Central Susquehanna Valley Transportation Project

SOUTHERN SECTION
S.R. 0015, SECTION 088
SNYDER, UNION AND NORTHUMBERLAND COUNTIES

ALCAB PROCEEDING – AUGUST 26, 2020

Pursuant to:

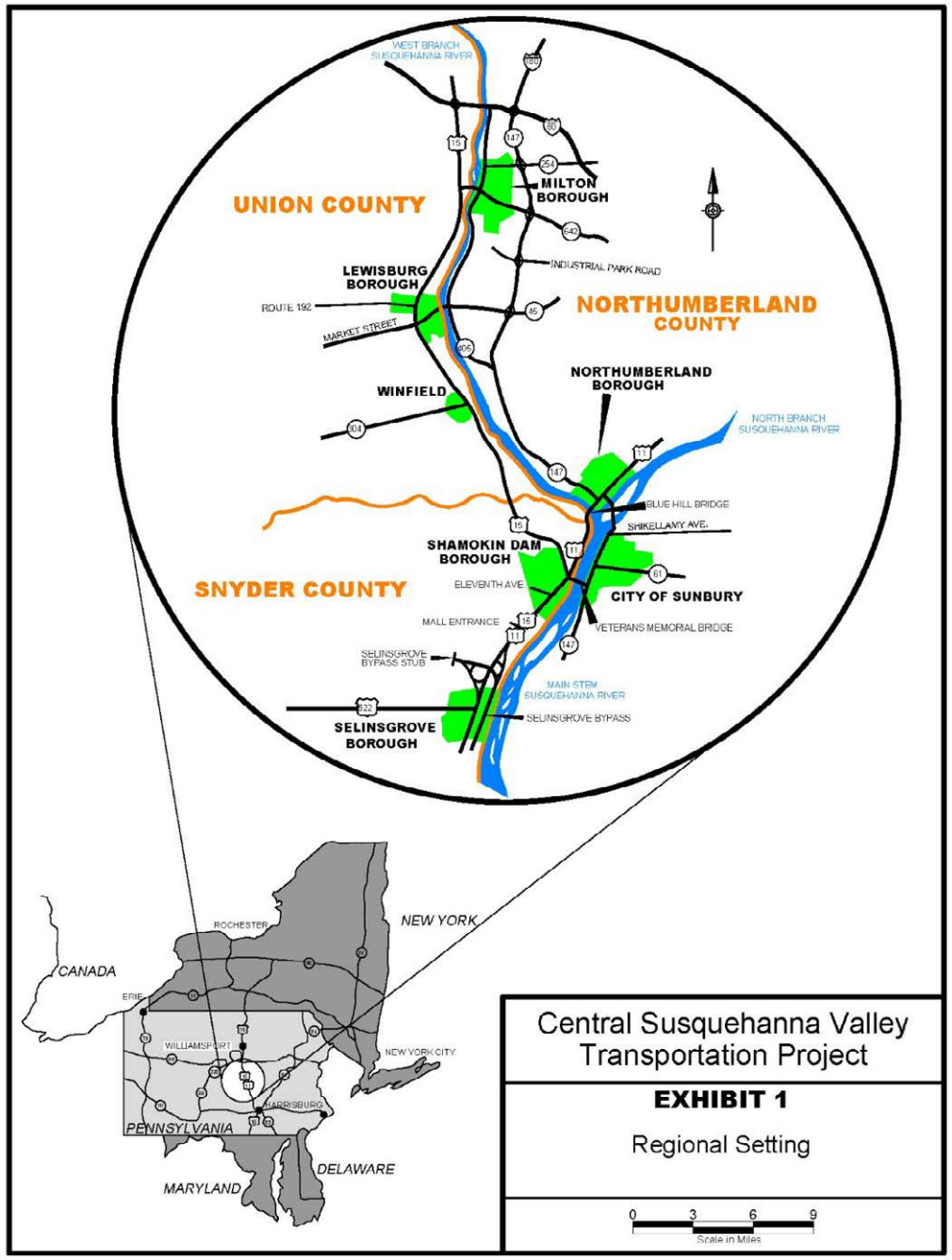
Commonwealth of Pennsylvania Act 100 of 1979

Commonwealth of Pennsylvania Act 43 of 1981 (as amended)

Commonwealth of Pennsylvania 4 Pa. Code § 7.301 *et. Seq*

Agricultural Land Preservation Policy

Project Location

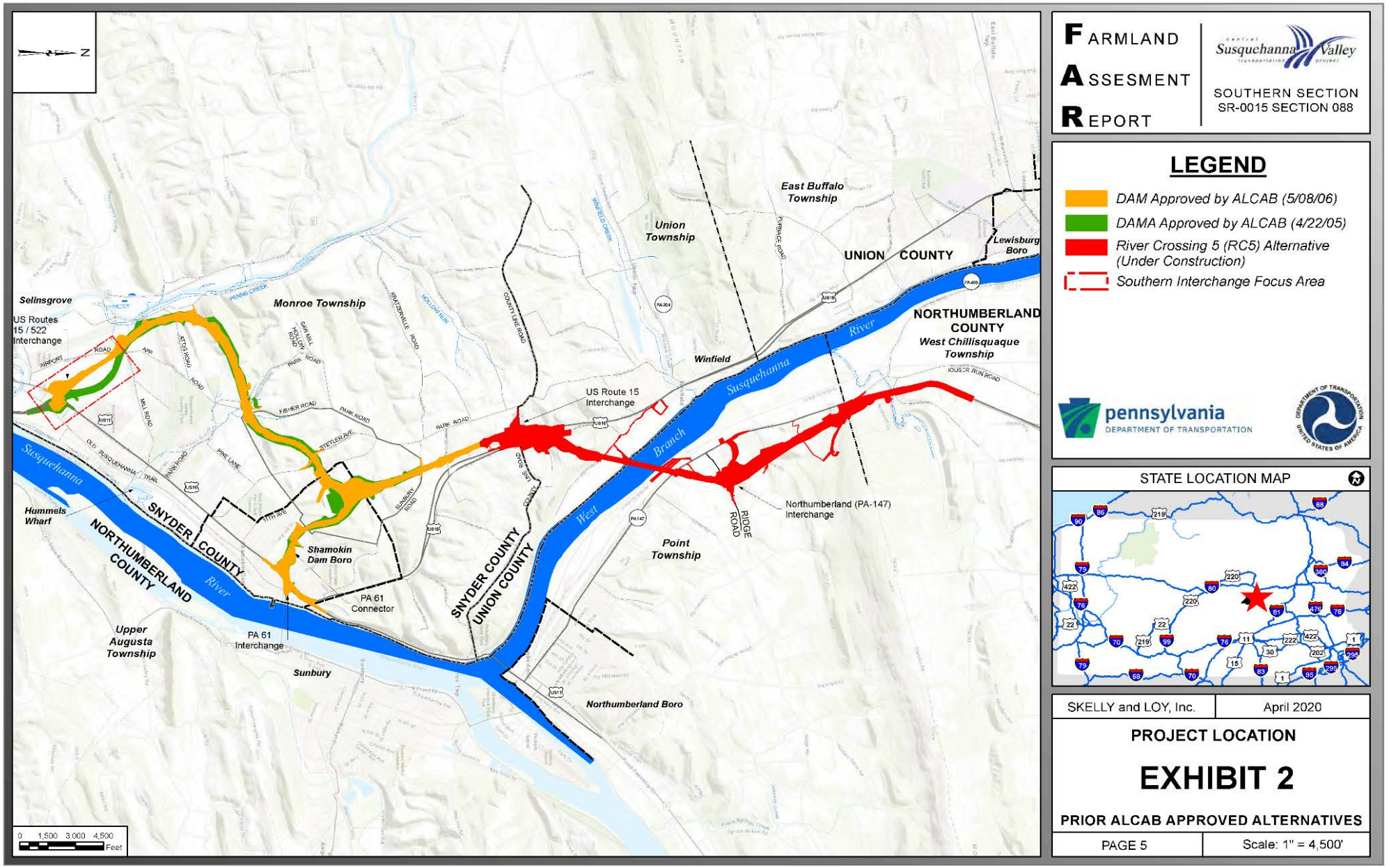


CSVT North and South

- Northern Section: Currently under construction, continues north of County Line Road/U.S. Route 15 near Winfield, crosses the West Branch of the Susquehanna River and connects to S.R. 147

- Southern Section: New, limited access, four-lane highway from existing U.S. Route 11/15 Interchange near Selinsgrove, north to County Line Road/U.S. Route 15 near Winfield

Previous Adjudications April 22, 2005 and May 8, 2006



Original CSVT Project Needs

1. Reduce Congestion and Accommodate Growth
2. Improve Safety
3. Separate Through Traffic from Local Traffic

Original CSVT Project Needs

1. Reduce congestion and accommodate growth by:
   - Reducing peak traffic congestion and future traffic congestion
   - Improving levels of service or eliminating unacceptable levels of service
   - Including a connection to PA Route 61 that is short enough to encourage traffic to use it
2. Improve safety by reducing regional and local traffic conflicts, thereby reducing crashes
3. Separate through traffic, especially through truck traffic, from local traffic

Project Timeline

2003 – Original Environmental Clearance

2005 – ALCAB # 1

2006 – ALCAB # 2

2006 – Final Design Begins on Northern Section

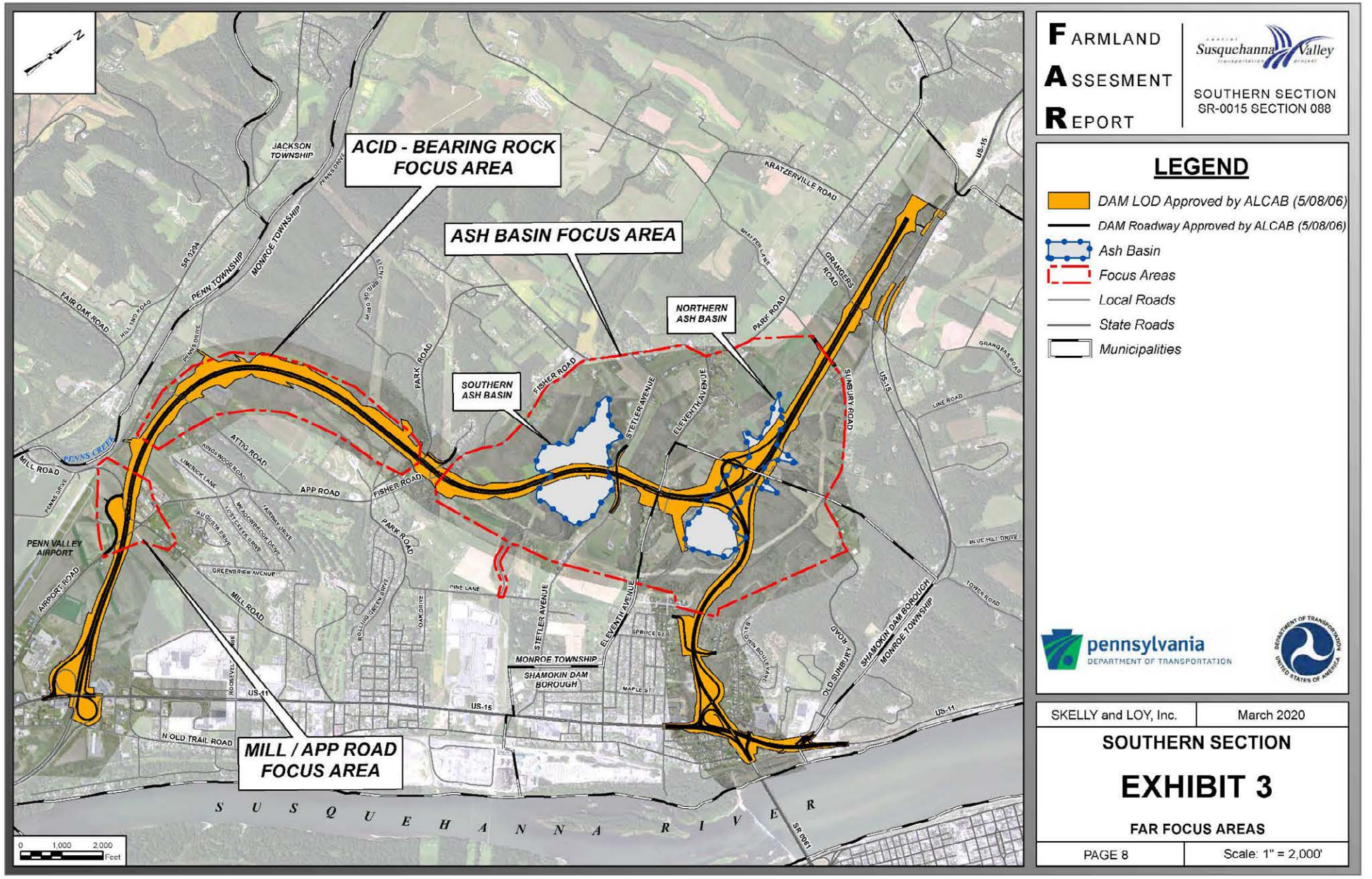
2008 – Pre-construction Activities Suspended Due to Budget Constraints and Other Transportation Priorities

2013 – Pre-construction Activities Resume

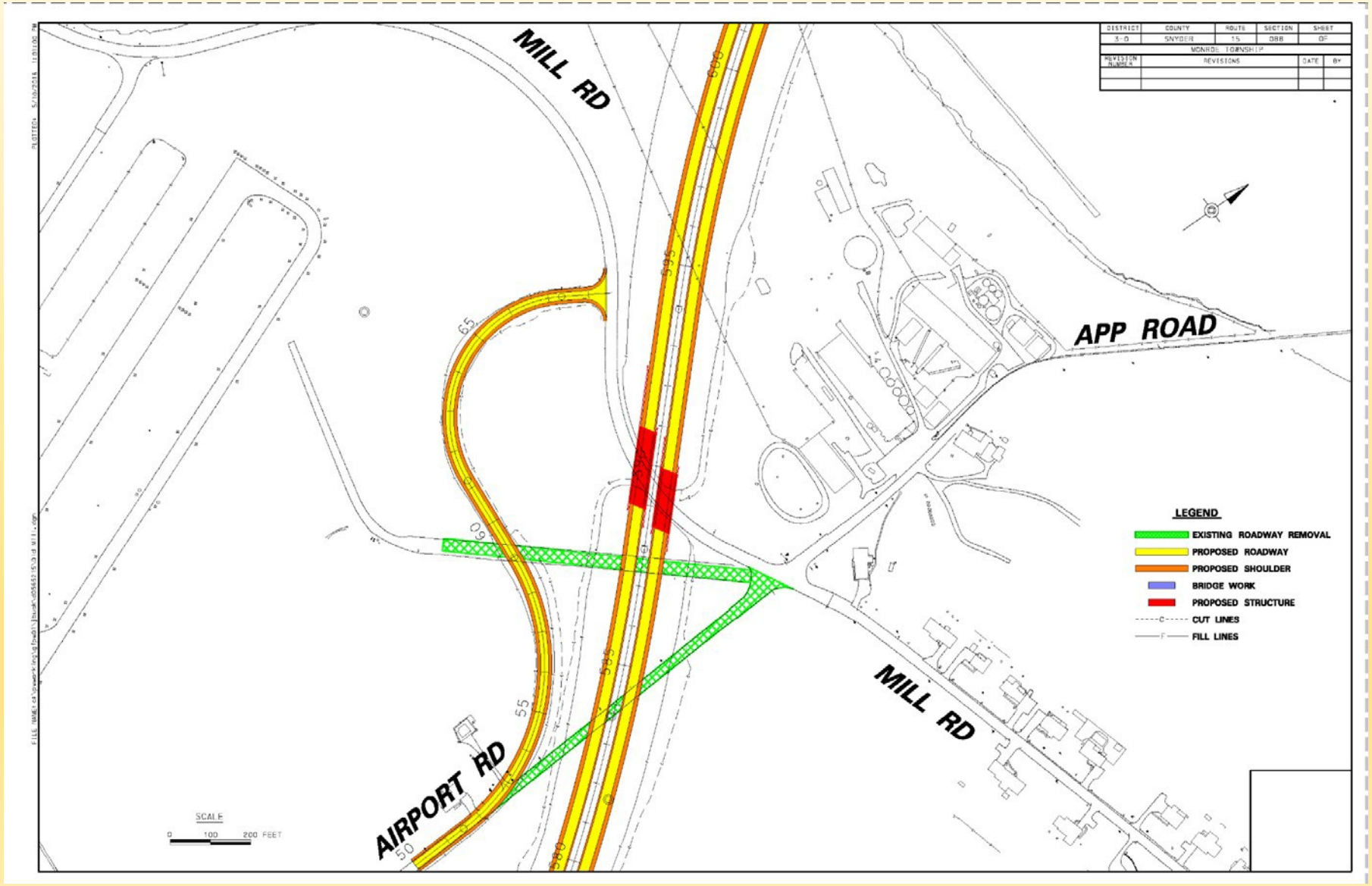
2015 – Final Design Begins on Southern Section

2016 – Ground Broken on Northern Section

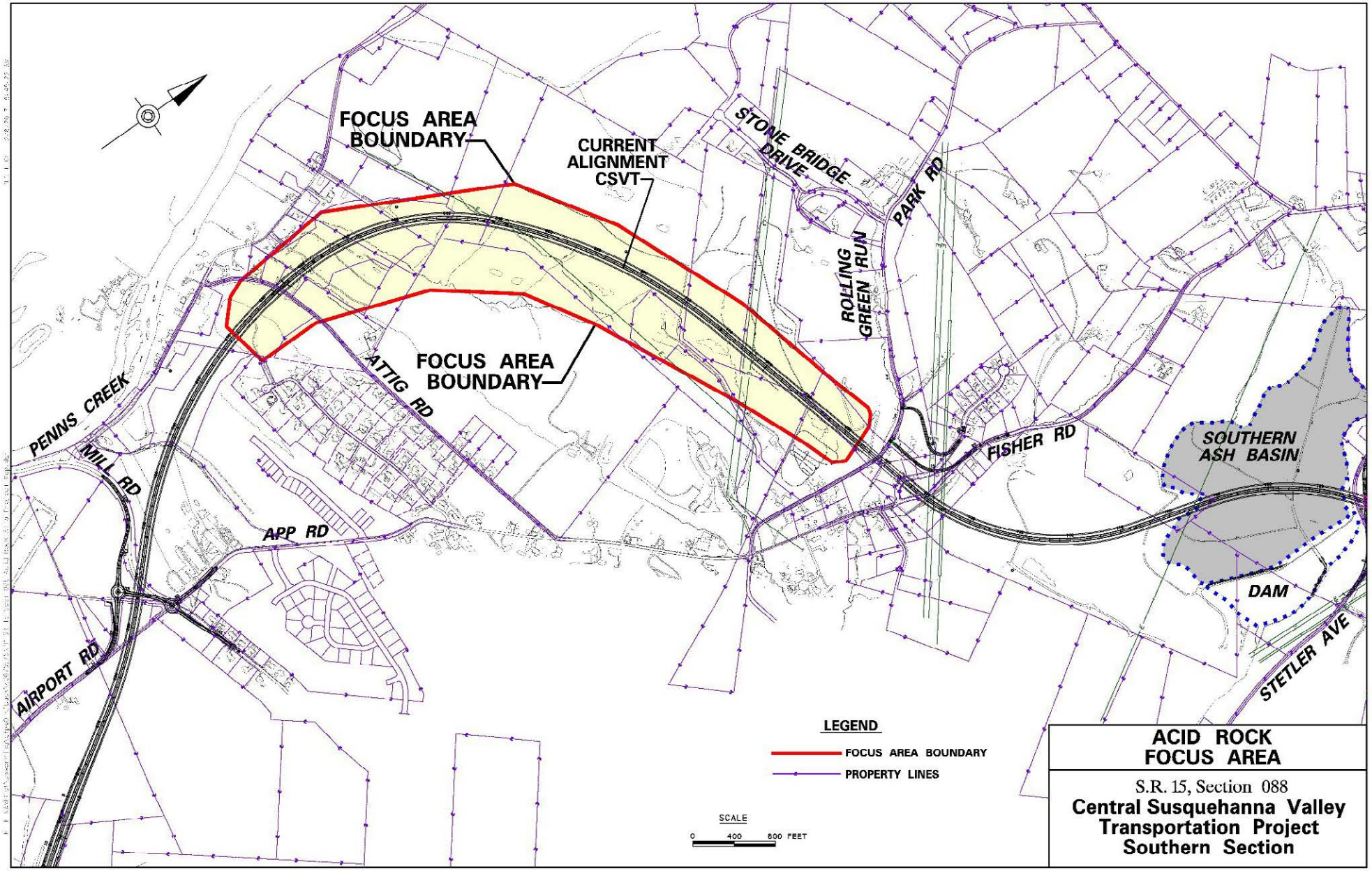
Focus Area Locations



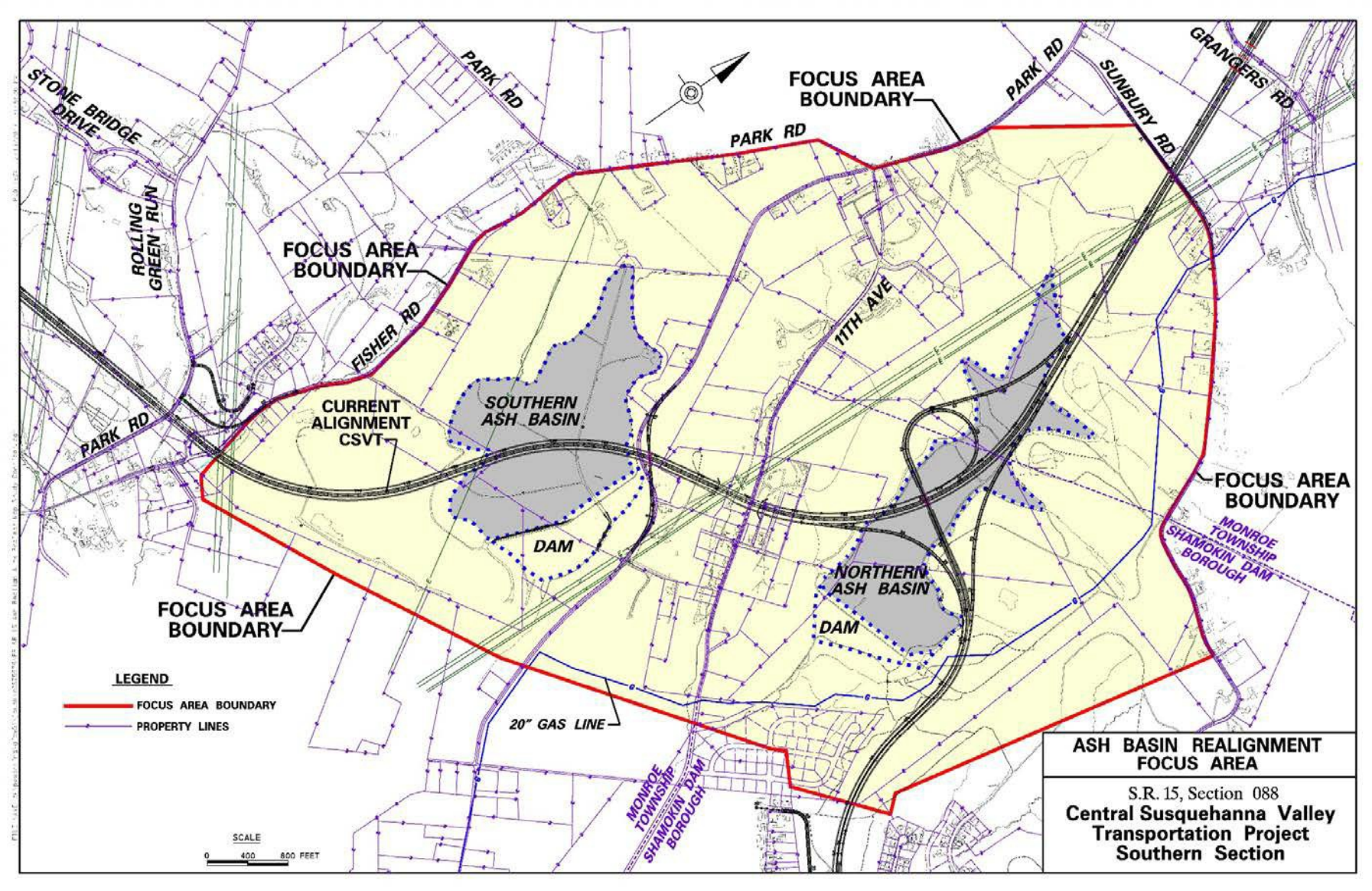
Mill App Road Focus Area



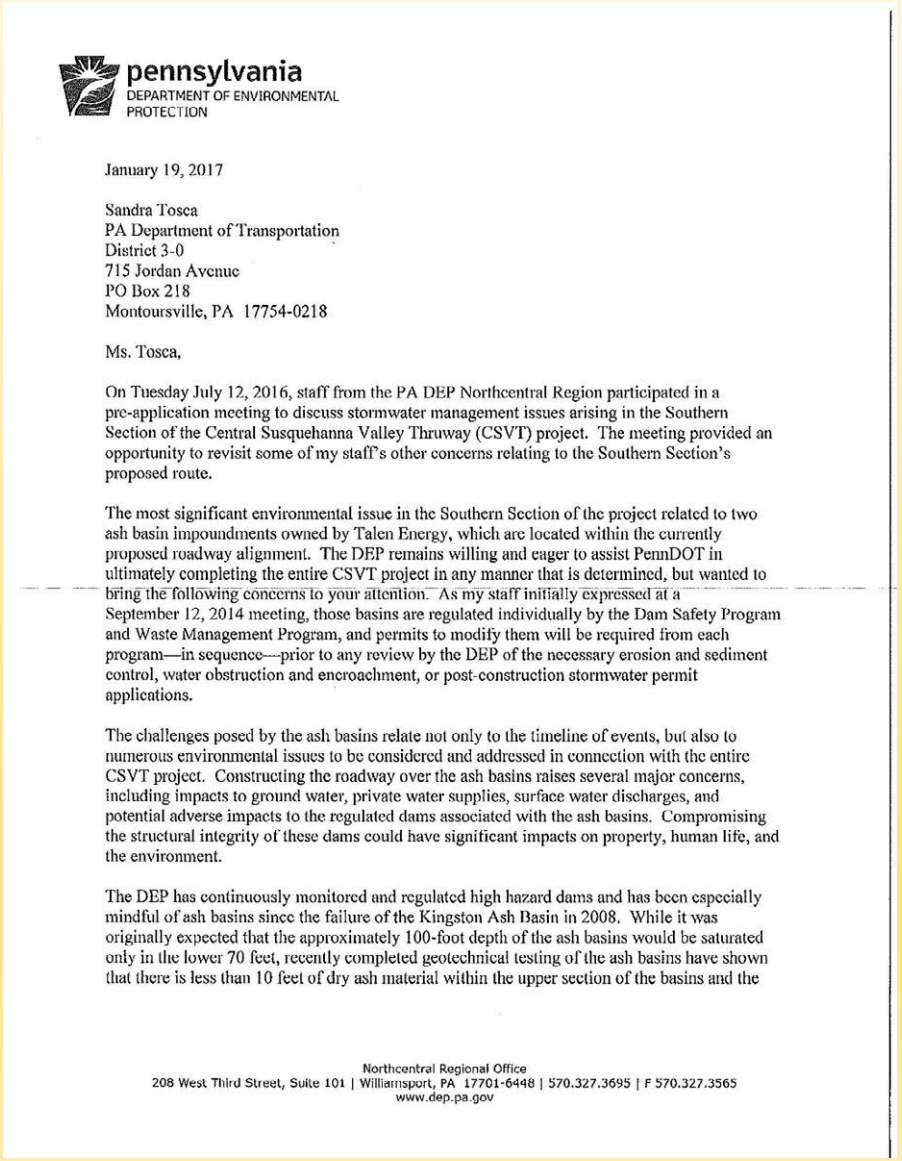
Acid Bearing Rock Focus Area



Ash Basin Focus Area



DEP Correspondence – January 19, 2017



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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 (CSVT) 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 CSVT 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 CSVT 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

