (PaGWIS) yielded a total of three domestic/private supply wells and two industrial monitoring (Talen Energy) wells located in the focus area. It is important to note that the domestic/private water supply well

information obtained from the PaGWIS is not complete. All the residential structures outside the public water supply are assumed to have a private water supply. Approximately 78 residential structures are located within this area and are assumed to have private wells servicing the properties.

3.2.2 Impacts

Seven domestic/private water supply wells (each associated with a residential displacement) and one Talen Energy monitoring well are directly affected by the Eastern Alternative within the focus area. Acquisition of the residential structures required for the construction of this alternative results in impacts to the wells that supply water to the residences. The No Change DAM Alternative would impact four domestic wells, each associated with a residence displaced by that alternative.

In addition, for the No Change DAM Alternative, PA DEP identified several concerns associated with constructing CSVT on the ash basins in its January 2017 letter to PennDOT (included in Appendix A). The PA DEP letter indicated that constructing the CSVT roadway on the ash basins raises several potential environmental issues including impacts to groundwater and private water supplies. The potential impacts of the No Change DAM alternative have been addressed in the development of alternatives to avoid the ash basins and subsequent preparation of this EA.

3.2.3 Mitigation

The primary goal with regard to mitigation measures for impacts to private wells and public water supplies is to ensure a continued supply of safe drinking water to all users. If impacts occur as a result of construction, PennDOT will ensure the maintenance of water supplies for homes and properties not acquired as part of the right-of-way for the project by one of the following:

- providing connections to public water systems;
- redrilling existing wells to another water-producing zone at a greater depth within the same formation;
- relocating a well within an adjacent water-producing formation undisturbed by construction activities;
- providing water treatment; or
- acquiring the property.

Sampling will be completed for wells that are located within 0.25 mile of blasting operations. The data collected during this monitoring will be used to assess potential impacts to groundwater resulting from the construction. The groundwater quality monitoring plan will be implemented prior to construction to establish baseline conditions as well as during construction and one year post-construction.

3.3 Surface Water Resources

3.3.1 Existing Conditions

The landscape of the Ash Basin Focus Area is characterized by rolling hills with small, relatively narrow stream valleys that drain to the Susquehanna River. The land cover/land use consists of a mix of forest land, agricultural lands, old fields, residential developments, wetlands, and streams. This focus area is located within the headwater reaches of numerous small named and unnamed tributaries to the Susquehanna River. The water uses for all of these tributaries are protected for warm water fishes and migratory fishes (WWF, MF) in accordance with PA DEP Chapter 93 Water Quality Regulations. There are 25 watercourses within the focus area; of those, 6 are perennial, 17 are intermittent, and 2 are ephemeral streams. There are two conservation easements along wetlands and watercourses within the Ash Basin Focus Area.

3.3.2 Impacts

The Eastern Alternative results in a slight increase in overall stream impacts (Eastern Alternative = 6,073 LF and No Change DAM Alternative = 5,444 LF), but the No Change DAM Alternative impacts more perennial streams. The increase in the overall stream impacts for the Eastern Alternative is associated with the small stream crossings around the eastern side of the Northern Ash Basin. These streams consist of small, single-thread channels that convey intermittent or ephemeral flow to an unnamed tributary to Shreiners Creek (Channel 26). The Eastern Alternative does avoid the ash basins and therefore avoids the potential water quality concerns raised by PA DEP during final design coordination for the No Change DAM Alternative. Additional details regarding the streams and proposed impacts are provided in the CSVT Ash Basin Focus Area – Environmental Technical Report (May 2018).

3.3.3 Mitigation

The CSVT Project's impact of aquatic habitat associated with perennial resources has been mitigated through a compensatory plan developed with the natural resource regulatory agencies at the Center Mitigation Site (Center Site) in Snyder County. The Center Site stream mitigation included the improvement and stabilization of 6,320 LF of perennial stream. The Center Site stream mitigation area was reviewed by the permitting agencies in August 2014 and was determined to be complete. The stream improvements and stabilization thereby provided the compensatory stream mitigation for the 2,617 LF of impacts associated with the ongoing construction of the CSVT Northern Section. The remaining balance of 3,703 LF of available stream mitigation created at the Center Site (6,320-2,617 LF) will offset the perennial stream impacts associated with the CSVT Southern Section, including the Eastern Alternative which impacts less perennial streams than the No Change DAM Alternative. All stream impacts and mitigation will be coordinated through the USACE as part of the federal Section 404 permitting and through PA DEP as part of the state Chapter 105 permitting for the project.

Minimization measures include both design and construction options to minimize construction and post-construction impacts. The design minimization measures include the following.

- Proposed stream crossing structures will be designed to maintain current flow conditions and avoid downstream and upstream impacts associated with increased velocities or flooding.

- Separate highway stormwater runoff from the clean upslope runoff. A comprehensive E&S Plan and Stormwater Management Plan will be developed as part of the NPDES permitting process during the final design phase of the project.
- The length of required stream relocations will be minimized to the extent possible. Where stream relocations are unavoidable, the most current methodologies (including fluvial geomorphology and natural stream design) will be used, as practical and feasible, to design the relocated stream.
- In accordance with PA DEP's Chapter 105 regulations, efforts will be made to repair, rehabilitate, and/or restore impacted waterways and their assumed floodways.

As part of the National Pollutant Discharge Elimination System (NPDES) permitting for the project, an extensive erosion and sedimentation pollution control plan and post-construction Stormwater Management Plan will be developed and implemented to avoid and minimize potential construction and operational impacts to the water quality of the receiving streams throughout the project area. Stormwater management measures will be located and positioned in uplands to the extent practical in an effort to avoid and minimize impacts.

3.4 Floodplains

There are no mapped Federal Emergency Management Agency (FEMA) floodplains within the focus area; therefore, there will be no impact by either the No Change DAM Alternative or the Eastern Alternative.

3.5 Wetlands

3.5.1 Existing Conditions

This project area is located within the headwater reaches of numerous small named and unnamed tributaries to the Susquehanna River. There are 68 wetlands totaling over 7.5 acres within the Ash Basin Focus Area.

3.5.2 Impacts

Construction of the Eastern Alternative or the No Change DAM Alternative would result in impacts to wetland resources within the focus area. Table 5 identifies the impacts by vegetative classification.

In general, the majority of the wetlands impacted by the project alternatives consist of small emergent areas located along the riparian area of small tributary streams or within a hillside landscape position. The project alternatives have been developed to avoid the larger wetland areas within the project area. The Eastern Alternative would impact approximately 0.5 acre less wetlands when compared with the No Change DAM Alternative. Additional details regarding the wetlands and proposed impacts are provided in the CSVT Ash Basin Focus Area – Environmental Technical Report (May 2018).

TABLE 5 SUMMARY OF WETLAND IMPACTS BY VEGETATIVE CLASSIFICATION		
	No Change DAM Alternative	Eastern Alternative
Total PSS ¹ Impacts (acres)	0.04	0.10
Total PEM ² Impacts (acres)	1.51	0.95
Total Wetland Impacts (acres)	1.55	1.05

1. PSS = Palustrine Scrub Shrub Wetlands
2. PEM = Palustrine Emergent Wetlands

3.5.3 Mitigation

Construction of either the Eastern Alternative or the No Change DAM Alternative would result in unavoidable wetland impacts. In accordance with both state and federal regulations, wetland replacement has been provided for the project impacts at the Center Site in Snyder County. The Center Site included the creation of 6.9 acres of wetlands.

Based on the established amount of PEM and PSS habitat that has been created at the Center Site, there is adequate wetland mitigation to offset unavoidable wetland impacts for the project. The required wetland replacement for the Eastern Alternative would total 1.10 acres, including 0.95 acre of PEM and 0.15 acre of PSS (0.10 acre impacted x 1.5 multiplier for PSS). The created wetland mitigation will adequately provide functional replacement and lift for the proposed wetland impacts. Though the impacted wetlands and the created wetlands share similarities in the different functions and values provided, the mitigation site provides an overall functional lift to the wetlands in the region. The mitigation site creates a larger ecological unit within a relatively undeveloped landscape and watershed position that will remain and be protected through conservation measures in perpetuity.

