

Harvey Road CONNECTOR

PLANNING & ENVIRONMENTAL
LINKAGES (**PEL**) STUDY

August 2021



www.elrobinsonengineering.com

prepared
for:



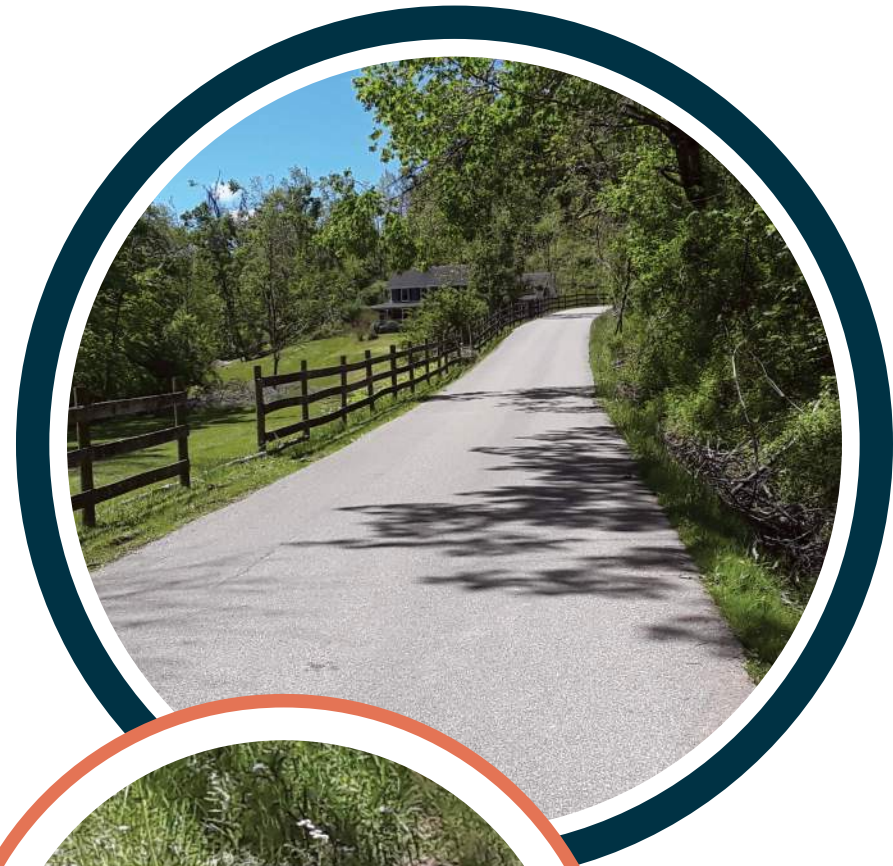
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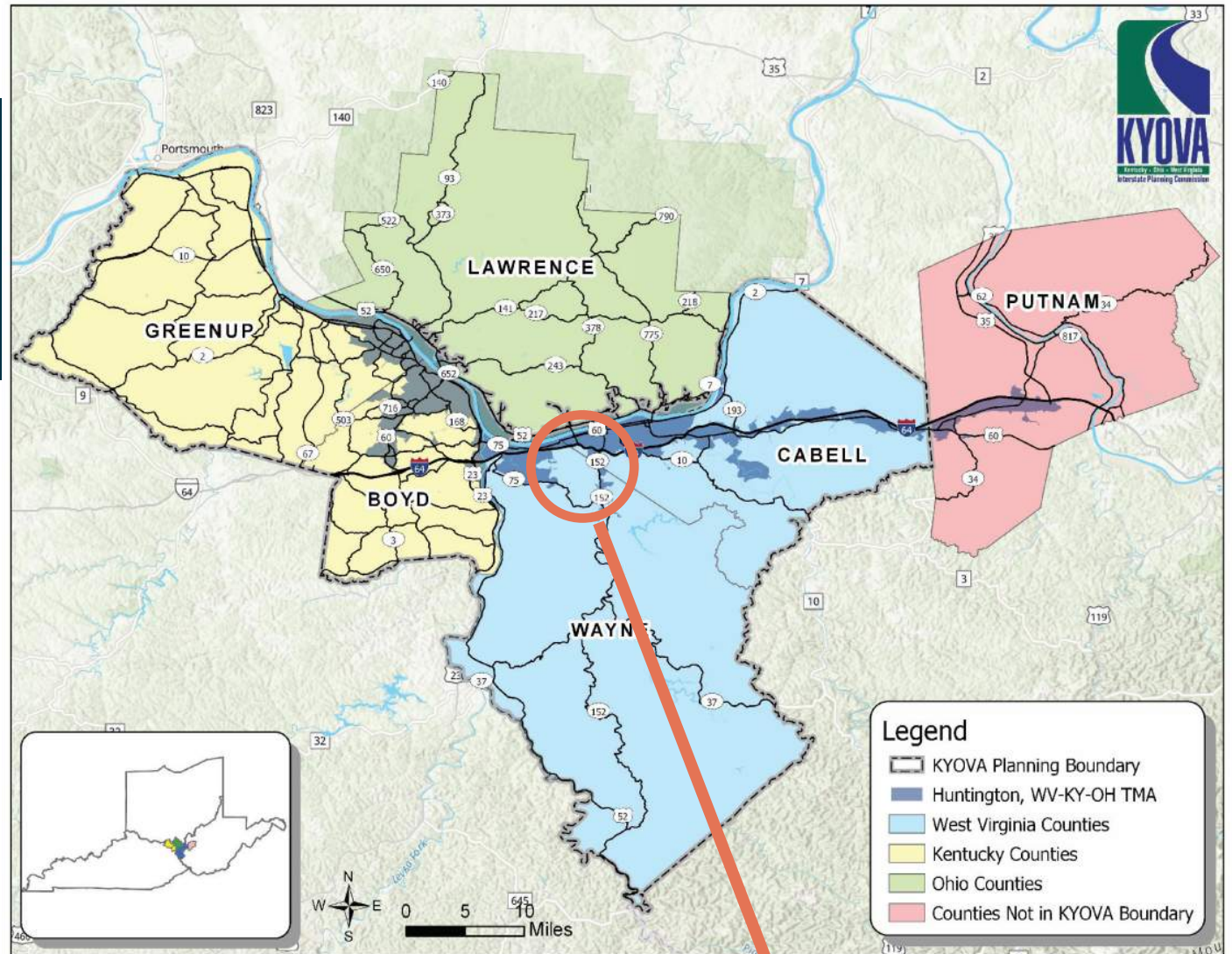
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ACRONYM LIST

AADT	Annual Average Daily Traffic
CFR	Code of Federal Regulations
EJ	Environmental Justice
ELR	E. L. Robinson Engineering Co.
FHWA	Federal Highway Administration
GIS	Geographic Information System
IPaC	Information for Planning and Consultation (USFWS)
KYOVA	Kentucky, Ohio and West Virginia Interstate Planning Commission
LEP	Limited English Proficiency
LiDAR	Light Detection and Ranging
mph	Miles-per-hour
NEPA	National Environmental Policy Act
PEL	Planning and Environmental Linkages
RAISE	Rebuilding American Infrastructure with Sustainability and Equity
ROW	Right-of-Way
SAG	Stakeholder Advisory Group
STIP	Statewide Transportation Improvement Program
TRTA	Tri-River Transit Authority
TSTA	Tri-State Transit Authority
UE	Upgrade Existing
USDOT	United States Department of Transportation
USFWS	United State Fish and Wildlife Service
UT	Unnamed Tributary
VTTS	Value of Time Travel Savings
WVDOH	West Virginia Division of Highways



PROJECT LOCATION



Study Area

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

Harvey Road is a minor urban collector traversing Cabell County into Wayne County. It is a key connecting route from the southern portion of Huntington to the northern portion of Wayne County. The KYOVA Interstate Planning Commission (KYOVA) identified the Harvey Road Connector as an important potential investment to improve east-west accessibility, mobility, and connectivity in northern Wayne County between Harvey Road (County Road 9) and WV-152 (5th Street Road). The existing roadway infrastructure connecting east to west is substandard due to narrow road widths and poor site distance creating travel inefficiencies and unsafe travel conditions. As a result, the lack of accessibility, mobility, and connectivity to the Wayne County section of Harvey Road represents a deficiency in the overall regional transportation network which reduces access to jobs, recreation, and entertainment options for residents in both Wayne and Cabell Counties as well as regional visitors. Consequently, KYOVA in cooperation with Wayne County initiated a PEL study in 2020 to closely examine the need for a connecting roadway between Harvey Road and WV 152 including evaluation of potential alternatives. The evaluation included identification of potential environmental impacts with input from federal, state and local resource agencies as well as the general public.



1.2 PROJECT HISTORY

In September 2017, a Heritage Farm Museum and Village Access Road Study was commissioned by Wayne County. The report evaluated four alternatives (one improvement to existing Harvey Road and three new location alternatives) to improve access. Based on the results of the study process it was determined that a PEL study would be beneficial to advance the project forward for additional evaluation and potential funding. In July 2020, this study was initiated by KYOVA and Wayne County.

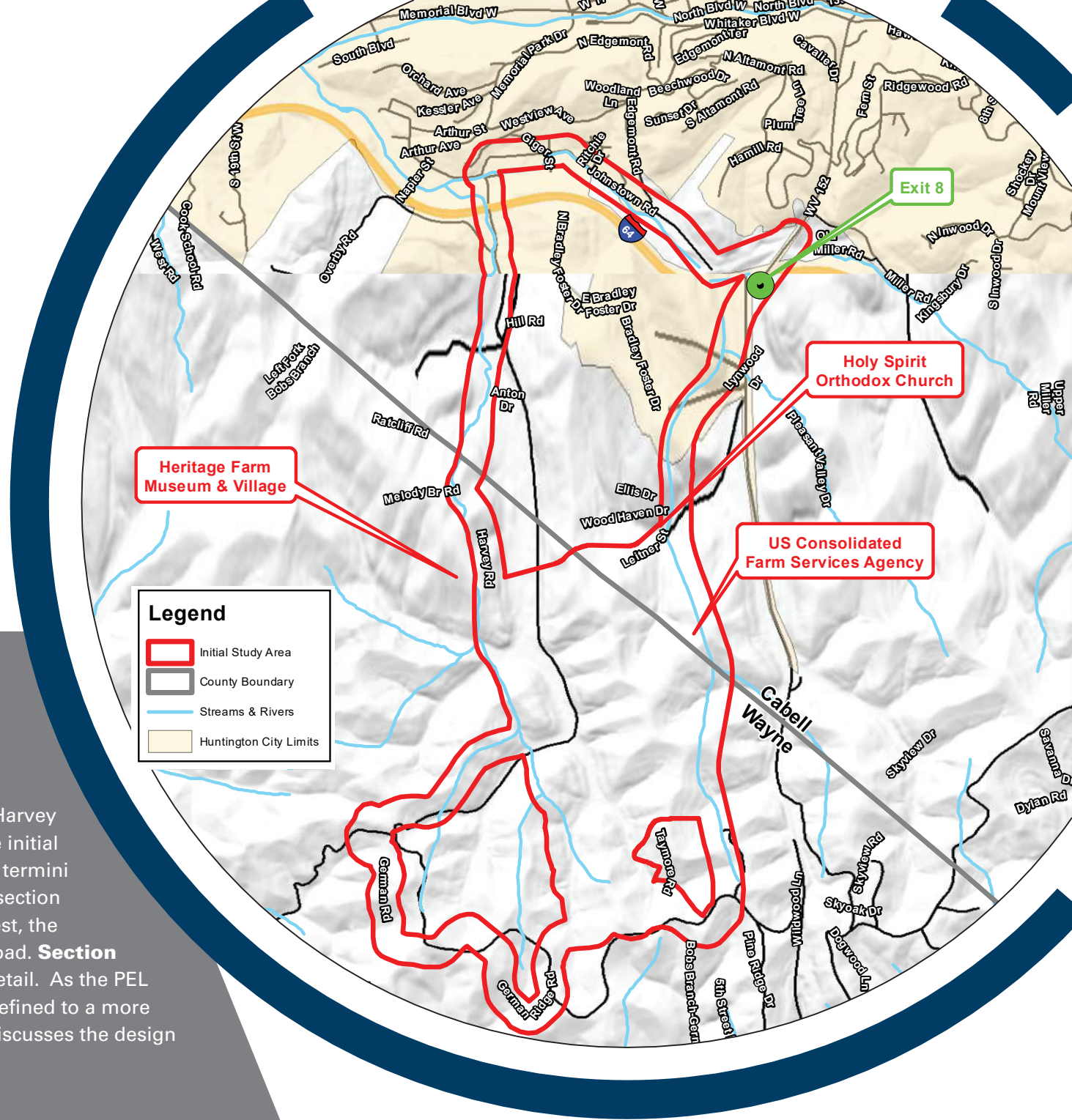
1.3 CURRENT STATUS IN PLANNING/PROGRAMMING PROCESS

Once the PEL is completed, funding for this project will be considered within the overall West Virginia Division of Highways (WVDOH) plans, goals and objectives for the limited dollars available. Other funding sources will also be considered such as Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants or other Federal grant programs. The remaining phases such as detail design, right-of-way and construction of the project are contingent on completing the Environmental phase. Once the project receives the applicable funding commitment, the National Environmental Policy Act (NEPA) project phase will be initiated by WVDOH.



1.4 INITIAL STUDY AREA AND LOGICAL TERMINI

The initial study area was bounded by Johnstown Road to the north, WV-152 to the east, German Ridge Road to the south, and Harvey Road to the west. **Section 5.1** discusses the initial study area in more detail. The project logical termini were determined to be, to the east, the intersection of Harvey Road and Ellis Lane, and to the west, the intersection of WV-152 and German Ridge Road. **Section 4.10** discusses the logical termini in more detail. As the PEL study progressed, the initial study area was refined to a more focused design study area. **Section 6.4.1** discusses the design study area in more detail.



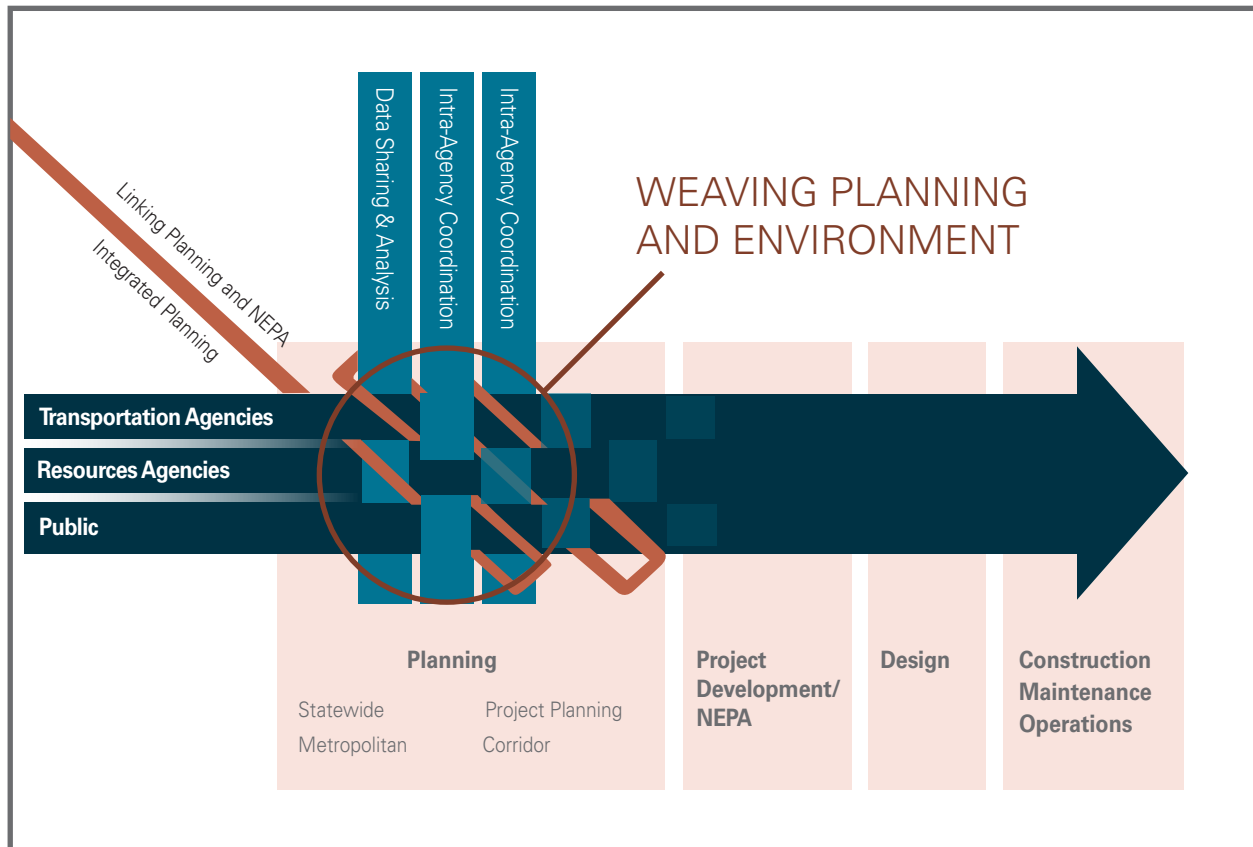


Figure 1: PEL Approach to Transportation Decision-Making

Image Source:
 Federal Highway Administration. 2009. A Guide to Measuring Progress in Linking Transportation Planning and Environmental Analysis. U.S. Department of Transportation, FHWA; Washington D.C.
https://www.environment.fhwa.dot.gov/env_initiatives/pel/meas_progress.aspx

2. WHAT IS A PEL STUDY?

A PEL study is defined by the Federal Highway Administration (FHWA) as a collaborative and integrated approach to transportation decision-making that considers environmental, community, and economic goals early in the transportation planning process and uses this information, analysis, and products developed to efficiently advance the NEPA environmental review process. The Harvey Road Connector PEL Study process was designed to reflect key elements of the NEPA environmental review process such that results of the study can be utilized to advance the next phase of the project development process. The study outcomes include raising the project's prominence and credibility, demonstrating commitment to the project, and providing a strong foundation to efficiently move the project from concept to completion. PEL studies are generally more focused than regional planning efforts, but broader than traditional project-specific environmental analysis typically conducted during the NEPA process.

2.1 PEL STUDY BENEFITS

FHWA developed the PEL program to “help transportation decisionmakers: (1) consider environmental, community, and economic goals early in the transportation planning process, and (2) use the information, analysis, and products developed during planning to inform the environmental review process. The goal of PEL is to develop a more seamless decision-making process that minimizes duplication of effort, promotes environmental stewardship, and streamlines project delivery.”¹

The PEL process:

Minimizes uncertainty by proactively clarifying the transportation problem, scope, purpose and need (goal and objective) statements, and environmental and social issues prior to project initiation.

Offers more flexibility for studying alternatives than could be possible further along in the project development process.