Northcentral Regional Office
208 West Third Street, Suite 101 | Williamsport, PA 17701-6448 | 570.327.3695 | F 570.327.3565
www.dep.pa.gov

FAR Appendix C

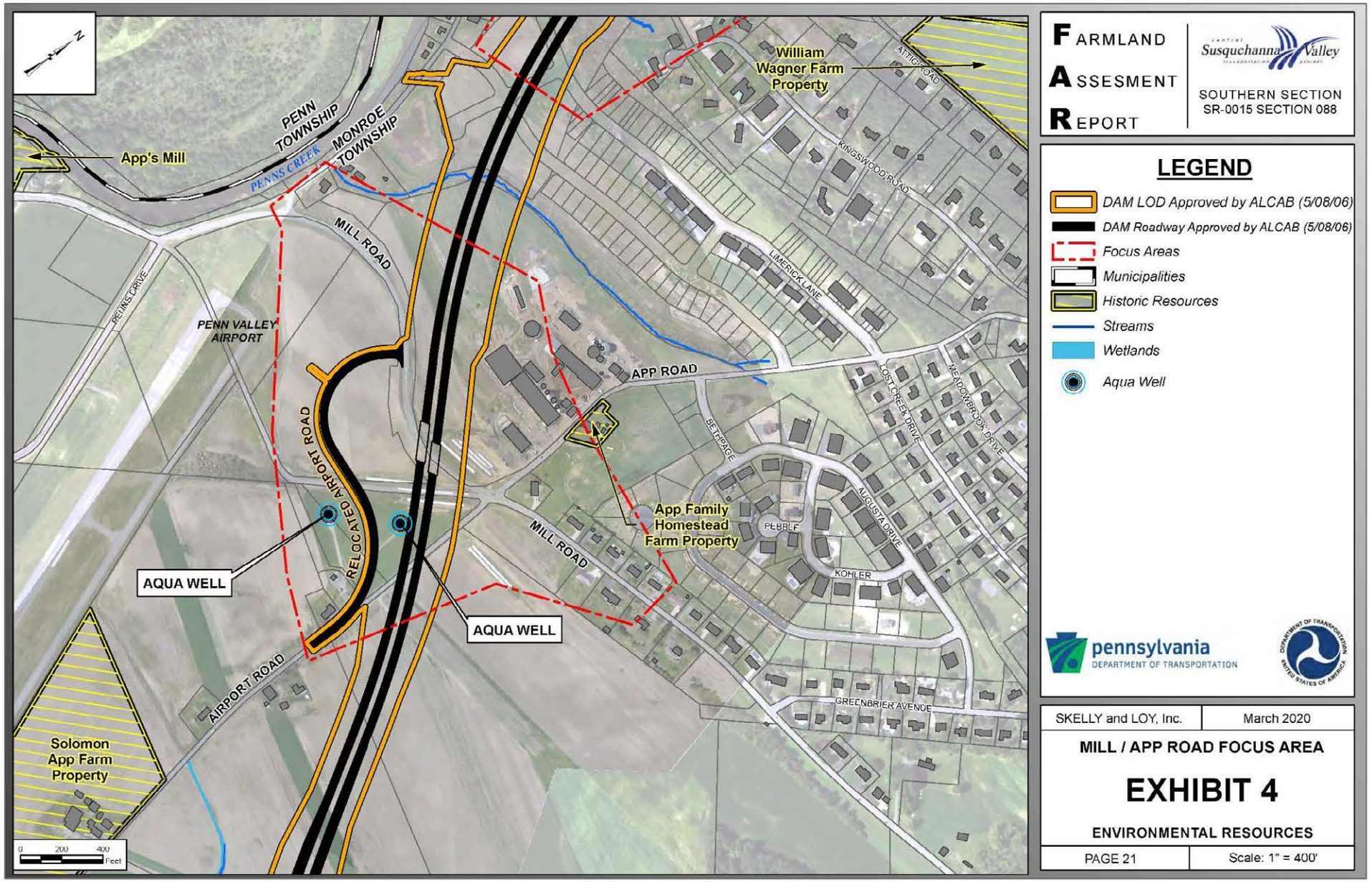
Project Need - Final Design Additions

4. In the Mill/App Focus Area, improve constructability by improving the skew and reducing the deck area of the bridges carrying the DAM mainline over Mill Road

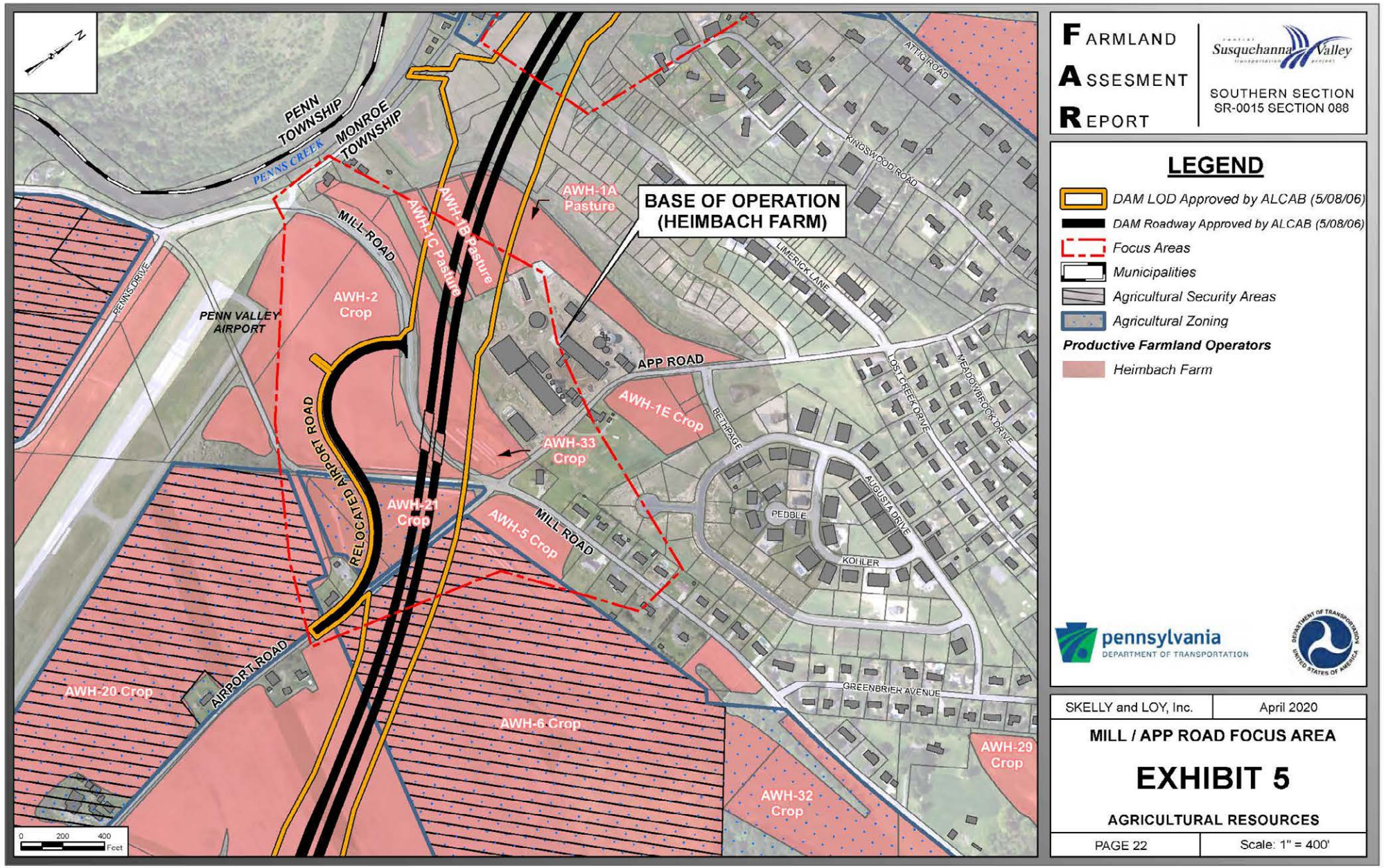
5. In the Acid-Bearing Rock Focus Area, avoid or minimize ABR excavation

6. In the Ash Basin Focus Area, avoid all impact to ash basins
    - Particularly ash basin dam structures
    - Shortest PA Route 61 Connector will best meet the project need of reducing congestion

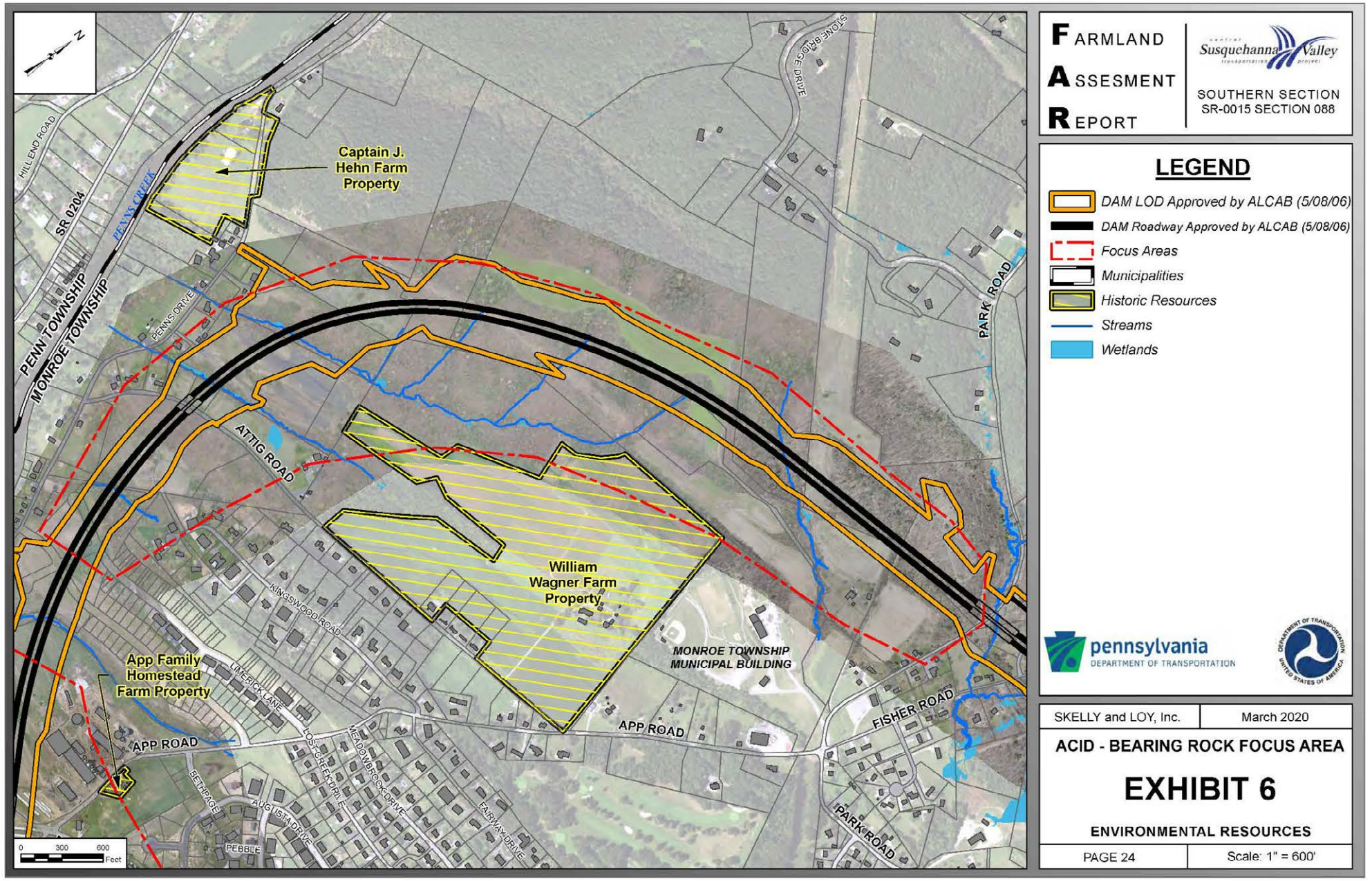
Environmental Features – Mill/App Road



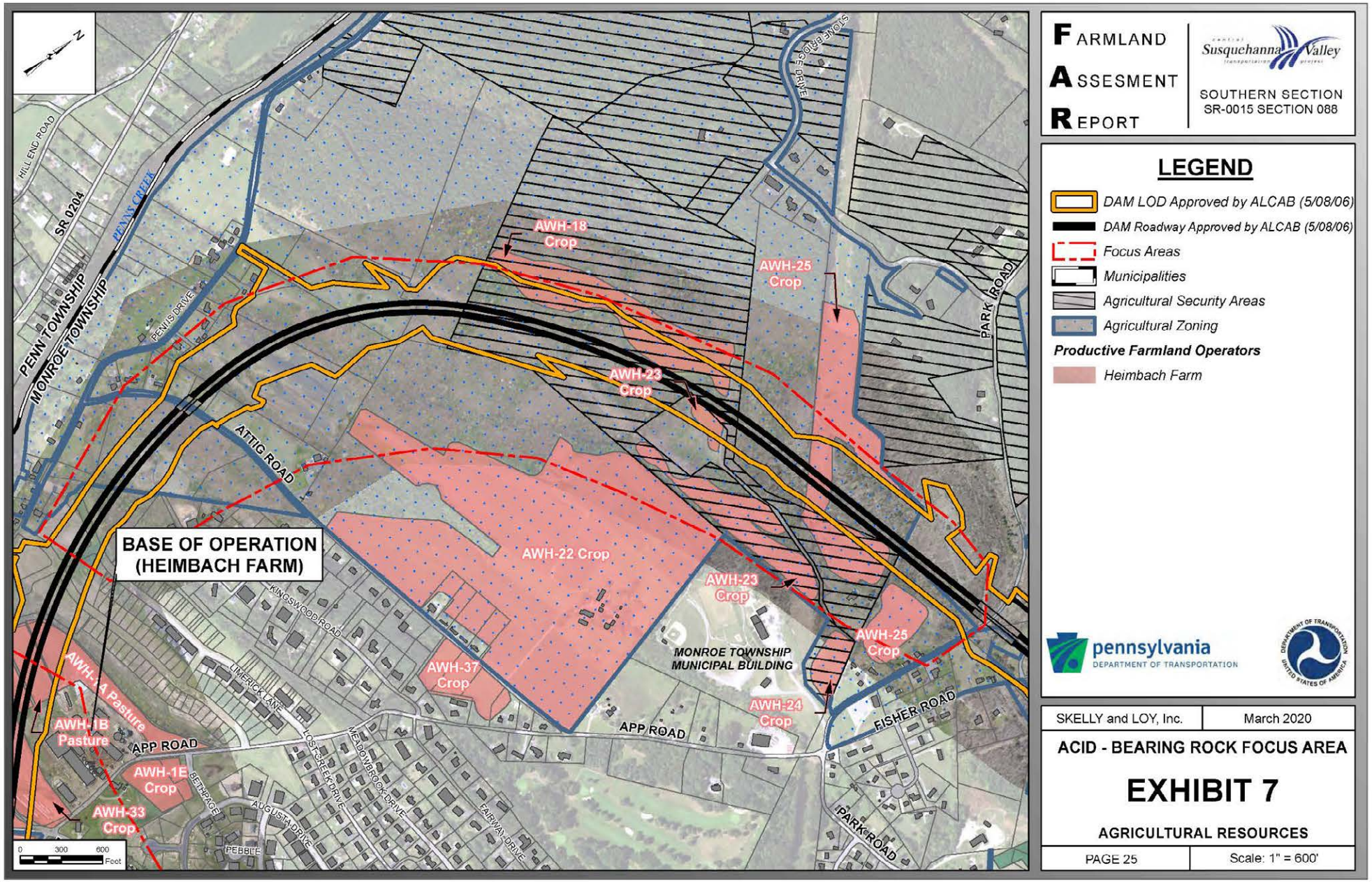
Agricultural Features – Mill/App Road



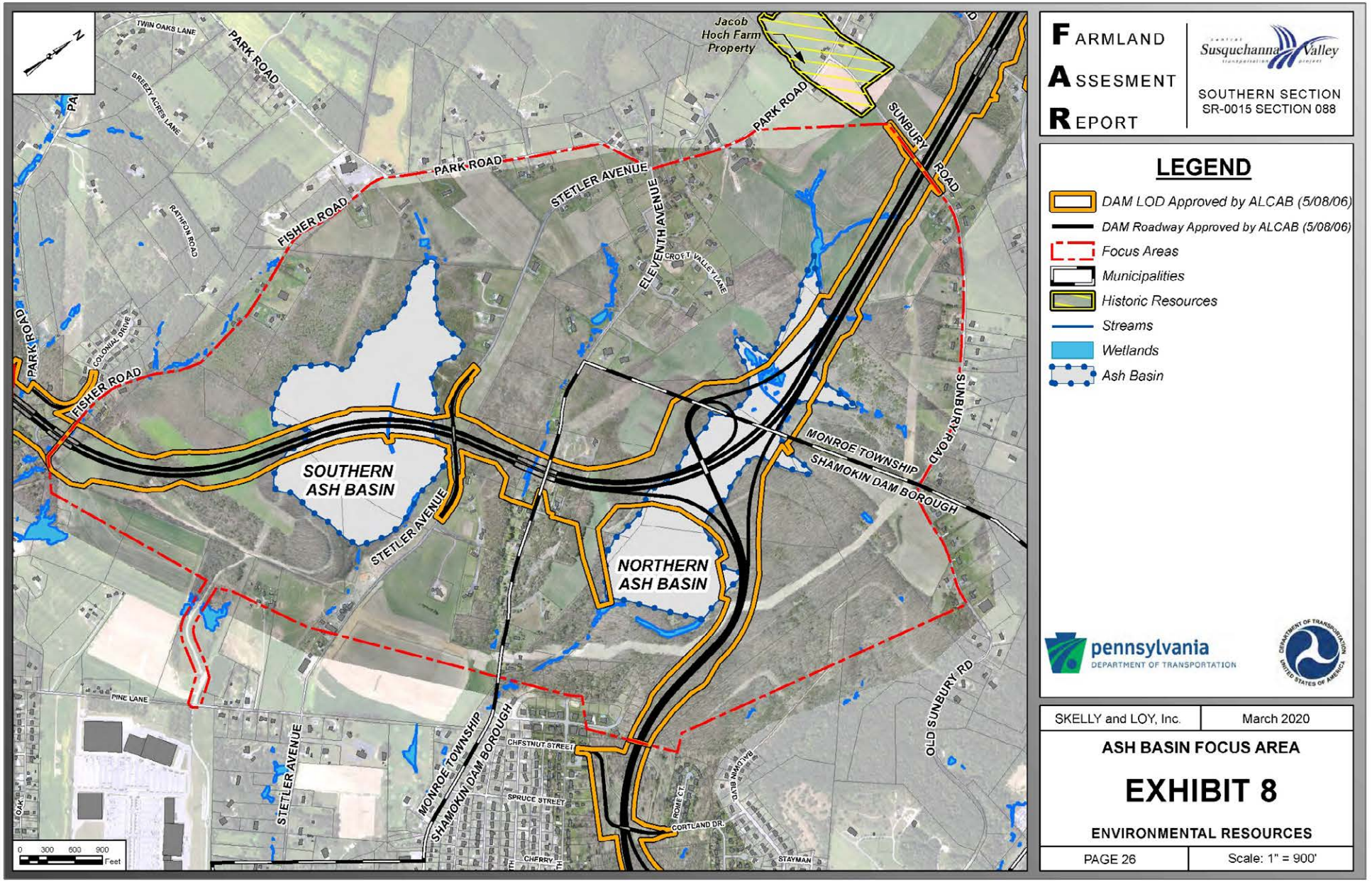
Environmental Features – Acid Rock



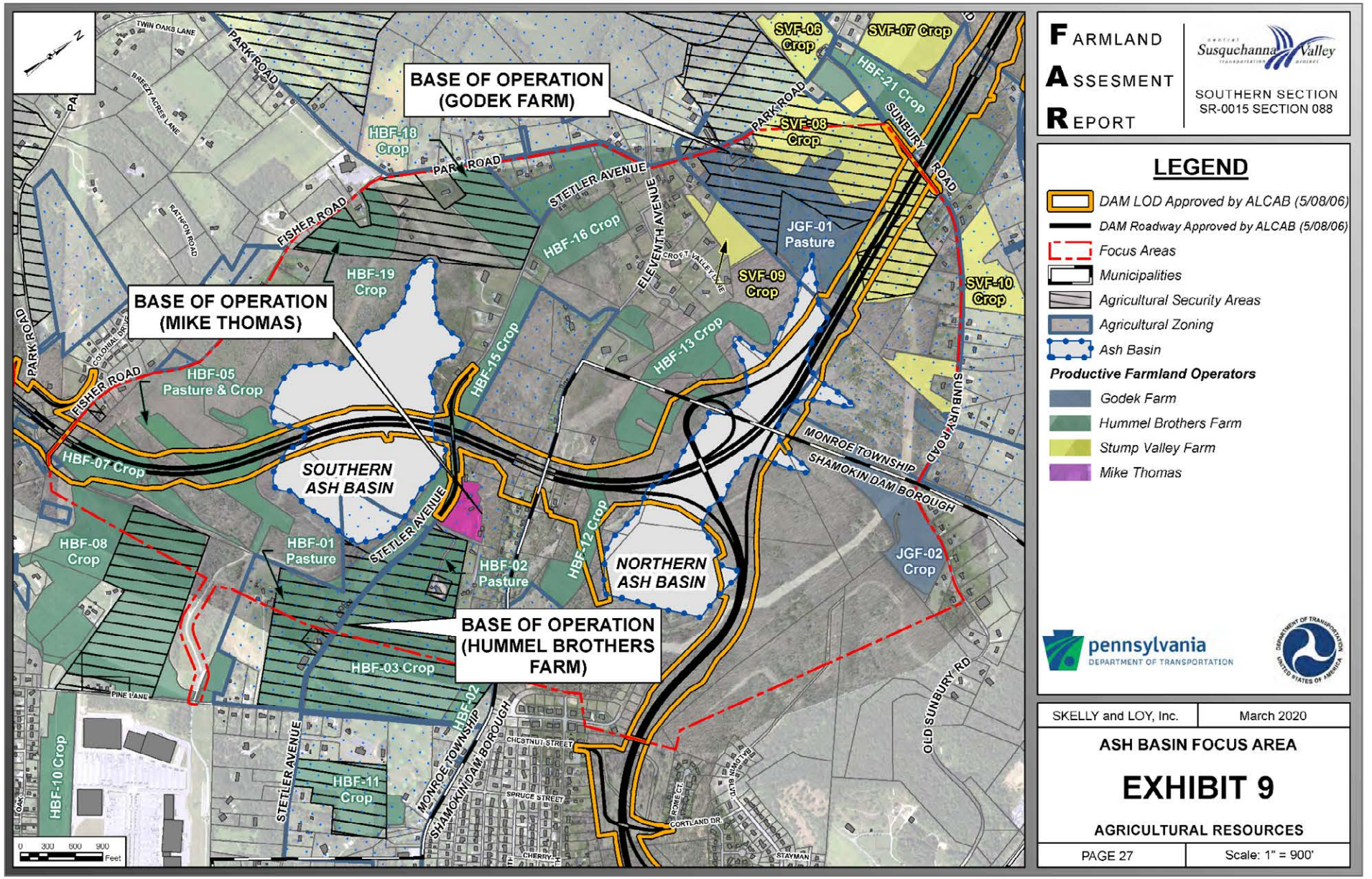
Agricultural Features – Acid Rock



Environmental Features – Ash Basin



Agricultural Features – Ash Basin



Final Design – Alternatives Development Process

1. Determined design must be modified based on identification of final design needs
2. Developed preliminary alternatives to meet needs (both overall project needs and individual focus area final design needs)
3. Evaluated the engineering characteristics of each alternative and determined their ability to meet needs

Final Design – Alternatives Development Process

4. For the alternatives meeting needs, evaluated impact on environmental resource
5. Compared alternatives based on environmental impacts and engineering characteristics and identified recommended Preferred Alternative
6. Obtained feedback from the public, local officials and environmental agencies

ALCAB TEST

- Provides basis for evaluation of alternatives
- Has two important components
    1. Prudent
    2. Reasonable

ALCAB TEST

- Prudent
  - Meets Project Needs
  - Does not have negative engineering constructability issues

ALCAB TEST

- Reasonable
  - ➢ Must not have substantial environmental impacts as compared to other evaluated alternatives

Current Project Needs

1. Reduce congestion and accommodate growth by:
   - Reducing peak traffic congestion
   - Improving levels of service or eliminating unacceptable levels of service
   - Including a connection to PA Route 61 that is short enough to encourage traffic to use it
2. Improve safety by reducing regional and local traffic conflicts, thereby reducing crashes
3. Separate through traffic, especially truck traffic, from local traffic

FAR Page 12

Current Project Needs

4. In the Mill/App Road Focus Area, improve constructability by improving the skew and reducing the deck area of the bridges carrying the DAM mainline over Mill Road.
5. In the Acid-Bearing Rock Focus Area, avoid or minimize ABR excavation
6. In the Ash Basin Focus Area, avoid all impact to ash basins
    - Particularly ash basin dam structures.
    - Shortest PA Route 61 Connector will best meet the project need of reducing congestion

FAR Page 12

Reason for Final Design Refinement Analysis

- Preliminary engineering does….
  - identify a preferred alignment through an alternatives analysis
  - advance design to about 30% level of completion
  - provide an understanding of general project impacts and costs
  - establish environmental clearance to complete project
- Final Design….
  - provides a detailed understanding of impacts
  - focuses on details of how project will be constructed
  - provides enough detailed information for contractor to construct project

Goals of Final Design

- Minimize impacts
- Improve intersection/interchange efficiency
- Improve constructability
- Address unexpected conditions

TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Mill/App Road Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent. Fails to fully meet need due to constructability issues related to bridge skew.	X	
Option 3-1	→	Dismissed	Not prudent. Fails to fully meet need due to decreased levels of service/capacity and decreased safety due to potential turning conflicts at the stop-controlled "T" intersection.	X	
Option 3-2	→		Option 3-2 is the only prudent and reasonable alternative for the Mill/App Road Focus Area.	ALCAB PREFERRED ALTERNATIVE	
Option 3-3	→	Dismissed	Not prudent. Fails to fully meet need due to decreased levels of service/capacity and decreased safety due to potential turning conflicts at the stop-controlled "T" intersections.	X	
Acid-Bearing Rock Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent. Fails to meet need due to constructability issues related to ABR. Not Reasonable due to excessive environmental impacts associated with ABR excavation.	X	X
ABR Design Refinement	→		Prudent and reasonable alternative; 80% reduction in ABR excavation.	ALCAB PREFERRED ALTERNATIVE	
Ash Basin Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent or reasonable due to constructability and excessive environmental concerns related to impacting crossing the ash basins.	X	X
Western Alternative	→	Dismissed	Not prudent due to not fully meeting the need of reducing traffic congestion due to length of PA Route 61 Connector. Not reasonable due to excessive impacts to community, wetlands, and agricultural resources.	X	X
Central Alternative	→	Dismissed	Not reasonable due to excessive impacts to community, wetlands, and agricultural resources.		X
Eastern Alternative	→		Eastern Alternative is the only prudent and reasonable alternative for the Ash Basin Focus Area.	ALCAB PREFERRED ALTERNATIVE	