3.6 Vegetation and Wildlife

3.6.1 Existing Conditions

Terrestrial communities found within the Ash Basin Focus Area were updated in 2017 with field reconnaissance and aerial mapping. They were grouped into two major categories: Forested Land and Non-Forested Land. The major categories consisted of microhabitats that were identified based on the density and type of vegetation that was present. Microhabitats within the two categories included mature forest habitat, successional forest habitat, old field habitat, agricultural land habitat, developed habitat, and barren land habitat. In addition to the terrestrial habitat mapping, a review of invasive and/or noxious plants was completed. There are approximately 25 different invasive species found in the focus area.

3.6.2 Impacts

Potential impacts to the terrestrial communities within the Ash Basin Focus Area were determined by comparing existing vegetative community conditions affected by the No Change DAM Alternative and the Eastern Alternative. Throughout the focus area, terrestrial community types most commonly impacted by the No Change DAM Alternative and the Eastern Alternative include mature forest, agricultural land, successional forest, and old field habitats.

Overall, there are similar impacts to wildlife habitat within the Ash Basin Focus Area. The largest differences in the impacts of the two alternatives are the changes in the impact sizes of the mature oak/hardwood (F1) and the old field/herbaceous dominated – not mowed regularly (OF2) micro habitats.

3.6.3 Mitigation

The existing stream valleys within the project area serve as wildlife corridors. Bridges will be constructed over local roads (11th Avenue for the No Change DAM Alternative; 11th Avenue and Stetler Avenue for the Eastern Alternative) and existing adjacent waterways that will accommodate wildlife movements through the focus area. Additional terrestrial habitat mitigation has been provided at the Center Site in Snyder County. The creation of 7 acres of wetlands, restoration of 6,320 LF of stream, provision of 55 acres of old field mitigation, and provision of 54 acres of forestland mitigation at the Center Site have already been completed/implemented as part of the mitigation commitments for the CSVT Project overall. The Stormwater Management Plan will consider the use of additional plantings along the highway corridor and invasive species will be controlled in accordance with Executive Order 13751 to the extent practical.

3.7 Threatened and Endangered Species

3.7.1 Existing Conditions

As discussed in Section 2.2.1.1, PennDOT consulted the PNDI-HGIS database and ultimately consulted with USFWS to determine if the project area supports threatened or endangered species or their habitats. The November 2, 2017, review (PNDI-603833) of the Eastern Alternative determined that there were three potential conflicts, involving the PFBC, PA DCNR, and USFWS. Additional project information and mapping was provided to PA DCNR and PFBC, and those agencies subsequently cleared the project of threatened and endangered species conflicts. The PGC indicated that there are potential impacts to state and federally listed species which are under the jurisdiction of both the PGC and the USFWS. As a result, the PGC defers comments on potential impacts to federally listed species to the USFWS. No further coordination with the PGC was therefore required.

3.7.2 Impacts

Through the development of the CSVT Project, the USFWS has identified concerns regarding potential impacts to Indiana Bats and Northern Long-Eared Bats. FHWA and PennDOT consulted with the USFWS for the Southern Section of the CSVT Project and implemented the National Programmatic Biological Opinion (BO) to address the potential concerns regarding the Northern Long-Eared Bat. Implementation of the National Programmatic BO concludes that the proposed CSVT Project is likely to adversely affect Northern Long-Eared Bats but is not likely to jeopardize the continued existence of the species. The USFWS originally approved the use of the National Programmatic BO for the CSVT Project in October 2016 and specifically approved its use for the Eastern Alternative in February 2018.

In addition to the consultation regarding the Northern Long-Eared Bat, the USFWS, in October 2016, also identified potential concerns regarding the Indiana Bat in the Southern Section. FHWA and PennDOT, in consultation with the USFWS, performed a mist net survey in the summer of 2017 to address the potential Indiana Bat concerns. The mist net survey was completed in July and August 2017, and no state or federal threatened or endangered bats

were captured, including Indiana Bats. A summary of the results of the mist net survey effort was forwarded to the USFWS in the fall of 2017, and a formal report was provided in January 2018 as part of the consultation efforts. Additionally, there is no critical bat habitat or hibernaculum within the CSVT Project area. Based on the survey results, the USFWS concluded in February 2018 that the Southern Section may affect, but is not likely to adversely affect, the Indiana Bat.

The vegetation and wildlife section (Section 3.6) details the different habitats that exist and would be impacted within the focus area. Forest land is considered to be potential habitat for the Northern Long-Eared Bat and Indiana Bat. Forest land impacts within the Ash Basin Focus Area total 94.0 acres for the Eastern Alternative and 63.7 acres for the No Change DAM Alternative.

3.7.3 Mitigation

FHWA and PennDOT have implemented the use of the National Programmatic BO to address the potential concerns regarding the Northern Long-Eared Bat. In accordance with the National Programmatic BO, tree clearing can occur from November 1 to March 31, and limited tree clearing (10% of the project total) can occur from April 1 to May 31 and August 1 to October 31. No tree clearing can occur from June 1 to July 31. Implementation of the National Programmatic BO concludes that the proposed CSVT Project is likely to adversely affect Northern Long-Eared Bats but is not likely to jeopardize the continued existence of the species. The USFWS originally approved the use of the National Programmatic BO for the CSVT Project in October 2016 and specifically approved its use for the Eastern Alternative in February 2018. No compensatory habitat mitigation is anticipated for the CSVT Southern Section.

3.8 Agricultural Resources

3.8.1 Existing Conditions

Agricultural resources were assessed based on 2017 interviews with operators, aerial photography, soil mapping, field reconnaissance, and local zoning and Agricultural Security Area (ASA) boundaries. There are four farming operations located within the Ash Basin Focus Area: Hummel Brothers Farms, Stump Valley Farms, Jason Godek operation, and Mike Thomas (subsistence farmer) operation. Several ASAs are located within the Ash Basin Focus Area on land owned and farmed by the Hummel Brothers. The property farmed by Jason Godek and Stumpy Valley farms is also enrolled in the ASA program.

3.8.2 Impacts

ASA impacts are less for the No Change DAM Alternative (8.2 acres) versus the Eastern Alternative (25.8 acres). The No Change DAM Alternative would directly impact 42.6 acres of productive agricultural land and would result in 22.6 acres of indirect impacts (e.g., 18.5 acres inaccessible, 4.1 acres impractical to farm), for a total of 65.2 acres impacted. The Eastern Alternative would directly impact 50.1 acres of productive agricultural land and would not have any indirect impacts.

3.8.3 Mitigation

Avoidance, minimization, and mitigation efforts for impacts to individual farm operations and specific farm units will be addressed in a detailed Farmlands Assessment Report (FAR) and

are anticipated to be presented to the Pennsylvania Agricultural Lands Condemnation Approval Board (ALCAB) during final design. Financial compensation to landowners and long-term (signed, committed) leaseholders of agricultural land would provide mitigation for direct damages. Additional compensation may be provided for indirect damages such as diminution of the value of land rendered un-farmable or inaccessible and/or loss of business viability.

Due to the nature of the project and the widespread extent of agricultural resources, no alternative that would meet the project need would completely avoid agricultural resources. Minimization and mitigation measures have been, and will continue to be, investigated to reduce the degree of impact on agricultural land. Planned future efforts include investigating measures to minimize the required right-of-way and measures to control runoff/erosion damages.

3.9 Archaeology Resources

3.9.1 Existing Conditions

Archaeological resources were evaluated using a predictive Geographic Information System model (as described in the July 2003 FEIS) to assess their potential presence in the Ash Basin Focus Area.

3.9.2 Impacts

Based on the results of predictive modeling in concert with potential impacts to known archaeological sites, the No Change DAM Alternative and Eastern Alternative appear to demonstrate virtually the same levels of potential impacts to both as-yet unknown pre-contact period archaeological resources and previously identified pre-contact period archaeological resources, as well as historic period archaeological resources.