Identifies major issues that could arise during formal environmental review and details the in-depth studies that should be necessary.

Creates awareness to the sponsor on the level of study that could be necessary during the environmental review process (NEPA).

1. https://www.environment.fhwa.dot.gov/env_initiatives/PEL.aspx

2.2 DECISION-MAKING PROCESS

For the Harvey Road Connector PEL study, the following decision-making process was used:

Scoping entailed developing the initial study area, reviewing local plans, using desktop Geographic Information System (GIS) reviews to develop an environmental features map, and generating a start of study letter.

Project goal and objectives entailed conducting interviews, performing a traffic analysis, identifying unsafe roadway conditions, and developing / validating the project goal and objectives.

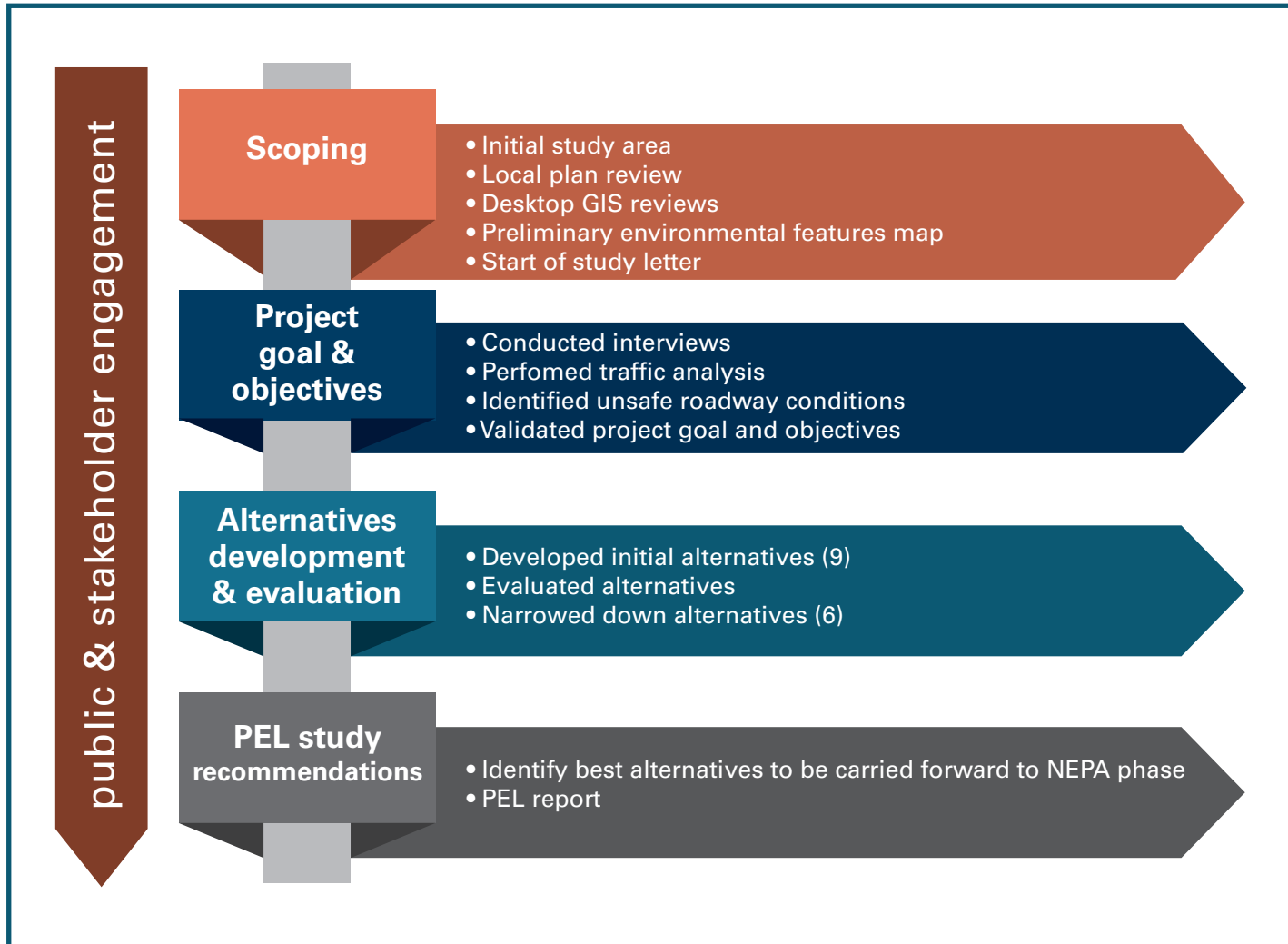
Alternatives Development and Evaluation was a multistep process:

1. Developing an initial nine alternatives.
2. Initial evaluation by screening those nine alternatives against the goal and objectives and identified environmental features. This resulted in the elimination of three alternatives.
3. Refined evaluation by further developing the remaining six alternatives with conceptual roadway designs, construction costs, developing a design study area, cultural resources screening, and field reconnaissance.

Public and Stakeholder Engagement occurred throughout with monthly Stakeholder Advisory Group (SAG) meetings, participation at bimonthly KYOVA Technical Advisory Committee and Policy Board Meetings, a virtual resource agency consultation meeting, a virtual public meeting, and an in-person open house.

PEL Study Recommendations used all the information from the refined evaluation and public and stakeholder engagement to evaluate the six remaining alternatives. This resulted in the elimination of three more alternatives and the identification of the three best alternatives to be carried forward to NEPA phase.





3. WHAT IS THE DESIRED TRANSPORTATION OUTCOME FOR THE HARVEY ROAD CONNECTOR PROJECT?

The project goal and objectives are important because they are used to identify and evaluate alternatives. In addition, they are the basis for the development of the purpose and need as the project proceeds to the NEPA phase. A project's "Need" is an identified transportation deficiency or problem, and its "Purpose" is the set of objectives that will be met to address the transportation deficiency. Using the information from the scoping process, the SAG developed the project goal and six associated objectives.

Project Goal:
Improve accessibility, mobility, and connectivity within northern Wayne County between Harvey Road (County Road 9 at Ellis Lane) and WV-152 (at German Ridge Road).

What is NEPA?

The National Environmental Policy Act (NEPA) was signed into law on January 1, 1970. NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions.

The range of actions covered by NEPA is broad and includes:

- making decisions on permit applications,
- adopting federal land management actions, and
- constructing highways and other publicly-owned facilities.

Using the NEPA process, agencies evaluate the environmental and related social and economic effects of their proposed actions. Agencies also provide opportunities for public review and comment on those evaluations.⁶

Accessibility: The US Department of Transportation (USDOT) defines accessibility as "The ease of reaching valued destinations, such as jobs, shops, schools, entertainment, and recreation."²

Mobility: FHWA states, "mobility, at its simplest, can be defined as the ability to access goods, services, and destinations. Mobility affords many benefits to society. The ability to move freely provides increased opportunities for people and businesses to interact with each other, earn a living, visit friends and family, and take advantage of recreational opportunities. A mobile society also implies transportation choices, so that people of all ages and abilities have access to options for work and recreation. Mobility can be measured in terms of the availability of travel choices, which may include different routes or modes of travel, such as transit, bicycling, and walking."³ Conceptually, mobility is "how far you can go in a given amount of time" and accessibility is "how much you can get to in that given amount of time."⁴

Connectivity: The USDOT describes connectivity as "a well-connected transportation network which reduces the distances traveled to reach destinations, increases the options for routes of travel, and can facilitate walking and bicycling."⁵

2. <https://ops.fhwa.dot.gov/publications/fhwahop12004/glossary.htm>

3. https://www.fhwa.dot.gov/ENVIRONMENT/air_quality/cmaq/research/advancing_mobility/03cmaq01.cfm#:~:text=Mobility%20at%20its%20simplest%2C%20can,goods%2C%20services%2C%20and%20destinations.

4. <https://www.strongtowns.org/journal/2018/10/17/the-difference-between-mobility-and-accessibility>

5. <https://www.transportation.gov/mission/health/promoting-connectivity>

6. <https://www.epa.gov/hepa/what-national-environmental-policy-act>

The six objectives include:

Objective 1:

Increase overall travel efficiency to the Wayne County section of Harvey Road.

- Provide measurable travel time savings

Objective 2:

Increase transportation redundancy for the Wayne County section of Harvey Road.

- Provide more travel options in the event of an emergency
- Improve EMS response times

Objective 3:

Reduce exposure to unsafe roadway conditions for all vehicle types.

- Improve roadway design
- Reduce conflicts between vehicles, bicycles, and pedestrians
- Reduce non-local traffic on existing routes

Objective 4:

Accommodate transit opportunities within the available project resources.

- Provide local transit the opportunity to expand their service area

Objective 5:

Accommodate bicycle and pedestrian facilities within the available project resources.

- Provide a connection between planned multimodal paths

Objective 6:

Support state, regional, and local plans for increased economic development opportunities.

- Provide increased access to the area between WV-152 and Harvey Road
- Provide better access to tourism oriented businesses

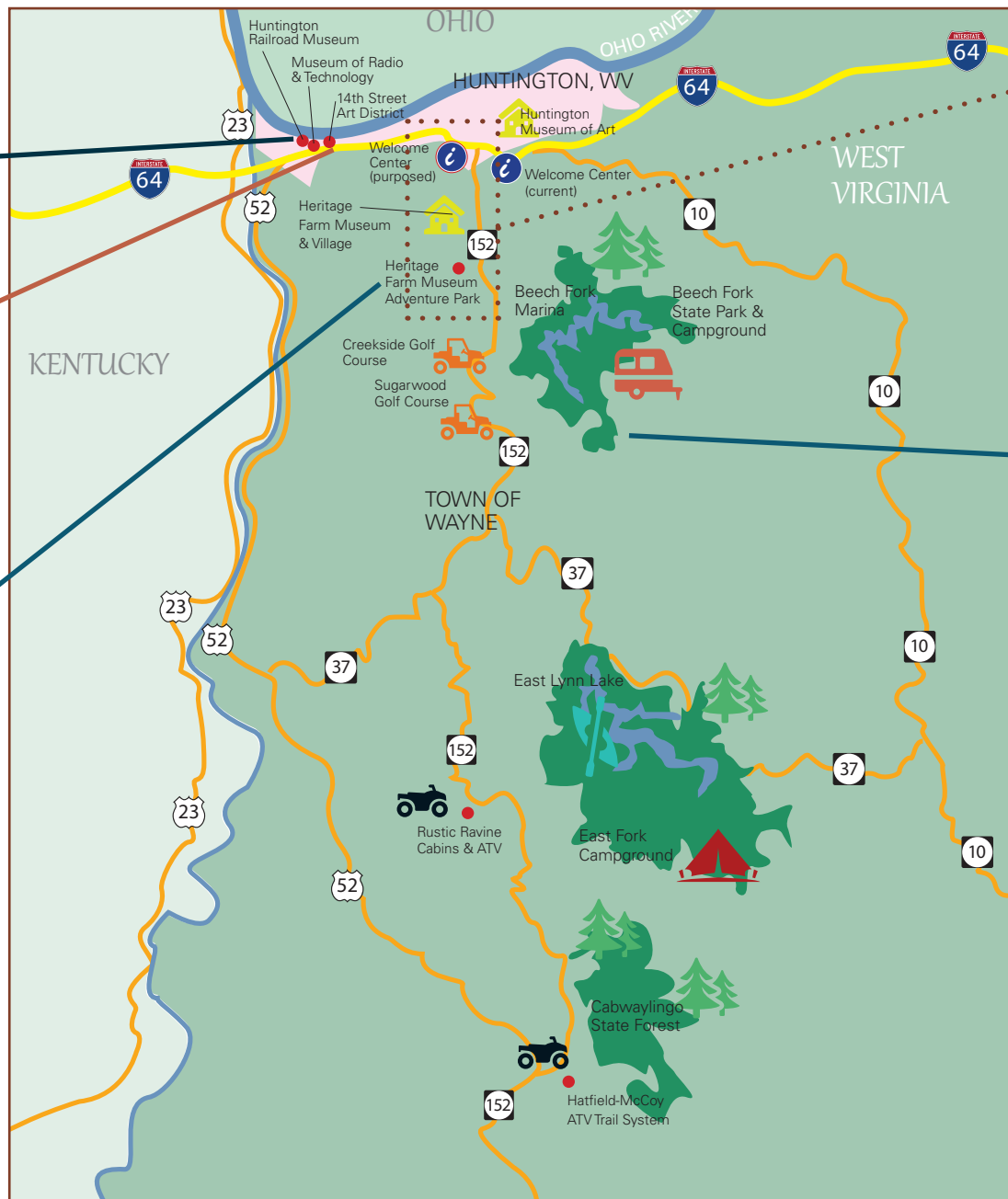
4. WHAT IS THE TRANSPORTATION CONTEXT FOR THE HARVEY ROAD CONNECTOR PROJECT?

4.1 REGIONAL CONTEXT

The Harvey Road area traverses Wayne and Cabell Counties in the heart of KYOVA's metropolitan planning area. The Wayne County section of Harvey Road is the location of one of West Virginia's leading tourist destinations, the Heritage Farm Museum and Village. One mile east, across an intervening ridgeline, is the main transportation artery for this area, WV-152 (5th Street Road). One mile north on WV-152, from the Wayne County line, is the Exit 8 interchange with I-64. KYOVA's 2018 Exit 8 / I-64 Mixed Use Development and Traffic Mobility Study identifies WV-152 as a tourism corridor due to the many tourist destinations located along it. The Cabell County portion of Harvey Road and WV-152 is also within the City of Huntington. As such, the Harvey Road area is important to the region as a suburb of the City of Huntington, a gateway for Wayne County, and a key destination along the WV-152 tourism corridor.

Northern Wayne County's topography is characterized by north-south running ridges interspersed by north-south running valleys. Roadways and development have naturally followed the valleys. This has resulted in a lack of east-west connections and the community isolated from greater Wayne County. For example, the project area is only one mile from a major transportation corridor (WV-152) when drawing a straight line on a map, but, anywhere from three to five miles by the current road network – portions of which are not ideal for travel. This lack of east-west connectivity has fundamental consequences to the community.

REGIONAL TOURIST INTERESTS



Study Area

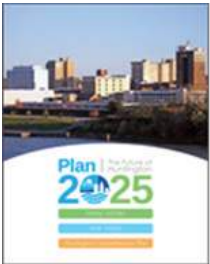


4.2 LOCAL PLANNING CONTEXT

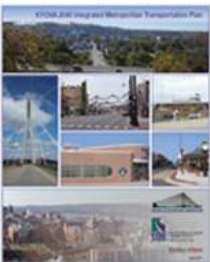
A review of local and regional plans emphasizes the importance of the study area to the region. Seven local plans were found which reflect upon the project objectives.



Wayne County’s 2009 Achieving 20/20 Vision Plan stated seven goals, three of which resonant with the project. These are: “Develop needed community facilities and enhance basic infrastructure within Wayne County”; “Increase capacity in Wayne County for economic and community development”; and “Enhance the quality of life for Wayne County residents and visitors through expanded cultural events and activities.”



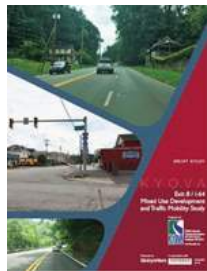
City of Huntington’s 2013 Huntington 2025 Plan This report identifies the area as the “Southern Hills” and as an important gateway to Huntington with the potential for growth. It highlights Heritage Farm as a unique attraction in the area. The report highlights hillside erosion concerns in this area due to the terrain. It also calls for opportunities to improve connections throughout for pedestrians and bicyclist and to explore potential economic development along Harvey Road.



KYOVA’s 2017 KYOVA 2040 Integrated Metropolitan Transportation Plan recommends subscribing to efforts that encourage the development of tourism in the region and prioritizing transportation programs that both retain existing and attract new businesses. It also emphasizes that recreation and tourism play a large role in the vitality of the area. The plan also recommends a multi-use trail along Harvey Road that connects Huntington to Heritage Farm Museum and Village, Lavalette, and Beech Fork State Park. Stated goals include, “enhance the existing transportation system”; “enhance the safety of the transportation system for all users”; “enhance the integration and connectivity of the transportation system”; and “create a system of interconnected streets to improve mobility”.



Region 2 Planning and Development Council’s 2018 Regional Development Plan identifies the WV-152 corridor as an area of growth within Wayne County and highlights Heritage Farm Museum and Village as having a positive effect on the tourism economy at the county and regional level.



KYOVA’s 2018 KYOVA Exit 8 / I-64 Mixed Use Development and Traffic Mobility Study identifies the WV-152 corridor as an area of opportunity for additional investment in the tourism and recreation industry and emphasizes improving travel to destinations in proximity to WV-152, including Heritage Farm Museum and Village. It calls for designating WV-152 as the Appalachian Heartland Highway (a tourism corridor). The plan calls for expanding the Paul Ambrose Trail for Health (PATH) through the Heritage Farm Museum and Village and linking it to WV-152. It also calls for additional bicycle and pedestrian trails along Harvey Road.



Region 2 Planning and Development Council’s 2020 Comprehensive Economic Development Strategy 2020-2024 indicates that heritage tourism is one of three sectors that have seen a resurgence contributing to the economic vitality of the area. The report supports the expansion of tourism opportunities in the area including Heritage Farm Museum and Village.



Region 2 Planning and Development Council’s 2020 Appalachian Heartland Initiative Strategic Marketing & Economic Feasibility Study states avid support for a new connecting roadway from WV-152 to the Wayne County section of Harvey Road (which includes Heritage Farm Museum and Village and its planned expansion) to encourage additional tourism-oriented development along WV-152.

WVDOH 2050 Long Range Transportation Plan

The Objectives of the Plan’s Access Goal:

- Focus on serving disconnected communities and addressing network gaps to improve access to jobs, health care, recreation, and key industries.
- Ensure rural roads are accessible, reliable, and adequately maintained.
- Provide multimodal, convenient, clear, and approachable transportation connections to West Virginia recreational and heritage sites, including national and state parks.

4.3 INITIAL OUTREACH

As part of the initial data gathering for the project scoping process, a Start of Study letter was disseminated to federal, state, local, and tribal entities about the study, providing them with the information gathered during the desktop GIS review, and requesting feedback and comments. Appendix D includes a copy of the Start of Study letter. On September 29, 2020, the start of study letter was emailed to 54 federal, state, local, and tribal entities. Responses were received from the Wayne County Transportation Director, the City of Huntington Planning Director, the President of the Huntington Area Convention and Visitors Bureau, and the WV Division of Forestry.

In an October 19, 2020, email, the City of Huntington Planning Director stated that creating improvements for pedestrian and cycling access will be great and wants to see the rural character of the area conserved. She also noted that she has seen a handful of times the bridge at Johnstown Road and Harvey Road become impassible due to heavy rains.

