DRAFT STUDY

KYOVA

Exit 8 / I-64 Mixed Use Development and Traffic Mobility Study

Prepared for:

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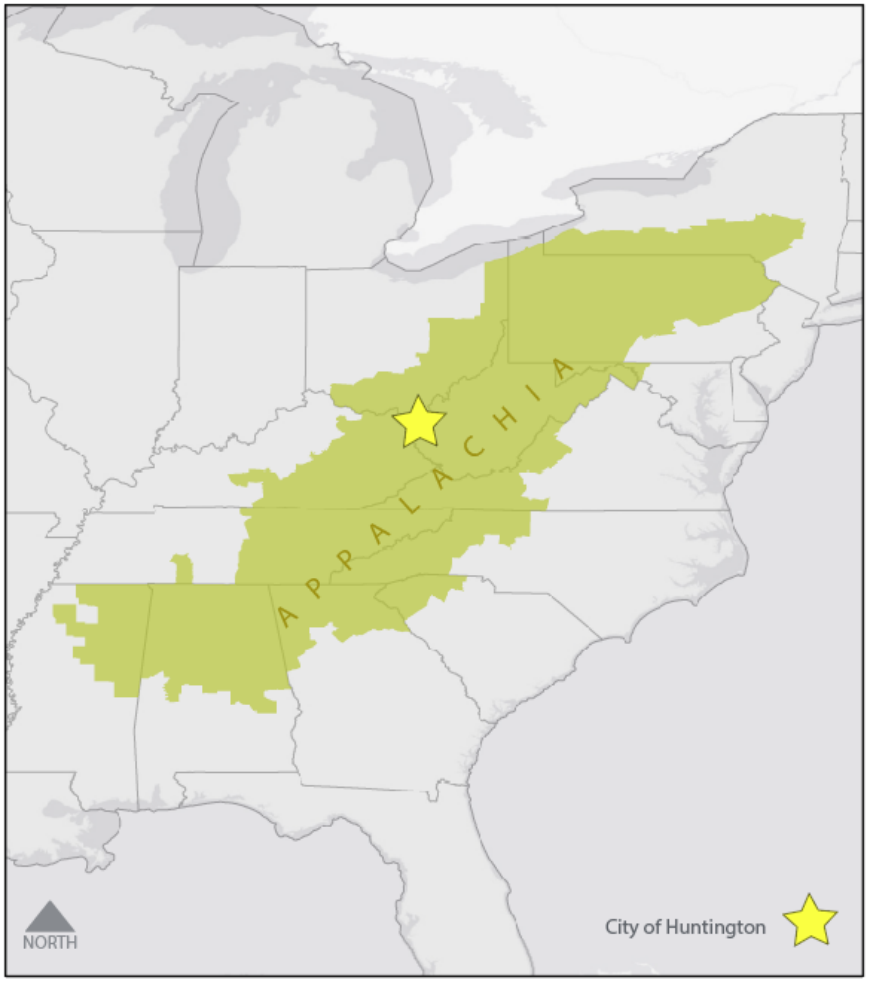
INTRODUCTION

Exit 8 on I-64 and the City of Huntington are nestled in the heart of Appalachia. Historically, its location on the banks of the Ohio River and in the western foothills of the Appalachian Mountains made it a prime site for trade and heavy industry. In modern day, its unique location, rich heritage, and abundance of scenery and outdoor recreational opportunities has positioned the city and surrounding area to attract visitors from around the region.