FAR, Page 45

Mill App Road Focus Area – Current Design

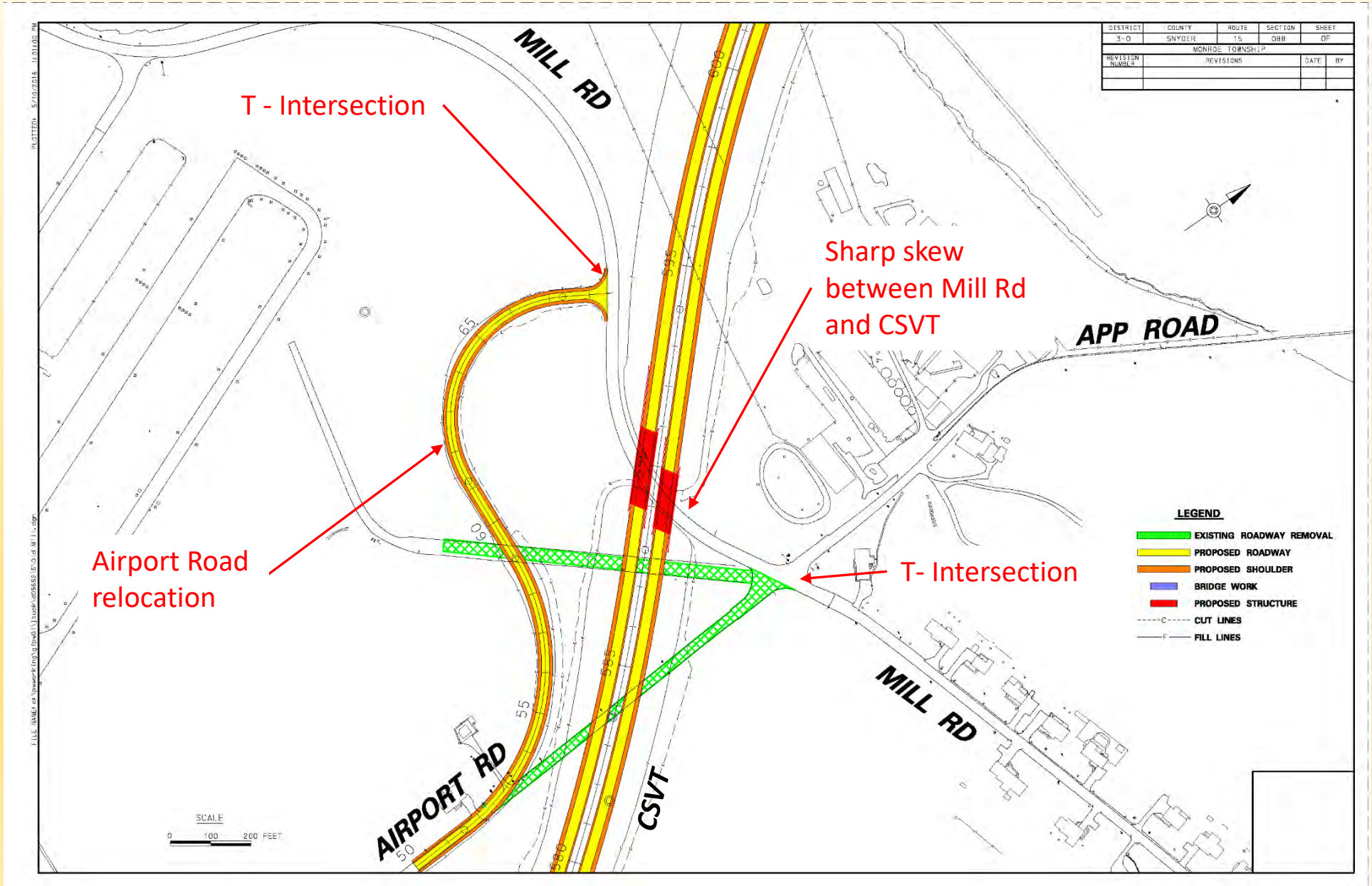
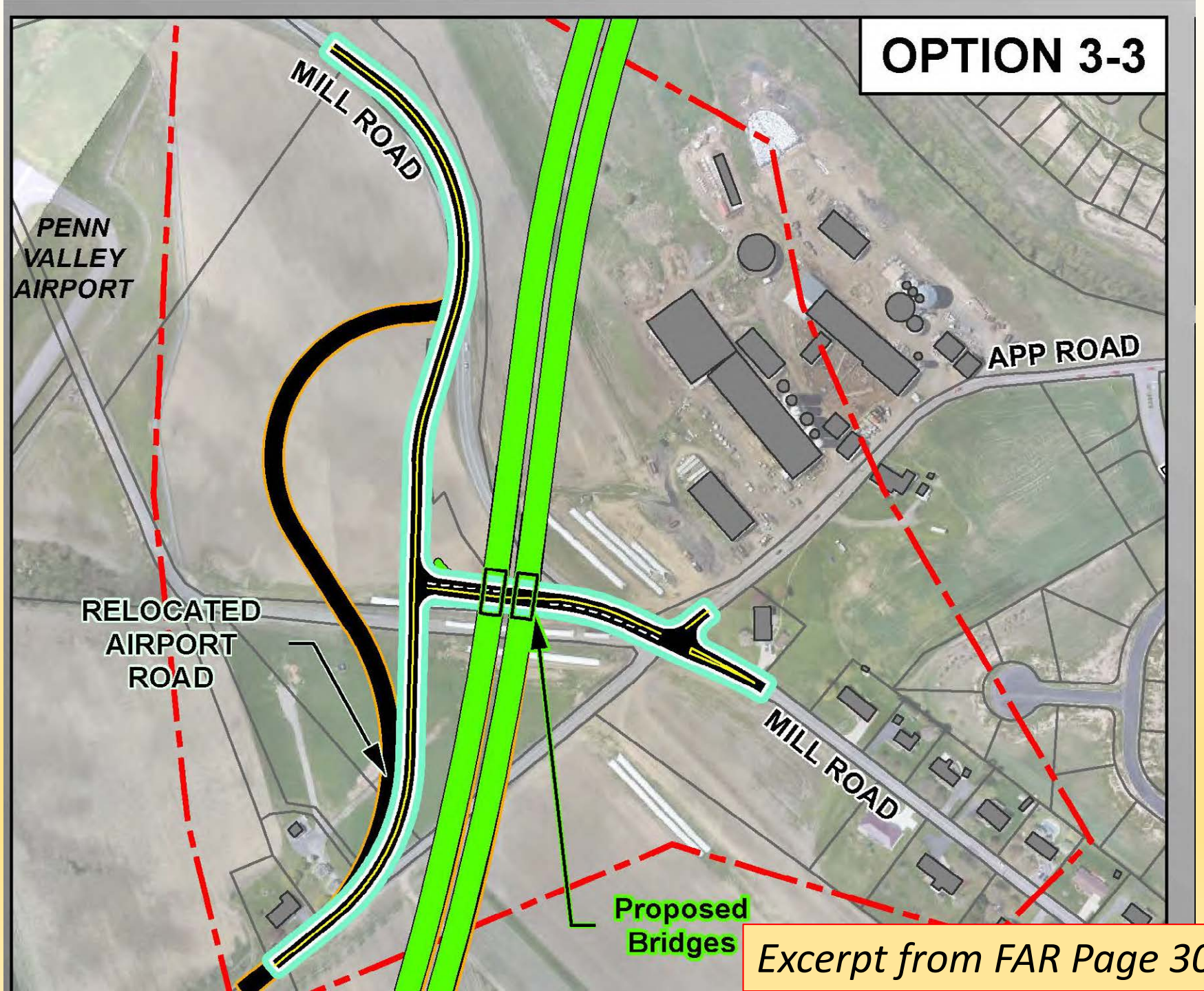


TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Mill/App Road Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent. Fails to fully meet need due to constructability issues related to bridge skew.	X	
Option 3-1	→	Dismissed	decreased levels of service/capacity and decreased safety due to potential turning conflicts at the stop-controlled "T" intersection.	X	
Option 3-2	→		Option 3-2 is the only prudent and reasonable alternative for the Mill/App Road Focus Area.	**ALCAB PREFERRED ALTERNATIVE**	
Option 3-3	→	Dismissed	Not prudent. Fails to fully meet need due to decreased levels of service/capacity and decreased safety due to potential turning conflicts at the stop-controlled "T" intersections.	X	

Excerpt from FAR Page 45



Excerpt from FAR Page 30

Traffic Flow at T-Intersections

- Intersection traffic flow is rated by level-of-service (LOS)
  - Level-of-service is a grading scale for intersection performance determined by the average delay per vehicle

LOS A	0-10 seconds/vehicle	LOS D	25-35 seconds/vehicle
LOS B	10-15 seconds/vehicle	LOS E	35-50 seconds/vehicle
LOS C	15-25 seconds/vehicle	LOS F	greater than 50 seconds/vehicle

T – Intersection Conflicts

- 9 conflict points
- 3 conflict points are crossing conflicts
  - Potential for right-angle, left turn, and head-on crashes

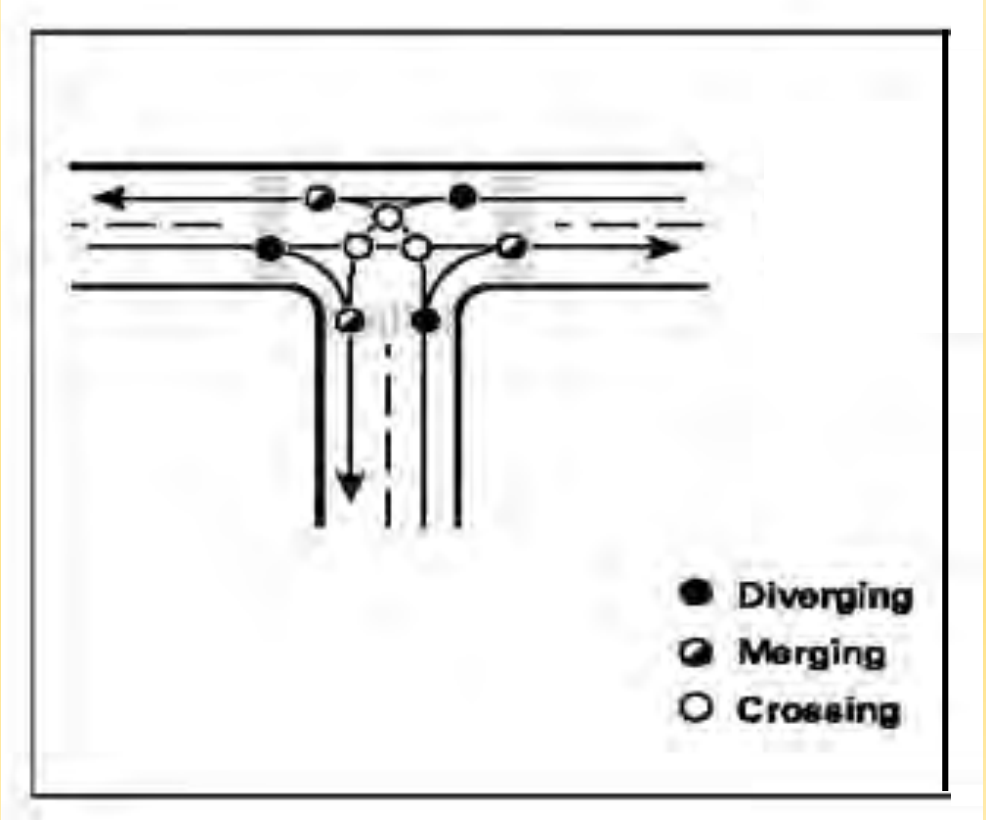
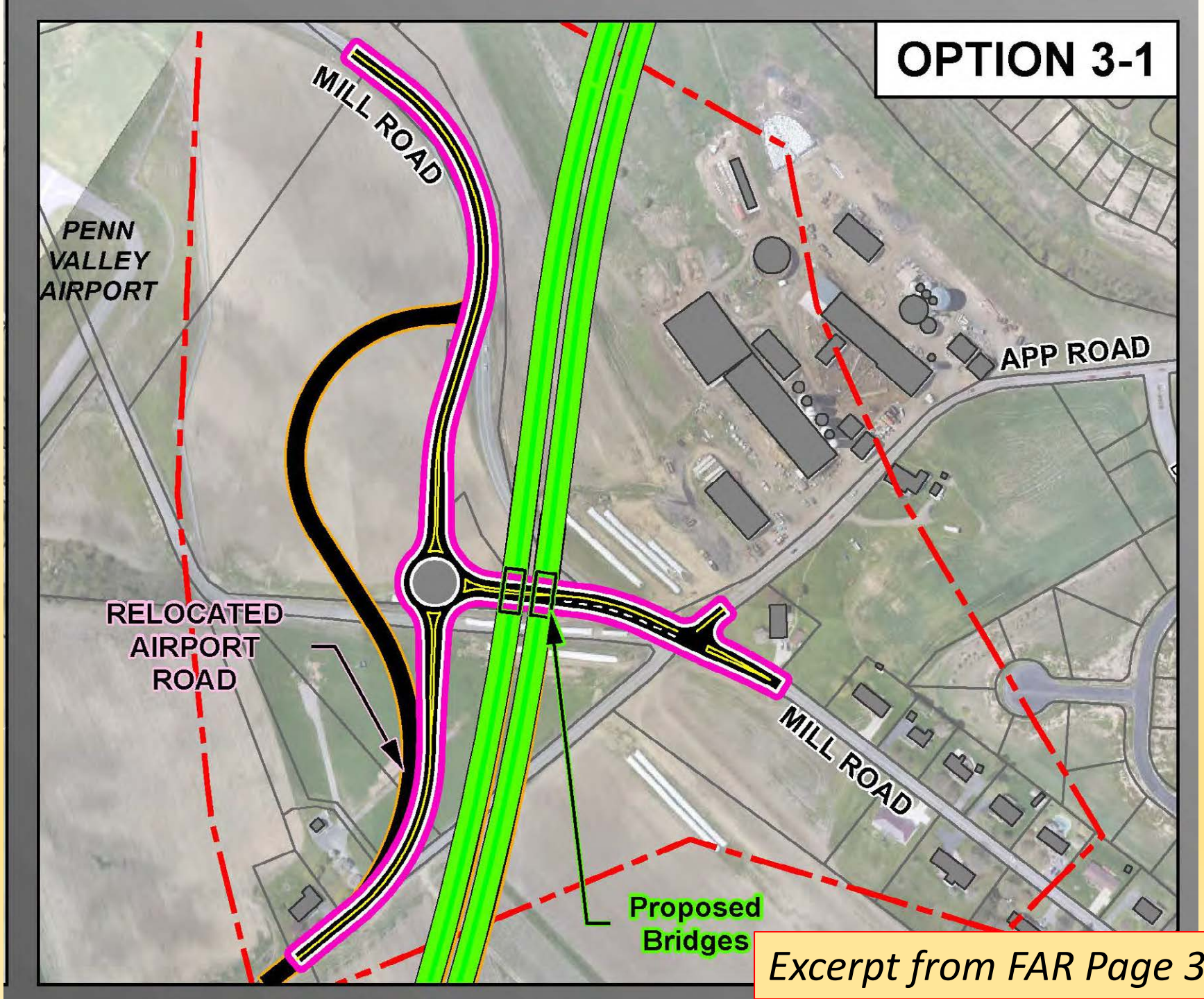


TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Mill/App Road Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent. Fails to fully meet need due to constructability issues related to bridge skew.	X	
Option 3-1	→	Dismissed	Not prudent. Fails to fully meet need due to decreased levels of service/capacity and decreased safety due to potential turning conflicts at the stop-controlled "T" intersection.	X	
Option 3-2	→		Option 3-2 is the only prudent and reasonable alternative for the Mill/App Road Focus Area	ALCAB PREFERRED ALTERNATIVE	
Option 3-3	→	Dismissed	Not prudent. Fails to fully meet need due to decreased levels of service/capacity and decreased safety due to potential turning conflicts at the stop-controlled "T" intersections.	X	

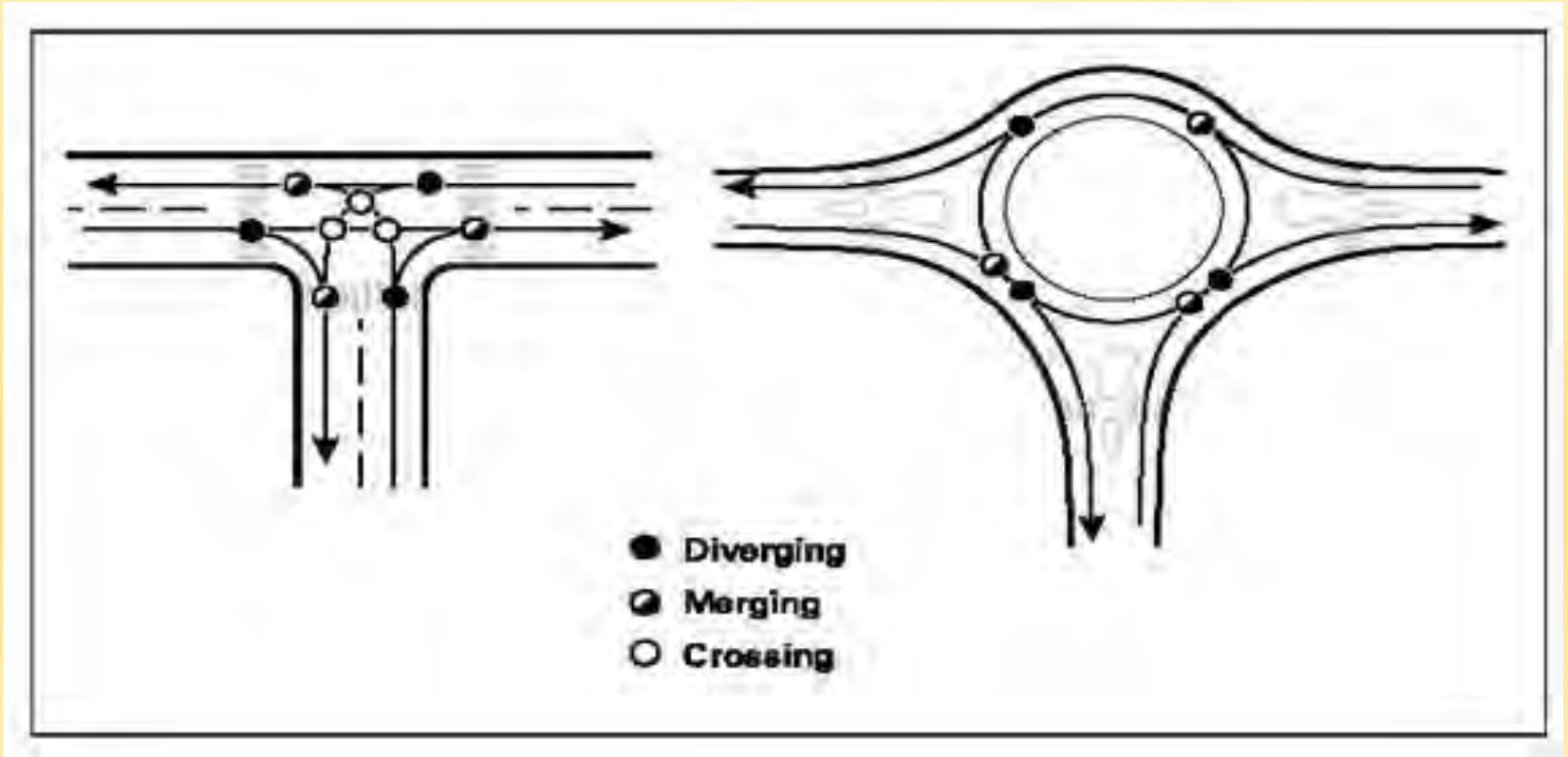
Excerpt from FAR Page 45



Excerpt from FAR Page 30

Safety Benefits of Roundabouts

- Roundabouts improve safety compared to stop-control intersections
  - Reduce speeds through the intersection
  - Reduce the number of turning conflicts
  - Eliminate potential for right-angle, left turn, and head-on crashes



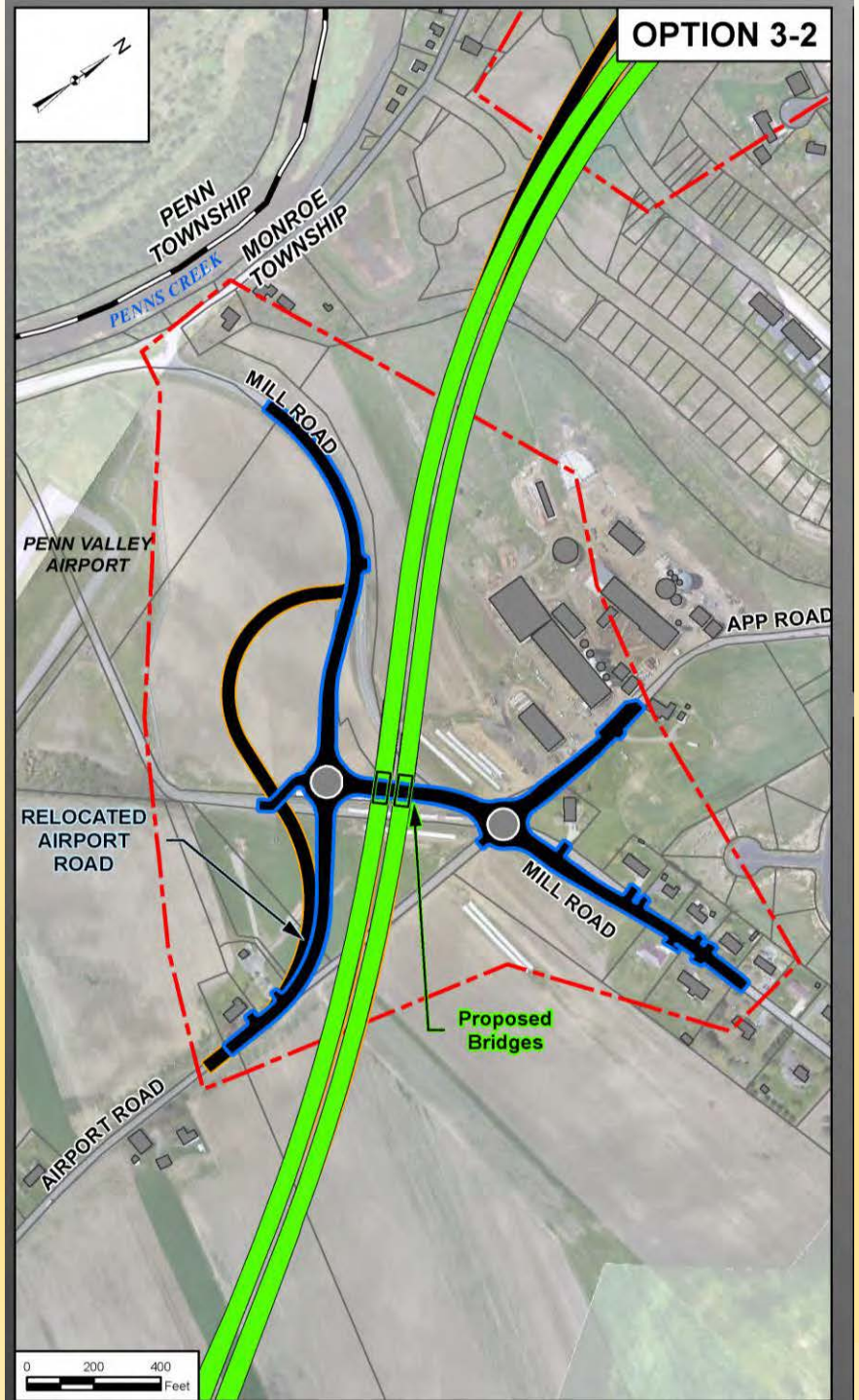
Traffic Flow Benefits of Roundabouts

- Roundabouts reduce congestion compared to stop-control
  - Allow continuous flow of traffic
  - Accommodates higher traffic flow
  - Allows intersection to function longer into the future when accounting for future traffic growth

TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Mill/App Road Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent. Fails to fully meet need due to constructability issues related to bridge skew	X	
Option 3-1	→	Dismissed	Not prudent. Fails to fully meet need due to decreased levels of service/capacity and decreased safety due to potential turning conflicts at the stop-controlled "T" intersection.	X	
Option 3-2	→		Option 3-2 is the only prudent and reasonable alternative for the Mill/App Road Focus Area.	**ALCAB PREFERRED ALTERNATIVE**	
Option 3-3	→	Dismissed	Not prudent. Fails to fully meet need due to decreased levels of service/capacity and decreased safety due to potential turning conflicts at the stop-controlled "T" intersections.	X	