In an October 26, 2020, email, the president of the Huntington Area Convention and Visitors Bureau noted that Heritage Farm is one of the area's top attractions and as it continues to improve and grow, so will the bureau's tourism efforts. He stated that he believed the project will enhance efforts that are underway to designate WV-152 as a tourism corridor to draw visitors to the area.

In an October 30, 2020, email the WV Division of Forestry stated there were best management practices for loggers and stated a desire to be involved in future NEPA planning.

In an October 13, 2020, phone call, the Wayne County EMS Director, stated that when they provide EMS services to the project area, they use the northern Johnstown Road route and not the southern German Ridge Road route. They avoid the southern route as the EMS vehicles scrap bottom on the Harvey Road switchback. He further stated that a direct connector between WV-152 and the Wayne County section of Harvey Road will improve EMS response times to the area.

In a November 3, 2020, phone interview the Executive Director of Tri-River Transit Authority (TRTA) stated that they had not considered expanding their service into the project area due to its inaccessibility. However, the director stated that if a new connector to the Wayne County section of Harvey Road were constructed, TRTA will consider expanding service to that area; specifically with a stop at Heritage Farm Museum and Village.

In a November 5, 2020, phone call, the City Manager of Huntington, stated that Harvey Road is prone to flooding and the frequency of flooding has been increasing in recent years. In addition, the manager also reported an area off Johnstown Road, near the Harvey Road intersection, was experiencing an active landslide issue.

Community Feedback

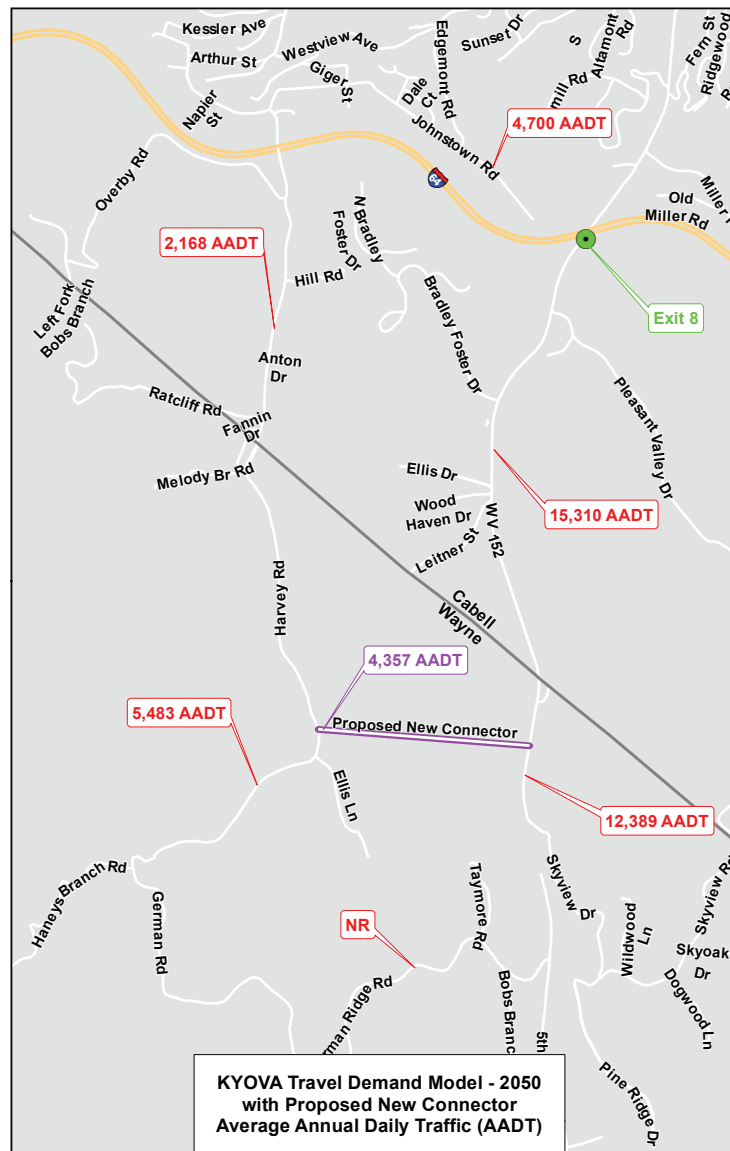
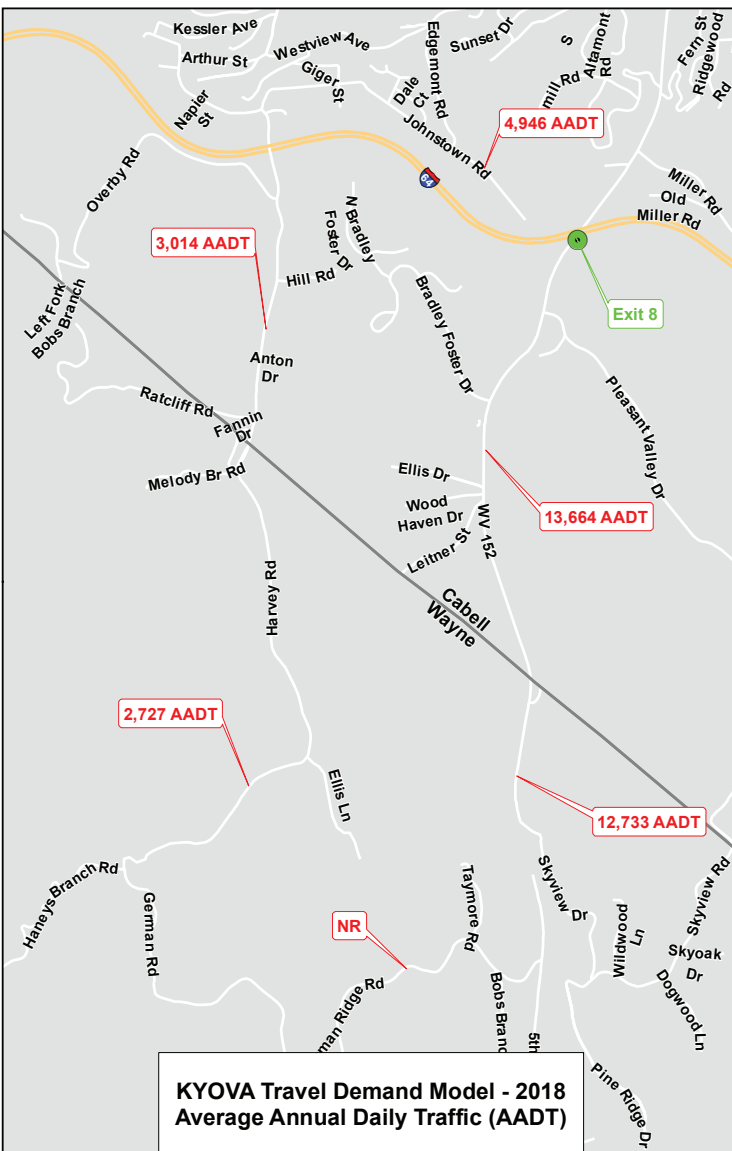
In an October 14, 2020, letter, the Wayne County Transportation Director stated that school bus drivers traveling along Harvey Road reported multiple incidents of standoffs with oncoming traffic, lasting more than 15 minutes, causing students to be late to school or home. He stated that the narrowing of Harvey Road (e.g., the switchback) in Wayne County makes it impossible for a school bus to pass through from Harvey Road onto German Ridge Road. He supported a new connector stating it will allow for more efficient bus routing.

4.4 TRAVEL DEMAND

KYOVA's Travel Demand Model was utilized to provide traffic forecast numbers for 2018 and 2050. In December 2020, KYOVA's model was modified to show a new connector road between Harvey Road and WV-152. The KYOVA model did not account for future expansion plans for the Heritage Farm Museum and Village.

The largest single point traffic destination on Harvey Road is the Heritage Farm Museum and Village. In August 2020, the museum was provided an in-depth questionnaire on visitor attendance, employees, parking spaces, vehicle type, and future expansion plans. The museum also provided a copy of their business plan for future expansion which included projected visitor attendance numbers. Based on this information, a model was developed to estimate the amount of traffic the museum will contribute to the 2050 projected traffic. The conclusion of the model was the museum will only contribute an additional 4.5% to the projected traffic volume.

The 2050 traffic projections indicate that a new connector will generate 4,357 average annual daily traffic (AADT). It also indicates that the new connector will divert traffic off Johnstown and Harvey Roads. The maps provide the 2018 and projected 2050 traffic from the KYOVA travel demand model.



4.5 TRAVEL TIME SAVINGS

The existing lack of travel efficiency can be quantitatively measured by calculating annual travel time savings when comparing existing roadways against a proposed new east-west connector. This is based on a simple formula:

Annual Travel Time Savings = 365 days x AADT

Annual Travel Savings = Annual Trips x Value of Travel Time Savings

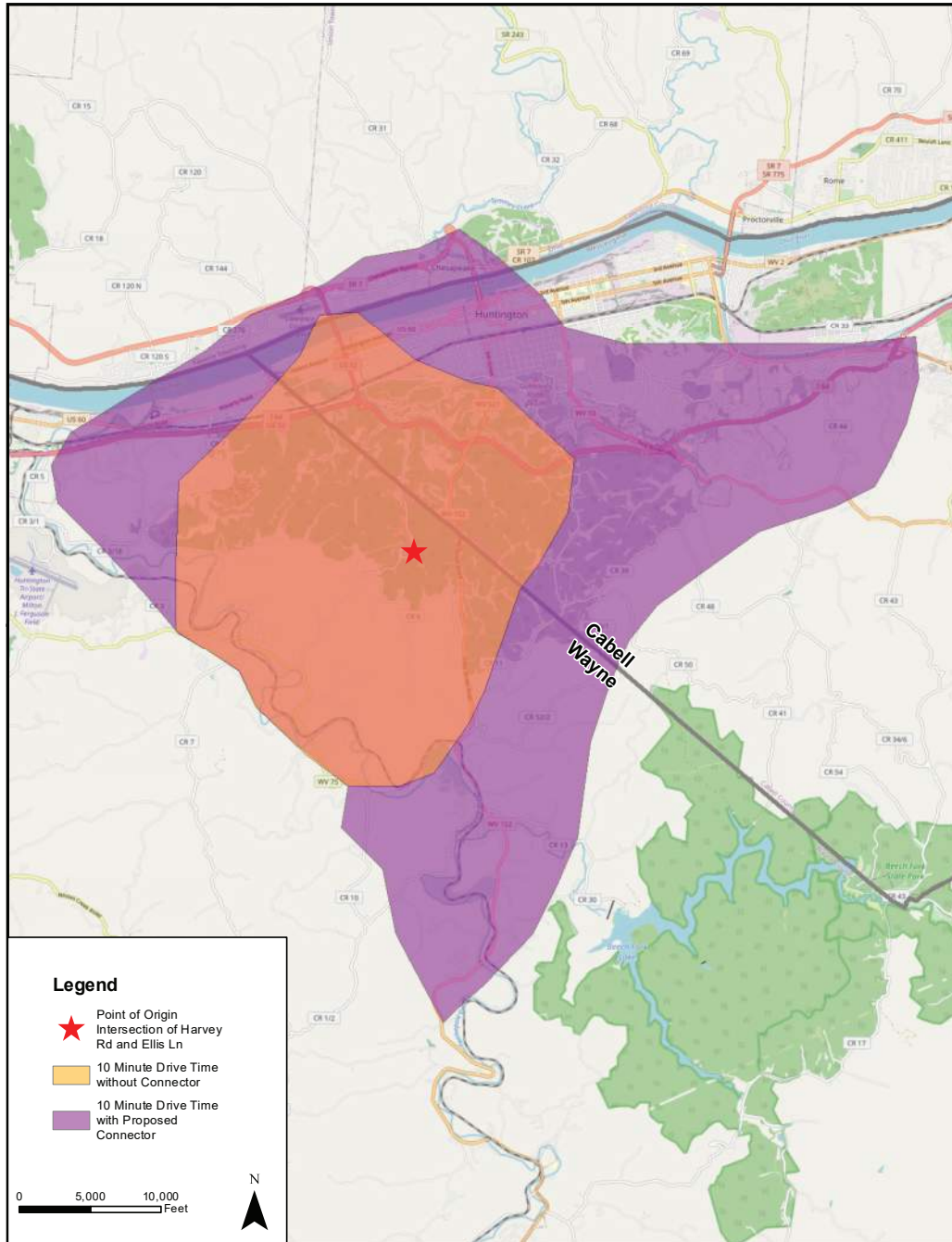
Annual Trips is calculated by multiplying 365 by the KYOVA model calculated 4,357 AADT for the proposed new connector road which results in 1,590,305 Annual Trips. Travel Time is calculated by multiplying distance between logical termini (miles) by posted speed limit (mph). Travel Time difference is calculated by subtracting the new connector's travel time from the existing south and north routes travel times. This resulted in a travel time difference of 0.071 hours/4.25 minutes for the existing southern route (German Ridge Road) and 0.167 hours/10 minutes for the existing northern route (WV-152 and Johnstown Road).

For local personal travel, the USDOT has determined the Value of Travel Time Savings VTTS as 50% of hourly median household income. According to Census data, Wayne County, WV Median Household Income is \$37,988 in 2019 dollars. This comes out to a VTTS of \$9.13/hour.⁷

Using the formula, the annual travel time savings was calculated as \$1,030,883 (south) to \$2,422,754 (north). However, the calculated travel time savings was based on the posted 25 mph speed limit for the existing south and north routes. Actual operational speeds are almost certainly lower than 25-mph, due to existing roadway deficiencies (e.g., narrow lanes and severe horizontal curves). As such, actual travel times savings are expected to be even higher than the calculated travel time savings.



7. <https://www.transportation.gov/sites/dot.gov/files/docs/USDOT%20VOT%20Guidance%202014.pdf>



4.6 TRAVEL DISTANCE MAP

Connectivity and accessibility are both associated with improvements in travel. A new connector will provide more efficient access to the project area potentially creating opportunities for development. A travel distance map showing the changes between the existing roadway network compared to a network with a new connector showcases potential impacts to accessibility. The map shows the 10-minute travel time radius for the existing road network compared with a new connector. You will note from the mapping that a new connector greatly expands the travel distance to the north, south, and east, for the same amount of travel time.

Travel Examples

Example 1: Currently in a 10-minute travel time, a driver can travel from Ellis Lane, via German Ridge Road, to Lavallette Volunteer Fire Department and Food Fair Shopping Center on WV-152 in Lavallette. With a new connector, a driver could reach the same destination in 4 minutes and in 10-minutes a driver could reach the intersection of Bloss Brand Road and WV-152, approximately 4.5 miles further south on WV-152.

Example 2: A new connector would provide more direct access, via Exit 8, to I-64, greatly increasing the travel distance in 10-minutes east and west on I-64.

Example 3: Currently in a 10-minute travel time, a driver can travel from Ellis Lane, via Harvey Road and Johnstown Road, to the intersection of WV-152 (5th Street Road) and 10th Avenue in downtown Huntington. With a new connector, a driver could reach the same destination in 6 minutes. In addition, a driver could reach the intersection of 8th Street and 4th Avenue, approximately 1 mile further north in 10 minutes.

4.7 EXISTING ROADWAY DEFICIENCIES

Roadway deficiencies are considered roadway geometries (lane width, curve radius, etc.) that do not meet current WVDOH roadway design standards to accommodate a representative design vehicle at a stated rate of speed (design speed). The West Virginia Department of Transportation 2019 Federal Functional Classification Map designates Harvey Road, in Wayne County, a minor collector - urban. This type of roadway requires a minimum of 11-foot lanes (10-foot if truck restricted) with a design speed of 35 miles per hour for a new roadway in mountainous terrain. The existing roadway network in the study area was examined for deficiencies and the following information summarizes the results.

WV-152, within the initial study area, was found to meet current WVDOH roadway design standards to accommodate the design vehicle and speed, except for the intersection with German Ridge Road. This intersection has poor intersection sight distance for vehicles turning north from German Ridge Road on to WV 152 due to the vertical crest. The June 2020 Safety Studies for Cabell and Wayne Counties also noted this deficiency.

Intersection of German Ridge Rd. and WV-152



Johnstown Road



Johnstown Road and the northern end of Harvey Road are primarily residential in character. Johnstown and Harvey Roads have narrow 9-foot travel lanes and lack shoulders. On Johnstown Road, two curves do not meet minimum radius, there is restricted lateral clearance (due to homes less than twelve feet from the edge of pavement), there is no guardrail on Hisey Fork Creek, and two business frontages do not meet standards. Harvey Road also has three 12-foot-wide bridges crossing Medley Fork Creek, inhibited site distances, and minimal to no clear zones.

German Ridge Road passes primarily through farmland with steep drop offs on either side and the occasional close-set barn or house. German Ridge Road travel way is 15-foot-wide (7.5-foot travel lanes), lacks shoulders, lacks centerline pavement markings, has restricted clear zones, and has four curves that do not meet standards.



German Ridge Road



Harvey Road

Harvey Road in Wayne County has a travel way 12-foot wide (6 foot lanes), lacks shoulders, and has restricted lateral clearance. In addition, Harvey Road has a switchback that does not meet the minimum turning radius.