3.9.3 Mitigation

A Programmatic Agreement (PA) was implemented between the Pennsylvania Historic and Museum Commission (PHMC) and PennDOT to ensure compliance with Section 106 of the National Historic Preservation Act of 1966. The PA, as amended (April 2016), was developed in consultation with Federally Recognized Tribes that have cultural affiliation with the area. Stipulations in the PA address final design and construction activities for the CSVT Project. The PA is provided in Attachment 2 of the Environmental Technical Report (May 2018). The No Change DAM Alternative has previously been cleared for archaeological resources. Consistent with the terms of the PA and PHMC archaeological guidelines, the limit of disturbance for the Eastern Alternative will undergo Phase I archaeological testing during final design. Any potentially important prehistoric or historic archaeological sites discovered during the Phase 1 will be subjected to Phase II, and possibly Phase III, investigations. The additional studies will be included in an addendum to the Phase I/II Archaeological Report.

3.10 Historical Resources

No NRHP-listed or NRHP-eligible above-ground resources are located within the Ash Basin Focus Area.

3.11 Municipal, Industrial, and Hazardous Waste Facilities

3.11.1 Existing Conditions

A Preliminary Waste Site Assessment (PWSA) was completed within the Ash Basin Focus Area in 2017 and identified seven potential areas of concern. Five potential waste sites in that area were previously identified during the FEIS phase.

3.11.2 Impacts

The No Change DAM Alternative has direct impacts to the Southern and Northern Ash Basins and a farm dump identified at the northern end of the Northern Ash Basin. The Eastern Alternative impacts one potential waste site consisting of unknown fill material (e.g., stockpiled topsoil) that is within the limit of disturbance (on Talen-owned property farmed by the Hummel brothers).

3.11.3 Mitigation

Additional studies, including a Phase I Environmental Site Assessment (ESA), will be completed for the Eastern Alternative during final design.

3.12 Land Use

3.12.1 Existing Conditions

Land use within the Ash Basin Focus Area consists of a diverse and scattered mixture of rolling agricultural, single-family residential properties, undeveloped woodlands, utility infrastructure, and two Talen ash basins. One church is present near the intersection of 11th Avenue and Park Road.

3.12.2 Impacts

The No Change DAM Alternative uses the two ash basins and has less impact to the surrounding agricultural, residential, and wooded lands than the Eastern Alternative. The Eastern Alternative impacts 3.5 acres of a wooded property within Shamokin Dam Borough that has a conceptual residential development plan (Grayston property).

3.12.3 Mitigation

Mitigation for land use impacts will be limited to the payment of fair market value for the required right-of-way acquisitions. Efforts were made during the development of the detailed alternatives to minimize the encroachment on the Grayston property based on concerns raised by Shamokin Dam Borough. The Eastern Alternative was shifted slightly west in the area of the Grayston property, reducing the associated impacts from 10.7 to 3.5 acres. If practical during final design, the highway footprint will be minimized to reduce impacts to the surrounding land use.

3.13 Community Facilities and Services

The only community facility located in the Ash Basin Focus Area consists of the Susquehanna Valley Baptist Church/Cemetery. Neither the No Change DAM Alternative nor the Eastern Alternative would impact this facility. There are no Section 408 resources (USACE Civil Works Projects) within the Ash Basin Focus Area.

3.14 Planned Development

3.14.1 Existing Conditions

Two approved residential developments were identified within the Ash Basin Focus Area, both within Shamokin Dam Borough. The Weatherfield Development is under construction, and the Broscious Development was originally approved in 1970.

3.14.2 Impacts

The Broscious Development, located in the corridor used by the proposed PA Route 61 Connector, is impacted similarly with either alternative. The Eastern Alternative impacts 1.1 acres of the Weatherfield Development. The Weatherfield Development is not impacted by the No Change DAM Alternative.

3.14.3 Mitigation

Efforts were made to minimize impacts to the planned residential developments in Shamokin Dam Borough during the development of detailed alternatives to avoid the ash basins. Specifically, impacts to the Weatherfield Development were reduced from 2.8 acres to 1.1 acres by modifying the adjacent Eastern Alternative ramp design. Mitigation for the proposed impacts to these planned residential developments will be limited to the payment of fair market value for the required right-of-way acquisitions.

3.15 Environmental Justice

Federal agencies must consider Environmental Justice (EJ) in their activities under the NEPA. Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was issued in 1994 and directs federal agencies, to the greatest extent practicable, to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. PennDOT undertook analyses to determine if the population data changed since the publication of the FEIS. The studies are described in the Environmental Technical Report (May 2018) and were undertaken consistent with/reflecting US DOT, FHWA, and PennDOT guidance dated 2012. The results of those investigations show the impacts associated with the Eastern Alternative (refer to Figure 4) are comparable with the No Change DAM Alternative, with the exception that the No Change DAM Alternative has potential significant water quality impacts on groundwater wells used by the local populations (refer to Section 3.2). Populations that meet the definition of EJ under the Executive Order have been and will be treated in a fair and equitable manner as evidenced through the public outreach efforts (refer to Section 4.1) and this analysis. Based on the updated analysis, it has been determined that the avoidance of the ash basins will not significantly change impacts from those

described in the FEIS and that there are no disproportionately high and adverse effects on EJ populations associated with proposed displacements and community impacts and that the project has met the provisions of EO 12898.

3.16 Residential Displacements

3.16.1 Existing Conditions

Project-related impacts to housing would include direct and indirect residential displacements associated with construction of the highway.

3.16.2 Impacts

The No Change DAM Alternative would require the acquisition of nine residential properties within the Ash Basin Focus Area (five of these have been previously acquired for the project). Construction of the Eastern Alternative would require twelve residential properties, which include the five previously acquired properties that are not anticipated to be needed for this alternative.

3.16.3 Mitigation

All properties acquired by PennDOT will be paid just compensation through the PennDOT Relocation Assistance Program. Property will be acquired in accordance with the civil requirements of the Uniform Relocation Assistance and Real Property Acquisition Act and Title VI of the Civil Rights Act. Under this legislation, PennDOT assures that no person shall be displaced as a result of a PennDOT construction project unless at least one comparable dwelling has been made available to the person displaced. In addition, no person will be required to relocate without at least 90 days written notice. Qualified PennDOT staff and/or private licensed real estate brokers will perform property appraisals to determine fair market value to assure equitable reimbursement of just compensation to the recipient. Last resort housing will be used to accomplish the residential relocation, if absolutely necessary. If an agreement is not made in a timely manner, residents are assured that accommodations will be made available to them until such an agreement is made. In regard to the properties that had been acquired for the No Change DAM Alternative, these properties may be put back on the market after completion of the project (and verification that they are not needed).

3.17 Tax Base Impacts

The differences in tax base impacts between the No Change DAM Alternative and the Eastern Alternative are minor and insignificant.

3.18 Noise

3.18.1 Existing Conditions

Traffic noise was assessed in accordance with PennDOT Publication 24, Project Level Highway Traffic Noise Handbook and FHWA Title 23 CFR 772. The existing acoustical environment within the Ash Basin Focus Area is rural with intermittent traffic noise emitted from passing vehicles on the existing road network.

3.18.2 Impacts

Noise impacts were predicted at 54 residential locations along the No Change DAM Alternative within the Ash Basin Focus Area. The Eastern Alternative results in 48 noise impacts at residential locations within the focus area. The majority of the noise impacts are a result of the “substantial increase over existing sound levels” criteria (i.e., the project will result in a 10 DBA or more increase in sound over existing levels).

3.18.3 Mitigation

Noise mitigation was not recommended for the No Change DAM Alternative within the Ash Basin Focus Area, based on analyses performed during the development of the FEIS. The noise impacts associated with that alternative are in areas with sparse development, and mitigation would not meet the necessary reasonableness criteria. Noise mitigation for the Eastern Alternative adjacent to the Weatherfield and Gunter neighborhoods in Shamokin Dam Borough was preliminarily determined to meet the feasible and reasonable criteria. A detailed final design noise analysis consistent with state/federal guidance will be prepared for the Eastern Alternative.

3.19 Air Quality

Air quality implications were assessed according to PennDOT Publication 321, Project Level Air Quality Analysis. There are no air quality concerns associated with either alternative, and there are no discernable differences between the No Change DAM Alternative and the Eastern Alternative with respect to air quality within the Ash Basin Focus Area. In regard to the entire CSVT Project, air quality should improve overall with less congestion on the existing roadway network. The project will remove regional traffic from the existing roadway network, particularly trucks, resulting in improved traffic flow and thus improved air quality. The air quality assessment completed as part of the FEIS did not result in any National Ambient Air Quality Standard (NAAQS) exceedances, and the results indicated an improvement in Carbon Monoxide (CO) concentrations at the signalized intersection throughout the corridor as a result of the overall CSVT Project.