Excerpt from FAR Page 45



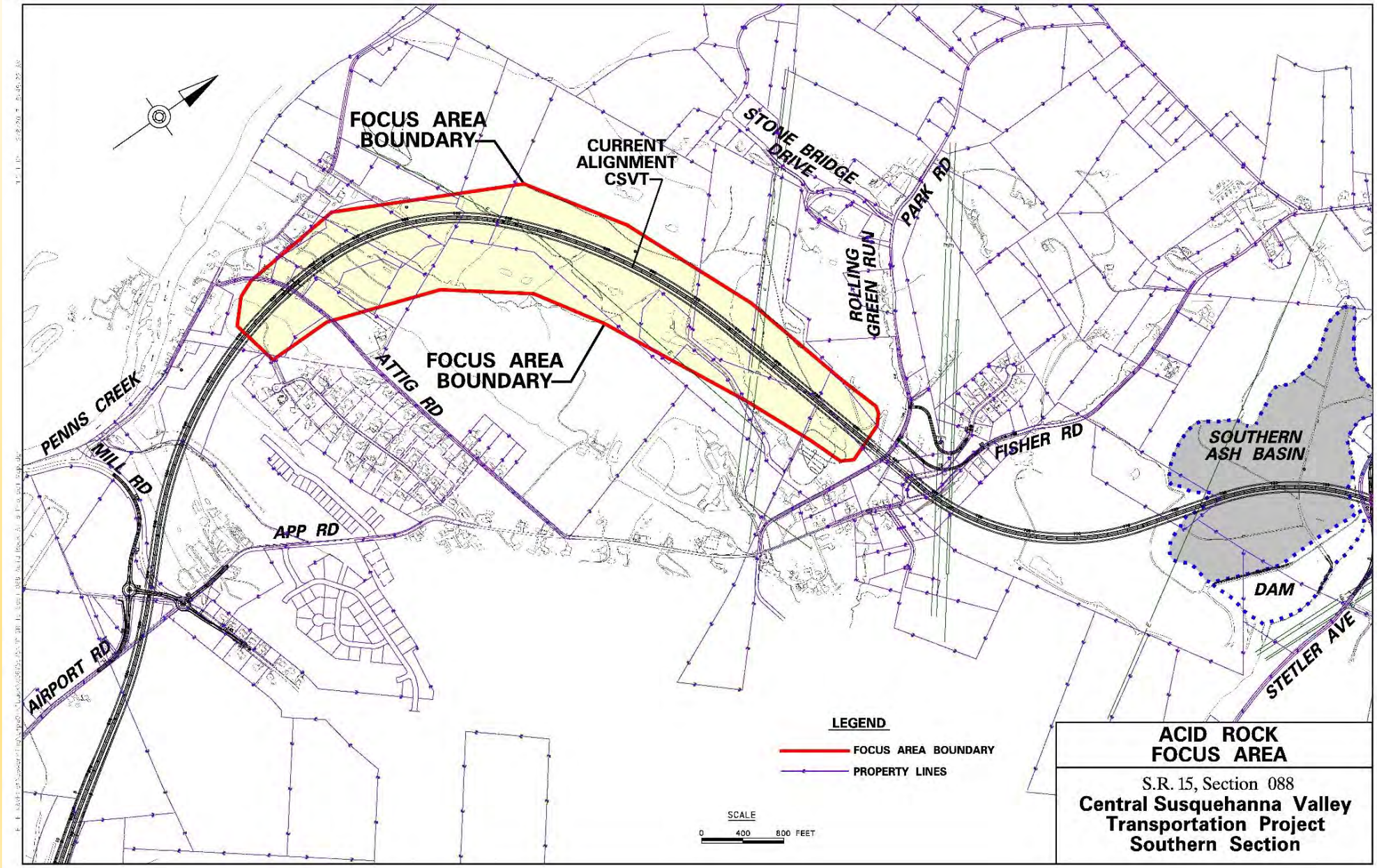
Excerpt from FAR Page 30

TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

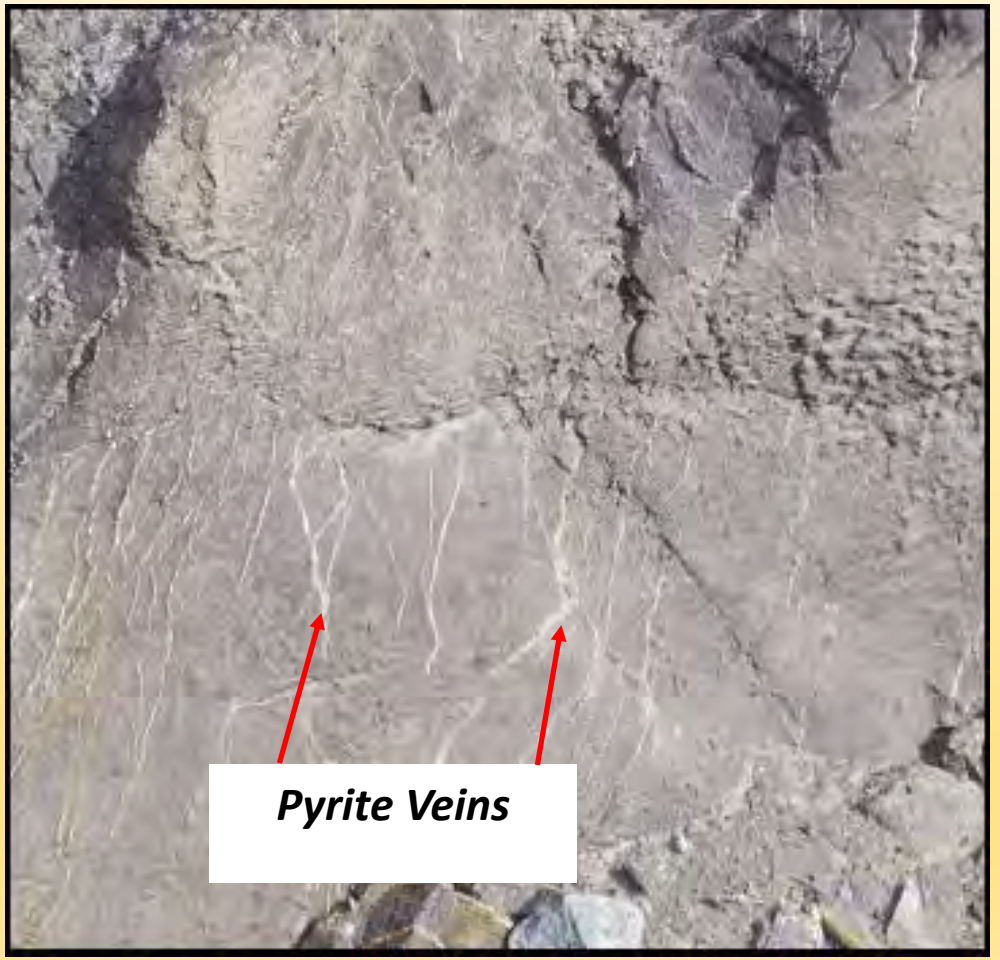
	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Mill/App Road Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent. Fails to fully meet need due to constructability issues related to bridge skew.	X	
Option 3-1	→	Dismissed	Not prudent. Fails to fully meet need due to decreased levels of service/capacity and decreased safety due to potential turning conflicts at the stop-controlled "T" intersection.	X	
Option 3-2	→		Option 3-2 is the only prudent and reasonable alternative for the Mill/App Road Focus Area.	**ALCAB PREFERRED ALTERNATIVE**	
Option 3-3	→	Dismissed	Not prudent. Fails to fully meet need due to decreased levels of service/capacity and decreased safety due to potential turning conflicts at the stop-controlled "T" intersections.	X	

Excerpt from FAR Page 45

Acid Rock Focus Area



PYRITE (FOOLS GOLD)



I. What is pyrite ?

- Commonly referred to as Fool's Gold
- Chemical nomenclature is Iron Disulfide (FeS_2)
- Found in sedimentary rock (sandstone and shale), metamorphic rock, and coal beds
- Reacts with oxygen and water to produce sulfuric acid (H_2SO4), leading to Acid Rock Drainage

$$4FeS_2 + 14H_2O + 15O_2 \longrightarrow 4Fe(OH)^3 + 16H^+ + 8SO_4^-$$

II. Why is it important to avoid or minimize excavation of pyrite?

- Pyrite when exposed to oxygen and water produces sulfuric acid (H_2SO_4)
- Sulfuric acid reacts with concrete and aggregates to weaken their structure and compromise their stability
- Sulfuric acid dissolves minerals in rock (Aluminum, Iron, Manganese, Lead, Zinc, Sulfate, etc.) and releases them to the environment

III. Impacts of Acid Rock Drainage (ARD) to highways and the environment

- ❑ Reacts with concrete and subbase of highway
  - Can corrode and degrade concrete foundations and bridges, metal culverts and pipes, increasing maintenance and replacement costs

- ❑ Releases contaminants into groundwater aquifers and surface waters
  - Can contaminate drinking water supplies with increased concentrations of toxic and carcinogenic heavy metals
  - Can be harmful for aquatic habitats and cause fish kills


09/01/2004

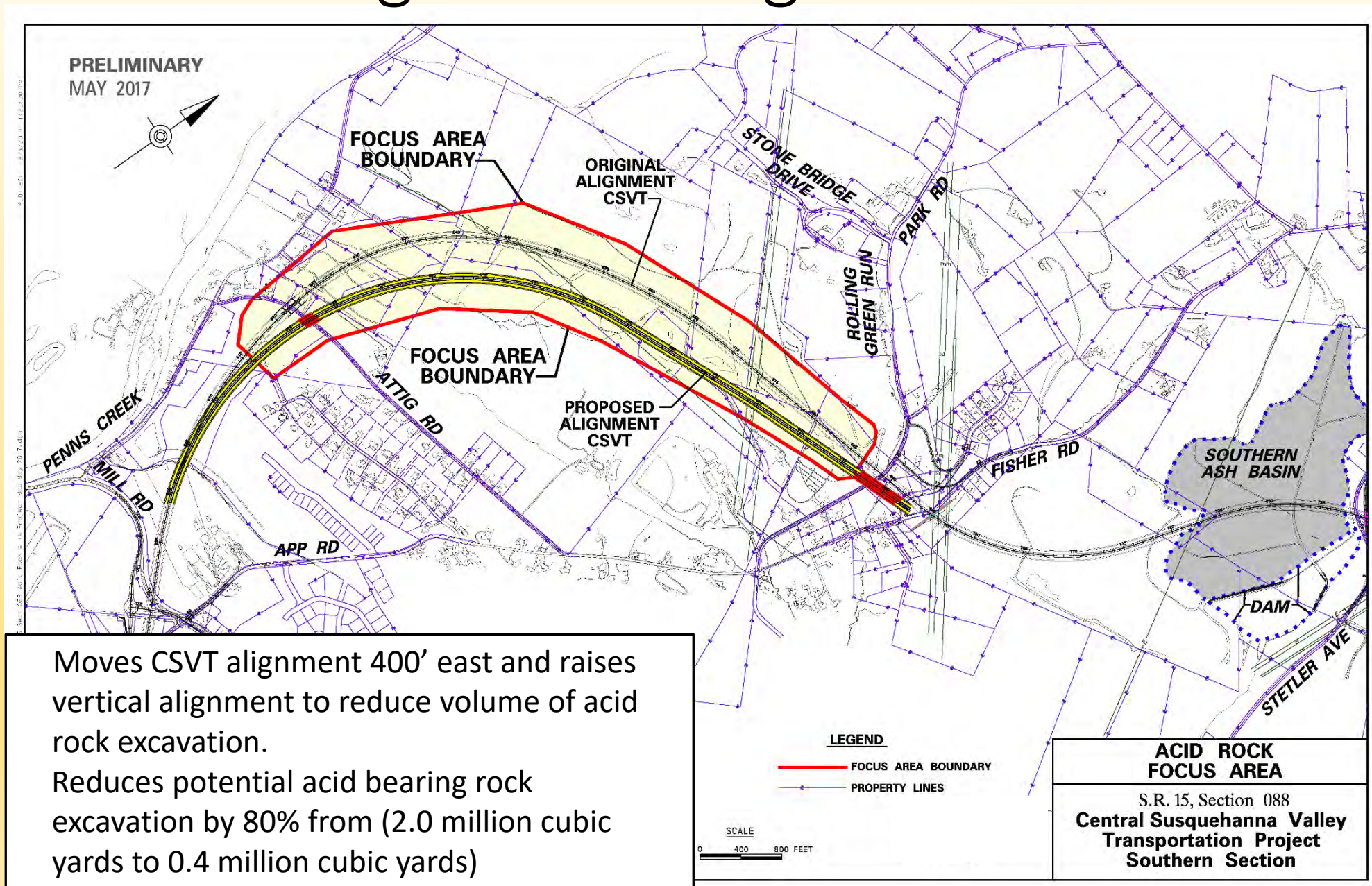

08/24/2004

TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Acid Bearing Rock Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent. Fails to meet need due to constructability issues related to ABR. Not Reasonable due to excessive environmental impacts associated with ABR excavation.	X	X
ABR Design Refinement	→		Prudent and reasonable alternative; 80% reduction in ABR excavation.	**ALCAB PREFERRED ALTERNATIVE**	

Excerpt from FAR Page 45

Acid Bearing Rock Realignment



Moves CSVT alignment 400’ east and raises vertical alignment to reduce volume of acid rock excavation.

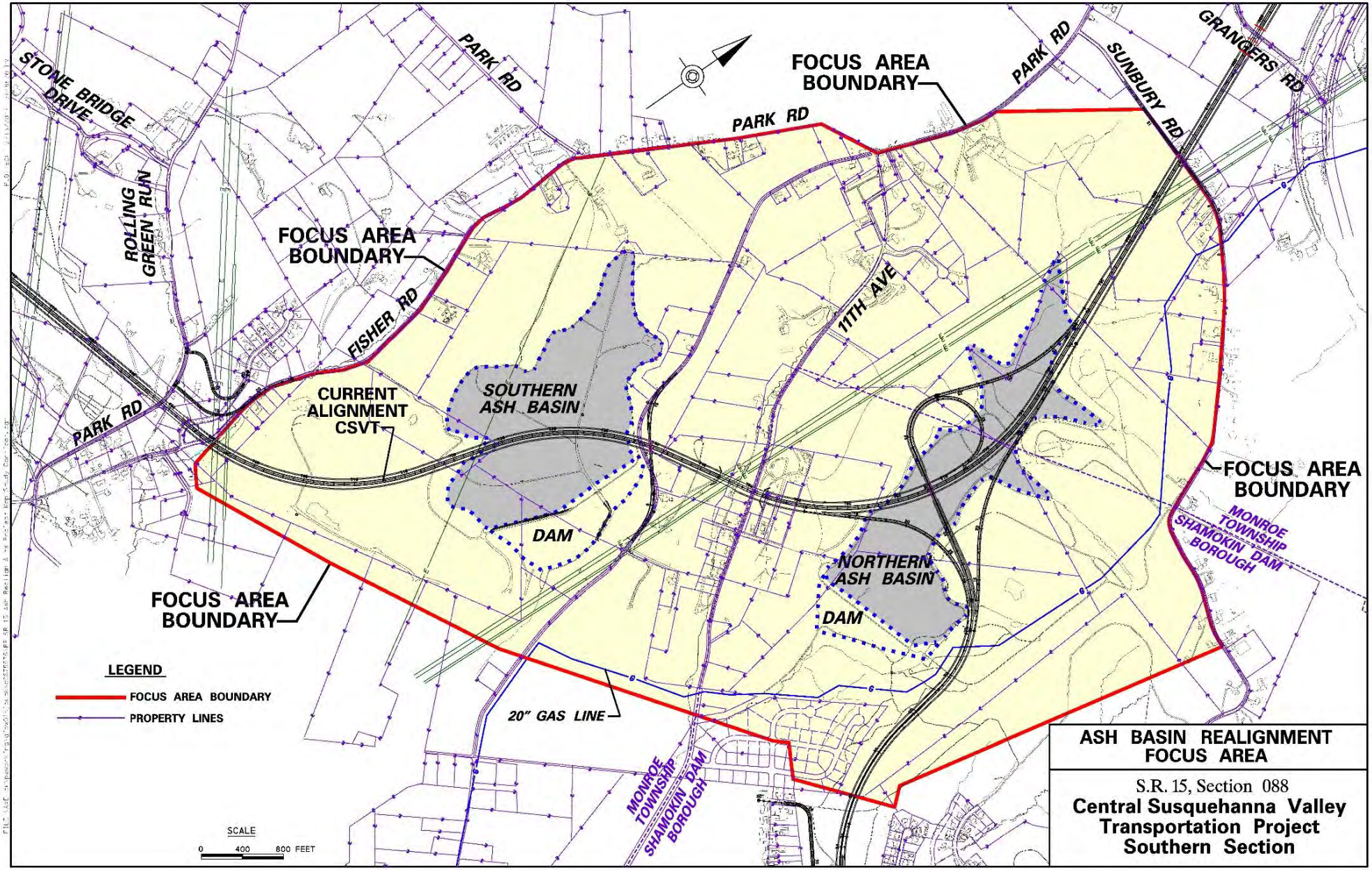
Reduces potential acid bearing rock excavation by 80% from (2.0 million cubic yards to 0.4 million cubic yards)

TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Acid-Bearing Rock Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent. Fails to meet need due to constructability issues related to ABR. Not Reasonable due to excessive environmental impacts associated with ABR excavation.	X	X
ABR Design Refinement	→		Prudent and reasonable alternative; 80% reduction in ABR excavation.	**ALCAB PREFERRED ALTERNATIVE**	

Excerpt from FAR Page 45

Ash Basin Focus Area



Ash Basin Focus Area - Background

Northern Ash Basin in use
(1970 to late 1980s)

Northern Ash Basin - today

Southern Ash Basin - today

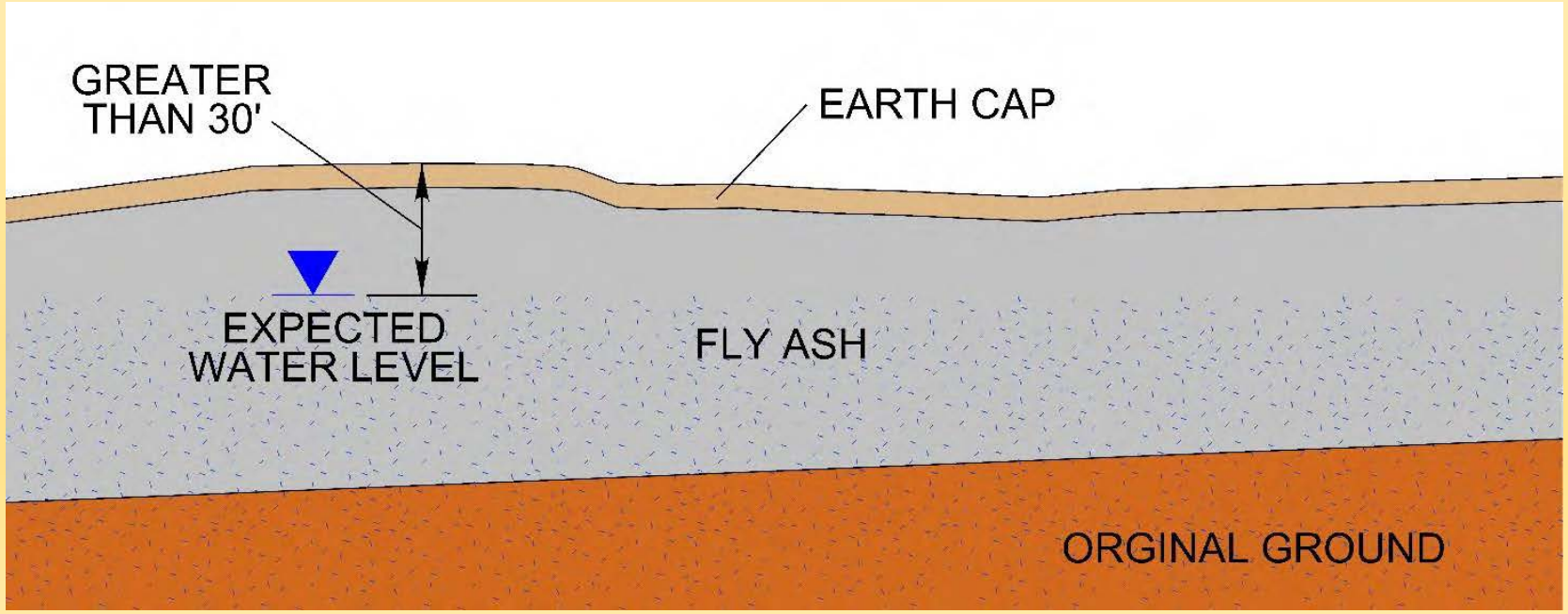
Why did CSVT originally cross the fly ash basins? *Slide 54*

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

- Expected conditions to improve – lower water level

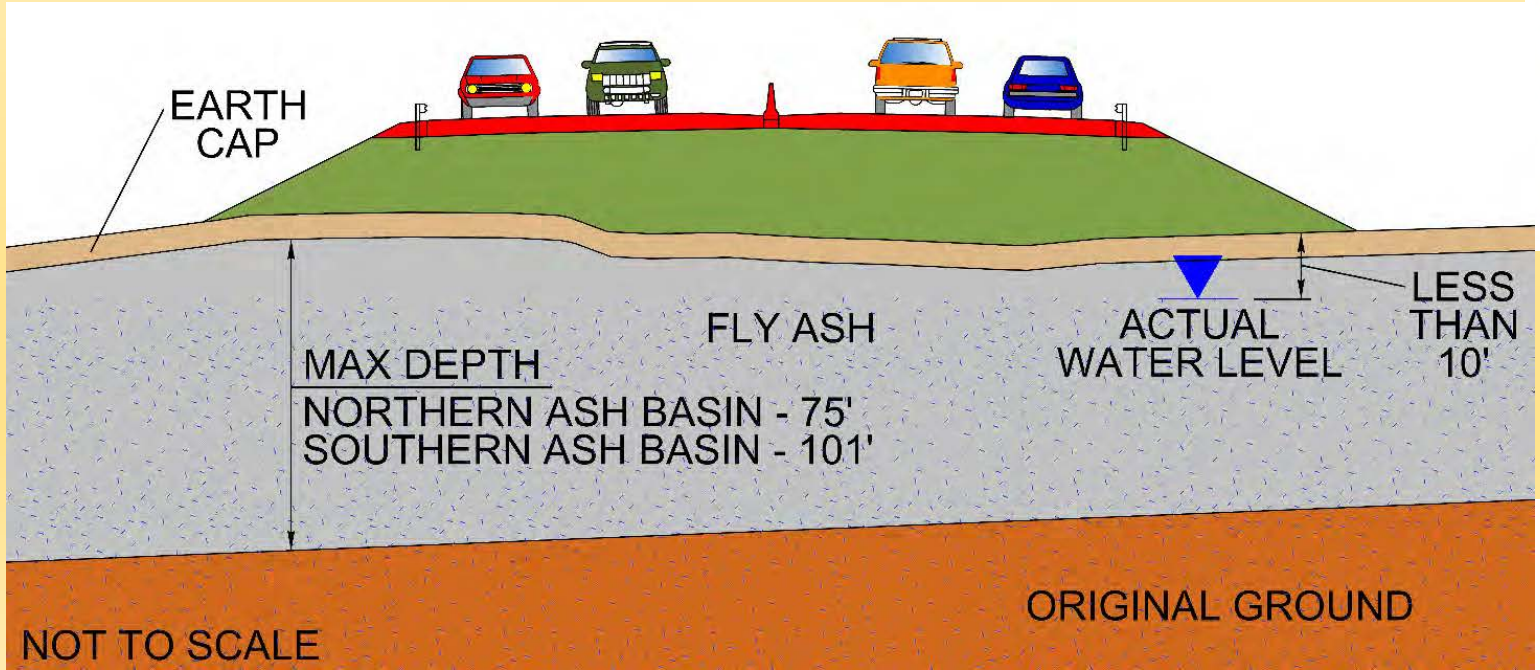
Expected Ash Basin Conditions

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



Actual Ash Basin Conditions

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



Why avoid constructing on the fly ash basins?

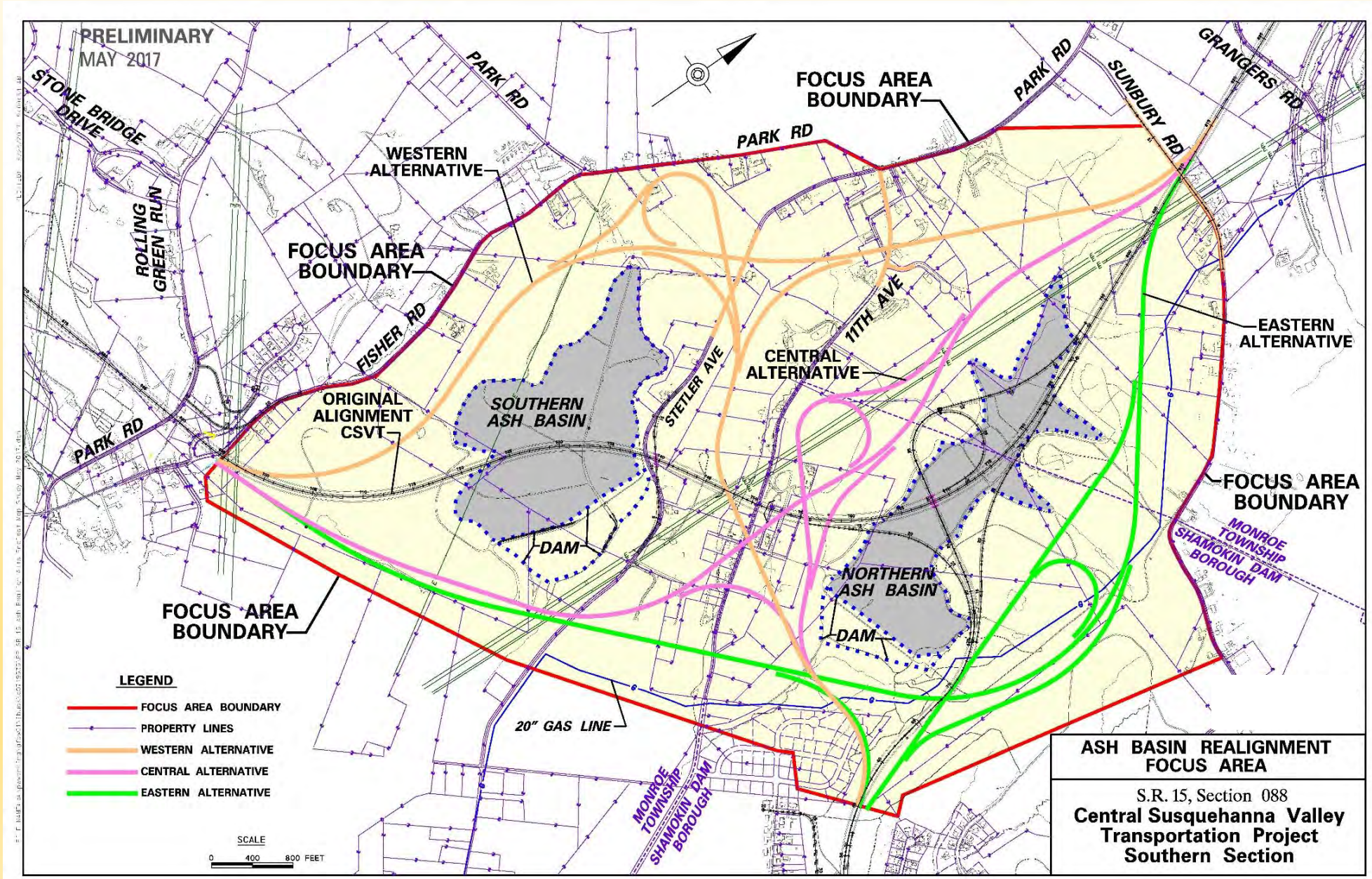
- Saturated ash cannot support weight of highway
- Risk of highway settling and deforming
- Risk of groundwater contamination during/after construction from the unlined basins
- Recent issues with other basins nationwide; increased scrutiny from environmental agencies
  - U.S. EPA - new regulations
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

TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

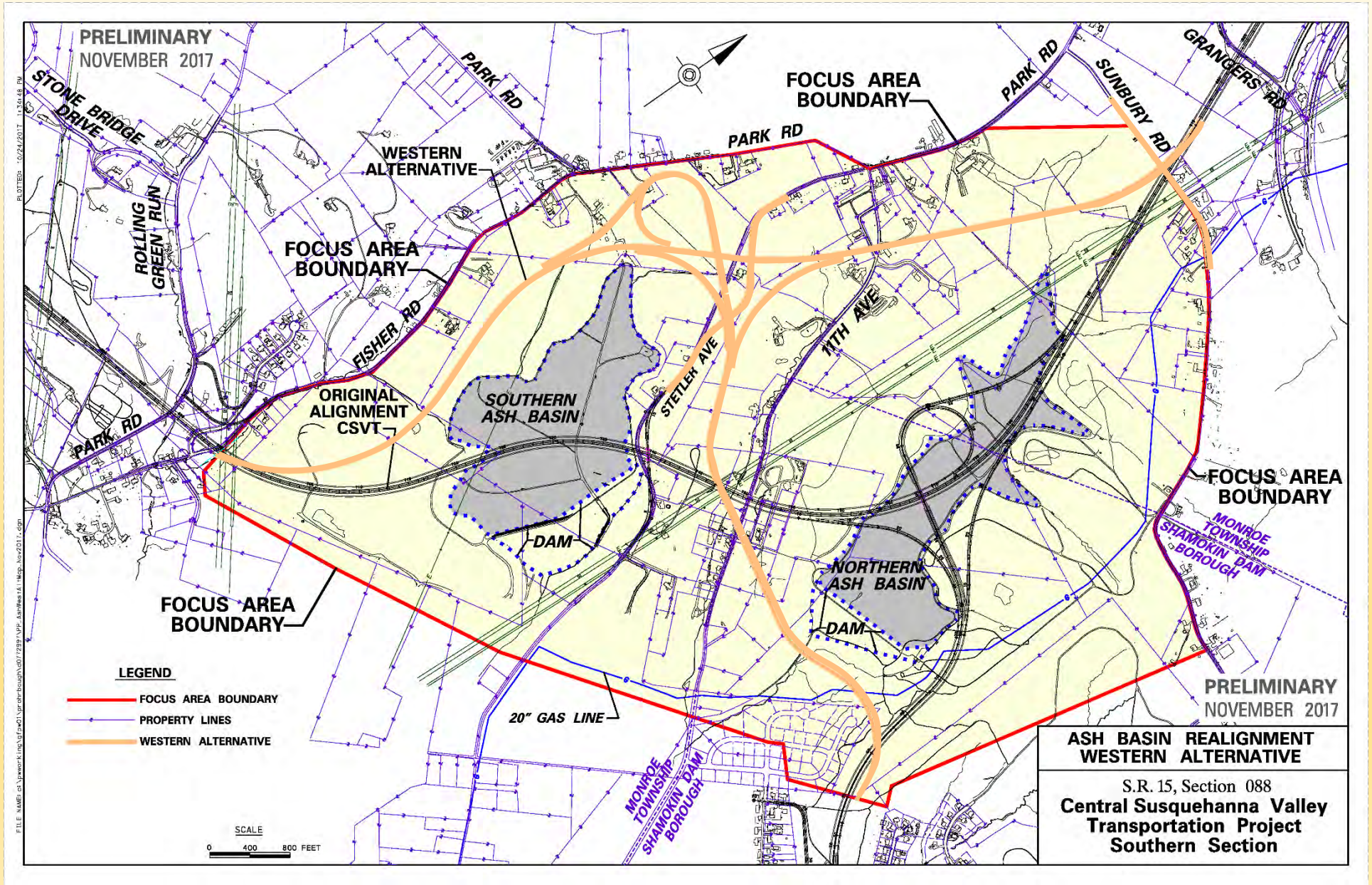
	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Ash Basin Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent or reasonable due to constructability and excessive environmental concerns related to impacting crossing the ash basins.	X	X
Western Alternative	→	Dismissed	Not prudent due to not fully meeting the need of reducing traffic congestion due to length of PA Route 61 Connector. Not reasonable due to excessive impacts to community, wetlands, and agricultural resources.	X	X
Central Alternative	→	Dismissed	Not reasonable due to excessive impacts to community, wetlands, and agricultural resources.		X
Eastern Alternative	→		Eastern Alternative is the only prudent and reasonable alternative for the Ash Basin Focus Area.	ALCAB PREFERRED ALTERNATIVE	

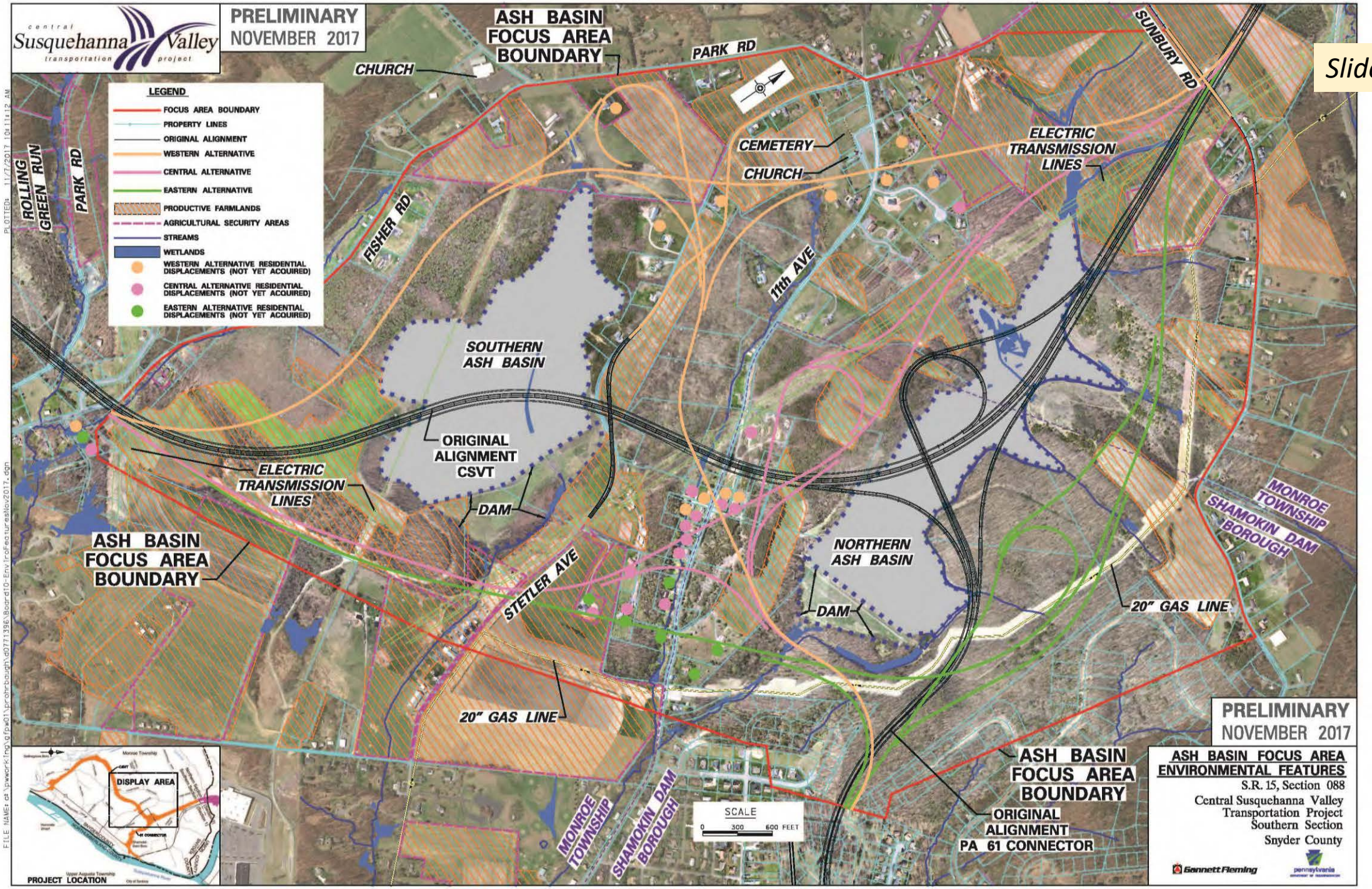
Excerpt from FAR Page 45

Ash Basin Avoidance Alternatives



Western Alternative




central Susquehanna Valley transportation project
PRELIMINARY
NOVEMBER 2017
ASH BASIN FOCUS AREA BOUNDARY
CHURCH
PARK RD
SUNBURY RD
LEGEND
FOCUS AREA BOUNDARY
PROPERTY LINES
ORIGINAL ALIGNMENT
WESTERN ALTERNATIVE
CENTRAL ALTERNATIVE
EASTERN ALTERNATIVE
PRODUCTIVE FARMLANDS
AGRICULTURAL SECURITY AREAS
STREAMS
WETLANDS
WESTERN ALTERNATIVE RESIDENTIAL DISPLACEMENTS (NOT YET ACQUIRED)
CENTRAL ALTERNATIVE RESIDENTIAL DISPLACEMENTS (NOT YET ACQUIRED)
EASTERN ALTERNATIVE RESIDENTIAL DISPLACEMENTS (NOT YET ACQUIRED)
ROLLING GREEN RUN
PARK RD
FISHER RD
CEMETERY
CHURCH
ELECTRIC TRANSMISSION LINES
11th AVE
SOUTHERN ASH BASIN
ORIGINAL ALIGNMENT CSVT
DAM
ELECTRIC TRANSMISSION LINES
ASH BASIN FOCUS AREA BOUNDARY
STETLER AVE
NORTHERN ASH BASIN
DAM
MONROE TOWNSHIP
SHAMOKIN DAM
BOROUGH
20" GAS LINE
20" GAS LINE
DISPLAY AREA
PROJECT LOCATION
SCALE
0 300 600 FEET
MONROE TOWNSHIP
SHAMOKIN DAM
BOROUGH
ASH BASIN FOCUS AREA BOUNDARY
ORIGINAL ALIGNMENT
PA 61 CONNECTOR
PRELIMINARY
NOVEMBER 2017
ASH BASIN FOCUS AREA ENVIRONMENTAL FEATURES
S.R. 15, Section 088
Central Susquehanna Valley Transportation Project
Southern Section
Snyder County
Gannett Fleming
pennsylvania

Western Alternative

	No Change DAM Alternative	Western Alternative	Central Alternative	Eastern Alternative
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**
Residential Displacements	**9**	**17**	**19**	**12**
Wetland Impacts (acres)	**1.6**	**1.8**	**1.6**	**1.1**
Productive Farmland Impacts (acres)	**65.2**	**68.8**	**84.8**	**50.1**

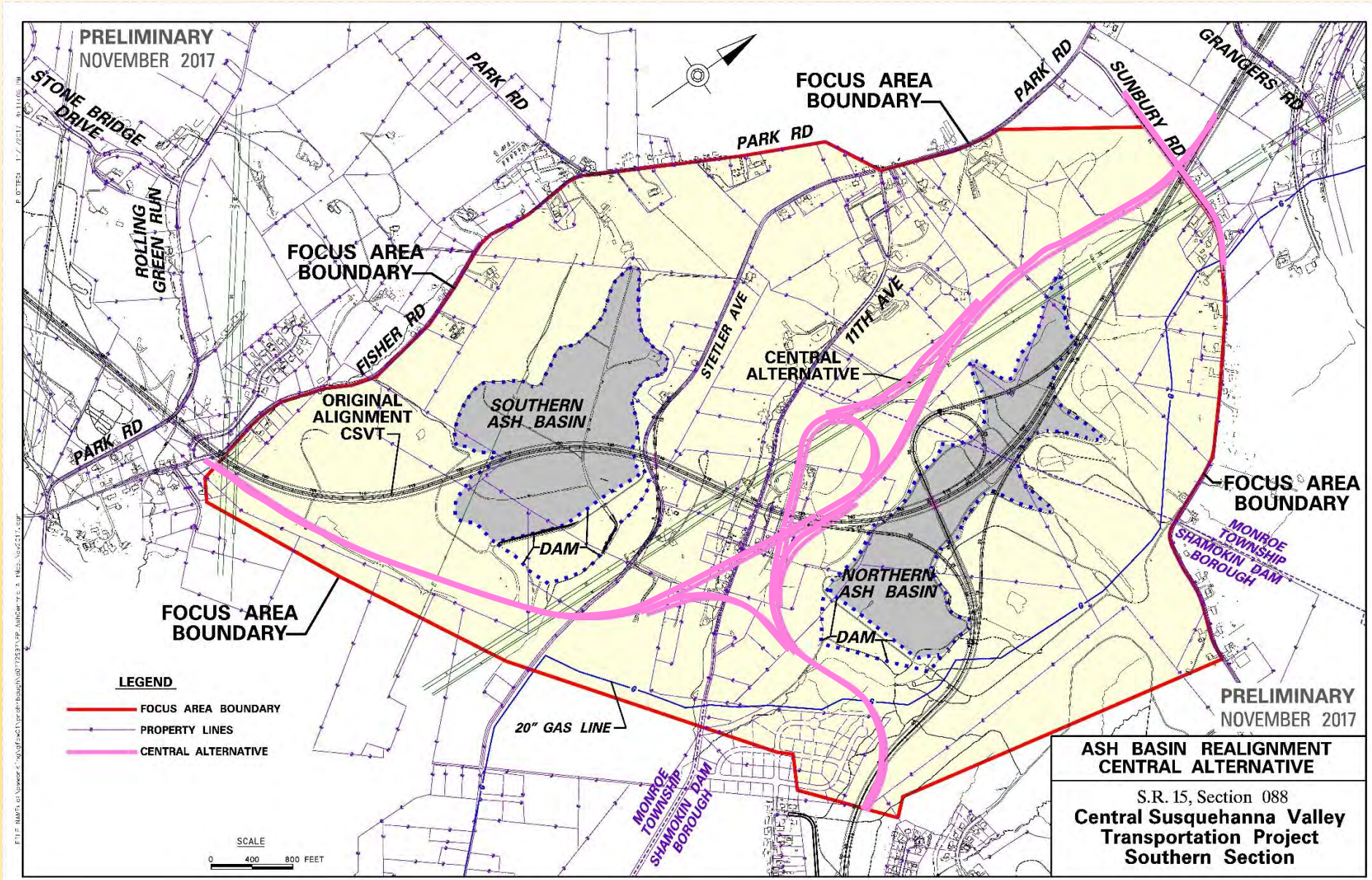
Data from FAR Pages 39 & 42

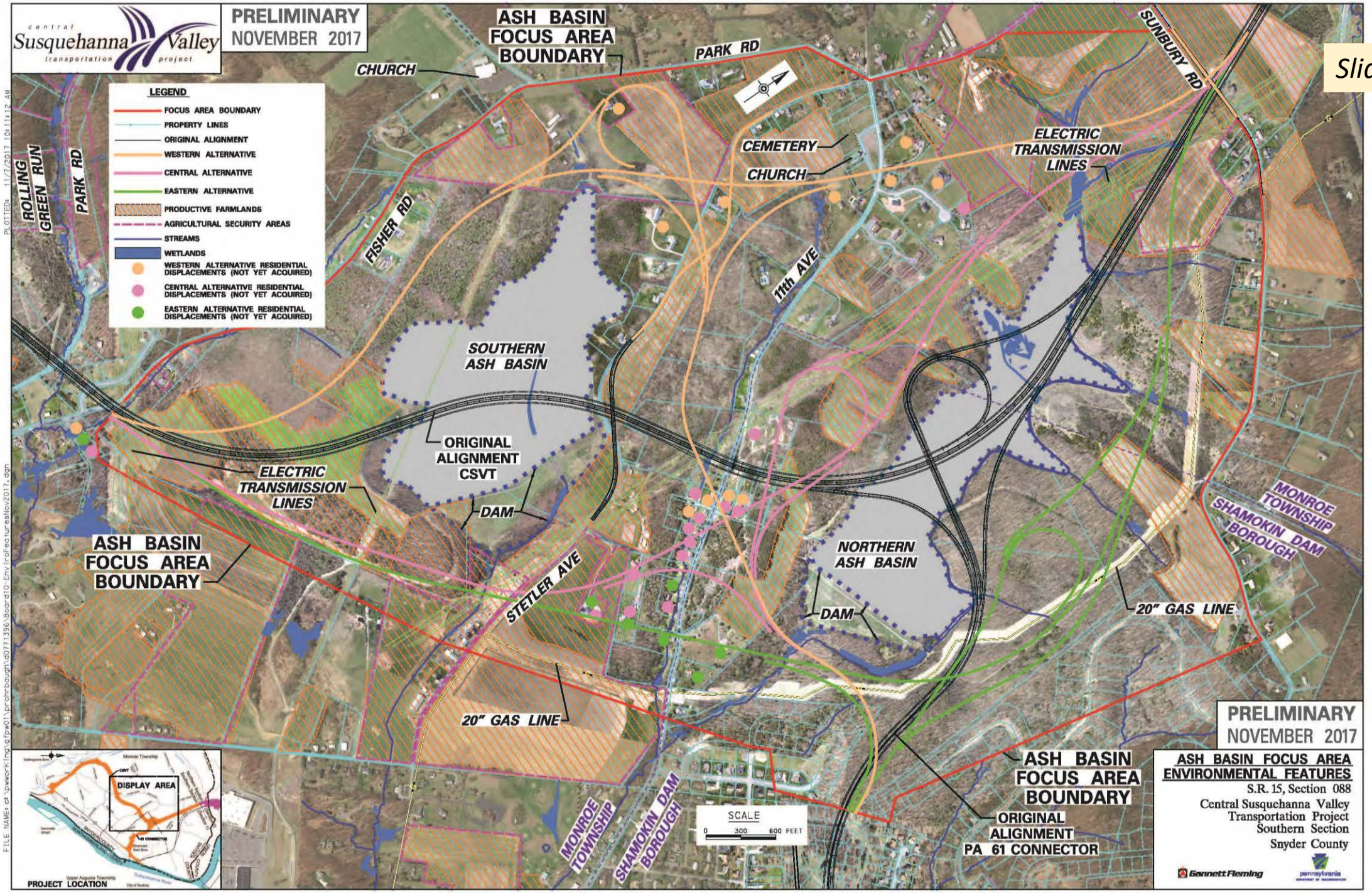
TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Ash Basin Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent or reasonable due to constructability and excessive environmental concerns related to impacting crossing the ash basins	X	X
Western Alternative	→	Dismissed	Not prudent due to not fully meeting the need of reducing traffic congestion due to length of PA Route 61 Connector. Not reasonable due to excessive impacts to community, wetlands, and agricultural resources.	X	X
Central Alternative	→	Dismissed	Not reasonable due to excessive impacts to community, wetlands, and agricultural resources.		X
Eastern Alternative	→		Eastern Alternative is the only prudent and reasonable alternative for the Ash Basin Focus Area.	ALCAB PREFERRED ALTERNATIVE	

Excerpt from FAR Page 45

Central Alternative




central Susquehanna Valley transportation project
PRELIMINARY
NOVEMBER 2017
ASH BASIN FOCUS AREA BOUNDARY
CHURCH
PARK RD
SUNBURY RD
LEGEND
FOCUS AREA BOUNDARY
PROPERTY LINES
ORIGINAL ALIGNMENT
WESTERN ALTERNATIVE
CENTRAL ALTERNATIVE
EASTERN ALTERNATIVE
PRODUCTIVE FARMLANDS
AGRICULTURAL SECURITY AREAS
STREAMS
WETLANDS
WESTERN ALTERNATIVE RESIDENTIAL DISPLACEMENTS (NOT YET ACQUIRED)
CENTRAL ALTERNATIVE RESIDENTIAL DISPLACEMENTS (NOT YET ACQUIRED)
EASTERN ALTERNATIVE RESIDENTIAL DISPLACEMENTS (NOT YET ACQUIRED)
ROLLING GREEN RUN
PARK RD
FISHER RD
CEMETERY
CHURCH
ELECTRIC TRANSMISSION LINES
11th AVE
SOUTHERN ASH BASIN
ORIGINAL ALIGNMENT CSVT
DAM
ELECTRIC TRANSMISSION LINES
ASH BASIN FOCUS AREA BOUNDARY
STETLER AVE
NORTHERN ASH BASIN
DAM
MONROE TOWNSHIP
SHAMOKIN DAM BOROUGH
20" GAS LINE
20" GAS LINE
DISPLAY AREA
PROJECT LOCATION
SCALE
0 300 600 FEET
MONROE TOWNSHIP
SHAMOKIN DAM BOROUGH
ASH BASIN FOCUS AREA BOUNDARY
ORIGINAL ALIGNMENT
PA 61 CONNECTOR
PRELIMINARY
NOVEMBER 2017
ASH BASIN FOCUS AREA ENVIRONMENTAL FEATURES
S.R. 15, Section 088
Central Susquehanna Valley Transportation Project
Southern Section
Snyder County
Gannett Fleming
pennsylvania

Central Alternative

	No Change DAM Alternative	Western Alternative	Central Alternative	Eastern Alternative
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**
Residential Displacements	**9**	**17**	**19**	**12**
Wetland Impacts (acres)	**1.6**	**1.8**	**1.6**	**1.1**
Productive Farmland Impacts (acres)	**65.2**	**68.8**	**84.8**	**50.1**

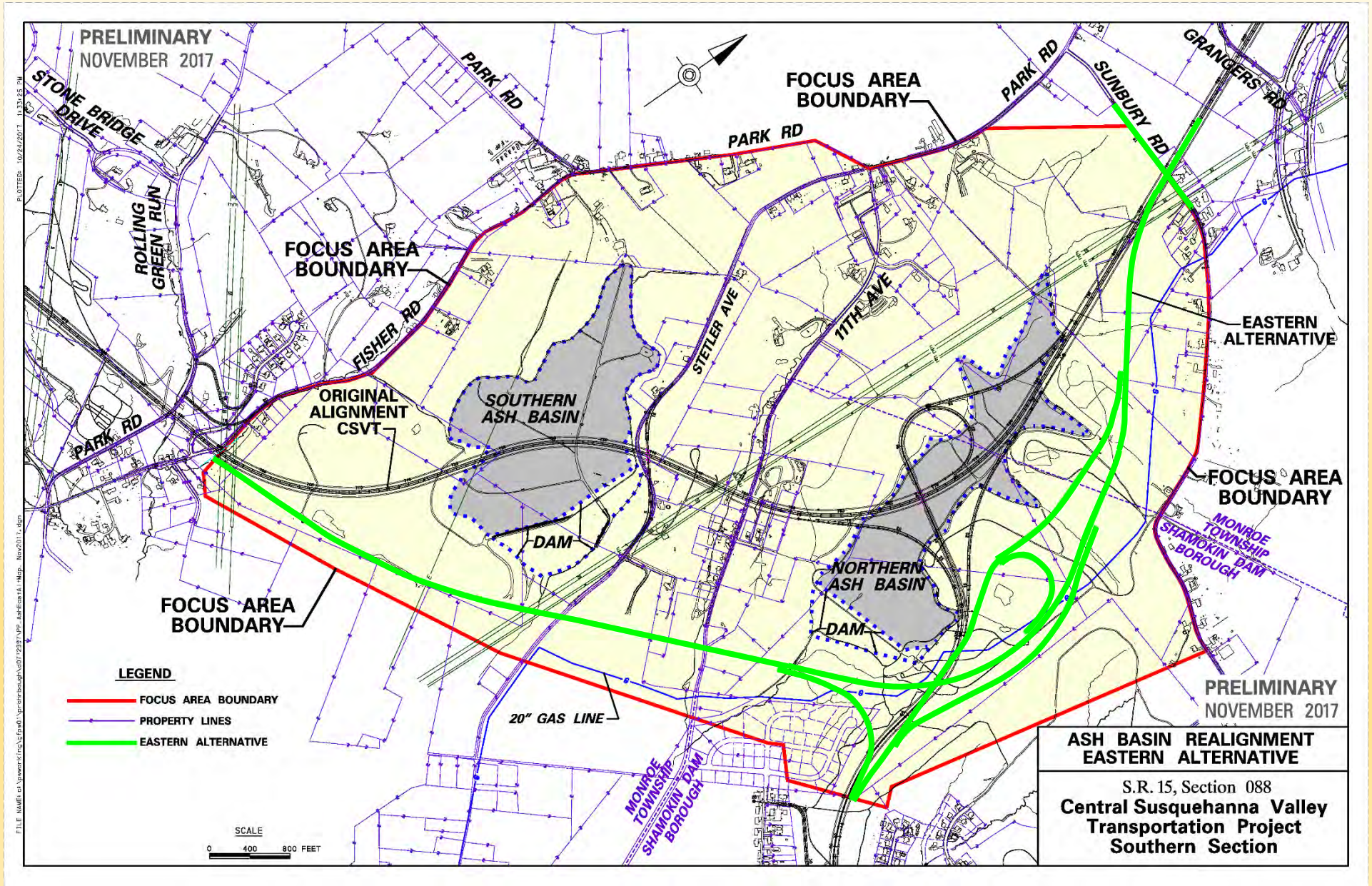
Data from FAR Pages 39 & 42

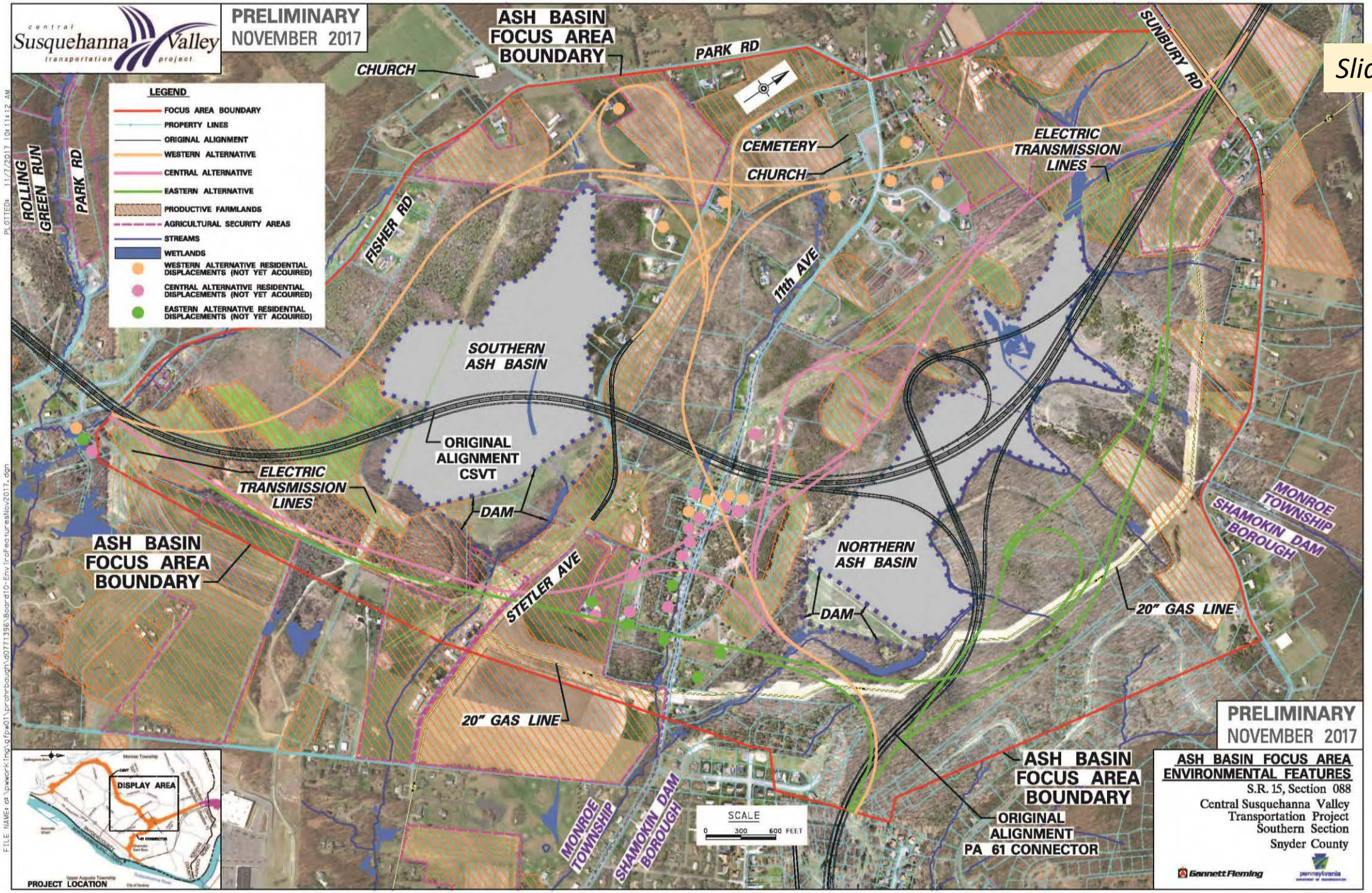
TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Ash Basin Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent or reasonable due to constructability and excessive environmental concerns related to impacting crossing the ash basins.	X	X
Western Alternative	→	Dismissed	Not prudent due to not fully meeting the need of reducing traffic congestion due to length of PA Route 61 Connector. Not reasonable due to excessive impacts to community, wetlands,	X	X
Central Alternative	→	Dismissed	Not reasonable due to excessive impacts to community, wetlands, and agricultural resources.		X
Eastern Alternative	→		Eastern Alternative is the only prudent and reasonable alternative for the Ash Basin Focus Area.	ALCAB PREFERRED ALTERNATIVE	