DEFICIENCIES MAP

Johnstown Road

- Mixed commercial and residential use
- Narrow travel lanes with narrow to no shoulders
- No pedestrian accommodations
- Restricted lateral clearance due to locations of power poles, concrete residential stairs, and residential fences - leaving minimal to no clearzone

Harvey Road

- Predominately residential use
- Narrow travel lanes with narrow to no shoulders
- No pedestrian accommodations
- Restricted lateral clearance due to locations of power poles, concrete residential stairs, and residential fences - leaving minimal to no clearzone

Harvey Road – Bridges

- Harvey road runs adjacent to Medley Fork and crosses it 4 times within the project study area
- Three crossings are narrower than the existing travel way and could only be used as single lane bridges for most larger vehicles

Harvey Road – Switchback

- The existing switchback does not have turning room for most design vehicles greater than a passenger vehicle
- The curve radii do not meet the minimum radius for the posted speed per AASHTO standards

German Ridge Road

- Predominately residential use
- Narrow travel lanes with narrow to no shoulders
- No pedestrian accommodations

Johnstown Road - Lateral Clearance Restraint

- Road is adjacent to Hisey Creek with retaining wall within 4' of edge of travel way and no guardrail present

Johnstown Road Access Control

- With over fifty driveways on 1 mile of road within the project study area, there is no control of access
- There are two businesses with driveway access that span the length of their property frontage that do not adhere with principles of safe access management

WV-152 / 5th Street Road (Cabell County)

- Four lane median divided facility
- Mixed access to commercial and community locations

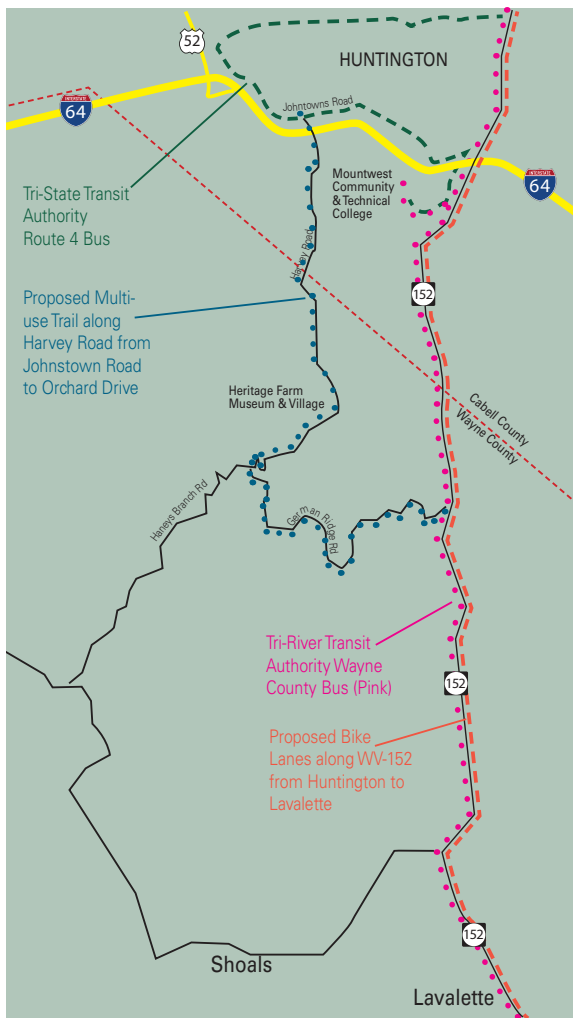
WV-152 (Wayne County)

- Road narrows to a two lane facility with increased speed limit
- Access is more mixed with increased residential properties

WV-152 and German Ridge Road Intersection

- The existing intersection has poor intersection sight distance for vehicles turning north from German Ridge Road onto WV-152 due to the vertical crest on WV-152 that lies just south of the intersection.





4.8 TRANSIT

The initial study area is also served by two different transit systems. Both transit systems overlap with a common stop at Mountwest Community College, located off WV-152 and in the northeast corner of the initial study area.

The Tri-State Transit Authority (TSTA) serves the City of Huntington and Cabell County. TSTA's Route 4 bus runs down Johnstown Road and only as far south down WV-152 as Mountwest.

The Tri-River Transit Authority (TRTA) serves Boone, Lincoln, Logan, Mason, and Wayne Counties. TRTA's Wayne County bus runs along WV-152 from Wayne with stops in Lavalette, Mountwest, and Huntington.

4.9 BICYCLE AND PEDESTRIAN

Existing Johnstown Road, Harvey Road, and German Ridge Road lack bicycle and pedestrian accommodations. Residents currently walk and bike in the streets. The 2017 KYOVA 2040 Metropolitan Transportation Plan currently proposes bike lane markings along WV-152 as well as a multi-use trail along Harvey Road from Johnstown Road to German Ridge Road to Orchard Drive on WV-152.

A new connector will provide a connection between these planned multimodal paths on Harvey Road and WV-152. In addition, a new connector will divert non-local traffic from existing Harvey Road and German Ridge Road, making them a more inviting route for for the proposed multi-use trail.

4.10 LOGICAL TERMINI

Logical termini are the points where all the alternatives begin and end. In this study, the logical termini were based on known road travel patterns for drivers accessing Harvey Road.

The intersection of Harvey Road and Ellis Lane was designated as the western logical terminus because it is the natural point that the new location alternatives terminate due to the terrain conditions.

The intersection of WV-152 and German Ridge Road was designated as the eastern logical terminus because it is the point of decision for drivers traveling north on WV-152 as to whether to use German Ridge Road to access Harvey Road (Alternative upgrade existing south) or continue north on WV-152 via Johnstown Road to Harvey Road (Alternative upgrade existing north).

What are Logical Termini?

Logical Termini for project development are defined as rational end points for both a transportation improvement and a review of the environmental impacts. Logical termini should be of sufficient length to address environmental matters on a broad scope; generate a segment which has independent utility; and not restrict consideration of alternatives for other reasonable foreseeable transportation improvements. – 23 CRF771.111(f)

5. WHAT ENVIRONMENTAL RESOURCES ARE PRESENT WITHIN THE HARVEY ROAD AREA?

In order to identify all potential alternatives, a series of environmental features maps were developed for the study area, using available GIS databases, for the presence of a range of human and natural environmental resources including community resources. These environmental features maps are presented in the appropriate sections below.

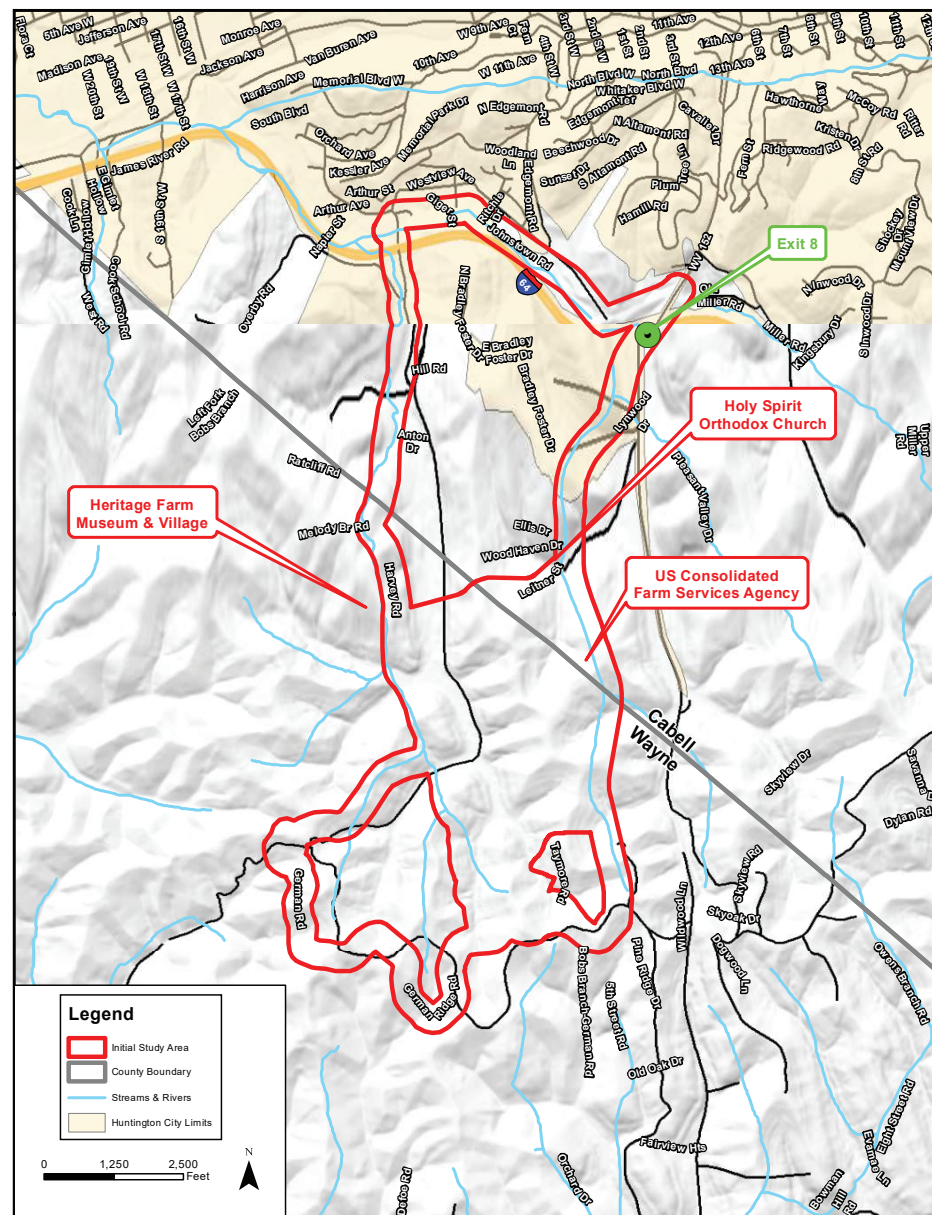
5.1 INITIAL STUDY AREA

A study area is the boundary which encompasses all travel options as well as potential alternatives to improve east to west connectivity within northern Wayne County. The study area is used to identify environmental features including social, economic, cultural and natural resources which provide constraints and opportunities for identifying potential alternatives to improve access, connectivity and mobility within northern Wayne County.

The initial study area boundaries were dictated by the upgrade existing alternatives north and south and the logical termini. This initial study area was bound to the north by Johnstown Road, the east by WV-152, the south by German Ridge Road, and the west by Harvey Road. The study area traverses both Cabell and Wayne Counties.

The study area around the existing roadways included a 500-foot-wide corridor around Johnstown Road, WV-152, and Harvey Road (Alternative upgrade existing north).

The Wayne County portion of the initial study area fully encompassed the area between Harvey Road and WV-152 in order to identify all initial alternatives. The southern end of the initial study area in Wayne County included a 500-foot-wide corridor around German Ridge Road (Alternative upgrade existing south). The layout of the initial study area resulted in three cutouts that are not within the study area because they are areas that will not be utilized to generate initial alternatives.



Footnotes from following page:

8. <https://www.epa.gov/laws-regulations/summary-executive-order-12898-federal-actions-address-environmental-justice>

9. <https://www.hhs.gov/civil-rights/for-individuals/special-topics/needy-families/civil-rights-requirements/index.html>

10. <https://www.transportation.gov/civil-rights/civil-rights-awareness-enforcement/title-vi-executive-order-13166>

5.2 HUMAN ENVIRONMENT

5.2.1 SOCIOECONOMICS

The EPA's 2020 Version of EJScreen was used to evaluate the initial study area for the presence of potential environmental justice (EJ) / Title VI / Limited English Proficiency (LEP) populations. The project study area is encompassed within two census block groups. The EJScreen indicated those block groups do not contain a people of color population or low-income population over county averages. There are no linguistically isolated populations. There is an elderly population (over 64) over county and statewide averages. This higher elderly population is due to the presence of the Woodlands Retirement Community within the census block.

Executive Order 12898 (EJ)

E.O. 12898 directs federal agencies to:

- Identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law.
- Develop a strategy for implementing environmental justice.
- Promote nondiscrimination in federal programs that affect human health and the environment, as well as provide minority and low-income communities access to public information and public participation.⁸

Title VI

Title VI prohibits discrimination on the basis of race, color, or national origin in any program or activity that receives Federal funds or other Federal financial assistance. Programs that receive Federal funds cannot distinguish among individuals on the basis of race, color or national origin, either directly or indirectly, in the types, quantity, quality or timeliness of program services, aids or benefits that they provide or the manner in which they provide them.⁹

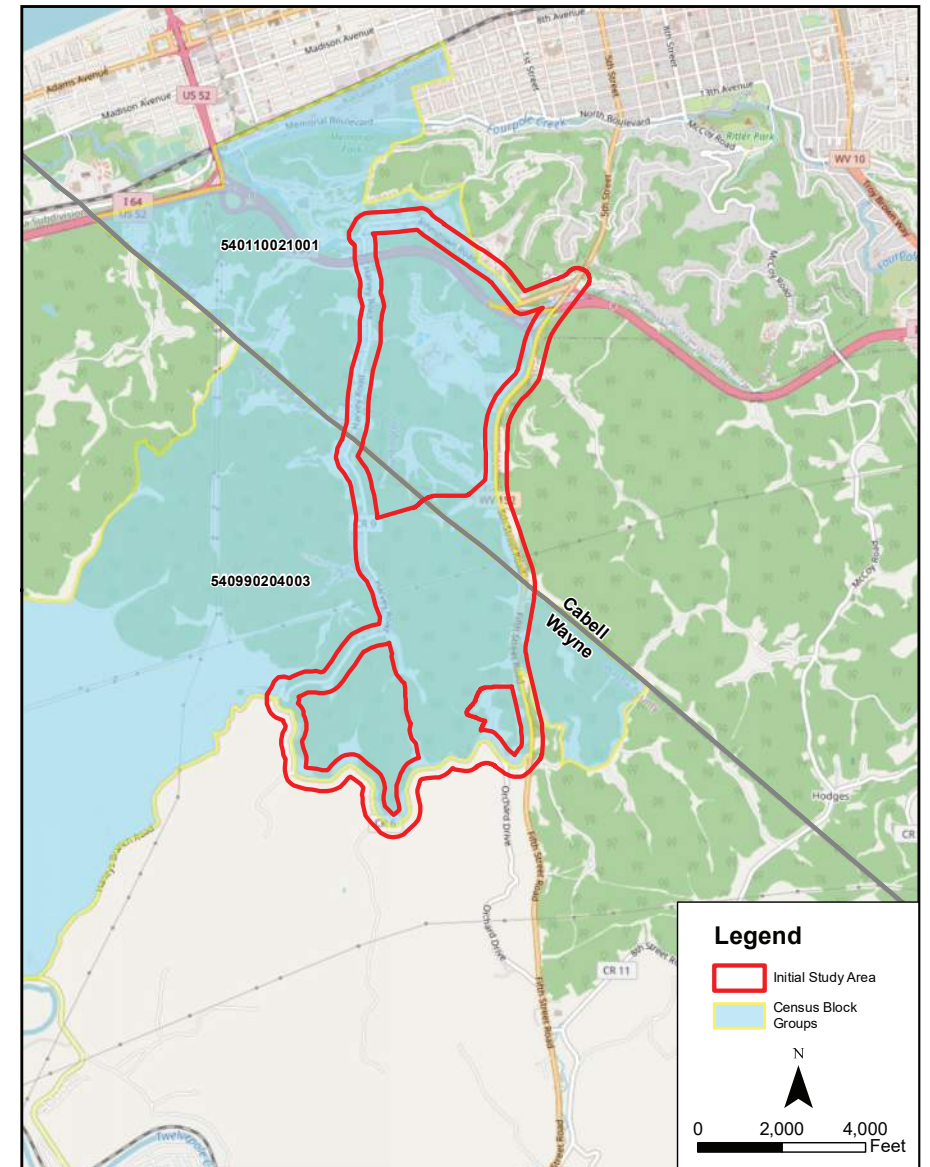
Executive Order 13166 (LEP)

Executive Order requires each Federal agency to examine the services it provides and develop and implement a system by which LEP persons can meaningfully access those services consistent with, and without unduly burdening, the fundamental mission of the agency.¹⁰

Socioeconomic Data

Block Group	Population	People of color	Low income	Linguistically isolated	Elderly (64+)
5401-1002-1001	1,410	0%	44%	0%	33
Cabell County	40,708	3%	44%	0%	20
5409-9020-4003	1,058	1%	33%	0%	24
Wayne County	40,708	3%	44%	0%	20
West Virginia	1,792,000	8%	39%	0%	19