3.20 Secondary and Cumulative Impacts

Within the Ash Basin Focus Area, both the No Change DAM Alternative and the Eastern Alternative would be constructed as an entirely limited-access roadway. The proposed highway would therefore be a “closed system” with no direct access to any of the project area parcels. Even the interchange with the PA Route 61 Connector would be an entirely limited-access facility within the boundaries of the Ash Basin Focus Area. Consequently, it is reasonable to conclude that there would be no increased development pressures on adjacent properties brought about by the construction of the highway. Therefore, there would be no reasonably foreseeable secondary impacts associated with the proposed project. In addition, analysis indicates that the estimated cumulative impacts to wetlands, farmland, and streams do not rise to the level of being significant.

3.21 Utility Impacts

3.21.1 Existing Conditions

Public utilities located in the Ash Basin Focus Area include high-tension electric transmission lines (PPL), electric distribution lines (PPL), public water supply lines within Shamokin Dam, and the recently completed UGI Sunbury Pipeline (natural gas). PPL Electric Utilities has 69 kV and 230 kV high-tension transmission lines that are contained within the same right-of-way, bisecting the Ash Basin Focus Area.

3.21.2 Impacts

The No Change DAM Alternative crosses the PPL 69 kV/230 kV transmission line between Stetler Avenue and 11th Avenue. Slight adjustments to the power line would be required as the highway passes underneath the lines. The Eastern Alternative crosses the lines just south of Stetler Avenue and requires relocation and replacement right-of-way to accommodate the relocated lines. A small section of replacement right-of-way is necessary west of Stetler Avenue near the Hummel farm (approximately 3,230 LF of relocation are required). The Eastern Alternative requires approximately 3,500 feet of the UGI gas line to be relocated to accommodate the CSVT mainline and northbound ramps for the PA Route 61 Connector. The No Change DAM Alternative does not impact the gas line. Anticipated replacement right-of-way for the PPL electric transmission lines and the UGI natural gas line has been included in the anticipated limit of disturbance and all impact calculations.

3.21.3 Mitigation

Replacement right-of-way will be obtained, if the utility has a property interest, for the PPL transmission lines as well as the UGI gas line. During construction, the two power lines will be rerouted to cross the CSVT mainline roughly perpendicular to the highway, continuing along the same right-of-way. The UGI gas line will be relocated adjacent to the highway and will cross under the PA Route 61 Connector and northbound ramps. To minimize the duration of impact associated with taking the pipeline offline, the majority of the relocated pipeline will be constructed first and then connected to the existing line. Relocation of all other affected utility facilities will also be coordinated with the associated utility companies prior to the start of the highway construction.

3.22 Construction Impacts

Construction impacts and mitigation for the Eastern Alternative would be similar to the No Change DAM Alternative. Construction of a four-lane limited-access highway on new alignment is a major construction project and has the potential for construction impacts. Although project construction may temporarily increase erosion during construction, disturb soils, and produce construction-related vibration and noise, these effects would be temporary.

3.22.1 Impacts

Construction impacts may include temporary impacts to air quality, noise, groundwater, and surface waters.

3.22.2 Mitigation

As discussed under Section 3.2, Groundwater Resources, sampling will be completed for water supply wells that are located within 0.25 mile of blasting operations. The data collected during this monitoring will be used to assess potential impacts to groundwater resulting from the construction. The groundwater quality monitoring plan will be implemented prior to construction, during construction, and one year post-construction. In addition, an Erosion and Sedimentation Pollution Control Plan will be developed and will be implemented during construction to address potential surface water quality impacts.

3.23 Visual Quality

The visual analysis completed as part of the FEIS (dated July 2003) outlines impacts and mitigation for the No Change DAM Alternative. This analysis can be found starting on Page IV-103 of the FEIS, which is available through the Resources page on the project's website (<http://www.csvt.com/resources/links/>). Visual renderings, impacts, and mitigation for the entire CSVT Southern Section, including the Gunter and Orchard Hills neighborhoods and the Colonial Acres area, are presented in the FEIS and include proposed views of the CSVT mainline highway and the PA Route 61 Connector.

3.23.1 Existing Conditions

Construction of high-speed, multi-lane highways will continue to alter the existing landscape with cuts, fills, bridges, paved areas, guide rails, and stormwater management basins. This can have a substantial intrusion on the visual quality of the area for both local and traveling populations. Of special concern are those who live in identifiable neighborhoods and other concentrated residential areas. To avoid or minimize effects on the local setting, these areas have been considered in the evaluation of visual quality. Based on public involvement conducted related to the Ash Basin Focus Area, neighborhoods within the overall CSVT Project (e.g., the Weatherfield, Gunter, and Orchard Hills neighborhoods and the Colonial Acres area) have expressed concern with the visual intrusion associated with the project (for both the overall CSVT Project as well as the Eastern Alternative).

3.23.2 Impacts

Construction of either alternative would have impacts to visual quality within the focus area. Adverse or beneficial impacts are determined by the change to the visual character of the viewshed, depending on the placement of the highway within the landscape and its visual consistency or non-consistency with the surrounding environment. Various engineering features (such as roadway, road cuts, fill slopes, and associated structures) were examined when evaluating impact to the viewshed.

A three-dimensional rendered computer model of the Eastern Alternative was created and integrated into several ground level views within the Ash Basin Focus Area. The visual renderings are provided in Appendix B.

While the majority of the Eastern Alternative is within undeveloped forested property, there will be several locations where it is visible and may be visually intrusive. The Eastern Alternative (and associated PA Route 61 Connector) will be visible as it approaches and crosses Stetler Avenue and 11th Avenue and passes east of the Northern Ash Basin. There are also several locations along Sunbury Road where the highway will be visible. The CSVT

mainline highway will not be visible from the Orchard Hills neighborhood due to the approximately 800 to 1,000 feet of wooded area between the homes and the highway.

The Weatherfield neighborhood, as currently developed, will be located approximately 800 feet from the CSVT mainline highway and approximately 200 feet from the PA Route 61 Connector. Residents may have views of the fill slope and the bridge over 11th Avenue, particularly for the homes closest to 11th Avenue. The wooded buffer between the northern limit of the current development and the PA Route 61 Connector will vary between 50 and 150 feet thick. The full buildout of the development would eliminate the forested buffer currently in place between the existing residences and the CSVT mainline highway, and additional residences currently planned would be within 250 feet of the CSVT mainline highway and the PA Route 61 Connector.

3.23.3 Mitigation

Construction of the Eastern Alternative or the No Change DAM Alternative will result in a visual intrusion into the landscape. The project team will coordinate further with local officials and affected property owners, particularly those adjacent to the new highway, to review the project's visual impacts and to identify and implement reasonable mitigation measures. Examples of mitigation measures that will be considered include:

- Vegetative screenings
- Bridge designs (color/texture/materials) that will blend into the landscape
- Filtered views of bridge piers; clusters of trees might be planted if they do not cause additional displacement or create hazards for errant vehicles
- Tinted colors of retaining walls and noise barriers that will blend into the landscape
- An “aesthetic theme” for the highway to be carried forward throughout the entire Southern Section of the CSVT Project

4.0 Public Involvement and Agency Coordination

4.1 Public and Public Officials Meetings

The CSVT Project maintains a website (<http://www.csvt.com/>) that serves as a major source of information for the public throughout the project development process. The website information includes news, maps, documents, and resources for the public to review. The website also includes a comment form and contact information for the project team. The online comment form provides an opportunity for the public to submit feedback or ask questions regarding the CSVT Project at any time. Commenters providing their name and address, fax, or e-mail address receive a response or answer to their question, usually within two weeks. The website's general project information includes a description of the proposed project improvements, the project's purpose, the project schedule, and status updates. Public Meeting announcements and Public Meeting presentations and handouts are provided, including files that can be downloaded.