Excerpt from FAR Page 45

Eastern Alternative




central Susquehanna Valley transportation project
PRELIMINARY
NOVEMBER 2017
ASH BASIN FOCUS AREA BOUNDARY
CHURCH
PARK RD
SUNBURY RD
LEGEND
FOCUS AREA BOUNDARY
PROPERTY LINES
ORIGINAL ALIGNMENT
WESTERN ALTERNATIVE
CENTRAL ALTERNATIVE
EASTERN ALTERNATIVE
PRODUCTIVE FARMLANDS
AGRICULTURAL SECURITY AREAS
STREAMS
WETLANDS
WESTERN ALTERNATIVE RESIDENTIAL DISPLACEMENTS (NOT YET ACQUIRED)
CENTRAL ALTERNATIVE RESIDENTIAL DISPLACEMENTS (NOT YET ACQUIRED)
EASTERN ALTERNATIVE RESIDENTIAL DISPLACEMENTS (NOT YET ACQUIRED)
ROLLING GREEN RUN
PARK RD
FISHER RD
CEMETERY
CHURCH
ELECTRIC TRANSMISSION LINES
11th AVE
SOUTHERN ASH BASIN
ORIGINAL ALIGNMENT CSVT
DAM
ELECTRIC TRANSMISSION LINES
ASH BASIN FOCUS AREA BOUNDARY
STETLER AVE
NORTHERN ASH BASIN
DAM
MONROE TOWNSHIP
SHAMOKIN DAM
BOROUGH
20" GAS LINE
20" GAS LINE
DISPLAY AREA
PROJECT LOCATION
SCALE
0 300 600 FEET
MONROE TOWNSHIP
SHAMOKIN DAM
BOROUGH
ASH BASIN FOCUS AREA BOUNDARY
ORIGINAL ALIGNMENT
PA 61 CONNECTOR
PRELIMINARY
NOVEMBER 2017
ASH BASIN FOCUS AREA ENVIRONMENTAL FEATURES
S.R. 15, Section 088
Central Susquehanna Valley Transportation Project
Southern Section
Snyder County
Gannett Fleming
pennsylvania

Eastern Alternative

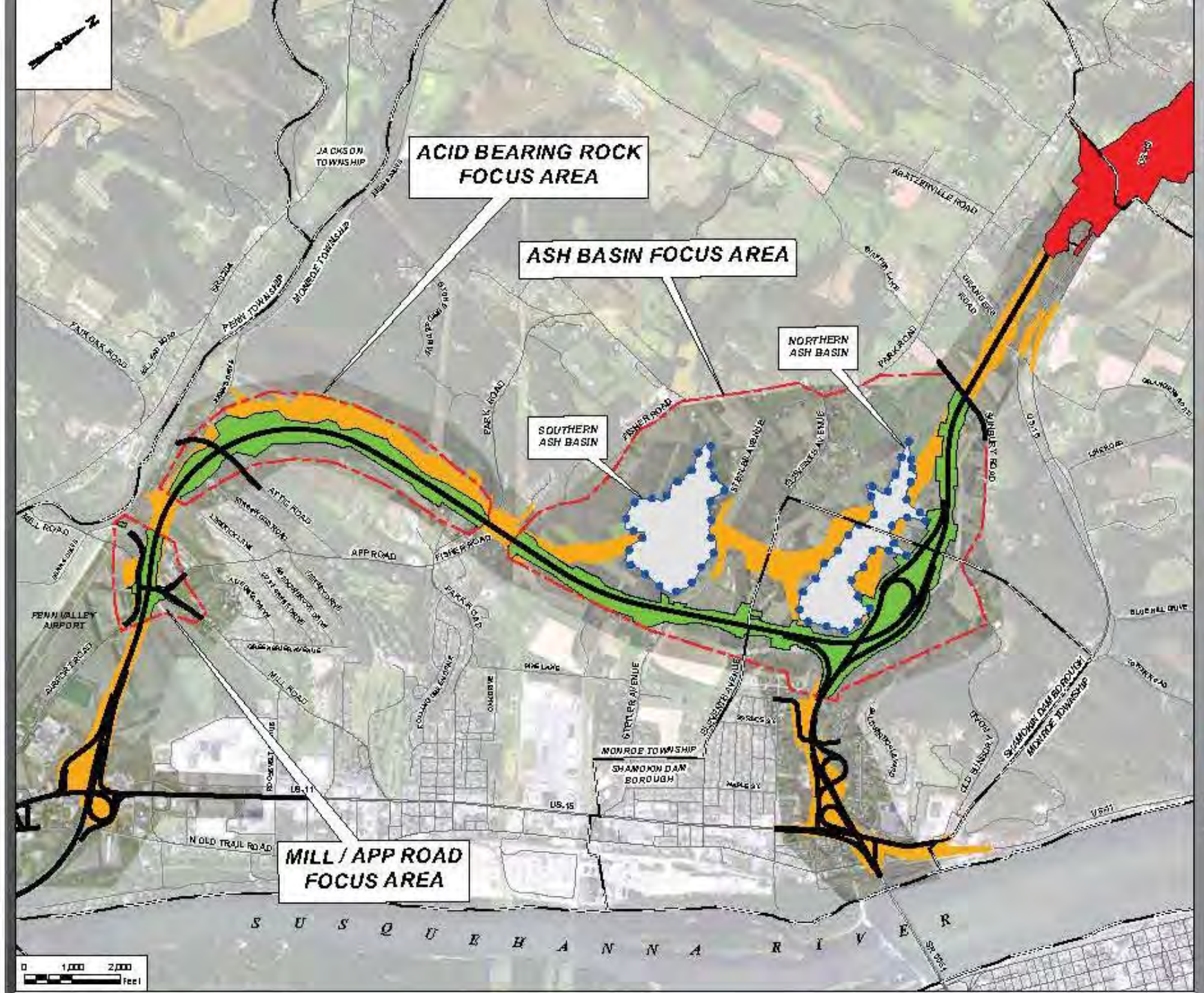
	No Change DAM Alternative	Western Alternative	Central Alternative	Eastern Alternative
PA Route 61 Connector Usage vs. No Change DAM Alternative		**30% less traffic removed from existing road network**	**10% more traffic removed from existing road network**	**30% more traffic removed from existing road network**
Residential Displacements	**9**	**17**	**19**	**12**
Wetland Impacts (acres)	**1.6**	**1.8**	**1.6**	**1.1**
Productive Farmland Impacts (acres)	**65.2**	**68.8**	**84.8**	**50.1**

Data from FAR Pages 39 & 42

TABLE 5
EVALUATION OF FINAL DESIGN FOCUS AREA ALTERNATIVES

	After ALCAB Approval (May 8, 2006)	Conclusion	Notes	Reason for Dismissal	
				Not Prudent	Not Reasonable
Ash Basin Focus Area Alternatives					
DA Modified (DAM)	→	Dismissed	Not prudent or reasonable due to constructability and excessive environmental concerns related to impacting crossing the ash basins.	X	X
Western Alternative	→	Dismissed	Not prudent due to not fully meeting the need of reducing traffic congestion due to length of PA Route 61 Connector. Not reasonable due to excessive impacts to community, wetlands, and agricultural resources.	X	X
Central Alternative	→	Dismissed	Not reasonable due to excessive impacts to community, wetlands, and agricultural		X
Eastern Alternative	→		Eastern Alternative is the only prudent and reasonable alternative for the Ash Basin Focus Area.	ALCAB PREFERRED ALTERNATIVE	

Excerpt from FAR Page 45



FARMLAND ASSESMENT REPORT

Slide 72

SOUTHERN SECTION
SR-0015 SECTION 088

LEGEND

- Ash Basin
- Focus Areas
- Local Roads
- State Roads
- Municipalities
- River Crossing 5 (RC5) Alternative (Under Construction)
- DAM Approved by ALCAB (05/08/2006)

ALCAB Preferred Alternative

- LOD (01/17/2019)
- Centerline

pennsylvania
DEPARTMENT OF TRANSPORTATION

SKELLY and LOY, Inc. | October 2019

SOUTHERN SECTION

EXHIBIT 13

FAR Page 46

Farmland Assessment Methodology

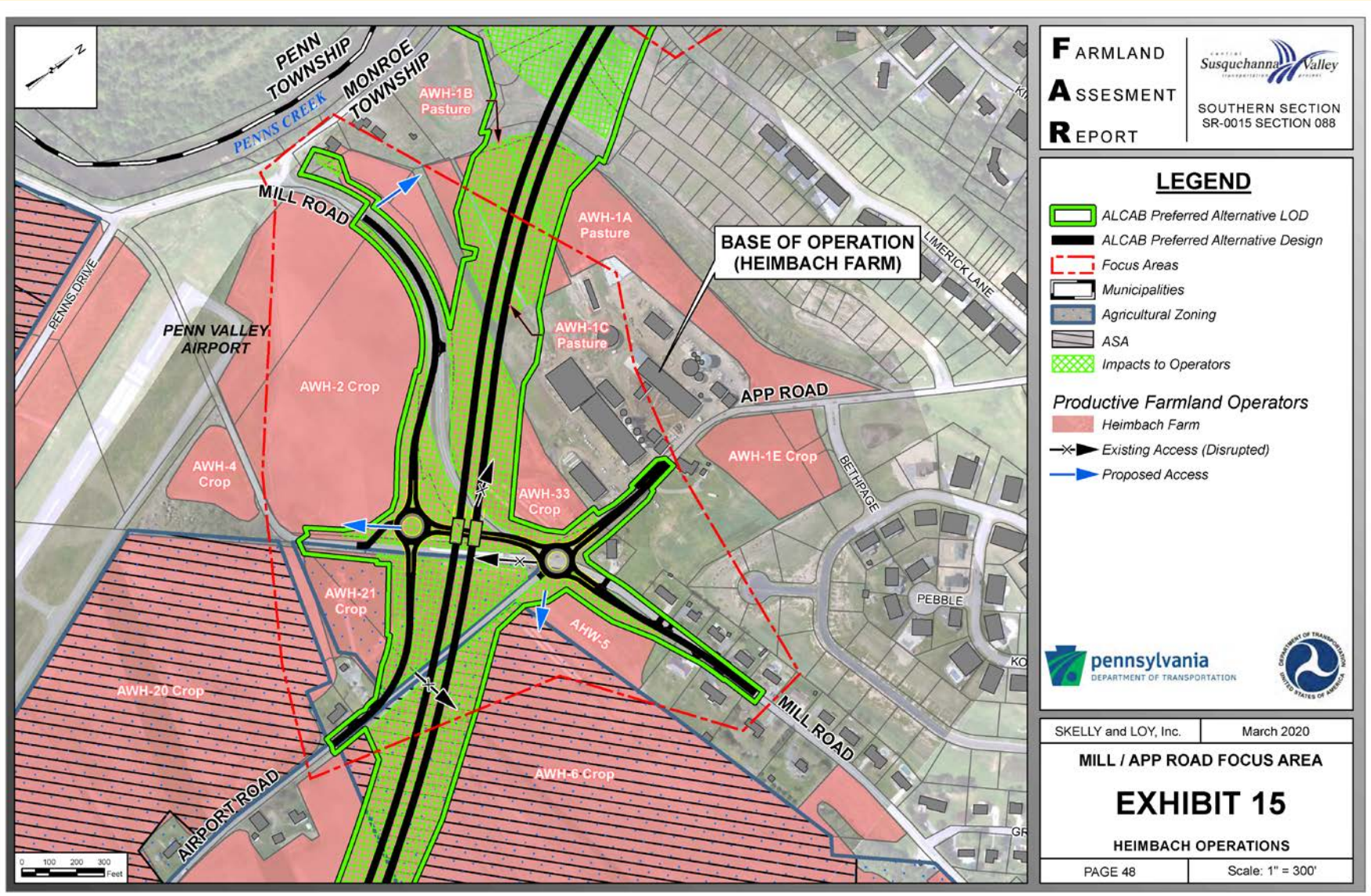
- Data Collection
  - Preliminary data collection
    - Snyder County Planning Department
    - Monroe Township and Shamokin Dam Borough
    - Pennsylvania Department of Agriculture
    - USDA Natural Resource Conservation Service
  - Detailed data collection
    - Interview farm operators
    - Farm operator coordination meetings

Farmland Assessment Methodology

- Farmland Legislation
  - PA Act 100 of 1979
  - PA Act 43 of 1981
    - Productive agricultural land

    "The production for commercial purposes of crops, livestock, and livestock products, including the processing or retail marketing of such crops, livestock, or livestock products if more than 50% of such processed or merchandised products are produced by the farm operator."

Farmland Assessment Methodology

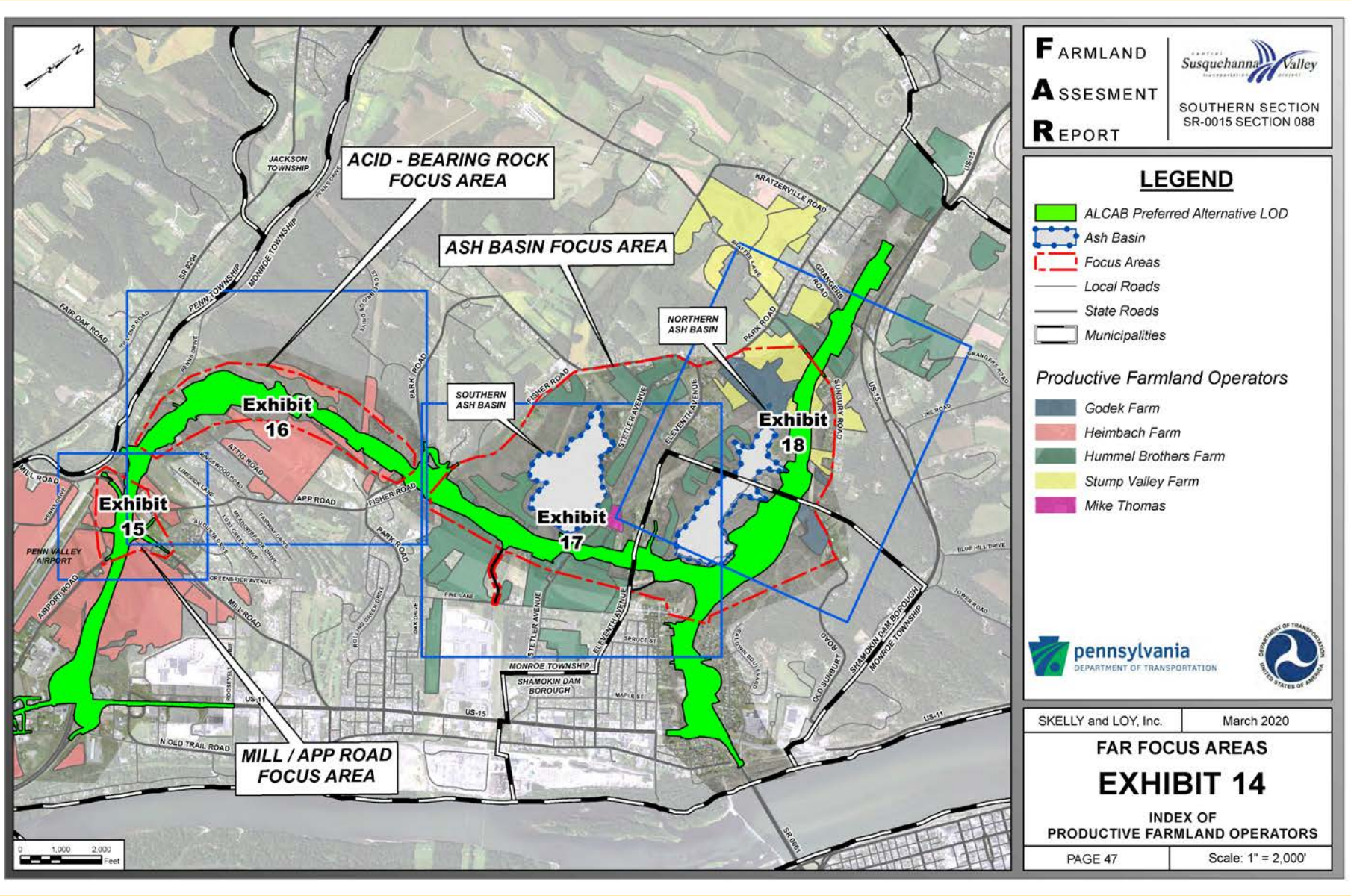


Productive Farmland Operators

Four farm operations include:

- A.W. (Albert) Heimbach and Sons – Dairy (and Beef) Farm Producer
- Hummel Brothers Farms (Jon and Kyle Hummel) – Beef Cattle and Crop Producers
- Godek Farms – Cattle and Crop Producer
- Stump Valley Farm (Lavere Stump and Family) – Organic Dairy Producer

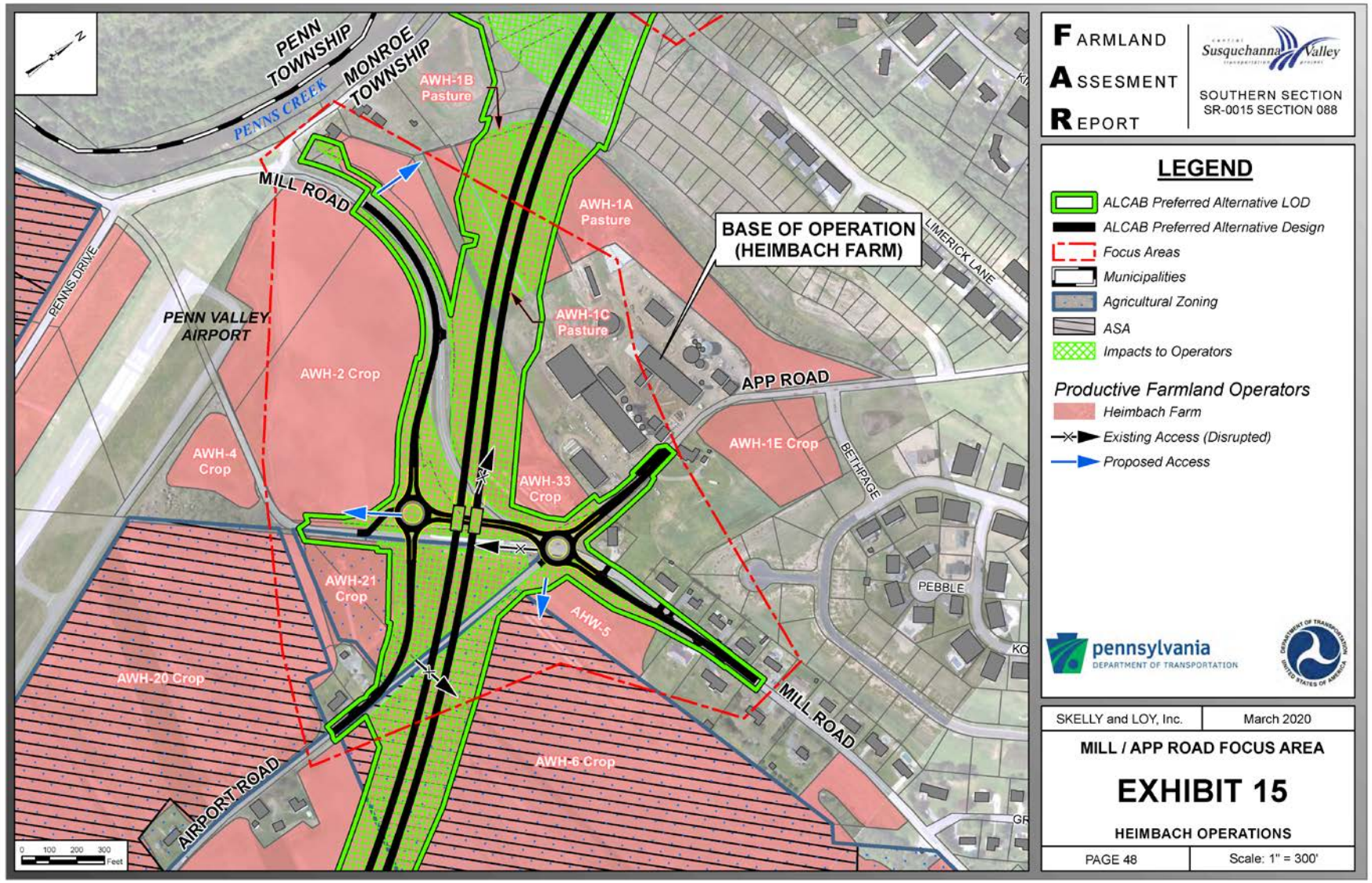
ALCAB Preferred Alternative



Albert W. Heimbach
Dairy and Beef Farm Producer

- Mill/App Road Focus Area contains the base of operations
  - Total leased land is 1,200 acres
  - Total operation size with owned land is 1,485 acres
    - (80 acres are within the Mill/App Road Focus Area and Acid-Bearing Rock Focus Area)
- Livestock: 331 Holstein cows, 281 Holstein replacement heifers and approximately 180 Holstein steers
- Crops: Corn, wheat, soybeans, hay
- Building impacts: none

Albert W. Heimbach
Dairy and Beef Farm Producer



FAR Page 48

A.W. (Albert) Heimbach
Dairy and Beef Farm Producer

TABLE 7
A. W. HEIMBACH AND SONS
IMPACTED FARM PARCELS – MILL/APP ROAD FOCUS AREA

Column A	Column B	Column C*	Column D	Column E	Column F	Column G	Column H
FAR Parcel ID No.	Parcel Owner	Existing Productive Agricultural Land	Productive Agricultural Land Impact				Remaining Land Available for Production (Acres)
			Lost to Right-of-Way (Direct) (Acres)	Left Impractical to Farm (Acres)	Left Inaccessible (Acres)	Total Productive Agricultural Impact (Acres)	
AWH – 1B	Heimbach	2.5	1.2	-	-	1.2	0.3**
AWH – 1C	Heimbach	1.5	1.0	-	-	1.0	0.5
AWH - 2	Heimbach	18.7	3.4	-	-	3.4	15.3
AWH - 5	Heimbach	2.5	0.9	-	-	0.9	1.6
AWH - 6	Heimbach	138.6	2.0	-	-	2.0	123.9***
AWH - 21	Aqua Pennsylvania, Inc.	5.6	3.4	-	-	3.4	2.2
AWH - 33	Heimbach	7.8	4.4	-	-	4.4	3.4
Subtotal – Operator-Owned Land			16.3	0.0	0.0	16.3	--
Total Acreage of Impacted Parcels			**16.3**			**16.3**	

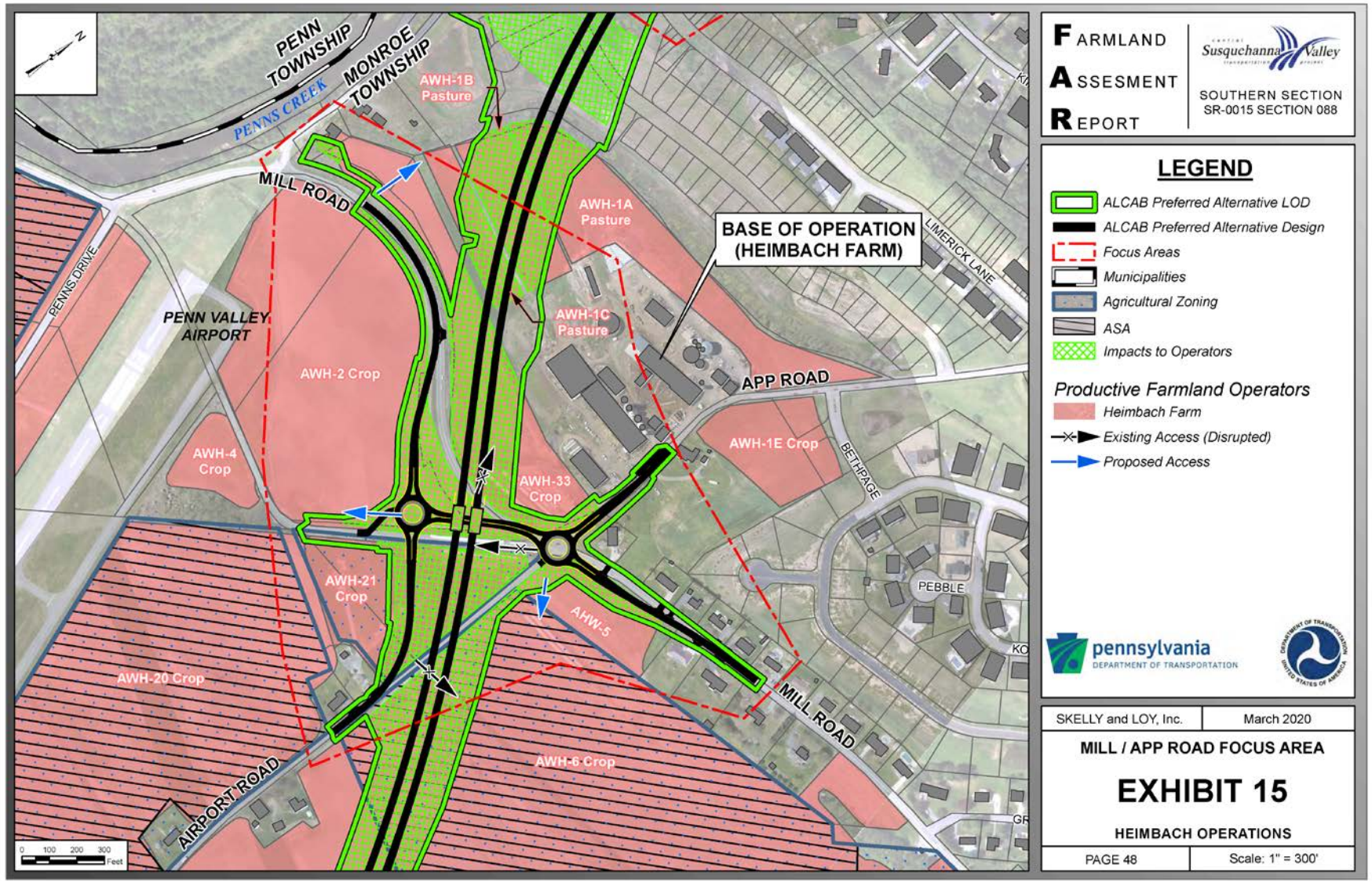
Note: Total productive agricultural land impact (Column G), is derived from Column C minus Columns D, E, and F. The remaining land available for production is shown in Column H.