Data source: EPA EJ Screen 2020

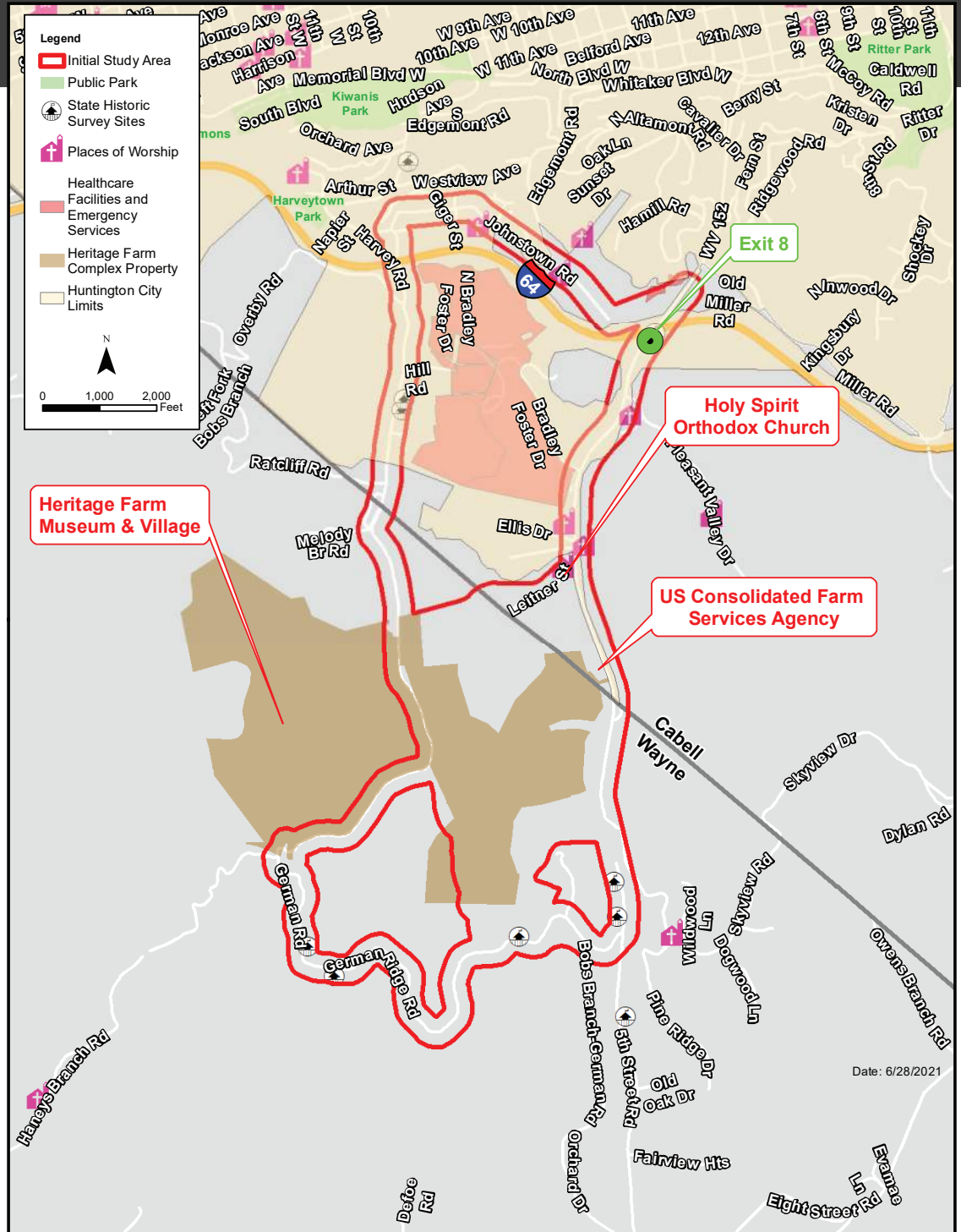


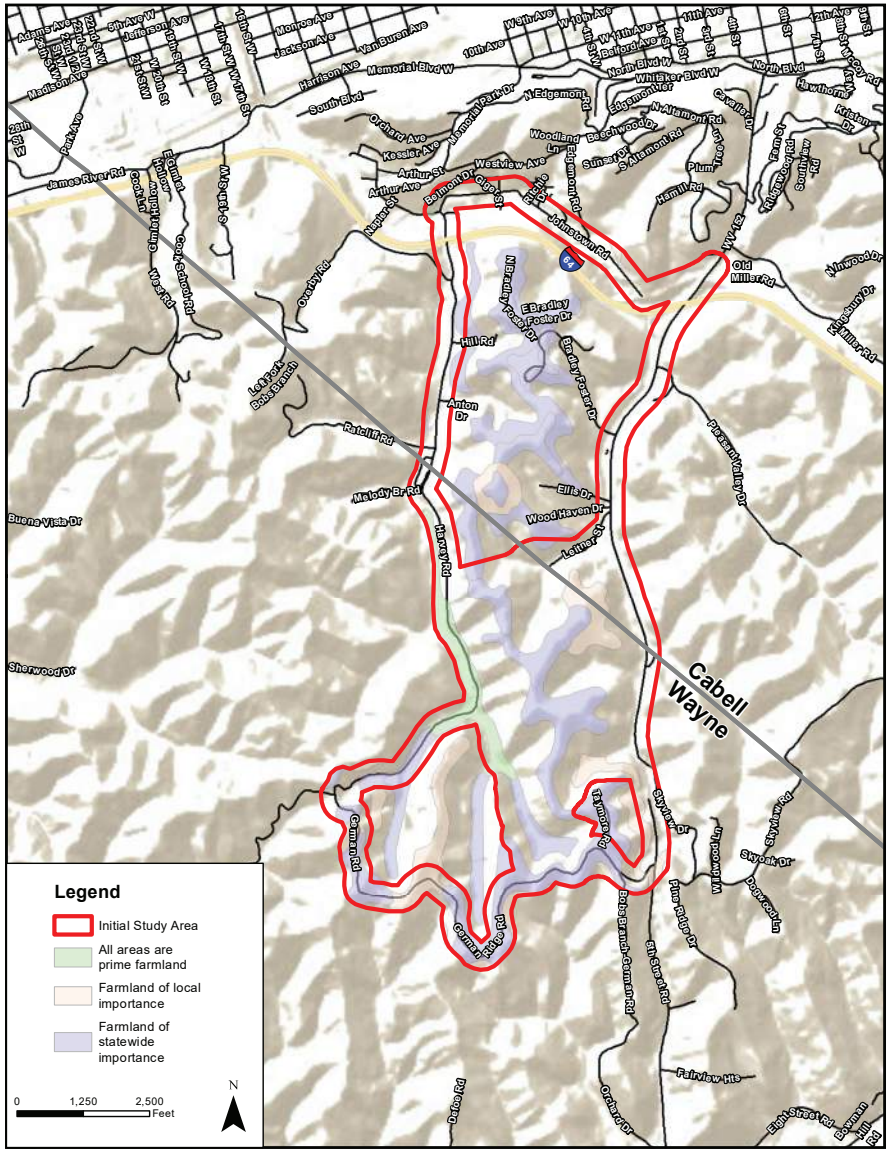
5.2.2 COMMUNITY FACILITIES

The predominance of the initial study area is served by public water and sewer. No public schools, parks, cemeteries, nursing homes, hospitals, or airports were found within the initial study area. Harvey Road is part of the Mike and Henriella Perry Heritage Trail which is tourism path connecting the 14th Street West Antique District and other tourist attractions in downtown Huntington to the Railroad Museum, the Radio Museum, and to the Heritage Farm Museum and Village.

The northern portion of the initial study area is within Cabell County and predominately within the City of Huntington limits. Johnstown Road and the northern end of Harvey Road are characterized by a residential community with houses set both close together and to the road. The encompassed portion of initial study area contains the only nursing home (Woodlands Retirement Community, shown in pink on the map) which has an associated healthcare facility.

Within the initial study area, along Johnstown Road, there is one private school (Covenant School), two of the five places of worship (Trinity Freewill Baptist Church and Christ Temple Church), and two healthcare facilities (Valley Health – Ear, Nose, and Throat and CHH Family Urgent Care Center). In addition, there exists along the northern portion of WV-152 (5th Street Road) one community college (Mountwest Community & Technical College) and the proposed location for a proposed Exit 8 Welcome Center.





The southern portion of the study area is predominately within unincorporated northern Wayne County. WV-152 is characterized by a mix of small businesses and residences. It has one public facility (USDA Service Center) and three places of worship (Kingdom Hall of Jehovah’s Witnesses, 5th Street Church of Christ, and Holy Spirit Orthodox Church). German Ridge Road is characterized by a mix of residences and farmland. Harvey Road contains the Heritage Farm complex made up of the Heritage Farm Museum & Village, the Appalachian Backyard Adventure, and the proposed Heritage Farm Mill Creek Adventure Park. The heart of the study area is predominately undeveloped land owned by Heritage Farm Museum and Village (shown in tan on the map).

5.2.3 CULTURAL RESOURCES

The West Virginia State Historic Preservation Office GIS Mapping System identified eight historic survey sites: CB-1962 5th Street Overpass over I-64; CB-2357 2620 Harvey Road; CB-2350 2624 Harvey Road; WA-0285 3063 Route 152; WA-0286 3089 5th Street (WV-152); WA-0206 1690 German Ridge Road; WA-0204 German Ridge Road; and RMU-51 Reconnaissance Historic Resources Survey for Pleasants, Lincoln, Jackson, Mason, and Wayne Counties, West Virginia. None of the survey sites were listed as National Register of Historic Places eligible.

5.2.4 ZONING / LAND USE / PRIME FARMLAND

The northern portion of the initial study area falls within the City of Huntington zoning ordinances. The area is zoned R-1 single family residential. This area is referred to in the 2013 Huntington 2025 Plan report as “Southern Hills” and is designated as rural residential. The unincorporated areas of Wayne County within the initial study area do not have land use zoning ordinances and do not fall within a Wayne County land use plan. The alternatives were also screened for farmland of statewide importance.

5.3 NATURAL ENVIRONMENT

5.3.1 SURFACE WATER RESOURCES

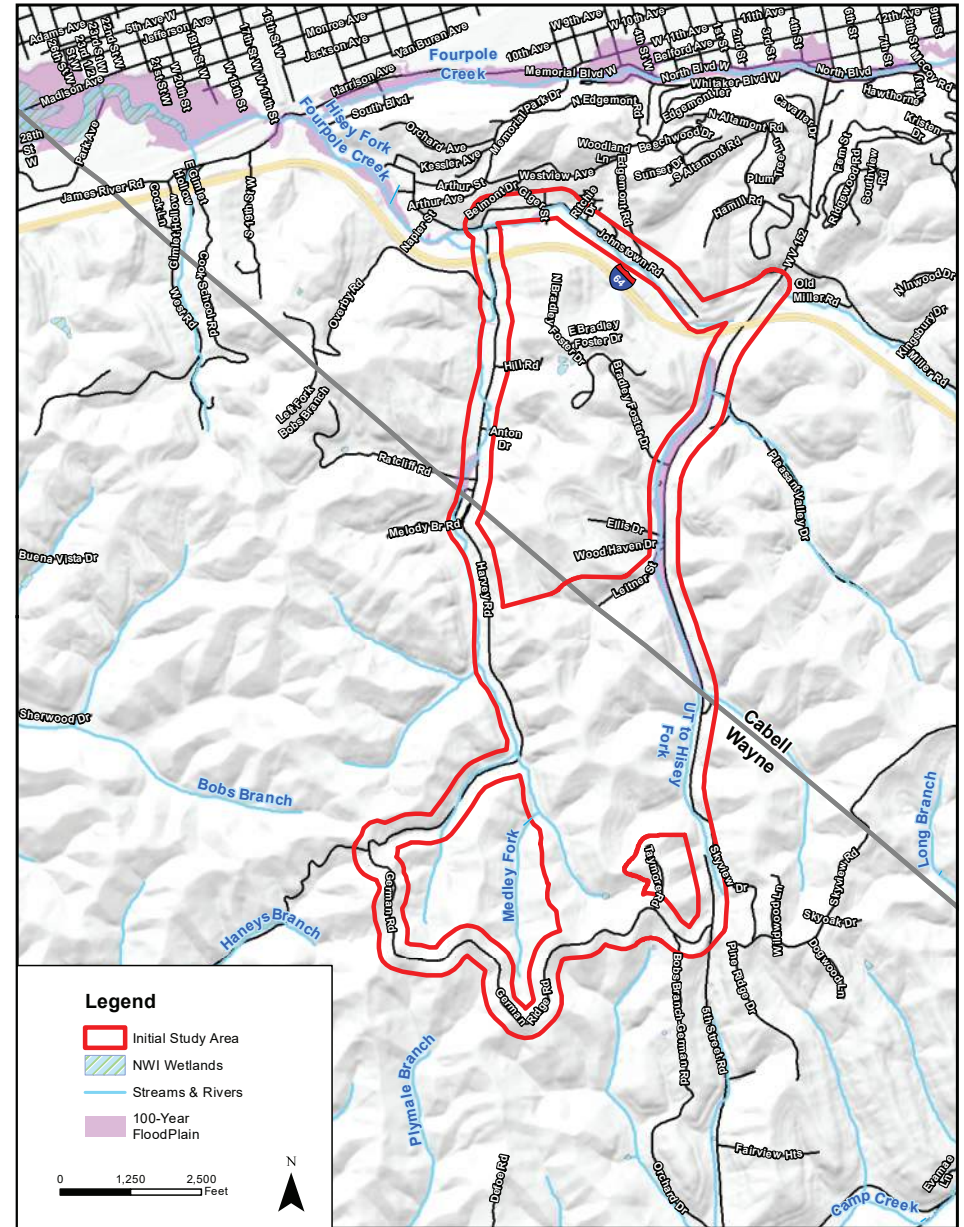
The initial study area contains two named creeks and associated unnamed tributaries. The northern portion contains the west flowing Hisey Fork Fourpole Creek (Hisey Fork), which parallels Johnstown Road. An unnamed tributary creek flows north into Hisey Fork parallel to WV-152. Medley Fork Creek flows north into Hisey Fork parallel to Harvey Road. The southern portion of the study area has Medley Fork Creek paralleling Harvey Road and unnamed tributaries (UT). The West Virginia Department of Environmental Protection does not list these creeks or their tributaries as impaired streams.

5.3.2 WETLANDS

The US Fish and Wildlife Service (USFWS) National Wetland Inventory online mapping service indicates the potential for riverine wetlands along the lower elevations of the creeks.

5.3.3 FLOODPLAINS

Mapping also indicates the presence of floodplains along the lower elevations of the creeks.



5.3.4 THREATENED AND ENDANGERED SPECIES

The USFWS Information for Planning and Consultation (IPaC) system indicates the potential occurrence of eight threatened or endangered species within the initial study area. These are gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), clubshell (*Pleurobema clava*), fanshell (*Cyprogenia stegaria*), pink mucket (*Lampsilis abrupta*), sheepsnose mussel (*Plethobasus cyphus*), and shuffbox mussel (*Epioblasma triquetra*). The West Virginia Division of Natural Resources Recreation Tool does not identify any Wildlife Management Areas within or near the study area.



Gray Bat
(*Myotis
grisescens*)



Clubshell
(*Pleurobema
clava*)

5.3.5 AIR QUALITY

As of 2019, all of West Virginia is in attainment for air quality.

5.3.6 NOISE

Noise will be evaluated as part of the NEPA phase.

5.3.7 HAZARDOUS MATERIALS

The EPA's Environmapper was reviewed and three hazardous materials sites were noted within the initial study area. These were the Speedway #9033 and GoMart gas stations on WV-152 and the former Superamerica 7316 gas station on the corner of Johnstown Road and Harvey Road.

5.3.8 MINES / MINERAL RESOURCES

The Minerals Information Team maps from the US Geological Survey were reviewed and no mines or mineral resources were identified in the initial study area.



Medley Fork
Creek along
Harvey Road

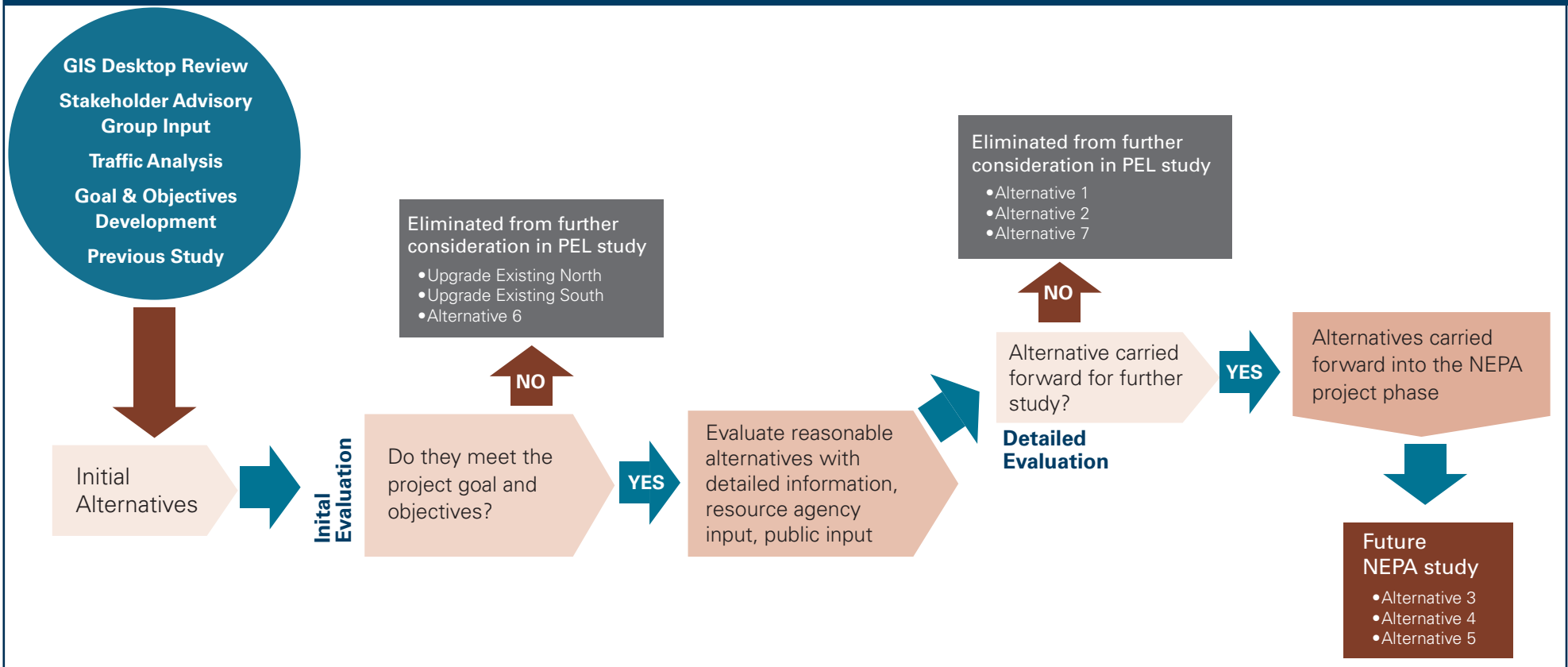
6. HOW WERE THE ALTERNATIVES DEVELOPED AND EVALUATED?

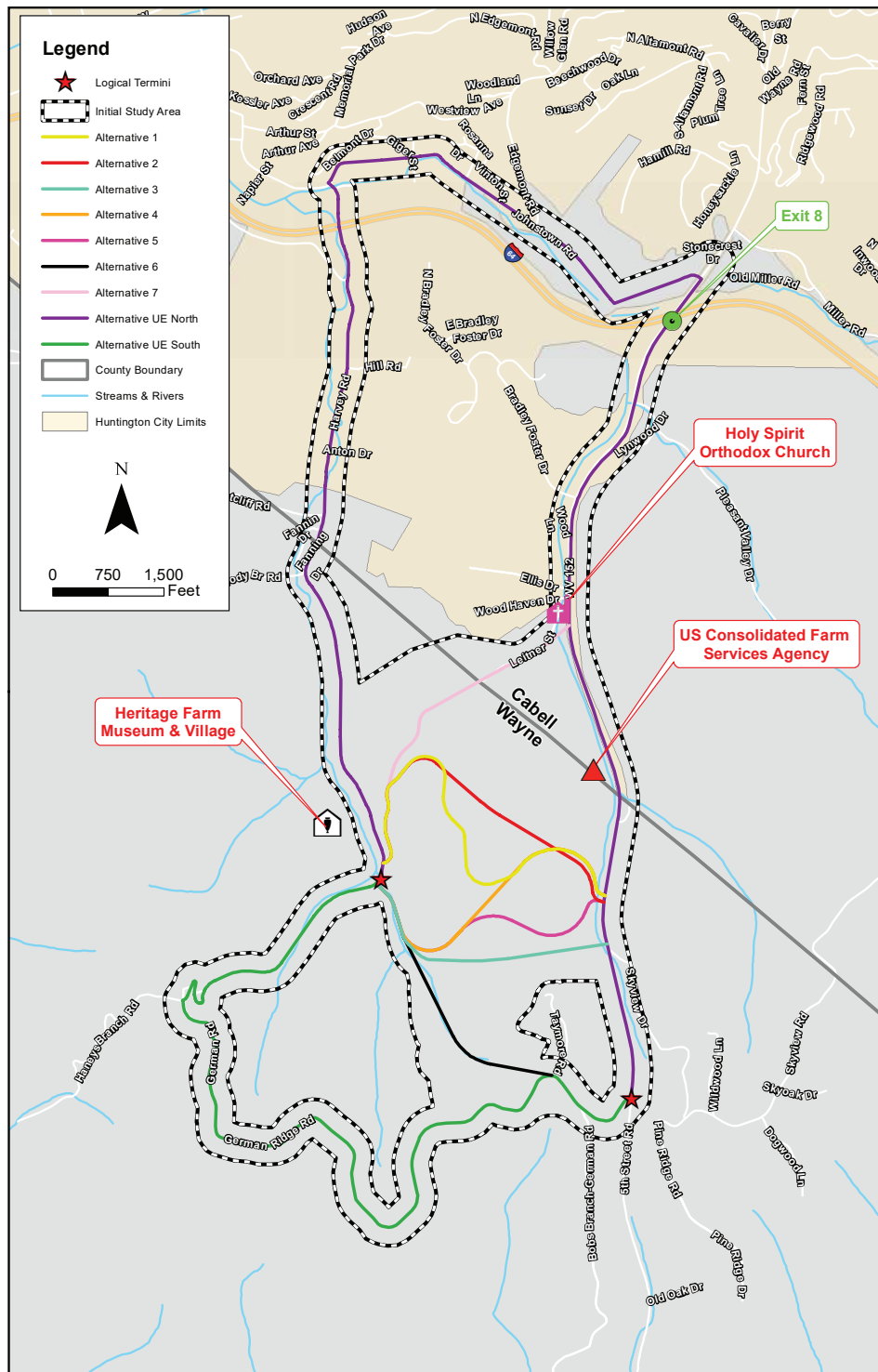
Nine alternatives were initially identified and screened for potential environmental impacts as well as how well they could address the project objectives. Three alternatives were eliminated as unreasonable because they either did not address the project objectives or resulted in substantially high environmental impacts. The remaining six alternatives were considered to be reasonable alternatives and carried forward for a more detailed analysis.