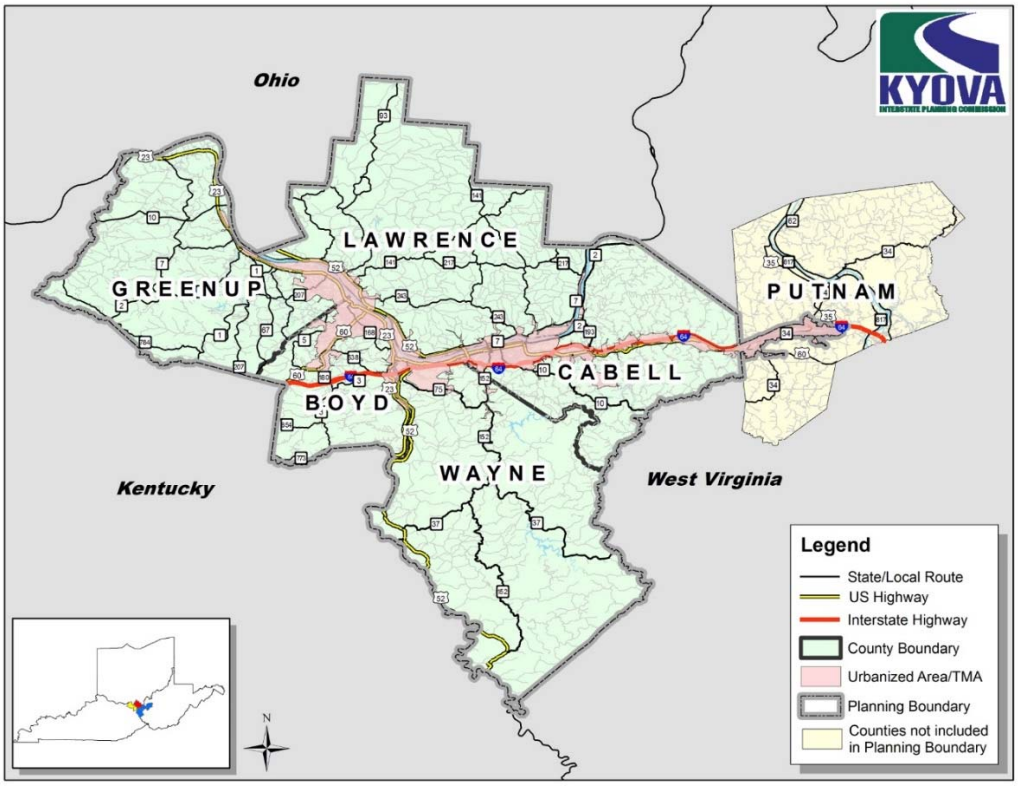
The City anchors the Tri-State Area consisting of West Virginia, Kentucky, and Ohio, and is easily accessed by I-64, an east-west corridor that begins in Chesapeake, VA and connects Charleston, WV with Lexington, KY then continues west to St. Louis, MO. Huntington has maintained its role as a regional center of industry and employment. It boasts the nation's largest inland shipping port, which encompasses more than 200 miles of the Ohio, Kanawha, and Big Sandy rivers. Located in downtown Huntington, Marshall University plays a central role in the local community and is home to several hospital and healthcare centers. More broadly, Huntington has a centralized position in the larger Appalachian region, which encompasses 205,000 square miles and more than 25 million people along the Appalachian Mountain range stretching northeast from Mississippi to New York as shown in **Figure 1**.

Figure 1: Appalachian Region



The KYOVA Interstate Planning Commission is the Metropolitan Planning Organization (MPO) for the WV-KY-OH Transportation Management Area (TMA) of Cabell and Wayne Counties; a portion of Putnam County, WV; Boyd and Greenup Counties, KY; and Lawrence County, OH. KYOVA has an agreement with the Regional Intergovernmental Council (RIC) to retain the planning functions for a portion of Putnam County, WV. As the region's MPO, KYOVA is responsible for ensuring wise and coordinated use of federal- and state-level transportation funds. The planning boundary for KYOVA is shown in **Figure 2**.

Figure 2: KYOVA Region Planning Boundary



To continue to serve and improve their region, KYOVA initiated the development of a study to evaluate various land uses and mobility in the vicinity of the I-64/WV 152 interchange in Huntington, WV (designated as Exit 8). This stems from a desire to increase tourism to the Huntington region by building upon existing destination resources, promoting land uses that are supportable based on market research, and providing the mobility needs to support the land use plan. The areas of focus extend north from the interchange to downtown Huntington—including the 5th and 8th street access routes—and south of the interchange to the Beech Fork Lake access road. This study will explore this corridor and recommend improvements for future land use and mobility. The study area, including preliminary potential land uses, is illustrated in **Figures 3, 4,** and **5**.