* *Productive agricultural land totals in Column C represent the total acreage of the farm parcel when intersected by the focus area boundary.*

** *FAR Parcel AWH-1B is intersected by the Mill/App Road Focus Area boundary. Direct acres lost to right-of-way outside the Mill/App Road Focus Area totals 1.0 acre. Rationale (2.5ac existing, minus 1.2 ac direct inside focus area, minus 1.0 ac outside focus area, equals 0.3 ac remaining). As such, the remaining land for available production for the entire parcel is 0.3acre to FAR parcel AWH-1B.*

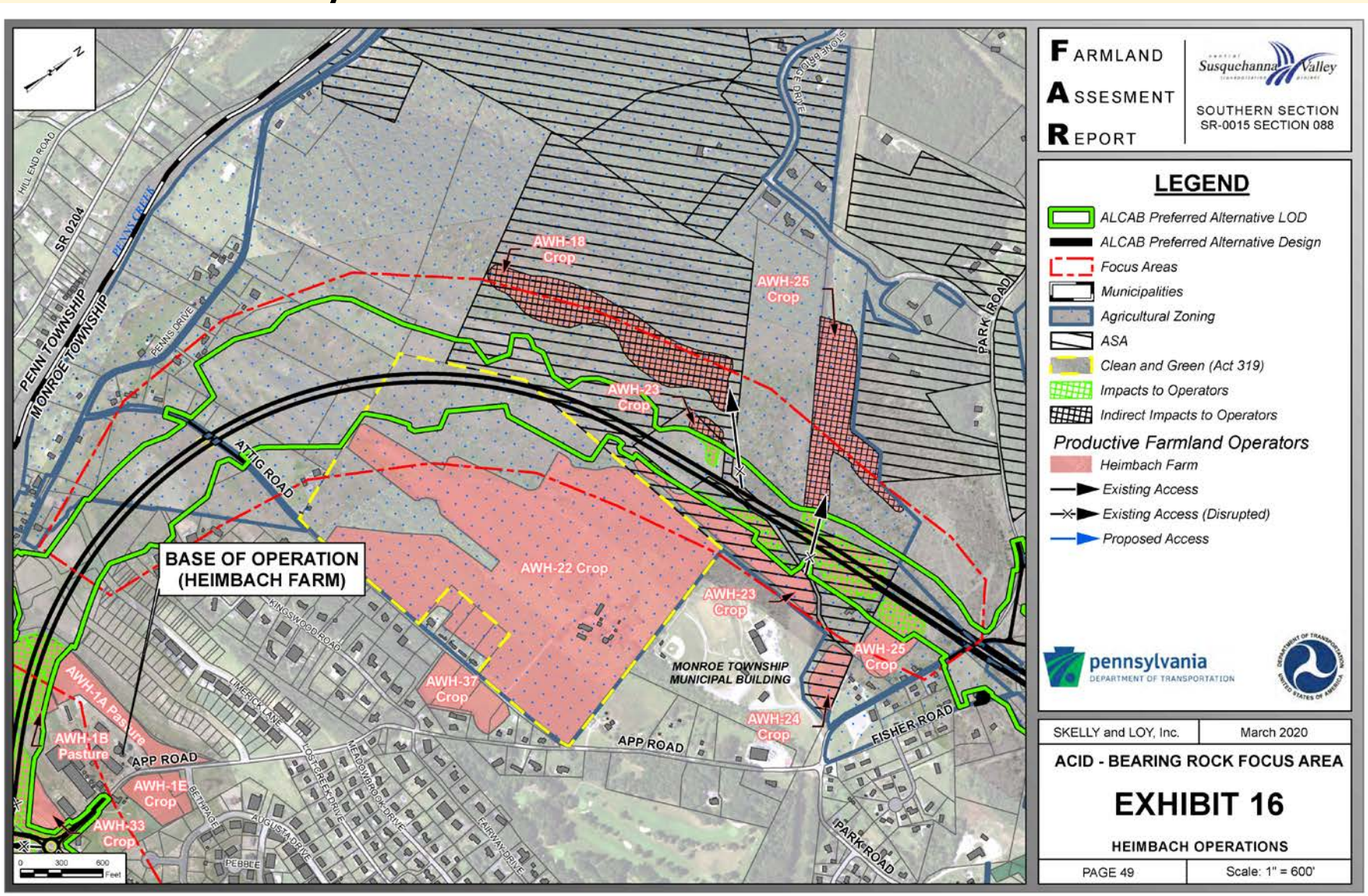
*** *FAR Parcel AWH-6 is intersected by the Mill/App Road Focus Area boundary. Direct acres lost to right-of-way outside the Mill/App Road Focus Area totals 12.7 acres. Rationale (138.6 ac existing, minus 2.0 ac direct inside focus area, minus 12.7 acre outside focus area, equals 123.9ac}. As such, the remaining land for available production for the entire parcel is 123.9 acres to FAR parcel AWH-6.*

Albert W. Heimbach
Dairy and Beef Farm Producer



FAR Page 48

A.W. (Albert) Heimbach
Dairy and Beef Farm Producer



A.W. (Albert) Heimbach
Dairy and Beef Farm Producer

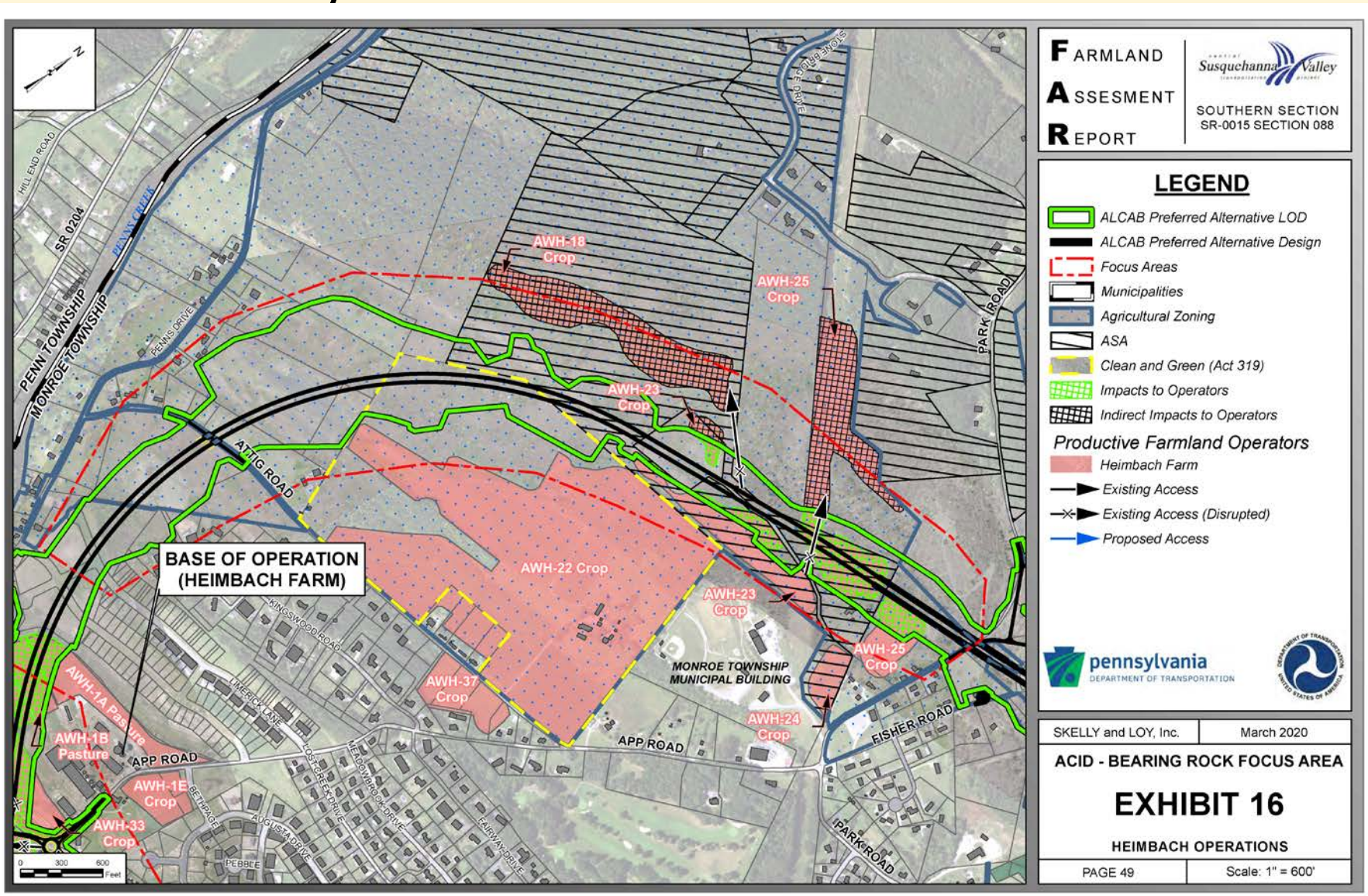
TABLE 8
A. W. HEIMBACH AND SONS
IMPACTED FARM PARCELS – ACID-BEARING ROCK FOCUS AREA

Column A	Column B	Column C*	Column D	Column E	Column F	Column G	Column H
			Productive Agricultural Land Impact				
FAR Parcel ID No.	Parcel Owner	Existing Productive Agricultural Land	Lost to Right-of-Way (Direct) (Acres)	Left Impractical to Farm (Acres)	Left Inaccessible (Acres)	Total Productive Agricultural Impact (Acres)	Remaining Land Available for Production (Acres)
AWH - 18	App	11.9	0.0	-	11.9	11.9	0.0
AWH - 23	App	12.7	2.1	-	0.7	2.8	9.9
AWH - 25	Debo	20.9	6.3	-	9.9	16.2	4.7
Subtotal – Rented Land			8.4	0.0	22.5	30.9	–
Total Acreage of Impacted Parcels			8.4	0.0	22.5	30.9	

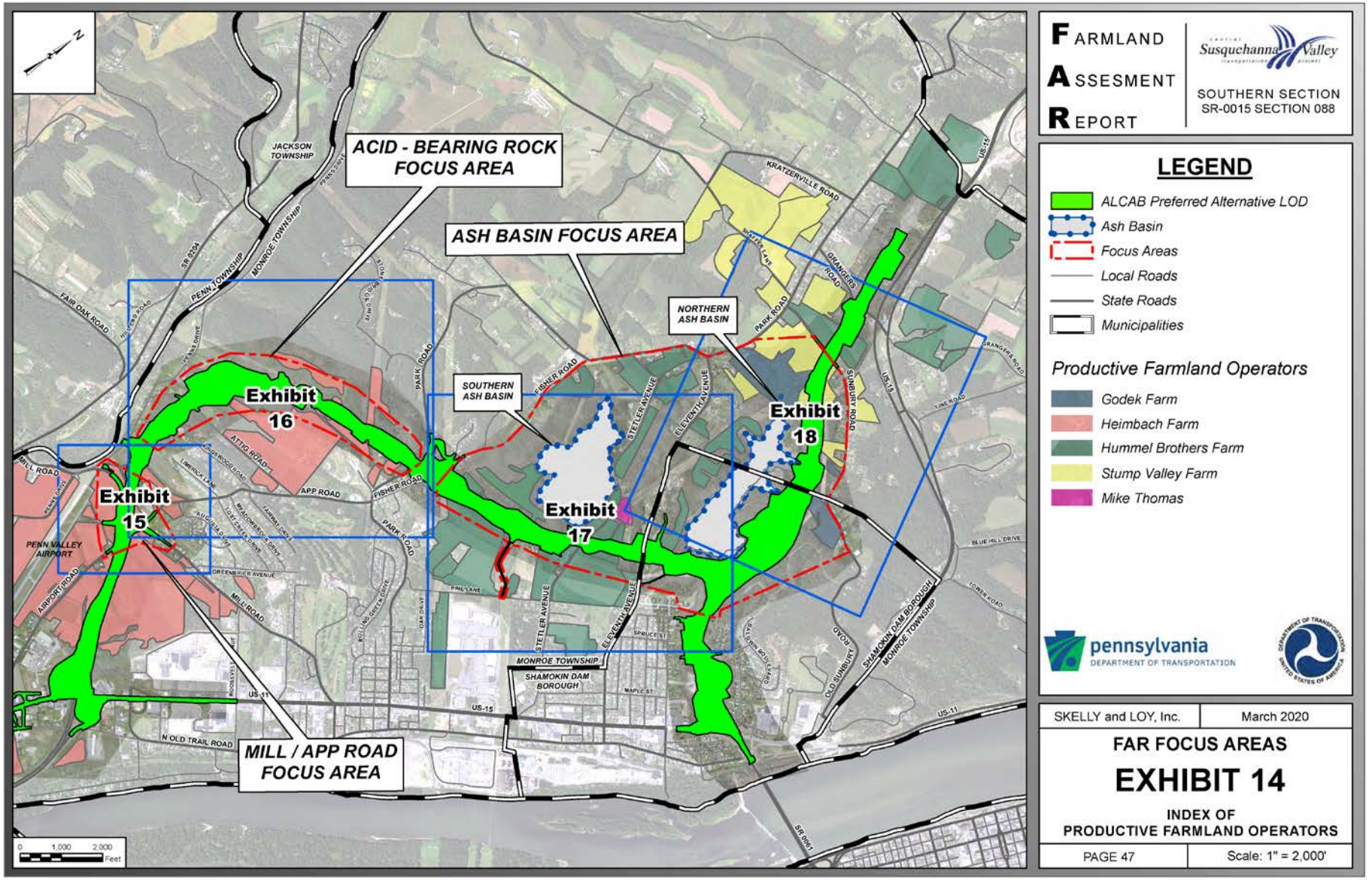
Note: Total productive agricultural land impact (Column G), is derived from Column C minus Columns D, E, and F. The remaining land available for production is shown in Column H.

* *Productive agricultural land totals in Column C represent the total acreage of the farm parcel when intersected by the focus area boundary.*

A.W. (Albert) Heimbach
Dairy and Beef Farm Producer



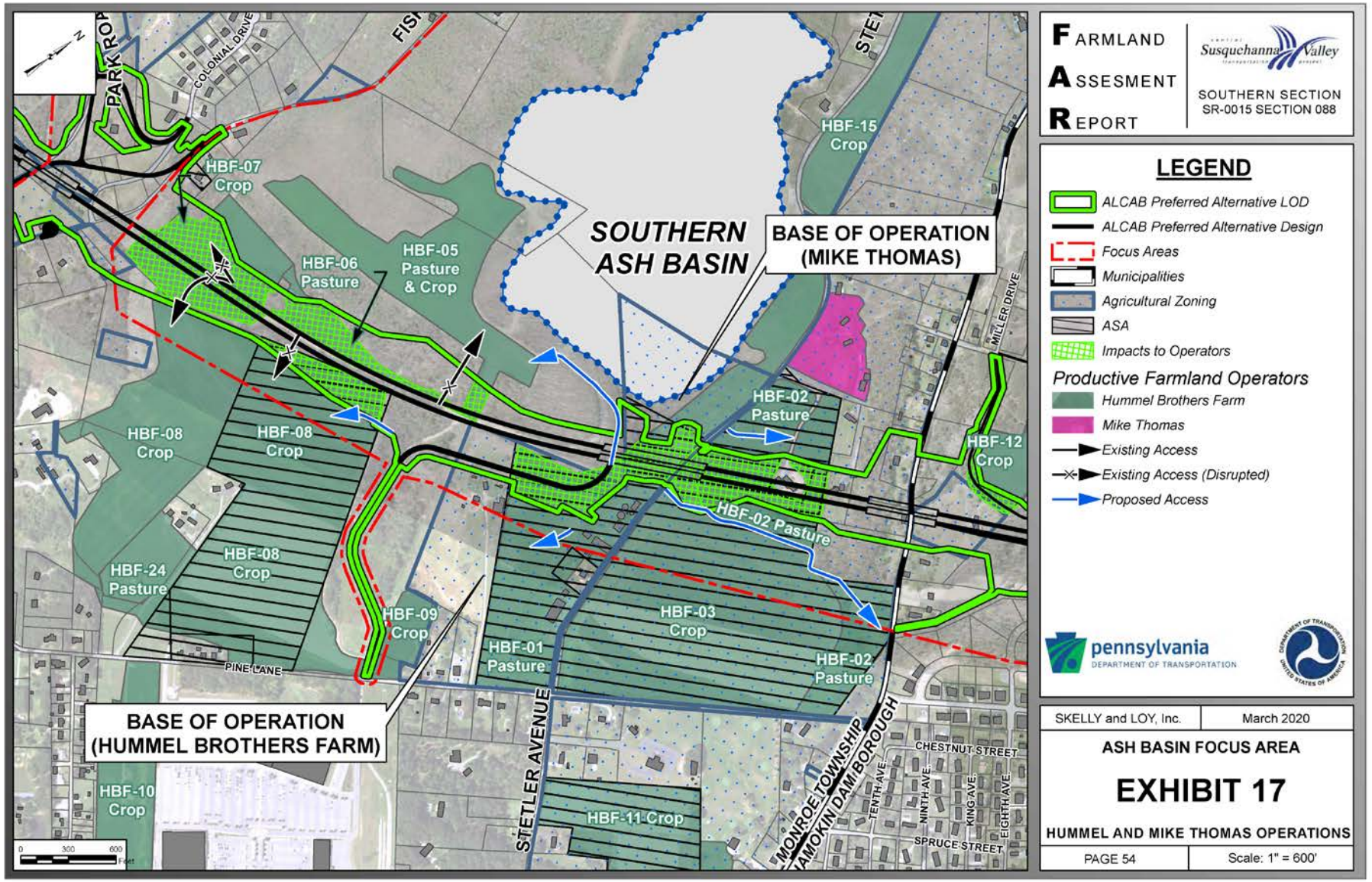
ALCAB Preferred Alternative



Hummel Brothers Farms *(Jon and Kyle Hummel)* Beef and Crop Producers

- Ash Basin Focus Area contains the base of farm operation
  - 300 acres are owned
  - 700 acres are leased
    - (170 acres are located in the Ash Basin Focus Area)
- 65-75 cow/calf pairs – Snyder County Operation
- 125,000 turkeys – Northumberland County Operation
- 150-200 rabbits
- Crops: Corn, soybeans, wheat, small grains, tomatoes, potatoes, hay
- Pioneer seed dealer
- Residential Displacement: Kyle Hummel's residence

Hummel Brothers Farms *(Jon and Kyle Hummel)*
Beef and Crop Producers



FAR Page 54

Hummel Brothers Farms *(Jon and Kyle Hummel)*

Beef and Crop Producers

TABLE 10
HUMMEL BROTHERS FARMS
IMPACTED FARM PARCELS – ASH BASIN FOCUS AREA

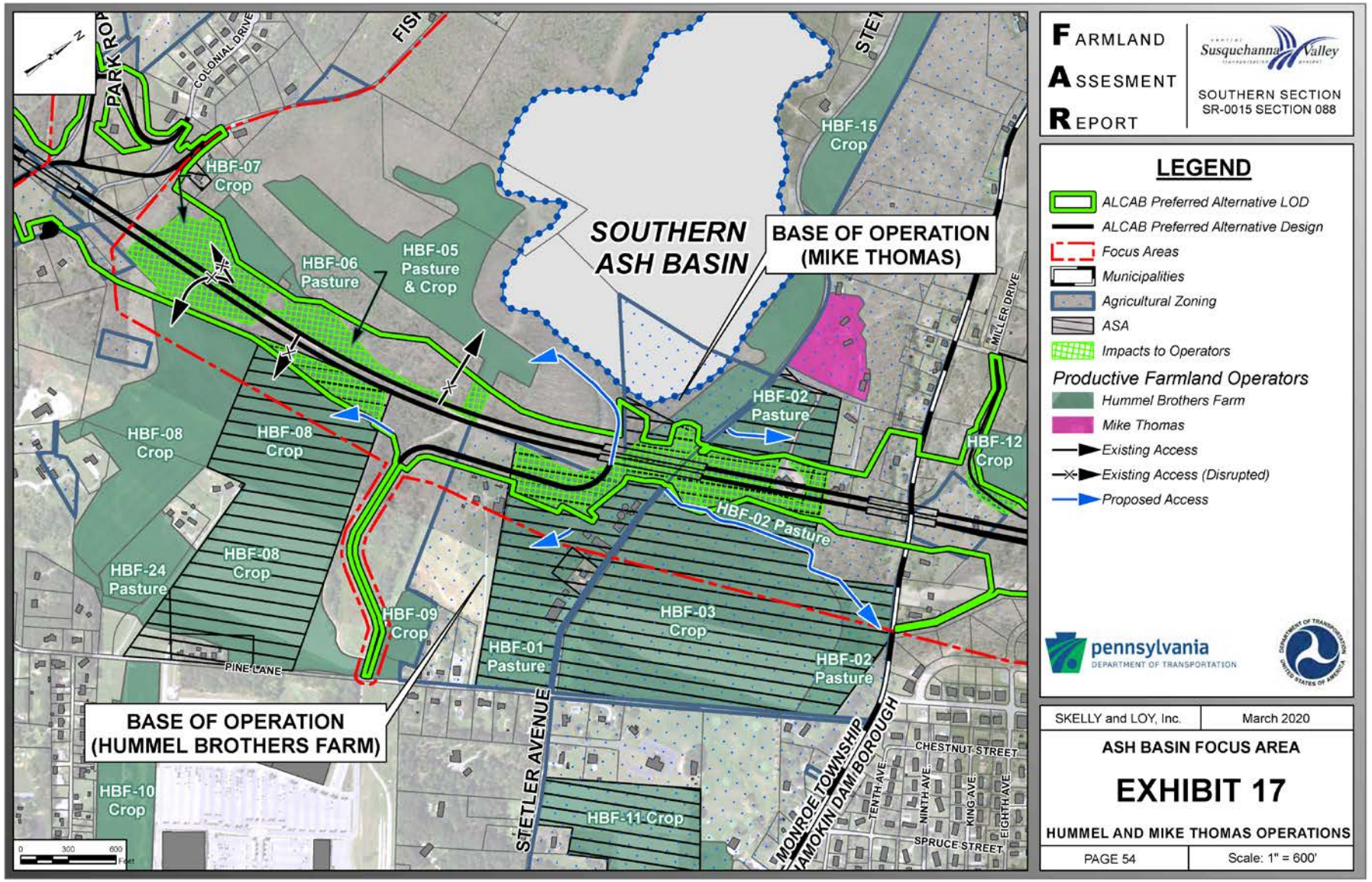
Column A	Column B	Column C*	Column D	Column E	Column F	Column G	Column H
FAR Parcel ID No.	Parcel Owner	Existing Productive Agricultural Land	Productive Agricultural Land Impact				Remaining Land Available for Production (Acres)
			Lost to Right-of-Way (Direct) (Acres)	Left Impractical to Farm (Acres)	Left Inaccessible (Acres)	Total Productive Agricultural Impact (Acres)	
HBF-01	Hummel	30.5	6.6	0.0	0.0	6.6	23.9
HBF-02	Hummel	20.2	5.4	0.0	0.0	5.4	14.8
HBF-03	Hummel	40.1	0.8	0.0	0.0	0.8	39.3
HBF-08	Hummel Farm Trust and Morningstar Village	60.9	2.9	0.0	0.0	2.9	58.0
Subtotal – Operator-Owned Land			15.7	0.0	0.0	15.7	--
HBF-05	Talen Energy	18.8	0.6	0.0	0.0	0.6	18.2
HBF-06	Talen Energy	17.9	3.5	0.0	0.0	3.5	14.4
HBF-07	Talen Energy	11.0	8.3	0.0	0.0	8.3	2.7
HBF-12	Talen Energy	9.1	1.0	0.0	0.0	1.0	8.1
Subtotal – Rented Land			13.4	0.0	0.0	13.4	--
Total Acreage of Impacted Parcels			**29.1**	**0.0**	**0.0**	**29.1**	

Note: Total productive agricultural land impact (Column G), is derived from Column C minus Columns D, E, and F. The remaining land available for production is shown in Column H.

* *Productive agricultural land totals in Column C represent the total acreage of the farm parcel when intersected by the focus area boundary.*

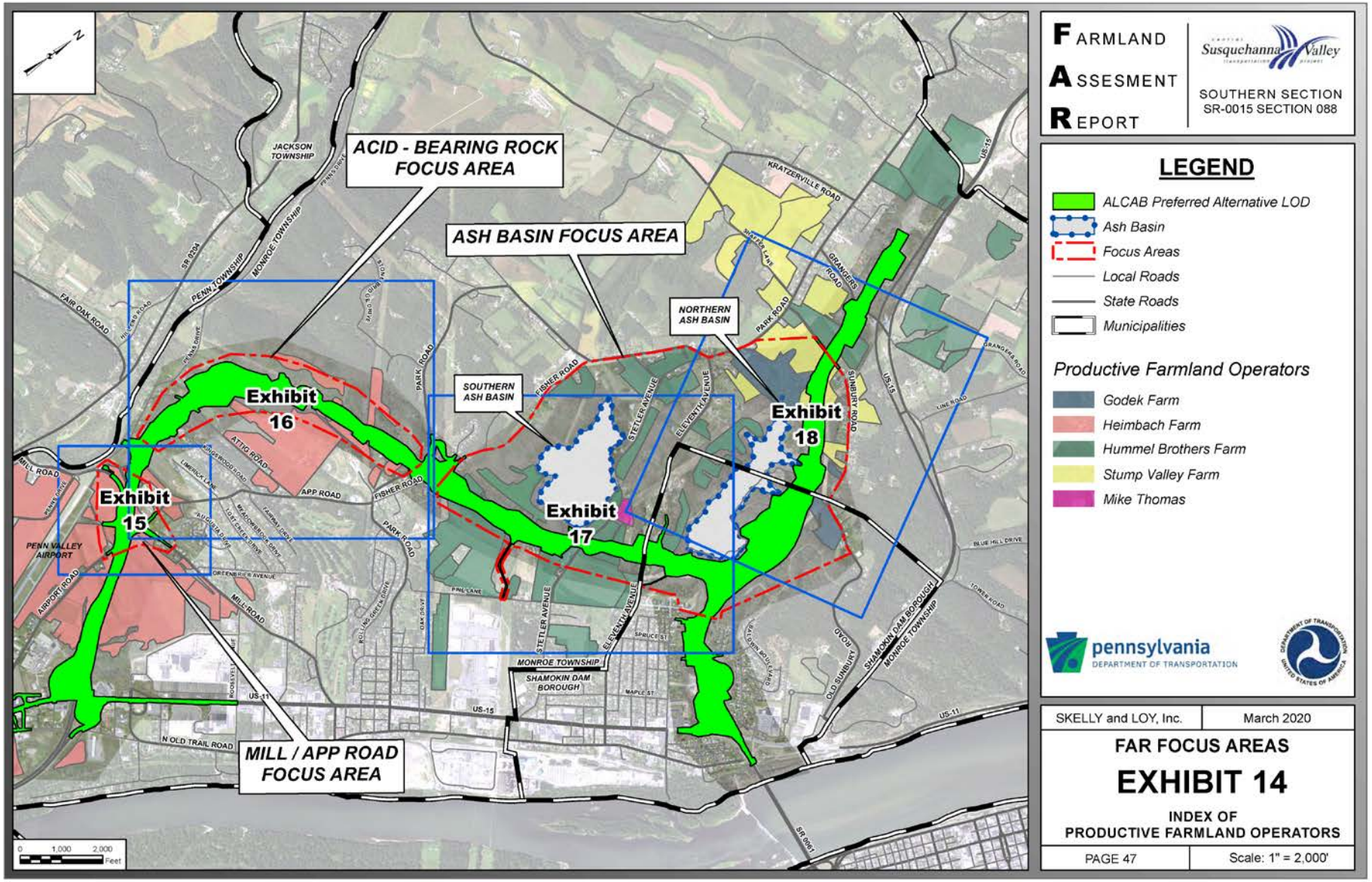
FAR Page 57

Hummel Brothers Farms *(Jon and Kyle Hummel)*
Beef and Crop Producers



FAR Page 54

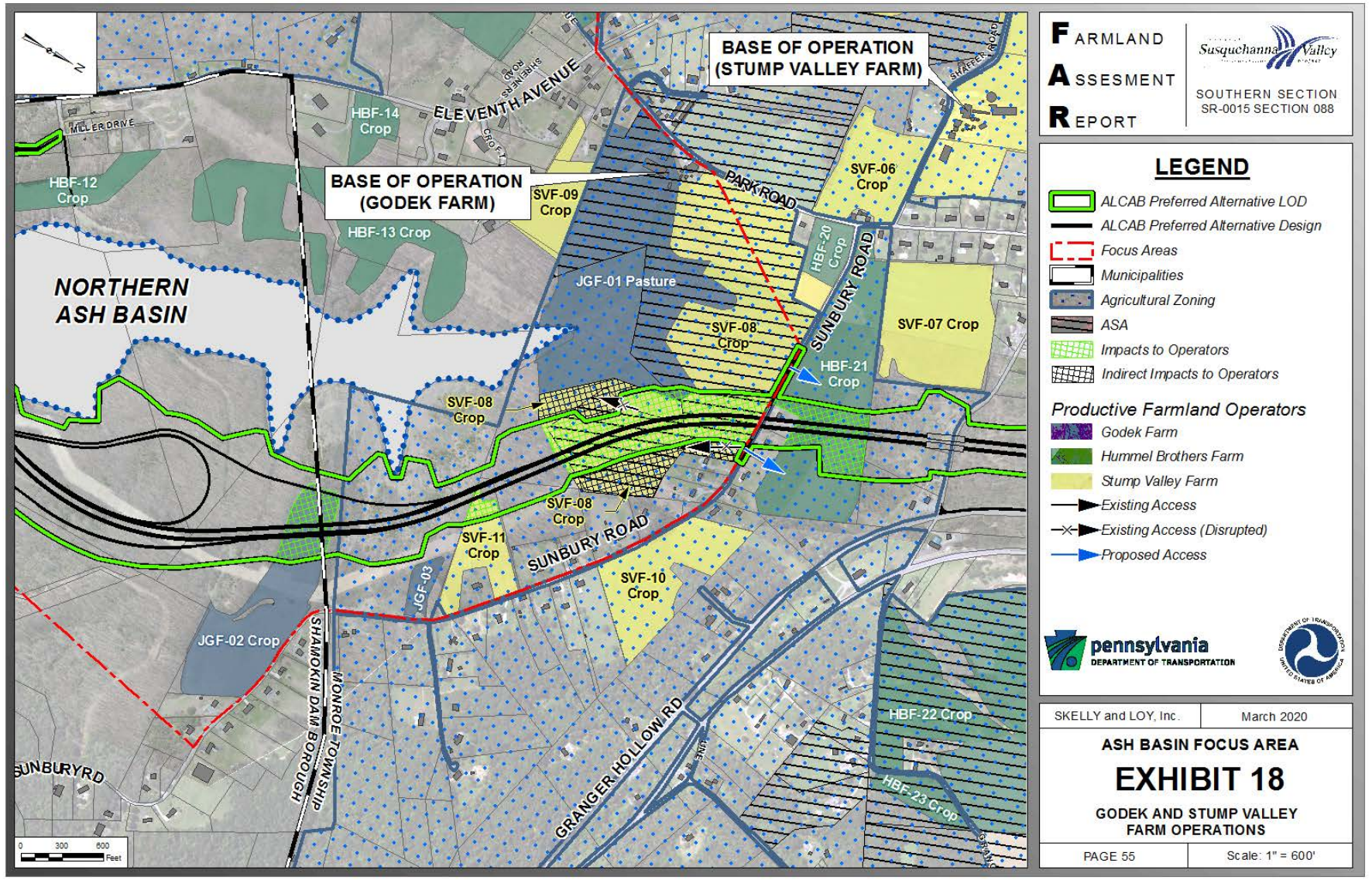
ALCAB Preferred Alternative



Godek Farms - Cattle and Crop Producer

- Ash Basin Focus Area contains the base of operation
- Jason Godek owns 0 acres and leases 950 acres
  - 56 acres are located within the Ash Basin Focus Area
- Livestock: 200 dairy heifers
- Crops: Corn, soybeans and grains
- Building impacts: none