Following the extensive public outreach conducted during the development of the FEIS, PennDOT has continued to conduct meetings with local officials and the public to keep the project area communities and residents informed on the project's schedule, final design modifications, and construction activities. Specific to the Southern Section, a Final Design Kick-Off Public Meeting was held on June 16, 2015, at the Selinsgrove Middle School. The meeting provided a summary of the project history, an update on the Northern Section's design and construction activities, and an overview of the Southern Section and its anticipated final design features. At the time, no major final design modifications were anticipated for the Southern Section from what was presented in the project's FEIS.

Shortly after Southern Section final design activities were underway and following the identification of previously unanticipated conditions within the ash basins, PennDOT and FHWA identified the need to modify the Southern Section's alignment to avoid impacting the basins. This resulted in the need for additional agency coordination and public outreach, including outreach to the general public and local officials in the Ash Basin Focus Area where realignments of the proposed roadway would be considered to avoid the ash basins. This additional outreach effort, as summarized below, was undertaken to explain the environmental and engineering issues involved and to receive feedback from the public on the proposed avoidance alternatives.

The additional outreach efforts can be categorized into three phases: 1) when the ash basin issue was introduced, 2) when avoidance alternatives were developed and assessed, and 3) when PennDOT identified a recommended Preferred Alternative for the Southern Section's modification. General Public Meetings were announced to the public using direct mailers to residents, flyers posted in the project area, advertisements in local newspapers and other media outlets, and on the project's website. All public meetings consisted of a presentation followed by an open house that included various displays of project information and allowed one-on-one discussions and questions with members of the Project Team. The public was provided handouts at the public meetings (also available to view and download on the project's website) that described the latest project findings and issues and included maps for proposed alignment modifications. Questionnaires were provided at the public meetings and on the project's website to encourage more detailed feedback from the public. Table 6 provides a summary of the various public and agency outreach meetings.

**TABLE 6
PUBLIC INVOLVEMENT/AGENCY COORDINATION SUMMARY**

	Meeting	Date	Purpose/Outcome
Ash Basin Challenges Introduced	Municipal Officials Meeting (Monroe Township, Shamokin Dam Borough, Snyder County Commissioners)	1/19/2017	Presented updates on recent design changes and current challenges for the CSVT Southern Section associated with the ash basins. In particular, public input was requested related to the need for modification of the project alignment between Fisher Road and Sunbury Road to avoid constructing the new highway on the existing fly ash waste basins. The meeting outlined the ash basin engineering challenges and environmental issues and defined the Ash Basin Focus Area.
	Public Officials Meeting (1:00-3:00 P.M., Monroe Township Building)	2/15/2017	
	Public Meeting #1 (6:30-9:00 P.M., Selinsgrove Middle School)	2/15/2017	
	Agency Meeting (Monroe Township Building)	2/23/2017	
Ash Basin Avoidance Alternatives Developed	One-on-one meetings with potentially displaced residents	5/15/2017 5/16/2017	Presented three preliminary realignment alternatives developed for the CSVT Southern Section within the focus area to avoid the ash basins. Preliminary engineering and environmental issues for each of the alternatives were presented and discussed.
	Public Officials Meeting (1:00-3:00 P.M., Monroe Township Building)	5/25/2017	
	Public Meeting #2 (6:30-9:00 P.M., Selinsgrove Middle School)	5/25/2017	
	Agency Meeting (Monroe Township Building)	6/20/2017	
	Agency Field View (Ash Basin Focus Area)	8/15/2017	
	Shamokin Dam Borough Coordination Meeting	8/28/2017	
Recommended Preferred Alternative	Agency Meeting (PA DEP Northcentral Regional Office)	9/19/2017	Presented findings of detailed engineering and environmental studies for ash basin avoidance alternatives. Presented PennDOT's recommended Preferred Alternative. Gathered comments from agencies, public officials, and public on PennDOT's recommended Preferred Alternative.
	Public Notification on PennDOT's Recommended Preferred Alternative	11/8/2017	
	Public Officials Meeting (2:00-4:00 P.M., Monroe Township Building)	11/15/2017	
	Public Meeting #3 (6:30-9:00 P.M., Selinsgrove Middle School)	11/15/2017	
Anticipated Public Hearing		Spring 2018	Opportunity for public to provide oral or written testimony.

The February 15, 2017, Public Meeting #1 had 390 attendees, and 96 questionnaires were returned. The majority of the respondents live in either Shamokin Dam Borough or Monroe Township. The results indicated that 85% of respondents were satisfied with the information presented on the ash basin challenges.

The May 25, 2017, Public Meeting #2 had 300 attendees, and 171 questionnaires were returned. The results indicated that 79% of respondents were satisfied with the information presented on the ash basin avoidance alternatives. Three preliminary alternatives were presented at this meeting, and feedback was sought on the public's reasons for support or opposition to each particular alternative. Rationale the public provided that supports the

Eastern Alternative included less residential displacements, least amount of farmland impact, and shortest PA Route 61 Connector distance. Input provided in opposition included perceived concerns on the environmental impact to forest areas, noise impacts, impacts to the new UGI gas line, and the reduction in future developable lands in Shamokin Borough. In addition, public comments were received requesting the elimination of the PA Route 61 Connector from the project (refer to Section 1.3.1 for information on the importance of the connector as a critical element of the project). After Public Meeting #2, letters outlining comments and concerns for the Ash Basin Focus Area Alternatives were received from Snyder County, Monroe Township, and Shamokin Dam Borough. Snyder County's letter did not endorse a particular alternative and primarily dealt with design modifications related to access to the U.S. Route 522 corridor (outside the Ash Basin Focus Area). Monroe Township's letter did not endorse a particular alternative or make specific design comments but asked that one be selected that minimizes impacts to residences and farmlands. Shamokin Dam Borough's letter also did not endorse a particular alternative. It asked that PennDOT provide information on why the U.S. Route 15 Connector (which had been considered and dismissed during the development of the FEIS) cannot be constructed in place of the PA Route 61 Connector. The letter also asked that the design for each alternative be adjusted to avoid or minimize impacts to the Weatherfield residential development and to the conceptual residential development planned for the Grayston property. A copy of each letter is located in Appendix C.

Following the letters from the local municipalities, the design team reviewed the three alternatives and made small adjustments to the CSVT mainline, the PA Route 61 Connector, and interchange ramps. These revisions successfully minimized the permanent and temporary impacts to the Weatherfield development and the Grayston property. The design team also performed an updated review of the U.S. Route 15 Connector as a substitute for the PA Route 61 Connector. Based on an updated analysis of projected traffic operations, it was determined the U.S. Route 15 Connector would be used by 34% less traffic than the PA Route 61 Connector and would therefore be less effective in meeting the traffic needs of the project (by removing less traffic from the existing road network). In addition, the U.S. Route 15 Connector would result in traffic patterns that cause unacceptable operations in the project's design year (2044) at the intersection of U.S. Route 11 and U.S. Route 15. Finally, based on a review of its geometrics, the U.S. Route 15 Connector would require an excessive amount of excavation, resulting in an imbalance in the project's earthwork, and would also impact more developable land in Shamokin Dam Borough than the PA Route 61 Connector. Given these findings, the Ash Basin Focus Area Alternatives were advanced with the PA Route 61 Connector included.

The November 15, 2017, Public Meeting #3 had 337 attendees, and 59 questionnaires were returned. The results indicated that 77% of respondents were satisfied with the information presented on the ash basin avoidance studies and PennDOT's recommended Preferred Alternative, which was identified as the Eastern Alternative. Feedback received on the questionnaires was mixed. Some people stated they felt that PennDOT recommended the best alternative while others said a different alternative should be selected. With a recommended alternative being presented, most of the comments were focused on impacts to specific properties, such as noise and visual impacts, rather than on overall alignment issues.

4.2 Agency Coordination

As outlined in Table 6, coordination has been ongoing with the PFBC, Pennsylvania Department of Agriculture, PA DEP, USFWS, U.S. EPA, PHMC, PGC, PA DCNR, and USACE. Agency meetings were held during each of phase of public outreach as follows:

- February 23, 2017, when the ash basin issue was introduced;
- June 20, 2017, when the three preliminary avoidance alternatives were presented; and
- September 19, 2017, when the PennDOT recommended Preferred Alternative was presented.