Figure 3: Study Area — Downtown Huntington Access

Figure 4: Study Area — I-64/WV 152 Interchange Area and Tourism Corridor

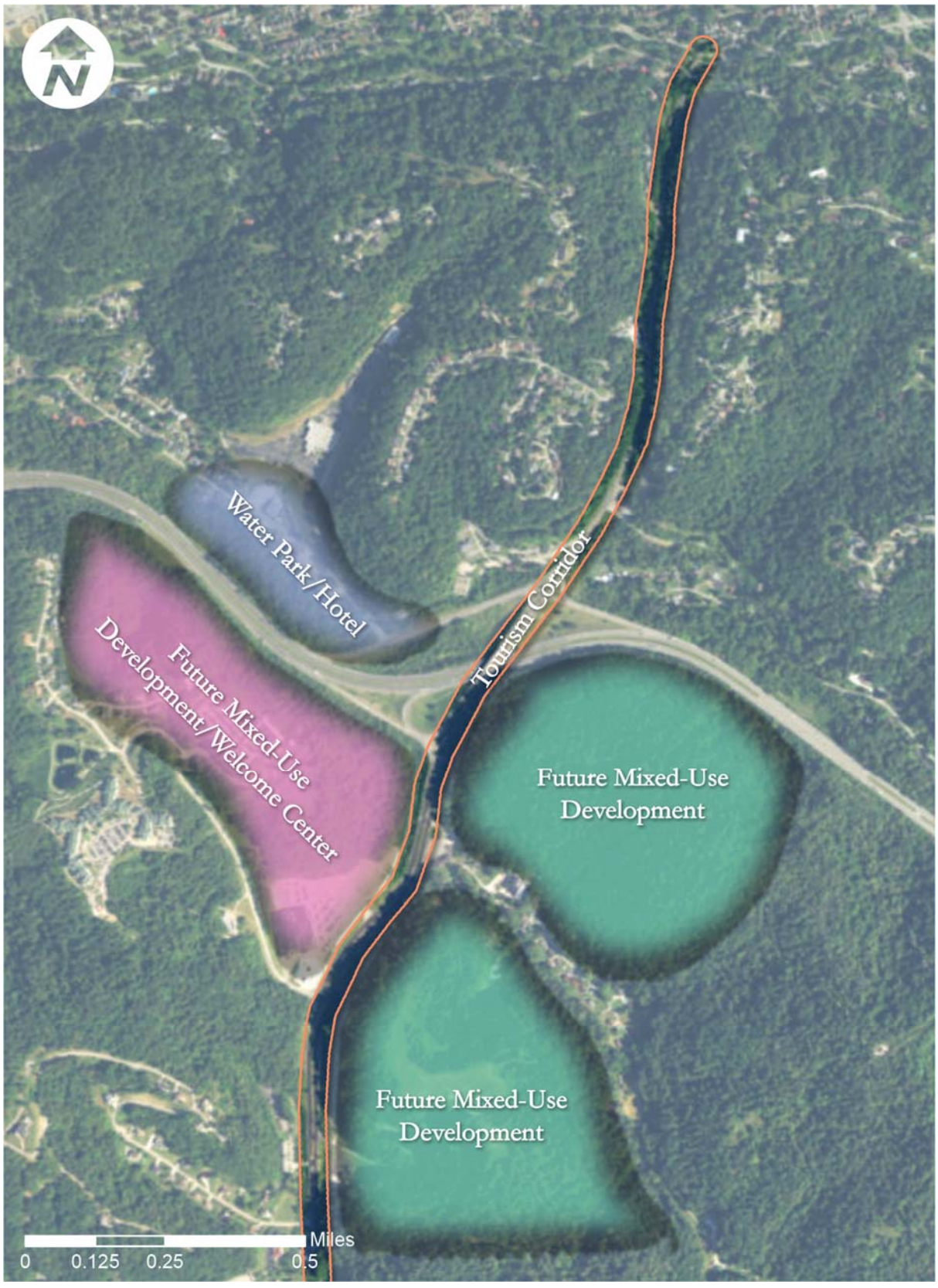
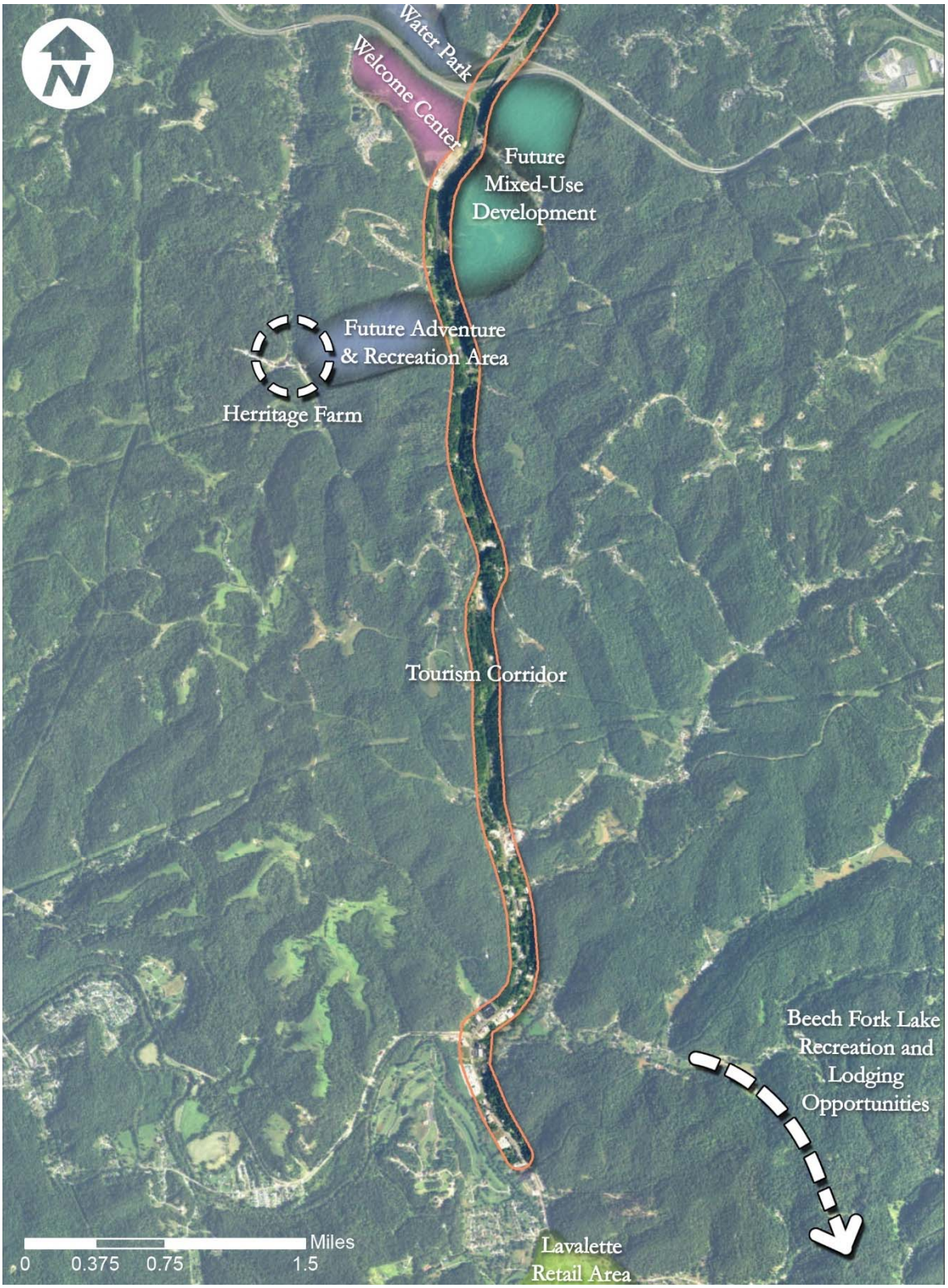