Reasonable alternatives

- Meets the project goal and objectives
- Does not have substantial environmental impacts
- Is practical and feasible

Alternatives Development & Evaluation





6.1 NO BUILD ALTERNATIVE

The no build alternative is defined to serve as the baseline for comparison of all the alternatives. The no build alternative represents the transportation system as it exists.

6.2 INITIAL ALTERNATIVES

Using the eastern logical termini (intersection of German Ridge Road and WV-152) as the travel origin and the western logical termini (intersection of Harvey Road and Ellis Lane) as the travel destination, nine alternatives were identified within the initial study area.

Initial Alternatives

Alternative Upgrade Existing North starts at the eastern logical termini. Drivers head 2.2-miles north on WV-152, turn left 0.2-miles on I-64 east bound exit ramp, turn right 0.9-miles on Johnstown Road, and turn left for 1.9-miles on Harvey Road before reaching the western logical termini. Total travel distance is 5.2 miles with an estimated travel time of 9-minutes.

Alternative Upgrade Existing South starts at the eastern logical termini, heads southwest for 2.1-miles on German Ridge Road and turns right for 0.7-miles on Harvey Road before reaching the western logical termini. Total travel distance is 2.8-miles with an estimated travel time of 8-minutes.

Seven new location alternatives were identified traversing the ridgeline between Harvey Road and WV-152. These were developed based on basic roadway engineering design principles needed to cross the ridgeline.

Alternative 1 starts at the eastern logical termini, heads north on WV-152 approximately 0.54 miles before turning left onto new location connector for approximately 1.14 to reach the western logical termini. Total travel distance is 1.68 miles with an estimated travel time of 2.5 minutes.

Alternative 2 starts at the eastern logical termini, heads north on W-152 approximately 0.53 miles before turning left onto new location connector for approximately 0.97 miles to reach the western logical termini. Total travel distance is 1.5 miles with an estimated travel time of 2.25 minutes.

Alternative 3 starts at the eastern logical termini, heads north on WV-152 approximately 0.37 miles before turning left onto new location connector 0.68 and then merging with existing Ellis Lane for approximately 0.09 miles to reach the western logical termini. Total travel distance is 1.14 miles with an estimated travel time of 1.75 minutes.

Alternative 4 starts at the eastern logical termini, heads north on WV-152 approximately 0.46 miles before turning left onto new location connector 0.87 miles and then merging with existing Ellis Lane for approximately 0.09 miles to reach the western logical termini. Total travel distance is 1.42 miles with an estimated travel time of 2.17 minutes.

Alternative 5 starts at the eastern logical termini, heads north on WV-152 approximately 0.46 miles before turning left onto new location connector 0.73 miles and then merging with existing Ellis Lane for approximately 0.14 miles to reach the western logical termini. Total travel distance is 1.33 miles with an estimated travel time of 2 minutes.

Alternative 6 starts at the eastern logical termini, heads west on German Ridge Road approximately 0.30 miles before turning right (north) onto new location connector 0.64 miles and then merging with existing Ellis Lane for approximately 0.09 miles to reach the western logical termini. Total travel distance is 1.03 miles with an estimated travel time of 1.5 minutes.

Alternative 7 starts at the eastern logical termini, heads north on WV-152 approximately 1.2 miles before turn left onto existing Leitner Street for approximately 0.4 miles before continuing south on new location connector 1.03 miles to reach the western logical termini. Total travel distance is 2.19 miles with an estimated travel time of 3.17 minutes.

6.3 INITIAL EVALUATION

A corridor analysis approach was utilized to identify potential environmental impacts for all nine initial alternatives and summarized in a potential impact matrix table. (Shown below).

Based on this evaluation, three alternatives (Upgrade Existing North, Upgrade Existing South, and Alternative 6) were eliminated from further consideration.

Upgrade existing north had the longest length, the most linear feet of potential stream impacts, the highest number of parcels and residential structures. It also does not meet the project goal nor any of the objectives. Upgrade existing south had the second longest length, the third highest linear feet of potential stream impacts, the second highest number of parcels and residential structures, and the most farmland of statewide importance. It also does not meet the project goal nor any of the objectives. Alternative 6 had the 2nd highest linear feet of potential stream impacts, the 3rd highest number of parcels and residential structures. In addition, this alternative required a realignment of the intersection of German Ridge Road and WV-152 intersection.

The remaining six alternatives (1-5 and 7) were retained because they fulfilled all the project objectives and had fewer potential environmental impacts than the three eliminated.

Harvey Road Connector PEL Study Potential Impacts Matrix									
	Initial Alternative Level 1 Screening								
	ALTERNATIVE UE-NORTH	ALTERNATIVE UE-SOUTH	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	ALTERNATIVE 5	ALTERNATIVE 6	ALTERNATIVE 7
Total Length (miles)	5.28	2.50	1.68	1.50	1.14	1.42	1.33	1.03	2.19
NATURAL RESOURCES									
Wetlands (acres)	0	0	0	0	0	0	0	.22	0
Streams (linear feet)	4,617	2,276	185	185	330	265	263	3,351	135
100-year Floodplain (acres)	3.75	0	0	0	0	0	0	0	0.85
Threatened or Endangered Species	yes	yes	yes	yes	yes	yes	yes	yes	yes
Farmland Statewide Importance (acres)	11.68	59.16	12.00	4.73	9.93	9.95	7.08	19.9	4.46
COMMUNITY RESOURCES									
Parcels (number)	300	45	8	9	11	7	11	26	18
Residential Structures/Units (number)	124	21	0	0	6	1	2	8	1
Commercial Structures/Units (number)	5	0	1	1	0	1	1	1	5
Museums (building number)	6	2	1	0	2	0	0	0	0
Places of Worship (number)	2	0	0	0	0	0	0	0	1
Hazardous Sites (number)	1	0	0	0	0	0	0	0	0
Major Utilities (number)	1	1	2	2	1	1	1	1	2

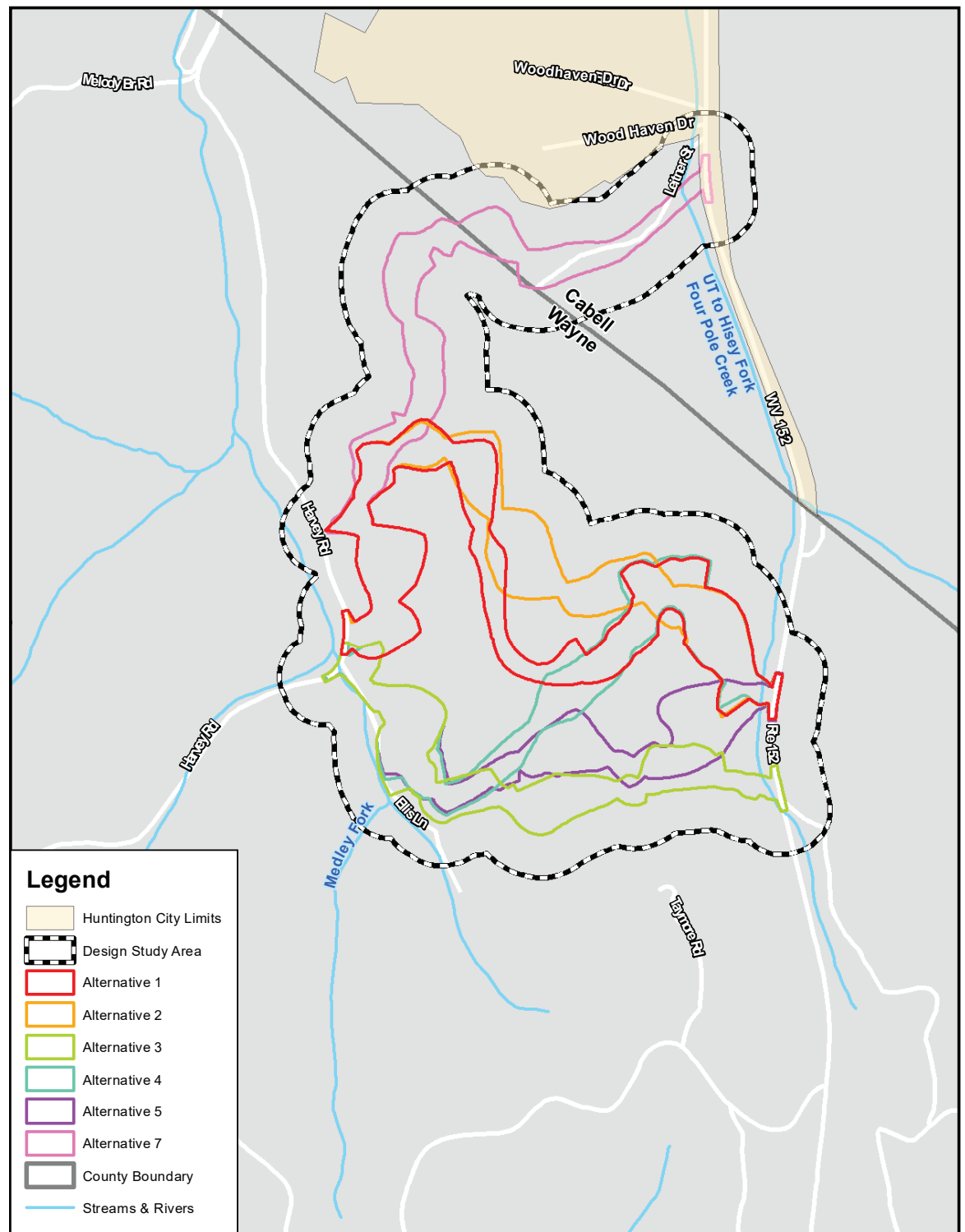
UE = Upgrade Existing; North = Johnstown Road / Harvey Road; South = German Ridge Road / Harvey Road

6.4 DETAILED EVALUATION

The remaining six alternatives (1-5 and 7) were subjected to further development and evaluation. This entailed refining the initial study area to a design study area, developing conceptual roadway designs, construction costs, conducting more in-depth cultural resources screening, and conducting a field reconnaissance. The goal of the additional evaluation was to determine the best alternatives for further evaluation in the NEPA phase.

6.4.1 DESIGN STUDY AREA

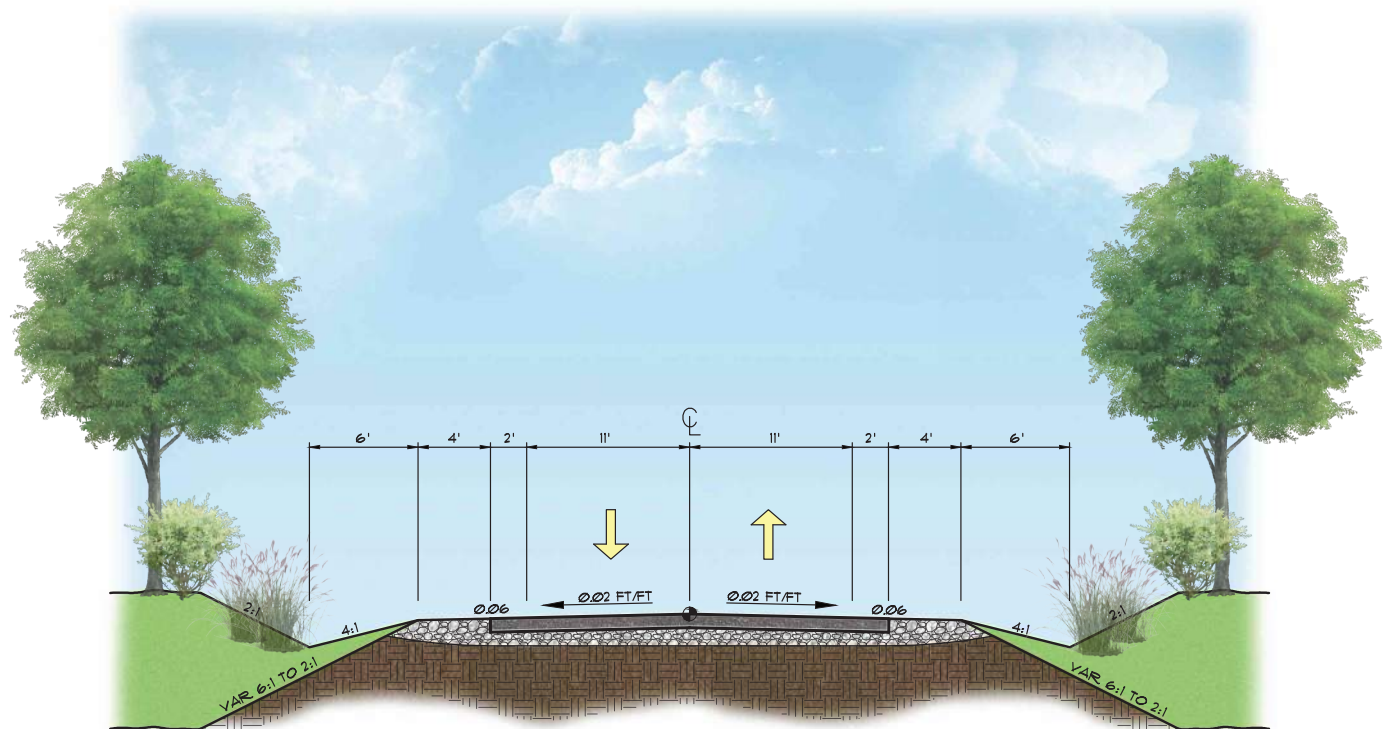
With the elimination of the two upgrade existing alternatives, the initial study area was refined to a design study area around Alternatives 1-5 and 7. The design study area buffered these six alternatives to account for minor shifts in the alternative's alignments that may occur once the project is funded for final design.



6.4.2 CONCEPTUAL ROADWAY DESIGNS

Evaluating the conceptual roadway designs for the new locations included crossing a 350-foot-high ridgeline. A conceptual roadway design for all 6 alternatives was required to account for the amount of earthwork that will be needed to construct a roadway that meets design standards across the ridgeline. Due to the steep terrain the footprint to construct the roadway is much greater than the width of the roadway due to the need to tie back into the steep slopes at a grade that is safe and stable. The required earthwork influences the potential environmental impacts and the construction costs estimates.

The conceptual roadway design was based on a maximum footprint using 2:1 slopes, without minimization efforts (retaining walls, steeper slopes). Based on the Urban Minor Collector functional classification for the new connector and considering a coach/tour bus as the design vehicle with design speed 35-mph, the typical section is a two-lane roadway with 11-foot lanes in each direction, undivided, with 5-foot-paved shoulders. The construction footprint also included an additional 30 feet from where the graded section tied back into the existing terrain. As such, these conceptual roadway designs (included in Section 6.5) show the maximum impact.





6.4.3 CONSTRUCTION COST ESTIMATES

Using the conceptual roadway designs, the construction cost estimates were generated from average unit bid prices, comparison with cost data of similar facilities built in the past, and estimates based on expected engineering, surveying, and permitting expenses. The construction cost estimates do not account for right-of-way or utility costs. Appendix B includes calculation sheets showing construction quantities and cost estimates for each alternative.

6.4.4 IN-DEPTH CULTURAL RESOURCES SCREENING

The WVDOH was provided shapefiles for the design study area and six alternatives. WVDOH conducted a more in-depth cultural resources screening by buffering those by 1.5 miles. The screening identified four archaeological surveys, an archaeology site, an architecture survey, and nine architecture sites within the 1.5 buffer of the design study area. However, none of these features were found within the design study area or the alternative footprints.

6.4.5 FIELD RECONNAISSANCE

In March 2021, ELR field staff conducted a two-day field reconnaissance of the design study area. The field reconnaissance evaluated the design study area for potential threatened and endangered species habitat as well as stream and wetland features not identified through the desktop GIS review.

No actual wetland delineations, stream classifications, or threatened and endangered species surveys occurred during the field reconnaissance. However, the field truthing provided indications on where such survey activities will need to be conducted during the NEPA study phase.

6.4.5.1 POTENTIAL MUSSEL HABITAT

Medley Fork (along Harvey Road) and the UT to Hisey Fork (along WV-152) within the design study area, were evaluated for their potential habitat features for the five endangered mussel species listed for the area. These are:

- Clubshell (*Pleurobema clava*)
- Fanshell (*Cyprogenia stegaria*)
- Pink mucket (*Lampsilis abrupta*)
- Sheepnose mussel (*Plethobasus cyphus*)
- Shuffbox mussel (*Epioblasma triquetra*)

The field reconnaissance noted the following:

Medley Fork: 1-8 feet wide, slow velocity, clear, with a substrate predominately cobble and gravel with some silt and sand on bars, benches, and pools.

UT Hisey Fork: 6-8 feet wide, slow velocity, mostly clear with some areas of slight turbidity, with a substrate predominately cobble and gravel with some silt and sand on bars, benches, and pools.

The field reconnaissance for potential mussel habitat concluded no habitat was present for fanshell, pinkmucket, sheepnose, or snuffbox. However, there is a very low probability of clubshell habitat in isolated portions of both Medley Fork and the UT to Hisey Fork.

Clubshell (*Pleurobema clava*): found in clean, loose sand and gravel in medium to small rivers and streams.

Fanshell (*Cyprogenia stegaria*): found in medium to large rivers. It buries itself in sand or gravel in deep water of moderate current.