An agency field view was conducted on August 15, 2017, to provide the opportunity to the resource agencies to field view the different resources within the Ash Basin Focus Area. Project area maps and preliminary impacts of the wetlands and watercourses were distributed to the agencies. The field view visited seven different locations within the focus area.

5.0 Identification of the Preferred Alternative

Through the alternatives development and analysis process described above, the project team, the public, local officials, and environmental agencies collaborated to develop the best solution to avoid the ash basins while minimizing impacts. The Eastern Alternative was selected as the Preferred Alternative because it:

- better meets the traffic needs of the project through increased usage of the PA Route 61 Connector and the associated removal of more traffic from the existing road network;
- has the least impact to residences;
- has the least impact to farmlands;
- has the least impacts to wetlands; and
- has noise impacts that are less than the Western Alternative and similar to the Central Alternative.

Overall, the Preferred Eastern Alternative avoids the ash basins and therefore avoids the engineering and environmental risks of the No Change DAM Alternative. Construction of the Preferred Eastern Alternative will result in either a reduction in resource impacts compared to the No Change DAM Alternative or will have only minor increases in impacts for some resources. Selection of the Preferred Eastern Alternative will allow the CSVT Project to advance with decreased environmental risk and provide transportation benefits for the region. Documentation in the Supplemental EA appears to suggest that the new or changed environmental impacts do not rise to the level of significance that would warrant a Supplemental Environmental Impact Statement.

In regard to the overall environmental impacts for the CSVT Project's Southern Section, Table 7 highlights the impacts for the entire Southern Section (including the Ash Basin Focus Area) to illustrate the change to the overall impacts identified in the FEIS (and subsequent FEIS/ROD Reevaluations).

**TABLE 7
ENVIRONMENTAL SUMMARY – SOUTHERN SECTION**

		No Change DAM Alternative	Eastern Alternative	Change	
Total Area/Required Right-of-Way (Acres)		455.8	413.4	-42.4	
Farmlands	Agricultural Security Area (Acres)	38.0	47.7	9.7	
	Productive Farmland (Acres)	Heimbach	47.8	60.5	12.7
		Hummel Brothers	56.4	37.0	-19.4
		Stump Valley	11.7	12.1	0.4
		J. Godek	1.3	4.4	3.1
		M. Thomas	0.3	0.0	-0.3
		Total	117.5	113.9	-3.6
	Statewide Importance Soils	156.3	143.5	-12.9	
	Prime Farmland Soils	114.8	110.2	-4.6	
Natural Resources	Wetland (Acres)	3.3	3.1	-0.2	
	Streams (Linear Feet)	12,964	13,954	990	
	Wooded (Acres)	175.4	190.6	15.2	
	Hedgerow (Acres)	5.2	6.7	1.4	
	Old Field (Acres)	105.0	56.8	-48.1	
	Threatened and Endangered Species Suitable Habitat (Acres/Species)	180.6/ Northern Long-Eared Bat	197.3/ Northern Long-Eared Bat	16.7	
Cultural Resources	High Prehistoric Archaeology Probability (Acres)	Cleared for Archaeology	1.9	Phase 1 required	
	Historic Resources	No	No	No	
Potential Waste Areas		3	1	-2	
Recreational Areas/Section 4(f) Resources		No	No	No	
Noise-Impacted Residences		109	188	79	
Displacements	Residential	31	38	7	
	Commercial	1	1	0	
Net Earthwork (Cut – Fill; Cubic Yards)		321,000 (Waste)	180,000 (Waste)	-141,000	

Note: Total impacts shown in the Eastern Alternative column reflect the limit of disturbance outside the Ash Basin Focus Area that is anticipated based on the current project design.

APPENDICES

**APPENDIX A -
PA DEP CORRESPONDENCE**

January 19, 2017

Sandra Tosca
PA Department of Transportation
District 3-0
715 Jordan Avenue
PO Box 218
Montoursville, PA 17754-0218

Ms. Tosca,

On Tuesday July 12, 2016, staff from the PA DEP Northcentral Region participated in a pre-application meeting to discuss stormwater management issues arising in the Southern Section of the Central Susquehanna Valley Thruway (CSV T) project. The meeting provided an opportunity to revisit some of my staff's other concerns relating to the Southern Section's proposed route.

The most significant environmental issue in the Southern Section of the project related to two ash basin impoundments owned by Talen Energy, which are located within the currently proposed roadway alignment. The DEP remains willing and eager to assist PennDOT in ultimately completing the entire CSV T project in any manner that is determined, but wanted to bring the following concerns to your attention. As my staff initially expressed at a September 12, 2014 meeting, those basins are regulated individually by the Dam Safety Program and Waste Management Program, and permits to modify them will be required from each program—in sequence—prior to any review by the DEP of the necessary erosion and sediment control, water obstruction and encroachment, or post-construction stormwater permit applications.

The challenges posed by the ash basins relate not only to the timeline of events, but also to numerous environmental issues to be considered and addressed in connection with the entire CSV T project. Constructing the roadway over the ash basins raises several major concerns, including impacts to ground water, private water supplies, surface water discharges, and potential adverse impacts to the regulated dams associated with the ash basins. Compromising the structural integrity of these dams could have significant impacts on property, human life, and the environment.

The DEP has continuously monitored and regulated high hazard dams and has been especially mindful of ash basins since the failure of the Kingston Ash Basin in 2008. While it was originally expected that the approximately 100-foot depth of the ash basins would be saturated only in the lower 70 feet, recently completed geotechnical testing of the ash basins have shown that there is less than 10 feet of dry ash material within the upper section of the basins and the

majority of the ash below 10 feet is not only saturated but flowable. This fact has only heightened our concern with the stability of the material and thus, concern for potential impacts as a result of the construction of a major roadway on top of the basins.

It is our understanding that the plan for construction might include pre-loading the portion over the ash basins in an effort to push some of the water out of the basin. The application of such pressure, combined with the local geology, has the potential to mobilize liquid from the material in the basin into the groundwater aquifer. That groundwater serves as the sole source of drinking water for several private homeowners in the nearby vicinity, as well as a source for public water supplies.

The ash basins also create significant stormwater challenges since stormwater facilities, with the exception of conveyance channels, will not be allowed to be constructed within the ash basins. The roadway's vertical alignment in this area will limit where stormwater can be conveyed. This could result in large volumes of stormwater being conveyed outside the basins to points which could be overloaded with stormwater. Depending on the relocation of this stormwater, it could also have an impact on the recharge rate of the aquifer.

In order to pursue the present configuration of the Southern Section, PennDOT must do a complete analysis of those potential impacts to ensure compliance with the dams' regulatory requirements. That analysis must be submitted with the application to amend the existing permits held by Talen Energy. Any portion of the roadway on the basin will require modifications/amendments to the existing permits. Under these circumstances, it is likely that Talen Energy may require the transfer of ownership of the dams, and of the related permits, to PennDOT. Upon such transfer PennDOT would assume the potential monetary liabilities associated with ownership of the ash basins, including a bond for the existing waste disposal. While the DEP cannot estimate the potential liability resulting from impacts to either the high hazard dams or groundwater should they occur in the future, the current bonding requirement of over \$2.8 million would fall to PennDOT as the operator of the facility. A land use change to include a project such as this roadway would significantly increase the bond amount required by the DEP. Also, considering the lack of consolidation of the ash over the years, the deregulation of these facilities as dams in the future seems unlikely.

Finally, at the July 2016 meeting, the DEP reiterated that the permitting process for the Dam Safety and Waste Management Programs will take some time, which could impact the project timeline. Given our understanding that the goal of PennDOT is to let these projects out for bid in early 2019 and the fact that no applications have been received by the Dam Safety or Waste Management programs with the DEP, I will state that in our opinion, the let date may not be practical.

Although not opposed to the current configuration during the Environmental Impact Statement review process in 2003, the recent geotechnical data made available highlighting the flowable nature of the ash have changed our position. The concerns expressed above lead me to recommend that PennDOT at the very least minimize the project's contact with the ash basins, and that ideally PennDOT completely avoid all contact with them.