Figure 5: Study Area — WV 152 Tourism Corridor from I-64 Interchange to Lavalette Retail Area



PURPOSE AND NEED

A purpose and need statement defines the reasons why a study is being conducted and establishes the basis for developing the range of feasible alternatives. As part of the alternative evaluation process, the purpose and need are the measure for which alternatives are compared and used to determine the preferred alternative. The Federal Highway Association (FHWA) National Environmental Policy Act (NEPA) includes establishing a purpose and need as part of the decision-making framework for federally funded projects. By following the process at the early planning stages, valuable time can be saved in securing future project funding and/or the timeline from study to construction.

Per FHWA guidance, purpose and need elements may address:

- Capacity
- System Linkage
- Transportation Demand
- Legislation
- Social Demands or Economic Development
- Modal Interrelationships
- Safety
- Roadway Deficiencies

At the outset of this study, the purpose and need elements were based upon known issues that resulted in the study being funded. Additional technical analysis—such as evaluation of roadway geometrics, traffic volumes, and crash rates—further refined the study needs. The first iteration produced by the study was developed based on this technical analysis and presented to representatives of the public (steering committee). These include:

- Capacity — With the potential for development at the I-64/WV 152 interchange, along with the corridor's role as a major link to downtown Huntington, additional roadway and infrastructure improvements may be needed to support the current and future traffic demands.
- System Linkage — Multiple destinations are linked or accessed by the WV 152 corridor (Downtown Huntington, Heritage Farm, Beech Fork Lake). Improvements to WV 152 will improve travel to these destinations as well as provide the opportunity for additional investment in the recreation industry. In addition, the bridges along Fourpole Creek at 5th and 8th Street entering the downtown are inadequate and form a barrier to connectivity.
- Economic Development — Improvements to the existing route will provide increased opportunity for recreation-based development and boost the economy of the region. Opportunities include quality lodging with good visibility from I-64 as well as lodging at the south end of the corridor at Beech Fork Lake.
- Safety — Improving the typical section of WV 152 may alleviate crash types that have been identified throughout the corridor and lead to a safer roadway environment for the users.
- Roadway Deficiencies — The existing WV 152 corridor has numerous identified horizontal and vertical deficiencies. Improvements along the route will improve safety, resulting in an improved route to serve existing and future travelers.

Through refinement with several presentations and discussion with the steering committee and public forums, the purpose and need evolved throughout the study process. A document developed by the Appalachian Heartland Highway (AHH) Committee provided additional input, titled "Vision for Exit 8/WV 152 as a Tourism Corridor." For reference, this document is included in **Appendix A**. The resulting purpose and needs are presented in the subsequent boxes.

PURPOSE

To evaluate and maximize various land uses related to the Exit 8/I-64 interchange and integrate uses with transportation mobility from the interchange north to downtown Huntington and south to Beech Fork Lake.

NEED

- Lack of easy and safe access to destinations
- Physical landscape and scenic quality variability along corridor
- Lack of alternative travel modes

EXISTING CONDITIONS

REGIONAL PLANNING DOCUMENTS

To ensure that the recommendations made from this study are in line with regional planning processes, the project team identified and reviewed documents outlining known projects. These documents included:

- 2040 Integrated Metropolitan Transportation Plan (MTP)
- Downtown Huntington Access Study
- Heritage Farm Access Road Study
- Beech Fork Lake Access Road Study (February 2012)
- Market Feasibility Report for a New State Park Lodge at Beech Fork Lake (January 2013)
- Paul Ambrose Trail for Health Master Plan (2016)

Additional details from these studies that are pertinent to this study are summarized on the following pages.

BEECH FORK LAKE ACCESS ROAD STUDY

West Virginia Department of Transportation (WVDOT) prepared a study exploring alternatives for connectivity between WV 152 and the entrance to a proposed lodge at Beech Fork Lake State Park. Descriptions of the alternatives and their associated costs are shown in **Table 1.** A map of the alternatives is shown in **Figure 6.**

Table 1: Beech Fork Access and Lodge Feasibility Study Alternatives Overview

Alternative	Description	Cost
1	Uses existing system roads	$3,500,000.00
2	Major horizontal and vertical improvements	$4,500,000.00
3	0.5 miles new roadway	$4,000,000.00

HERITAGE FARM MUSEUM AND VILLAGE ACCESS ROAD STUDY

Thrasher prepared a study for the Wayne County Commission to examine and develop alternatives connecting Heritage Farm with WV 152. Descriptions of the alternatives and their associated costs are shown in **Table 2.** A map of the alternatives is shown in **Figure 7.**

Table 2: Heritage Farm Museum and Village Access Road Alternatives Overview

Alternative	Description	Cost
1	Follows existing terrain	$8,307,000.00
2	More direct route with valley fill	$8,530,000.00
3	Shortest route with most excavation	$9,066,000.00

STATEWIDE FREIGHT PLAN

At the request of the West Virginia Department of Transportation – Division of Highways (WVDOH), a consultant is preparing a statewide freight plan; however, conclusions and recommendations were not available at the time of this study.

REGIONAL PROJECTS

Information gathered from these existing projects will help influence the recommended improvements in the study area. There are five regional projects located in the study area identified from these documents. These are shown in **Table 3**. A map showing locations of regional projects in the study area is shown on **Figure 8.** Information about the bridge replacement projects (S306-527/STP-0527 (006)D are shown in **Figures 9–12**.