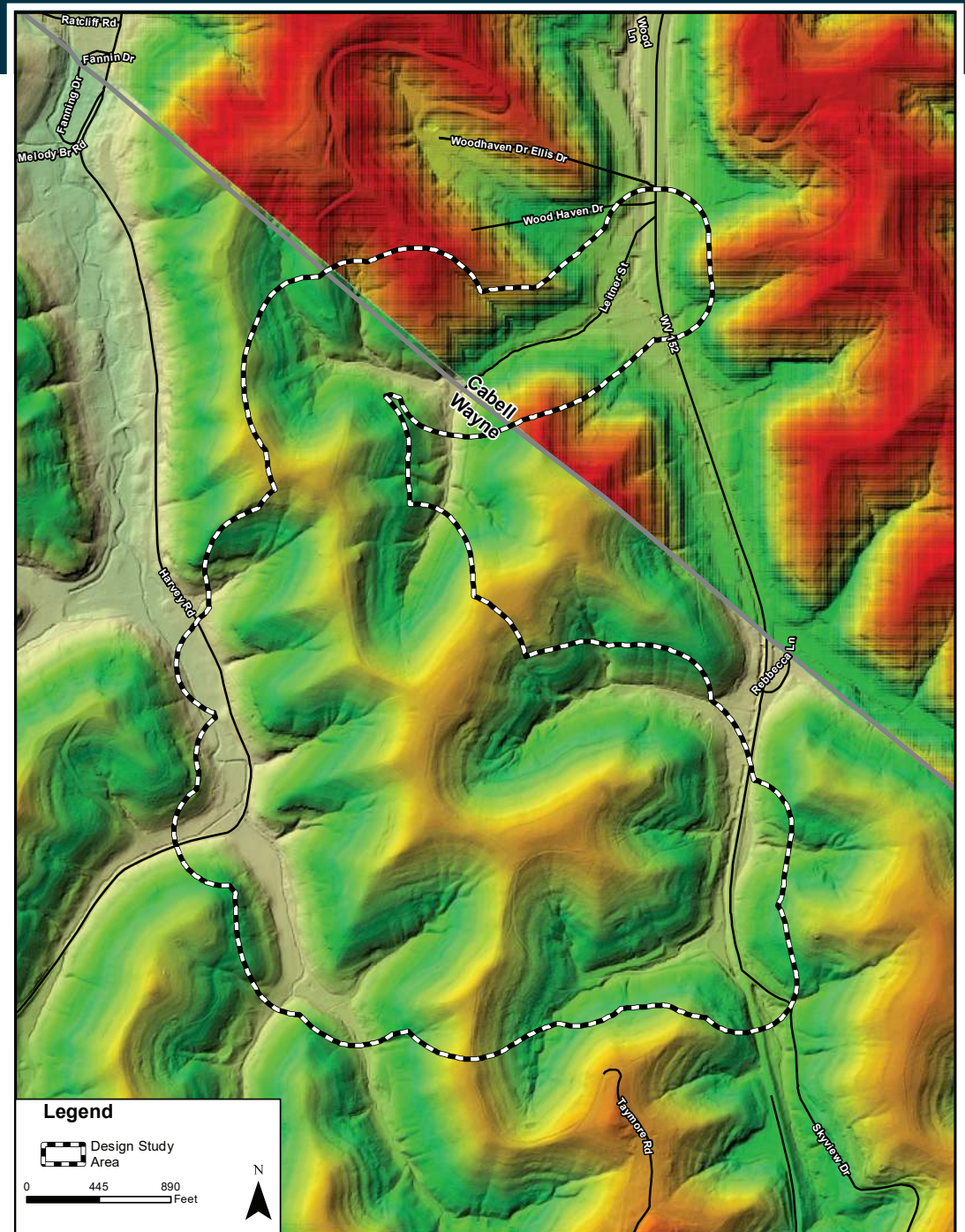
Pink mucket (*Lampsilis abrupta*): found in mud and sand and in shallow riffles and shoals swept free of silt in major rivers and tributaries.

Sheepnose mussel (*Plethobasus cyphus*): found in larger rivers and streams where they are usually found in shallow areas with moderate to swift currents that flow over coarse sand and gravel. However, they have also been found in areas of mud, cobble, and boulders, and in large rivers they may be found in deep runs.

Shuffbox mussel (*Epioblasma triquetra*): found in small- to medium-sized creeks, inhabiting areas with a swift current. Adults often burrow deep in sand, gravel, or cobble substrates.

6.4.5.2 LiDAR MAPPING

Light Detection and Ranging (LiDAR) maps were overlaid on the design study area to identify potential features for further evaluation during the field reconnaissance. The LiDAR mapping identified seventeen areas within the design study area to evaluate for potential bat habitat and unidentified waters of the U.S. These features included potential drainage features, concave features with potential wetlands, and potential ledge or cliff faces seen in the LiDAR mapping. Appendix C includes a copy of the field reconnaissance plan describing the seventeen identified locations.



6.4.5.3 POTENTIAL BAT HABITAT

The design study area was evaluated for potential bat habitat for three endangered bat species. These are:

Gray bat (*Myotis grisescens*): found in vertical caves, caves along rivers – do not use barns or houses.

Indiana bat (*Myotis sodalis*): caves, abandoned mines, wooded areas containing trees with loose tree bark or snags.

Northern long-eared bat (*Myotis septentrionalis*): loose tree bark, snags, cavities, crevices, caves, and mines.

The design study area falls within Zone 16 of the WVDOH programmatic agreement for threatened and endangered species. The programmatic agreement has a 17-acre threshold for tree clearing before it is no longer applicable.

The field reconnaissance found rock ledges and small caves that present potential suitable habitat for gray bat. These areas are noted with green icons on the individual reasonable alternatives maps shown in Section 6.5.

The field reconnaissance concluded the entire design study area presented a variety of preferred habitat, such as shag bark hickory, white oak, and snags, for both Indiana bat and northern long-eared bat.

6.4.5.4 POTENTIAL STREAM AND WETLAND FEATURES

The field reconnaissance found that many of the potential drainage features identified by the LiDAR maps were ephemeral in nature. Several features could potentially be classified as intermittent and/or perennial. In addition, one hillside spring/seep was located which could potentially feed a wetland further downslope. These features are noted by blue diamonds on the individual reasonable alternatives maps shown in Section 6.5.

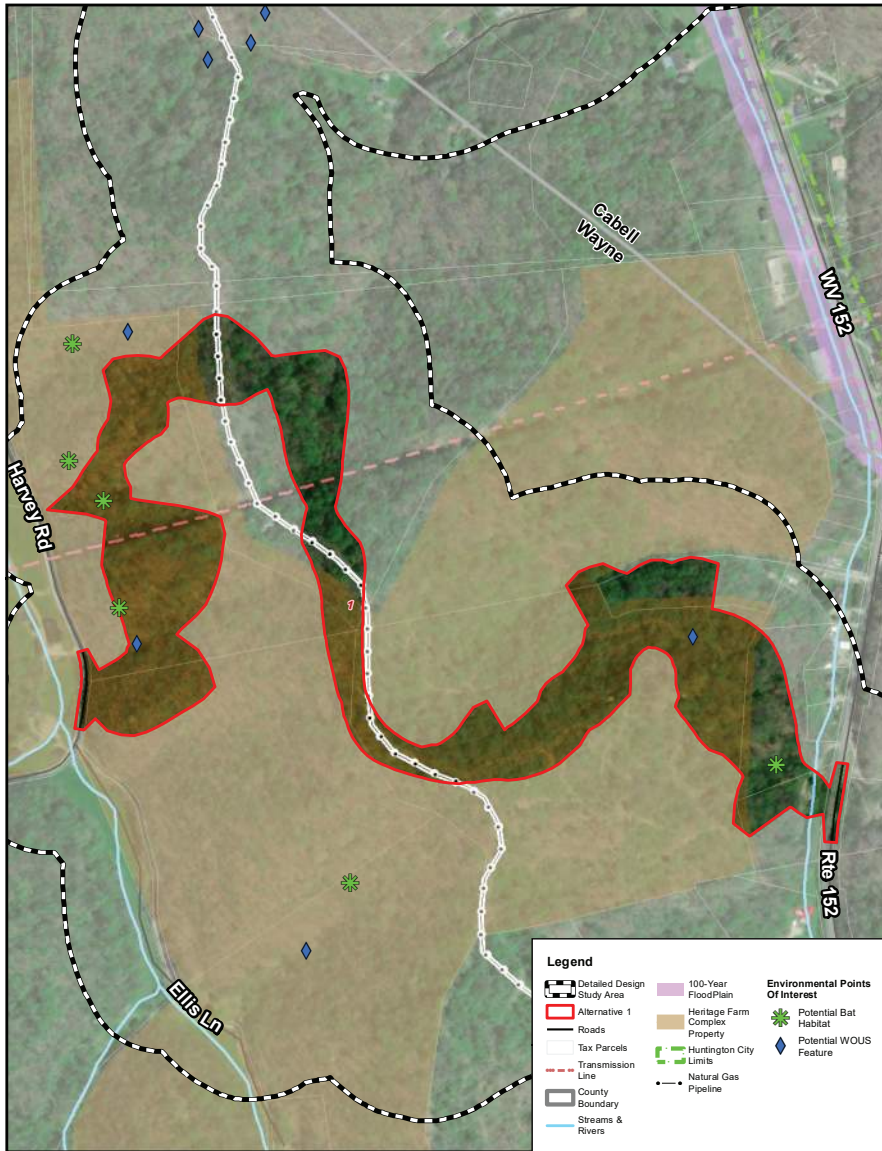
6.4.5.5 NATURAL GAS PIPELINE

The field reconnaissance identified a natural gas pipeline running north-south through the center of the design study area that had not previously been found during desktop GIS survey. The pipeline was added to the individual reasonable alternatives maps shown in Section 6.5.

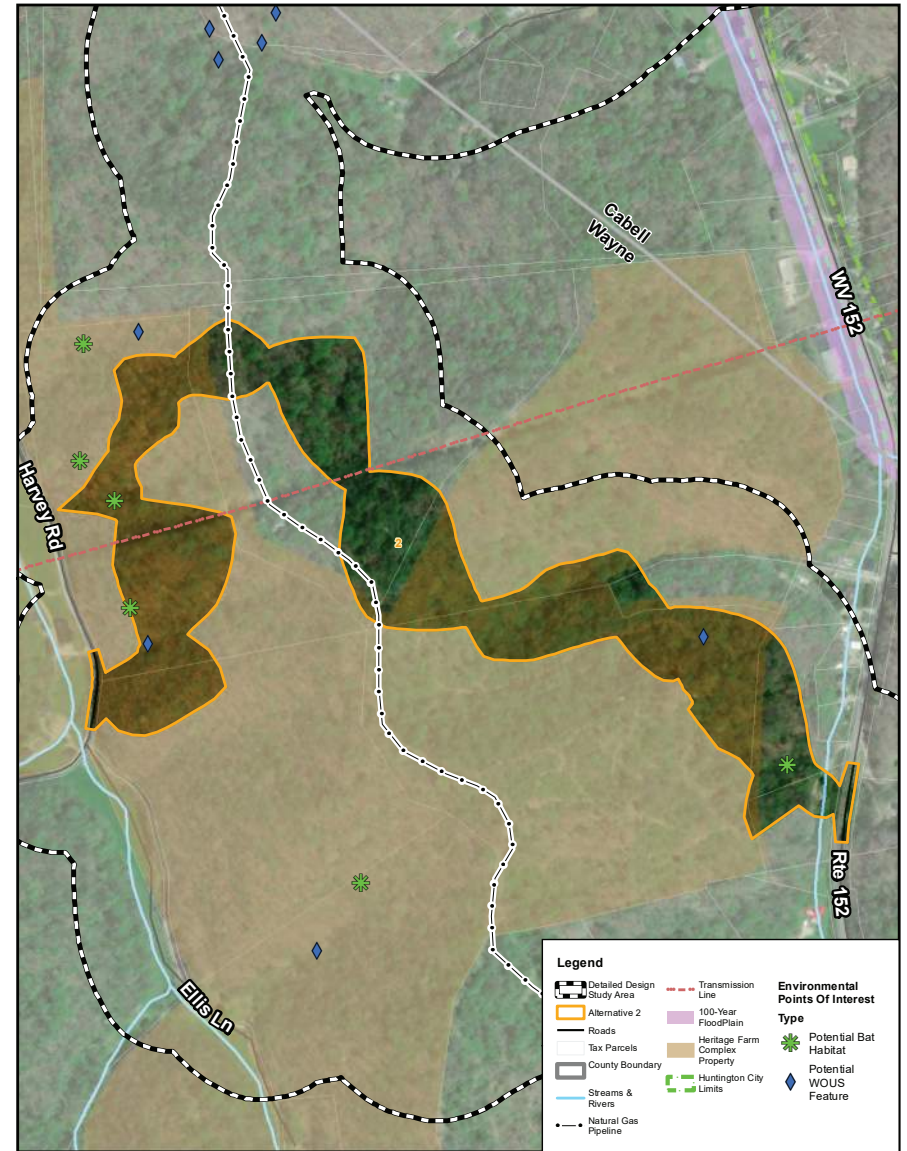


6.5 INDIVIDUAL REASONABLE ALTERNATIVE MAPS

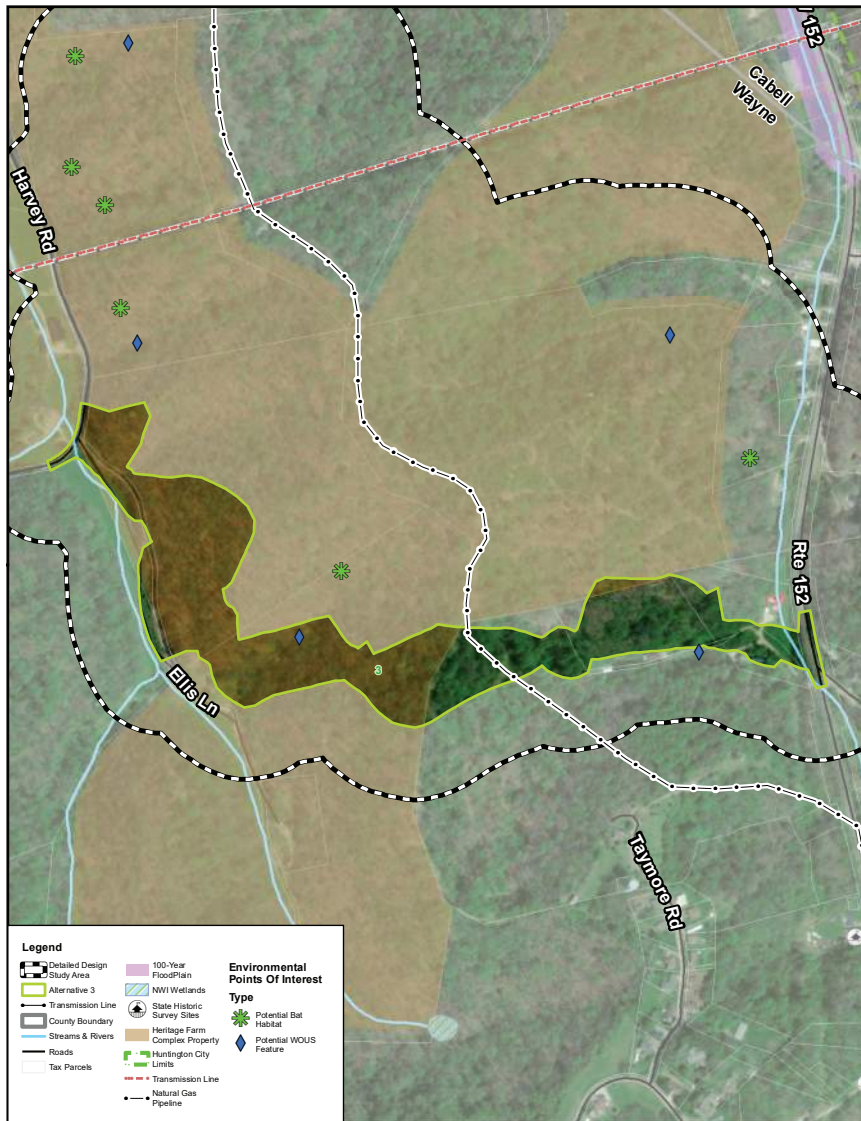
This section provides maps of each reasonable alternative showing the design study area boundary (Section 6.4.1), conceptual roadway design footprints (Section 6.4.2), potential bat habitat (Section 6.4.5.3), potential stream and wetland features (Section 6.4.5.4), and the natural gas pipeline (Section 6.4.5.5).