In closing, I wish to emphasize that the Department's concerns at this point stem only from the current configuration of the Southern Section of the CSVT project in the area of the ash basins. The DEP wishes to work with your agency on whatever path for the project is ultimately chosen and appreciates any opportunity to discuss a path forward.

Should you have any questions, please feel free to contact me by email at mkohl@pa.gov or by phone at 570.327.3695.

Sincerely,



Marcus Kohl
Regional Director

**APPENDIX B -
VISUAL RENDERINGS**

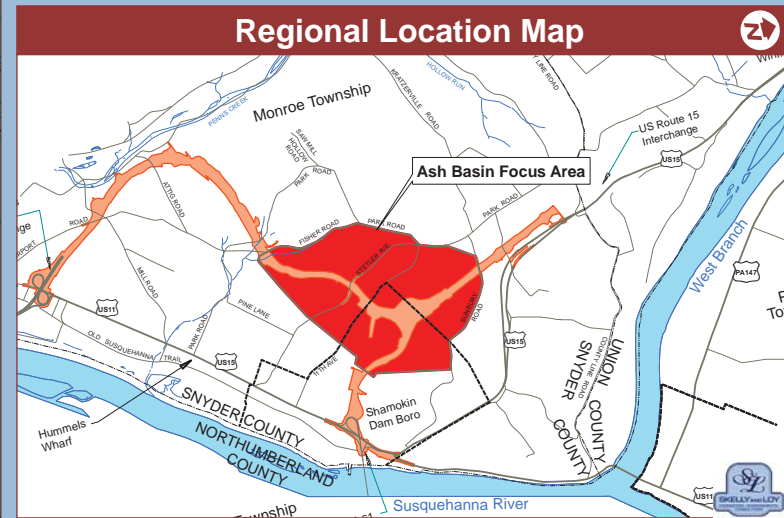
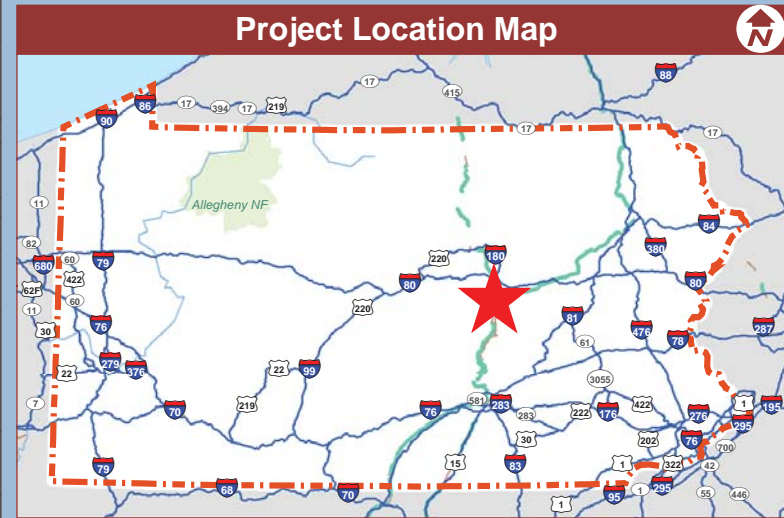
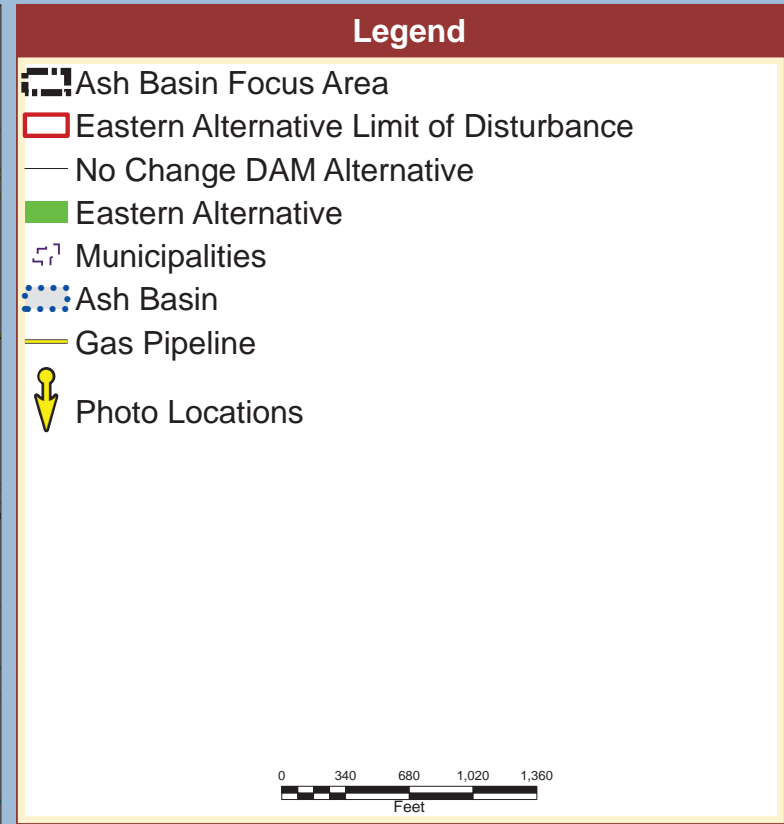
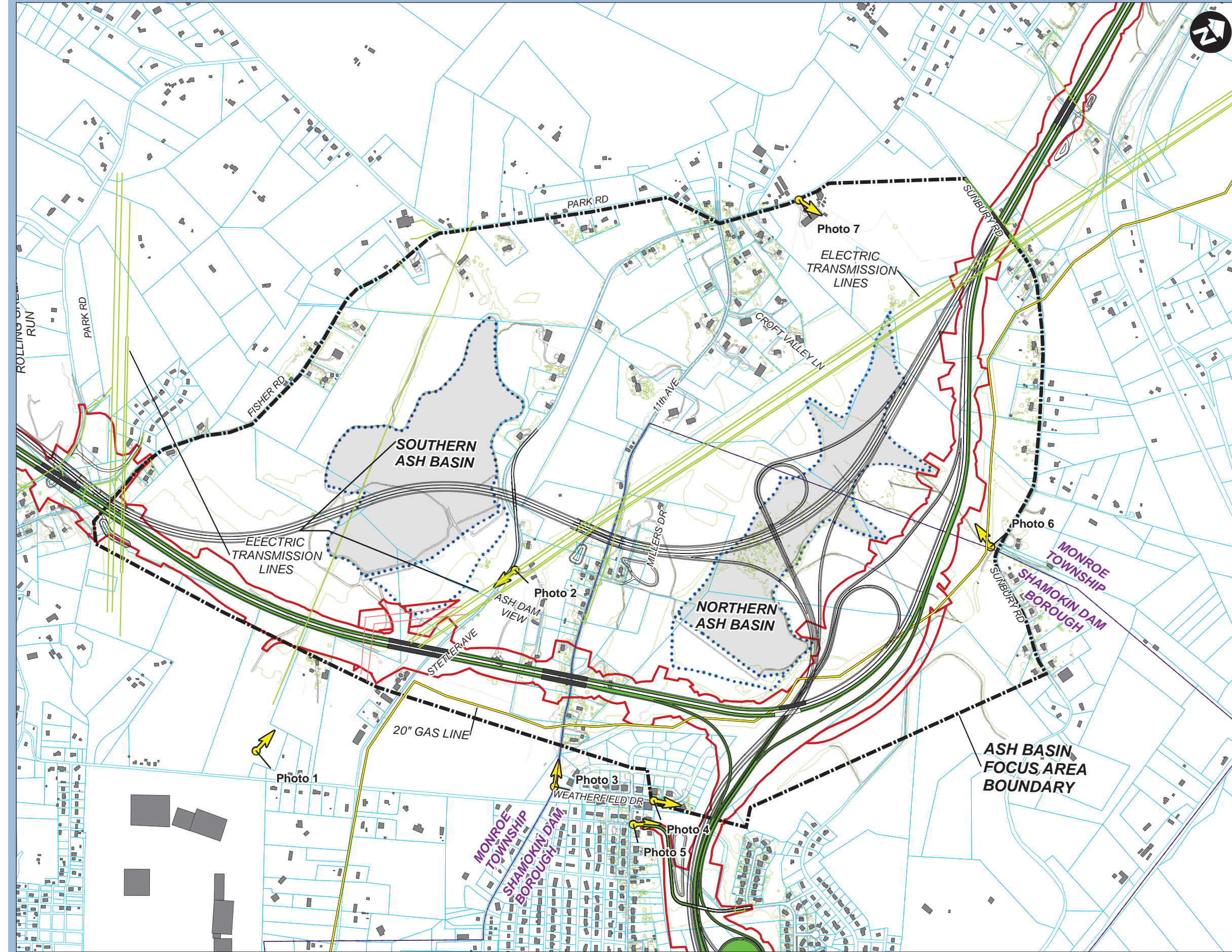