Table 3: Regional Projects of Influence

Project Sponsor	Project Description	Project ID	Cost	Expected Date of Completion
WVDOH	I-64/WV 152 Interchange Reconstruction	N/A	$7,823,000	Summer 2018
WVDOH	Miller Road Bridge Replacement	U306-64/NHPP-0641(380)D	$5,550,000	N/A
WVDOH	5th Street and 8th Street Ritter Park Bridge Replacement Over Fourpole Creek (**Figures 9–12**)	S306-527/STP-0527(006)D	$2,025,000	Late 2019 for 8th Street Bridge Late 2020 for 5th Street Bridge
City of Huntington	Hal Greer Boulevard PATH Improvements	U306-HUN/TAP-2014(192)D	$496,000	N/A
WVDOH/Dept. of Natural Resources	Beech Fork Lake Access Road Study	N/A	$4 million	N/A

Figure 6: Beech Fork Access and Lodge Feasibility Study – Alternatives

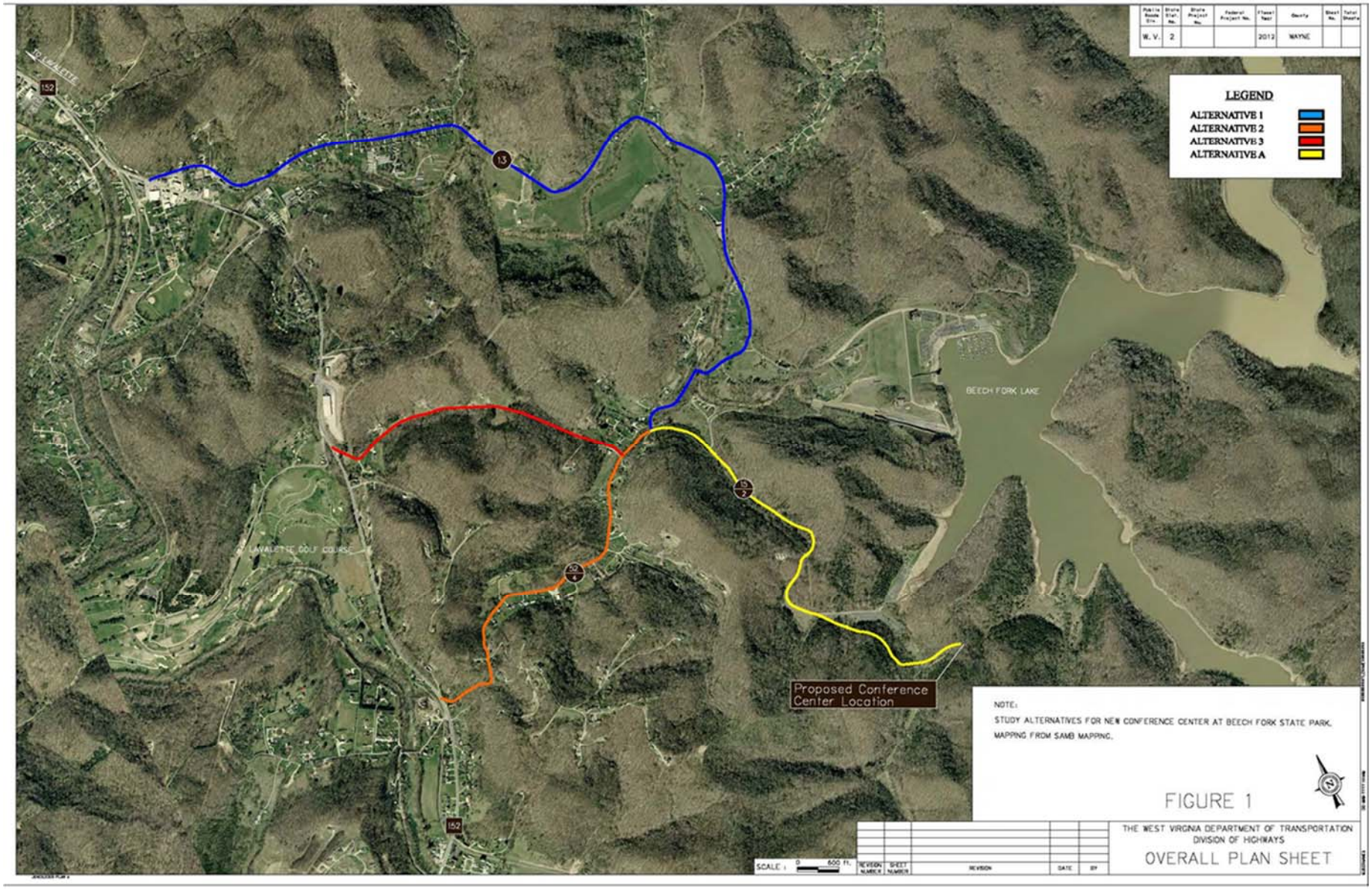


Figure 7: Heritage Farm Museum and Village Access Road Study – Alternative Overview