Godek Farms - Cattle and Crop Producer



Godek Farms
Cattle and Crop Producer

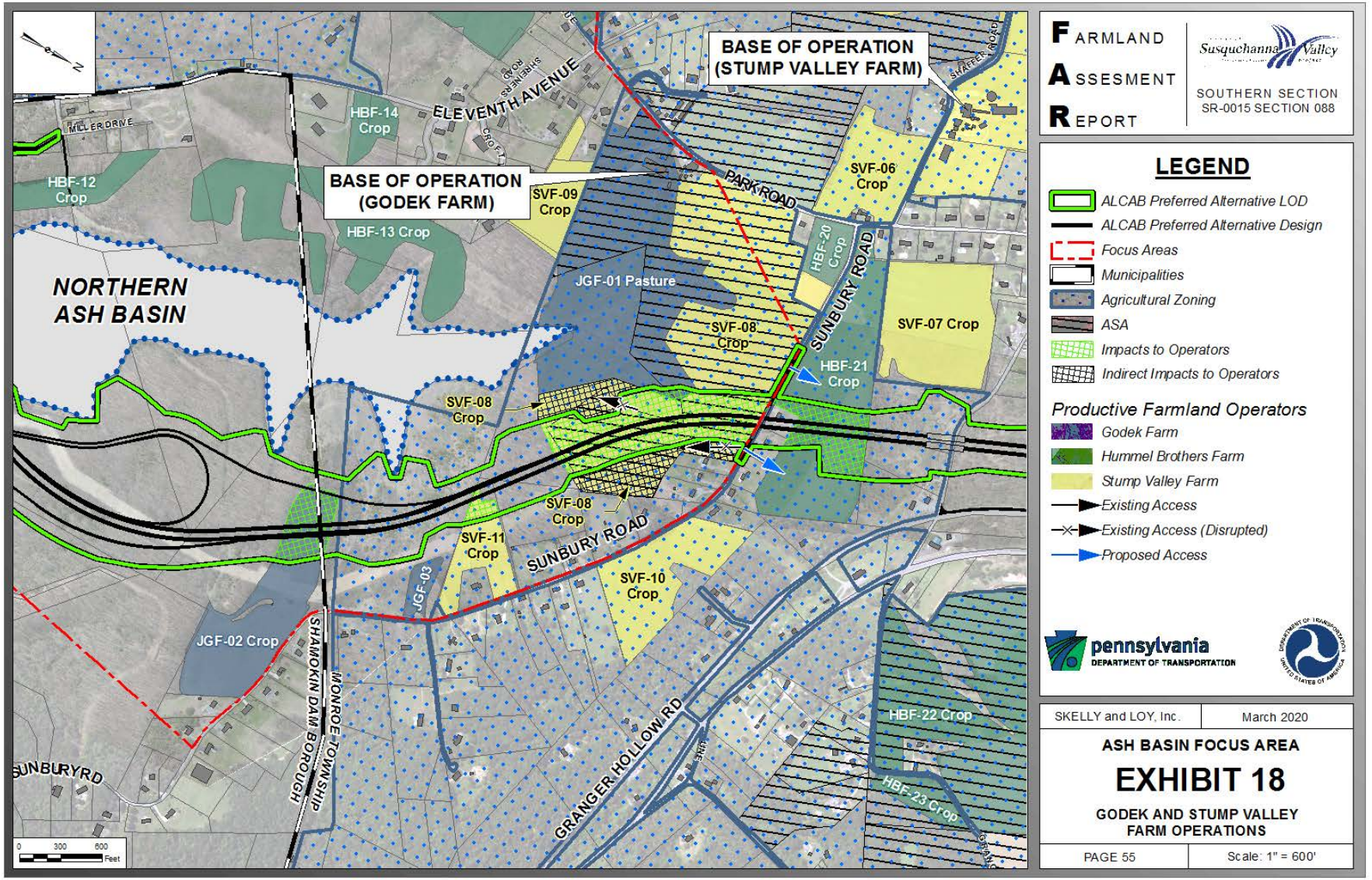
TABLE 12
GODEK FARM
IMPACTED FARM PARCELS – ASH BASIN FOCUS AREA

Column A	Column B	Column C*	Column D	Column E	Column F	Column G	Column H
FAR Parcel ID No.	Parcel Owner	Existing Productive Agricultural Land	Productive Agricultural Land Impact				Remaining Land Available for Production (Acres)
			Lost to Right-of-Way (Direct) (Acres)	Left Impractical to Farm (Acres)	Left Inaccessible (Acres)	Total Productive Agricultural Impact (Acres)	
JGF-01	Shaffer	38.0	0.5	0.0	0.0	0.5	37.5
JGF-02	Talen Energy	16.4	4.0	0.0	0.0	4.0	12.4
Subtotal – Rented Land			4.5	0.0	0.0	4.5	--
Total Acreage of Impacted Parcels			4.5	0.0	0.0	4.5	

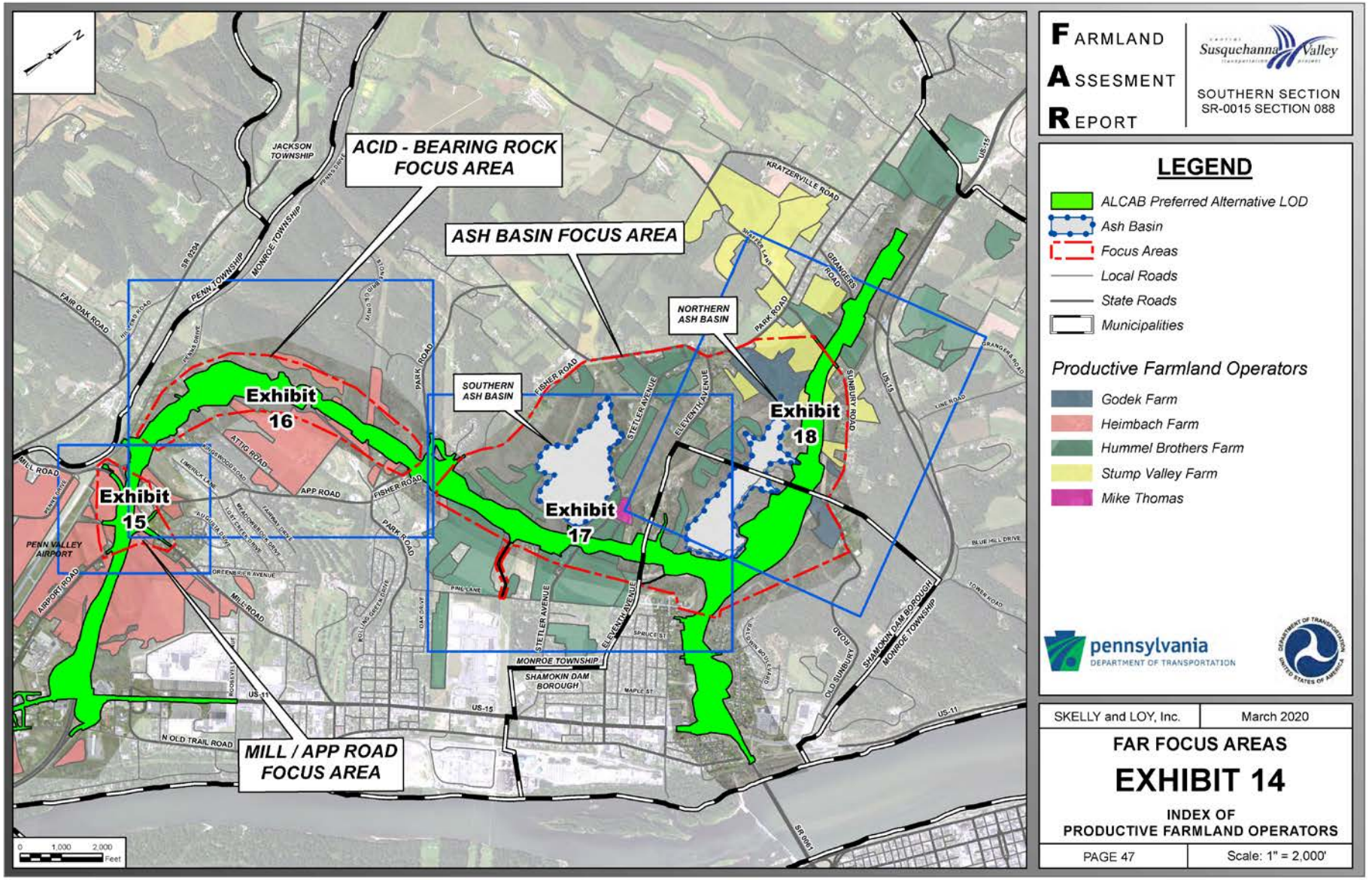
Note: Total productive agricultural land impact (Column G), is derived from Column C minus Columns D, E, and F. The remaining land available for production is shown in Column H.

* *Productive agricultural land totals in Column C represent the total acreage of the farm parcel when intersected by the focus area boundary.*

Godek Farms - Cattle and Crop Producer



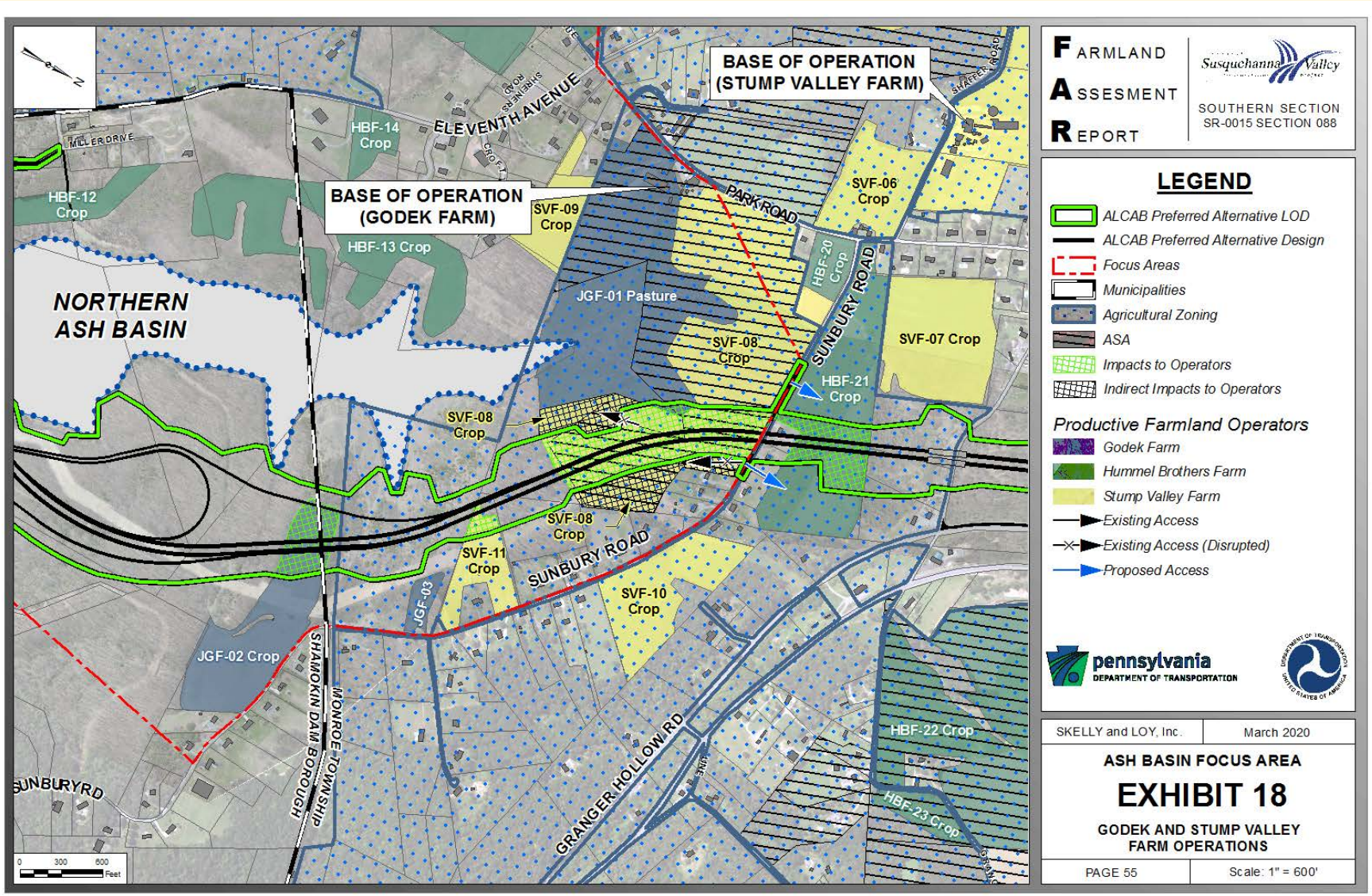
ALCAB Preferred Alternative



Stump Valley Farms - Organic Dairy Producer

- Base of operation is northwest of Ash Basin Focus Area, on Shaffer Rd
- Stump Valley Farms owns 50 acres and leases 311 acres
  - 63 acres are located within the Ash Basin Focus Area
- Livestock: 85 organic dairy cows
- Crops: Corn, wheat, soybeans and hay
- Building impacts: none

Stump Valley Farms - Organic Dairy Producer



FAR Page 55

Stump Valley Farms
Organic Dairy Producer

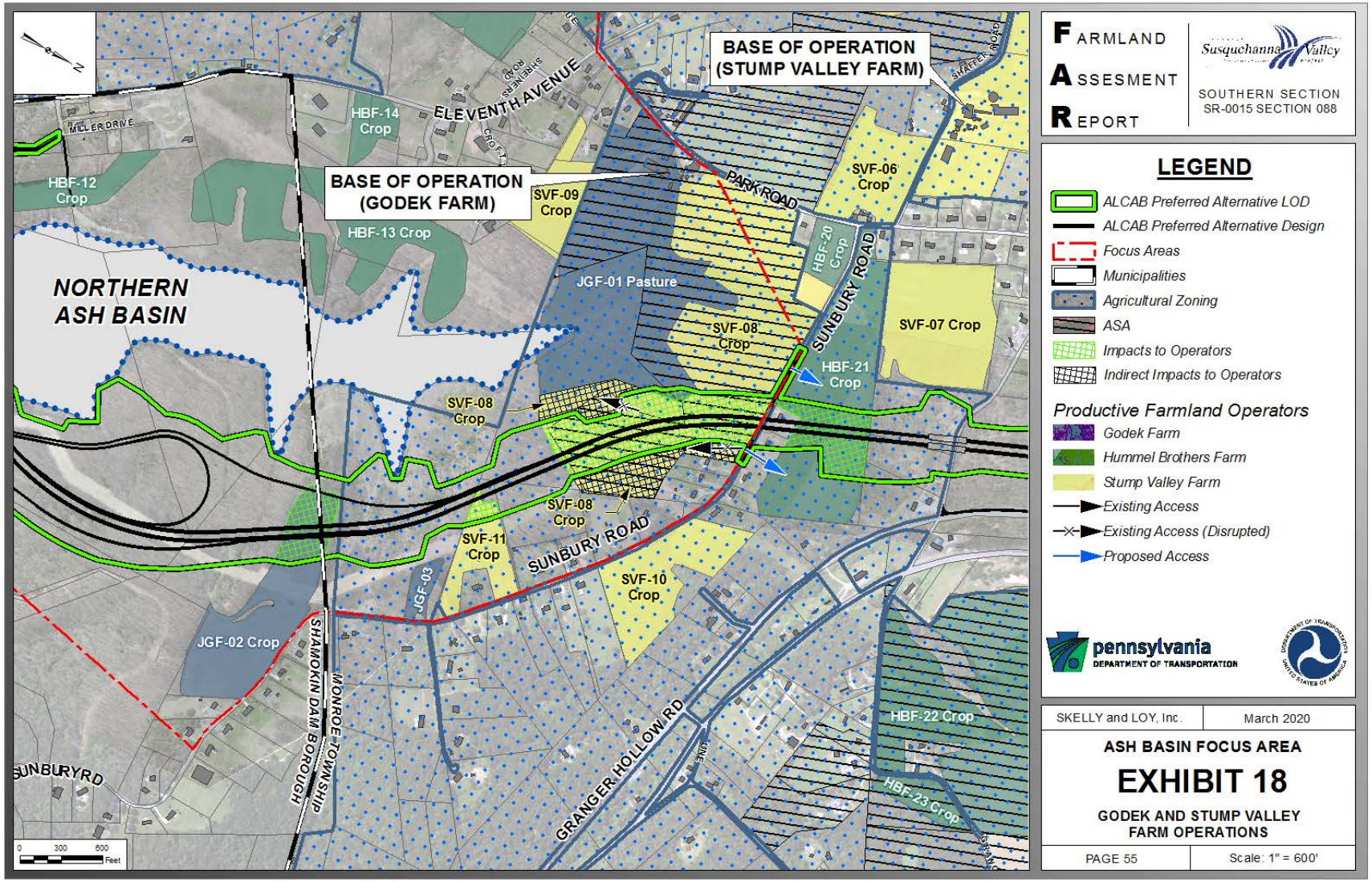
TABLE 14
STUMP VALLEY FARMS
IMPACTED FARM PARCELS – ASH BASIN FOCUS AREA

Column A	Column B	Column C*	Column D	Column E	Column F	Column G	Column H
FAR Parcel ID No.	Parcel Owner	Existing Productive Agricultural Land	Productive Agricultural Land Impact: Lost to Right-of-Way (Direct) (Acres)	Productive Agricultural Land Impact: Left Impractical to Farm (Acres)	Productive Agricultural Land Impact: Left Inaccessible (Acres)	Productive Agricultural Land Impact: Total Productive Agricultural Impact (Acres)	Remaining Land Available for Production (Acres)
SVF-08	Shaffer	50.8	13.8	0.0	8.0	21.8	29.0
Subtotal – Operator-Owned Land			13.8	0.0	8.0	21.8	--
SVF-11	Ferry	5.7	0.8	0.0	0.0	0.8	4.9
Subtotal – Rented Land			0.8	0.0	0.0	0.8	--
Total Acreage of Impacted Parcels			**14.6**	**0.0**	**8.0**	**22.6**	

Note: Total productive agricultural land impact (Column G), is derived from Column C minus Columns D, E, and F. The remaining land available for production is shown in Column H.

* *Productive agricultural land totals in Column C represent the total acreage of the farm parcel when intersected by the focus area boundary.*

Stump Valley Farms - Organic Dairy Producer



FAR Page 55

Farmland Assessment Methodology

- Farmland Legislation
  - Agricultural Lands Preservation Policy (ALPP)
    - Preserved farmland
    - Agricultural Security Area
    - Preferential tax assessment (Clean and Green)
    - Agricultural zoning
    - Soil capability classes I-IV

Summary of Prime Agricultural Land Impacts

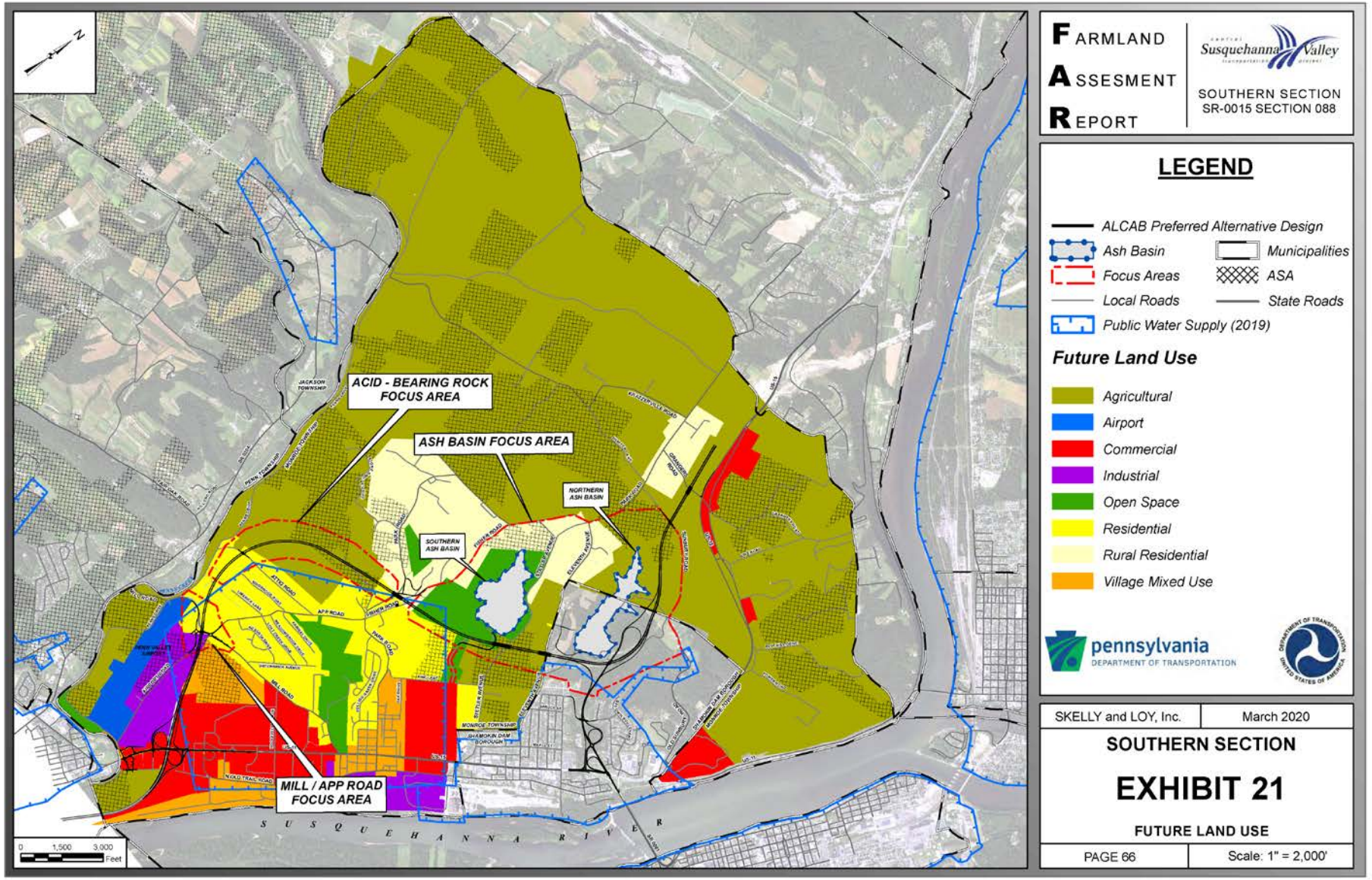
TABLE 15 PRIME AGRICULTURAL LAND (ALPP)/DIRECT IMPACTS			
	Mill/App Road Focus Area	**Acid-Bearing Rock Focus Area**	**Ash Basin Focus Area**
First Priority: Preserved	N/P*	N/P*	N/P*
Second Priority: Ag Security Areas	2.0 acres	6.0 acres	26.8 acres
Third Priority: Clean and Green	0.0 acres	0.0 acres	0.0 acres
Fourth Priority: Agricultural Zoned	3.4 acres	2.5 acres	3.4 acres
Fifth Priority: Land Capability Classes I-IV	10.8 acres	0.0 acres	11.2 acres
Total Prime Agricultural Land:	**16.2 acres**	**8.5 acres**	**41.5 acres**
** N/P = Not Present*			

FAR Page 62

ASAs within Monroe Township

- 2,484 acres of ASA exists
  - 52 acres of direct impacts
  - 2% impact to ASA
  - 2,432 acres will remain in Monroe Township ASA

ASA and Future Land Use



Farmland Protection Policy Act (FPPA)Impacts

- FPPA Farmland (USDA)
  - Prime farmland soils
  - Statewide important soils
  - Locally important soils
  - Unique farmland soils

- FPPA Findings
  - ALCAB Preferred Alternative
  - Scored 152 of the 160 points
  - Does not exceed mitigation requirement threshold

Farmland Assessment of the ALCAB Preferred Alternative

- Total impacts to 103.4 acres (direct and indirect) productive agricultural land:
  - A.W. (Albert) Heimbach and Sons
    - 16.3 acres of direct impacts within the Mill/App Road Focus Area
    - 30.9 acres of direct and indirect impacts with Acid-Bearing Rock Focus Area
  - Hummel Brothers Farms
    - 29.1 acres of direct impacts within the Ash Basin Focus Area
  - Godek Farm
    - 4.5 acres of direct impacts within the Ash Basin Focus Area
  - Stump Valley Farm
    - 22.6 acres of direct and indirect impacts within the Ash Basin Focus Area

ALCAB Preferred Alternative