Photo 1

Looking west at Hummel Farm and Stetler Avenue



Before



After

Photo 2

Looking east at Hummel Farm and Stetler Avenue



Before



After

Photo 3

Looking west on 11th Avenue



Before



After

Photo 4

Looking north on Weatherfield Drive



Before



After

Photo 5

Looking north on Chestnut Street



Before



After

Photo 6

Looking west from Sunbury Road across new UGI gas line



Before



After

Photo 7

Looking north from Park Road toward Sunbury Road



Before



After

**APPENDIX C -
MUNICIPAL CORRESPONDECE**

Shamokin Dam Borough

42 West 8th Avenue, Suite 1
P.O. Box 273
Shamokin Dam, Pa 17876
P: 570-743-7565 / F: 570-743-4102
E-mail: choverstine@shamokindam.net



June 8, 2017

PennDOT

Attention: Sandra Tosca, P.E. – District Executive

PO Box 218

Montoursville, PA 17754

Re: CSVT - Borough Council Discussion

Ms. Tosca;

I am writing on behalf of the Shamokin Dam Borough Council in reference to the proposed realignment of the Central Susquehanna Valley Throughway (CSVT). Council discussed, at their June 5, 2017 Borough Council meeting, the options that PennDOT presented at the public meeting held on May 25th, 2017. Council took no particular stance on whether the western, central or eastern was a preferred route, the discussion focused on the impacts within the borough. The first area of focus was the Route 61 Connector in general and its impact on the remaining Weatherfield housing development, the second was the inter-borough street connection (Spruce or Chestnut St option), and the last being the interference of the eastern route in regards to the Robert Grayston property.

In regards to the proposed Route 61 connector, Council requests that the department take another look at a Route 15 option, when compared to the Route 61 connector option, before a final decision is made for that section of highway. Some recent feedback for borough residents and Council members as well expressed concern for the need of the direct connection to and from Sunbury through the Route 61 connector. Council believes a final look into the Route 15 option is appropriate, and a detailed explanation of the decision would be appreciated so that we have something on file to explain to our constituents.

If the Route 61 connector is chosen, the Council's preference would be that it totally misses all of the future developable land on the current Weatherfield property, since the proposed Route 61 connector already eliminates substantial development opportunities on the Broschious owned property. Also, if that route is chosen, Council would prefer the Spruce Street inter-borough connection as opposed to the Chestnut Street connection in all the scenarios that were presented.

Lastly, if the eastern route is chosen, prime developable land is affected on the Robert Grayston property, near Sunbury Road. Council is requesting that the thru-way turn slightly to the west to avoid that interference.

Your review of the above mentioned items is greatly appreciated. Council, Mayor McGranaghan and I appreciate the fact that you have included the public meetings as part of the design process, and take the general public concerns into consideration as your department(s) and engineer work to develop that final design.

● Page 2

June 8, 2017

If you have any questions or need more information on the items discussed, feel free to contact me.

Sincerely,



Edward J. Hovenstine
Borough Manager

CC:

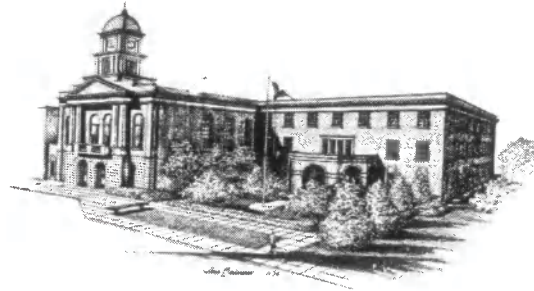
Matt Beck P.E. - Assistant Plans Engineer
David Hamlet P.E. - Gannett Fleming, Inc
File

COUNTY COMMISSIONERS

JOSEPH E. KANTZ
Chairman

MALCOLM L. DERK III
Vice Chairman

PEGGY CHAMBERLAIN
ROUP
Secretary



LEE KNEPP
Chief Clerk/County Administrator

ROBERT M. CRAVITZ
Solicitor

Snyder County Board of Commissioners

Court House, P.O. Box 217 • Middleburg, Pennsylvania 17842-0217
(570) 837-4207 • FAX (570) 837-4282

June 13, 2017

Ms. Sandra Tosca
PA Department of Transportation, District 3
P.O. Box 218
Montoursville, PA 17754

Dear Ms. Tosca,

I am writing today to voice my concerns with the lack of an exit ramp for southbound Rt. 522 traffic in the new CSVT design. Snyder County's best opportunity for economic development comes with the future widening and expansion of Route 522. That is why Snyder County representatives on the MPO have made it one of the top priorities on the TIP. I have spoken to my colleagues and while we realize not everyone will be happy with all the changes that come with a massive highway project like CSVT, as representatives of the people of Snyder County, we feel we would be derelict in our duties if we did not bring this issue to your attention. One suggestion by Representative Fred Keller at a recent Greater Susquehanna Valley Chamber of Commerce Transportation meeting was to tie the south bound off ramp into the existing Susquehanna Valley Mall Drive. This would allow the south bound traffic to enter Routes 11/15 at an existing traffic light as well. The land to develop this idea would not negatively impact any farmland or business.

We appreciate your consideration of this request. As to the three options for the avoidance of the ash basins, we realize all three have merit. We ask that if you choose the "Eastern" option, that you do everything you can to avoid the "Grayston" property so that Shamokin Dam can benefit from the future growth this property will afford them. Their borough will only have the ability to grow with opportunities like this for increased tax base.

In conclusion, we appreciate all the effort you and your staff are investing in this project. We are confident that it will catapult the economic growth of our county into the future with the wind at our backs. Please let us know if there is anything we can do to help.

Sincerely,

A handwritten signature in blue ink, appearing to be 'JK' or similar initials, written over a light blue circular stamp.

Joe Kantz

RECEIVED PA DOT
'17 JUN 15 AM 1:28
DIST 3-0 MONTOURSVILLE

Dean K Davis
Chairman
David A Heimbach
Vice Chairman
Steven E Paige
Supervisor



Rick L Bailey
Zoning Officer

Michelle D Shaffer
Secretary/Treasurer

39 MUNICIPAL DRIVE
SELINGROVE, PA 17870
Phone: (570) 743-7057
monroetwp@verizon.net

RECEIVED PA DOT
'17 JUL 12 PM 12:40
DIST 3-0 MONTICOURSVILLE

July 7, 2017

Matthew S. Beck, P.E.
Assistant Plans Engineer
Penn DOT, Engineering District 3-0
P.O. Box 218
715 Jordan Avenue
Montoursville, PA 17754

Re: CSVT Ash Basin Avoidance Alternatives

Dear Matt:

The Township has taken the opportunity to review the three (3) proposed alternative routes for the CSVT along with the materials which Penn Dot prepared regarding those alternatives. The Township appreciates the effort Penn Dot has put into identifying these alternatives.

The Township has reviewed potential impacts of each alternative route and realizes that each route presents challenges which must be overcome. However, the specific nature of those challenges is not entirely clear to the Township given the preliminary nature of the information provided by Penn DOT. Therefore, the Township cannot identify a preferred alternative.

However, given the tremendous impact the CSVT is going to have on the Township in any of the potential locations, the Township urges Penn DOT to select that route which will minimize the number of displacements, maximize the preservation of productive farm land and continue the quality of life to which Township residents are accustomed. More specifically, the Township expects Penn DOT to fulfill its commitment to maintain the existing road network in the Township.

Thank you for your consideration.

Respectfully,

Dean K. Davis
Chairman, Board of Supervisors