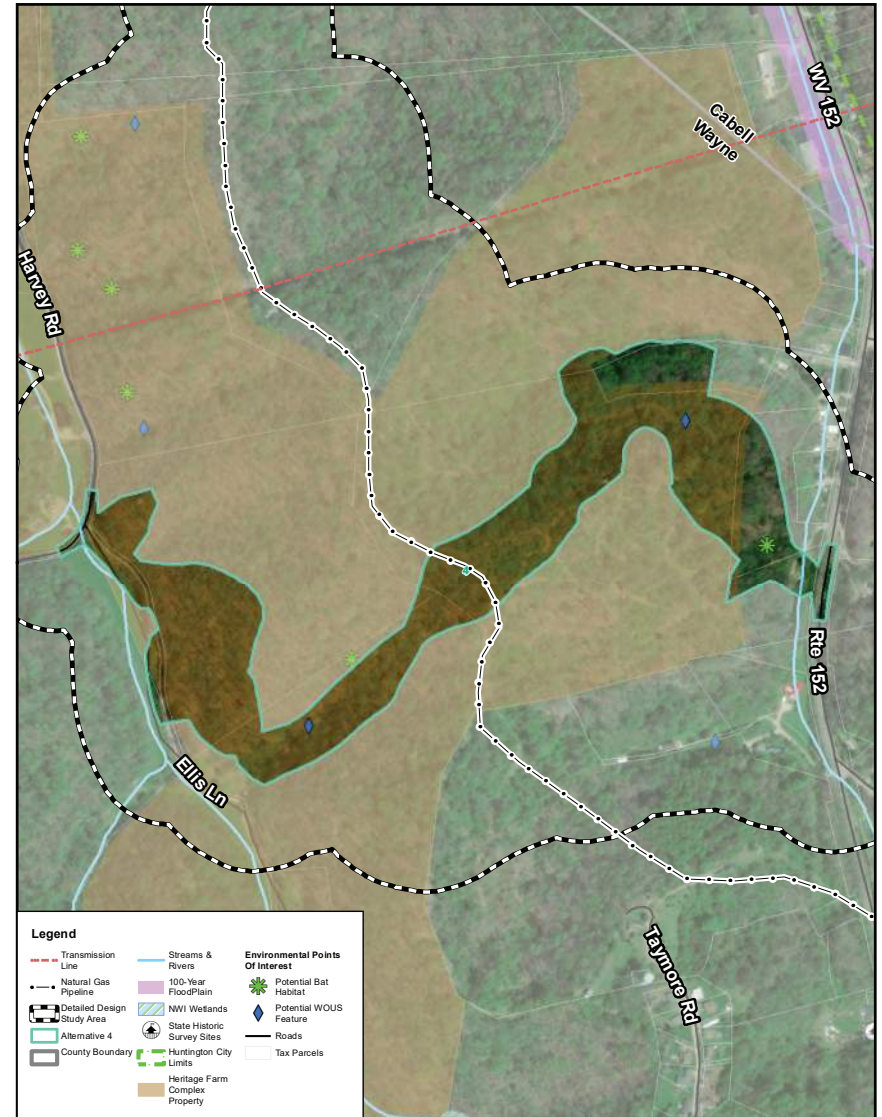
ALT. 1



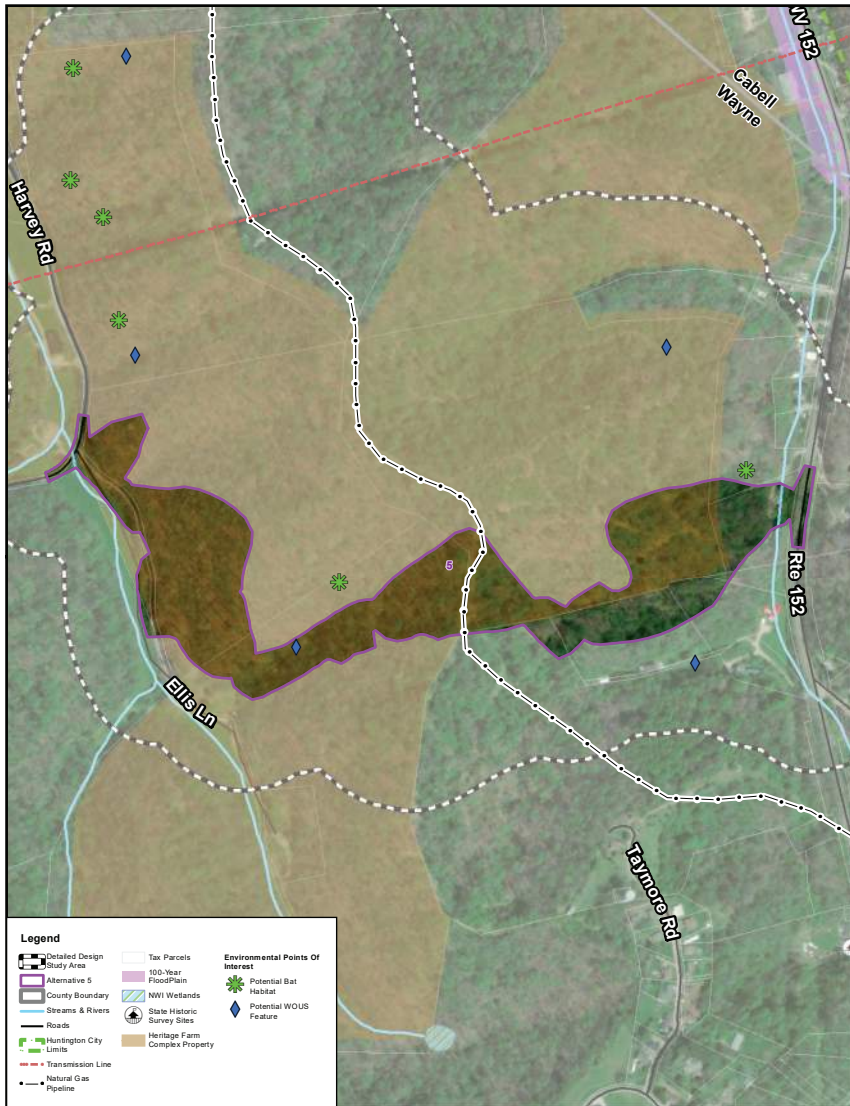
ALT. 2



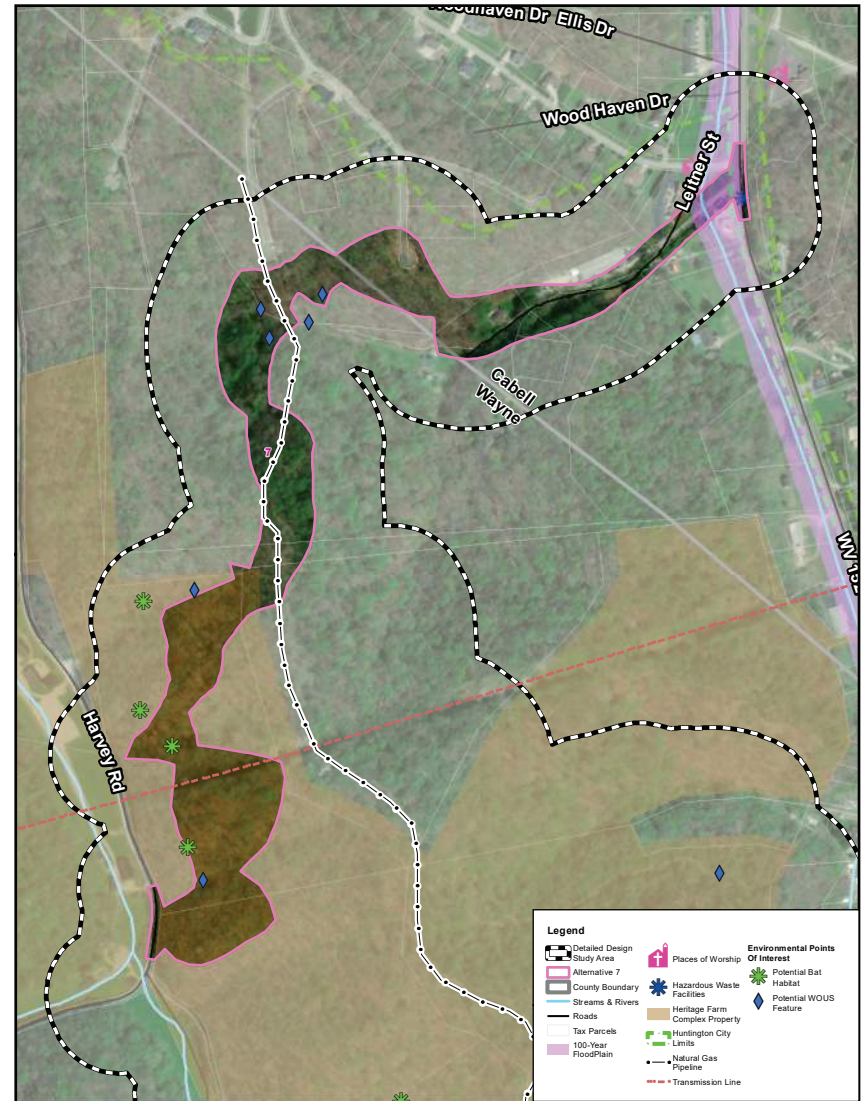
ALT. 3



ALT. 4



ALT. 5



ALT. 7

6.6 DIRECT, INDIRECT, AND CUMULATIVE EFFECTS ANALYSIS

Direct, indirect, and cumulative effects were assessed using a high-level qualitative approach focused on identifying considerations for the NEPA phase.

6.6.1 DIRECT IMPACTS

Per the Code of Federal Regulations (CFR) 40 1500:1508, direct impacts are caused by the action, occur at the same time, and occur in the same place. The project is anticipated to have no direct impacts to pedestrian, bicycle, or transit facilities; parks and/or recreational facilities; agricultural operations; or community resources as they do not exist within the study area. The project will not disrupt community cohesion or cause recurring effects on populations or neighborhoods because it will not traverse an existing community. The project will not have disproportionately high or adverse impacts to nondiscrimination communities because none are within the study area. The project is consistent with local plans.

The project is not anticipated to have exceptional right-of-way impacts but more refined mapping and roadway designs in the NEPA phase will determine the potential for residential relocations. The project will have direct impacts on farmland soils by being constructed on them. The project will have direct impacts to local traffic by providing a new route that will redirect traffic from existing roadways.

6.6.2 INDIRECT EFFECTS

Per the CFR, indirect effects are caused by the action but occur later in time and/or further removed in distance but are still reasonably foreseeable. Reasonably foreseeable means that the impact is sufficiently likely to occur that a person of ordinary prudence could take it into account in making a decision. The project will result in a travel time savings of more than one minute; permanently add a new connection to the existing roadway network; provide new or expanded access to properties; and encourage development. Therefore, there is a potential for indirect effects to the study area. As part of the NEPA phase, additional evaluation will be required to determine if there are substantial indirect impacts to notable environmental features.



6.6.3 CUMULATIVE EFFECTS

Cumulative effects are the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative effects are evaluated based on notable cultural, water quality (e.g., designated high quality, trout waters, 303d listed impaired), and natural habitat features as well as proximity to other transportation development projects. Notable features are those resources that are identified by local officials, organizations, or agencies as important, special, or unique.

This PEL study did not identify any notable cultural or water quality features. The PEL study did find potential notable habitat features, primarily for endangered gray, Indiana, and northern long eared bats. There are no current or other future transportation projects in the immediate project area. However, Heritage Farm Museum and Village has plans to expand their operations in the area.

There is a potential for cumulative impacts to endangered bat species. However, WVDOH has a 2011 programmatic agreement with FHWA and US Fish and Wildlife Service to minimize and mitigate these impacts. As part of the NEPA phase, additional evaluation will be required to determine if there are substantial cumulative impacts to notable environmental features.



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7. HOW WERE RESOURCE AGENCIES INVOLVED IN THE DECISION-MAKING PROCESS?

An important part of the PEL study process is providing resource agencies the opportunity to provide input on the project. As noted in Section 4.3, on September 29, 2020, a Start of Study letter was emailed to 54 federal, state, local, and tribal entities.

On March 31, 2021, an email invitation was sent to 31 federal, state, and local agencies inviting them to attend a virtual consultation meeting.

On April 14, 2021, a virtual consultation meeting was held from 10:30 a.m. to 12:00 p.m. The meeting had 21 attendees, of which 15 were from federal, state, or local agencies. The meeting consisted of an agenda, a handout, access to the Google KMZ files, and a PowerPoint Presentation. The six alternatives (Alternatives 1-5 and 7) with the design study area, conceptual roadway design footprints, and field reconnaissance findings, were presented to the resource agencies. Agencies provided initial comments in the chat box and those comments expressed their appreciation of being informed about the project and its status.

The resource agencies did not provide any additional comments by the May 31, 2021, deadline. It is anticipated that the resource agencies will have more comments on the project during the NEPA phase. Appendix D provides detailed resource agency consultation documentation.



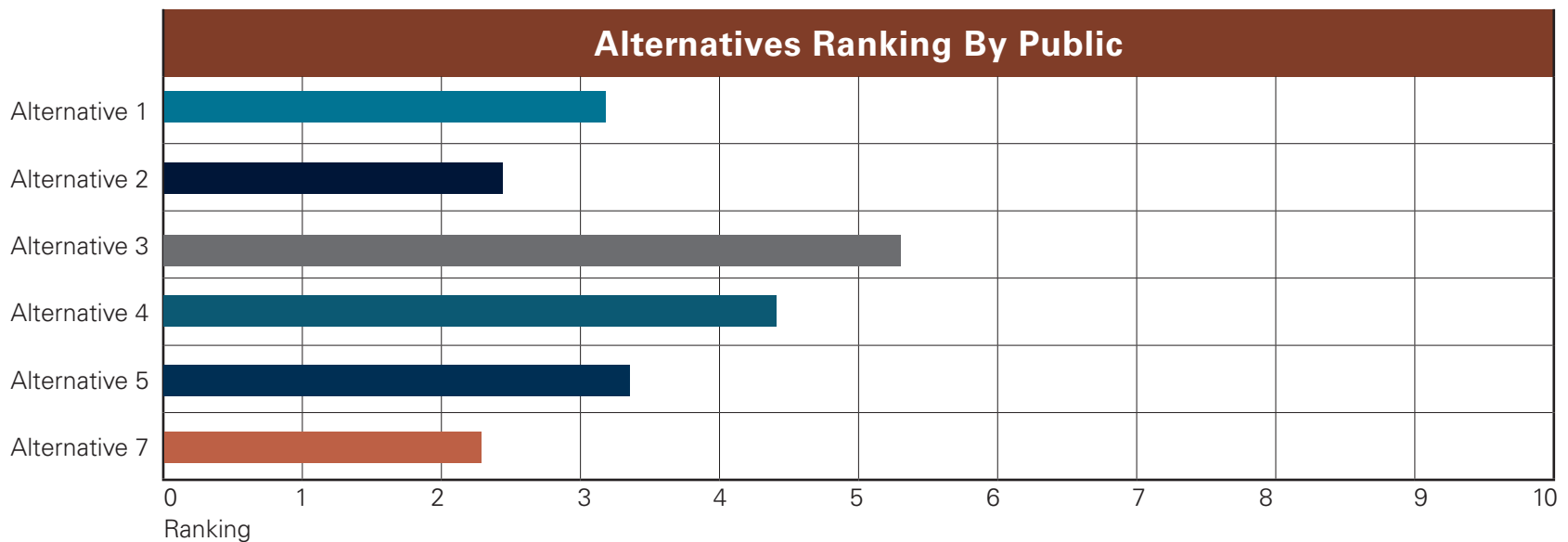
8. HOW WAS THE PUBLIC INVOLVED IN THE DECISION-MAKING PROCESS?

An important part of the PEL study process is providing the public the opportunity to provide input on the project. The following provides the highlights of the public engagement effort. For a full summary, please see Appendix D.

A project information webpage was developed which presented general project information, links to download project maps, announcements, and handouts. The project information webpage also provided opportunity for public input via comment forms and a survey. The project information webpage was linked from the KYOVA website, KYOVA Facebook pages, and pushed out in handouts and news articles. The survey consisted of six simple questions, two on selecting an alternative, two on ranking the alternatives, one open ended feedback opportunity, and one on signing up for future involvement.

On April 14, 2021, from 6-7 p.m., a virtual public meeting was held via Teams Meeting. The meeting consisted of a PowerPoint Presentation. The virtual public meeting was attended by 19 people. The meeting attendees provided initial comments in the chat box. In addition, the virtual public meeting was recorded and a copy of the recording archived on KYOVA's YouTube channel.

On May 13, 2021, from 4-7 p.m., an in-person open house was conducted at the Heritage Hall at Heritage Farm Museum and Village as this was close to the project study area and met safe meeting protocols required by COVID-19 restrictions. The open house consisted of a registration table and four stations.



At the registration table, attendees were provided copies of the printed handout and a copy of the comment / survey form. Station 1 consisted of three posters: project location, the PEL study process graphic, and the initially identified alternatives map. Station 2 consisted of two posters: the roadway deficiencies map and goal and objectives. Station 3 included a poster of the impact matrix, two posters of the alternatives under consideration map, and two sets of tabletop printouts of the individual maps for Alternatives 1-5 and 7. Station 4 provided a location for attendees to submit filled out comment/survey forms. Thirty-eight people attended the in-person open house. On May 19, 2021, an article in the Wayne County News covered the open house and encouraged people to visit the project information webpage to provide feedback.

The public was given until May 31, 2021, to respond to the survey and/or provide comment responses. Twenty-eight survey responses were received. Ten supported Alternative 3, seven supported Alternative 4, and two supported Alternative 7. Sixteen respondents provided a ranking for the alternatives. The public support was for Alternatives 3, 4, and 5. In addition, there were nine survey responses, one letter, and one phone call specifically against Alternative 7.

9. SUMMARY

Nine initial alternatives were identified. An initial screening eliminated three alternatives for failure to meet the project goal and/or objectives and the extent of potential environmental impacts. The remaining six alternatives were additionally evaluated before being presented to resource agencies and the public for input. Considering potential environmental impacts and public input, in June 2021, the SAG selected three alternatives (Alternatives 3, 4, and 5) to be carried forward into NEPA.

Alternatives 3, 4, and 5 were selected due to:

high public support • low public controversy • shorter length • lower costs • lower potential environmental impacts • lower potential for utility conflicts.

Conversely, Alternatives 1, 2, and 7 were eliminated from further consideration due to:

high public controversy • low public support • longer length • higher costs (especially when right-of-way acquisition is taken into consideration) • higher potential environmental impact • higher potential for utility conflicts.

The following table provides a color-coded potential impact matrix illustrating the above conclusions where red is the highest potential impact and green the lowest potential impact.

Alternatives Selected

Alternatives 3, 4, and 5 were selected due to:

- high public support
- low public controversy
- shorter length
- lower costs
- lower potential environmental impacts
- lower potential for utility conflicts

Alternatives Eliminated

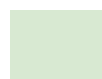
Alternatives 1, 2, and 7 were eliminated from further consideration due to:

- high public controversy
- low public support
- longer length
- higher costs (especially when right-of-way acquisition is taken into consideration)
- higher potential environmental impacts
- higher potential for utility conflicts

Harvey Road Connector PEL Study Impacts Matrix						
	Alternative Environmental Screening					
	1	2	3	4	5	7
LENGTH						
Total Length (miles)	1.68	1.50	1.14	1.42	1.33	2.19
New Location Road Length (miles)	1.14	.97	.68	.87	.73	1.03
NATURAL RESOURCES						
Potential Bat Habitat (field recon)	3	3	0	1	0	2
Potential Waters of the US (field recon)	2	2	1	2	1	4
NWI Wetlands (acres)	0	0	0	0	0	0
Streams (linear feet)	185	185	330	265	263	135
100-year Floodplain (acres)	0	0	0	0	0	.85
Threatened or Endangered Species	yes	yes	yes	yes	yes	yes
Total Acreage (acres)	38.47	38.13	23.76	31.33	26.34	30.7
Forest Cover (acres)	38	37	21	29	24	26
Farmland Statewide Importance (acres)	12	4.73	9.93	9.95	7.08	4.46
COMMUNITY RESOURCES						
Parcels (number)	8	9	11	7	11	18
Residential Structures/Units (number)	0	0	6	1	2	1
Commercial Structures/Units (number)	1	1	0	1	1	5
Museums (building number)	1	0	2	0	0	0
Places of Worship (number)	0	0	0	0	0	1
Major Utilities (number)	2	2	1	1	1	2
PUBLIC INVOLVEMENT FINDINGS						
Public Preference (No. of survey respondents)	0	0	10 for	7 for	0	2 for; 9 against
Public Ranking (highest to lowest)	4	5	1	2	3	6
COST ESTIMATES						
Cost Estimates (Conceptual Roadway Designs)	\$12,920,000	\$16,500,000	\$6,160,000	\$9,520,000	\$10,750,000	\$8,670,000



highest potential impact



lowest potential impact

10. NEXT STEPS: WHAT ARE THE NEXT STEPS FOR PROJECT IMPLEMENTATION?

The information provided in the PEL study can be used by KYOVA to advance the project into the NEPA phase. The FHWA Questionnaire has been completed to facilitate the efficient transition from planning to the NEPA phase. FHWA may use the questionnaire to assist in determining if the study meets the requirements of 23 CFR §§ 450.212 or 450.318. Appendix E includes a copy of the FHWA PEL Questionnaire.

With the information from this study, discussions can move forward regarding a comprehensive environmental evaluation required under NEPA. These discussions include determining the appropriate class of action, the schedule for funding, and coordination with the funding agency.

Once the project receives the applicable funding commitment, the NEPA phase will be initiated by WVDOH. The NEPA phase will include more detailed roadway designs, right-of-way costs, threatened and endangered species surveys, wetland delineations and stream classifications, additional resource agency input, and additional public engagement. The NEPA process will culminate in a recommendation of a preferred alternative which satisfies the project purpose and need; considers social, economic and environmental impacts; as well as receives support from the public and considers project costs.

APPENDICES

Appendix A - Goal and objectives documentation

Appendix B -Construction Quantity and Cost Estimates

Appendix C - Field Reconnaissance Plan

Appendix D - Resource Agency Consultation and Public Involvement documentation

Appendix E - FHWA PEL Questionnaire