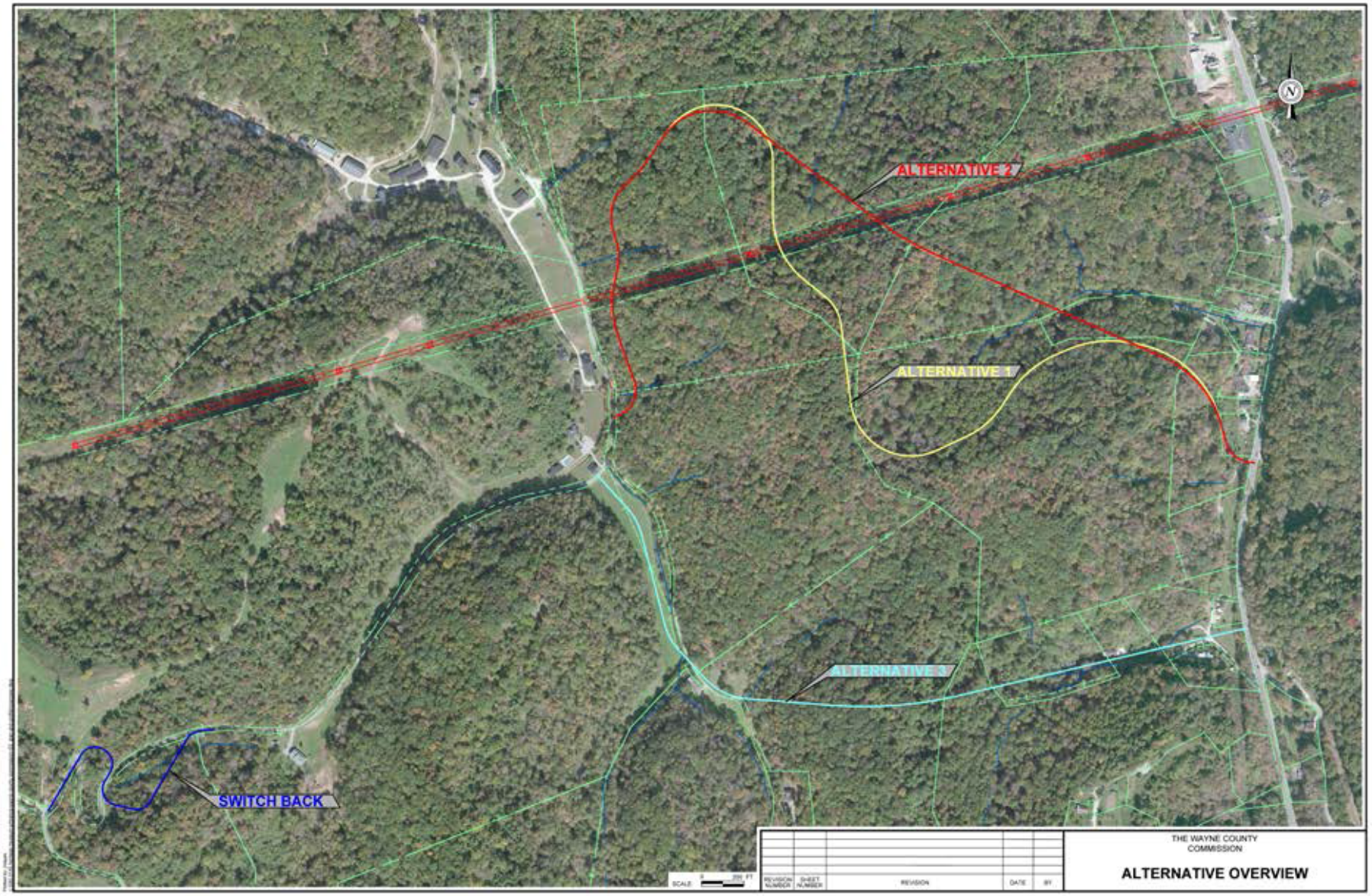
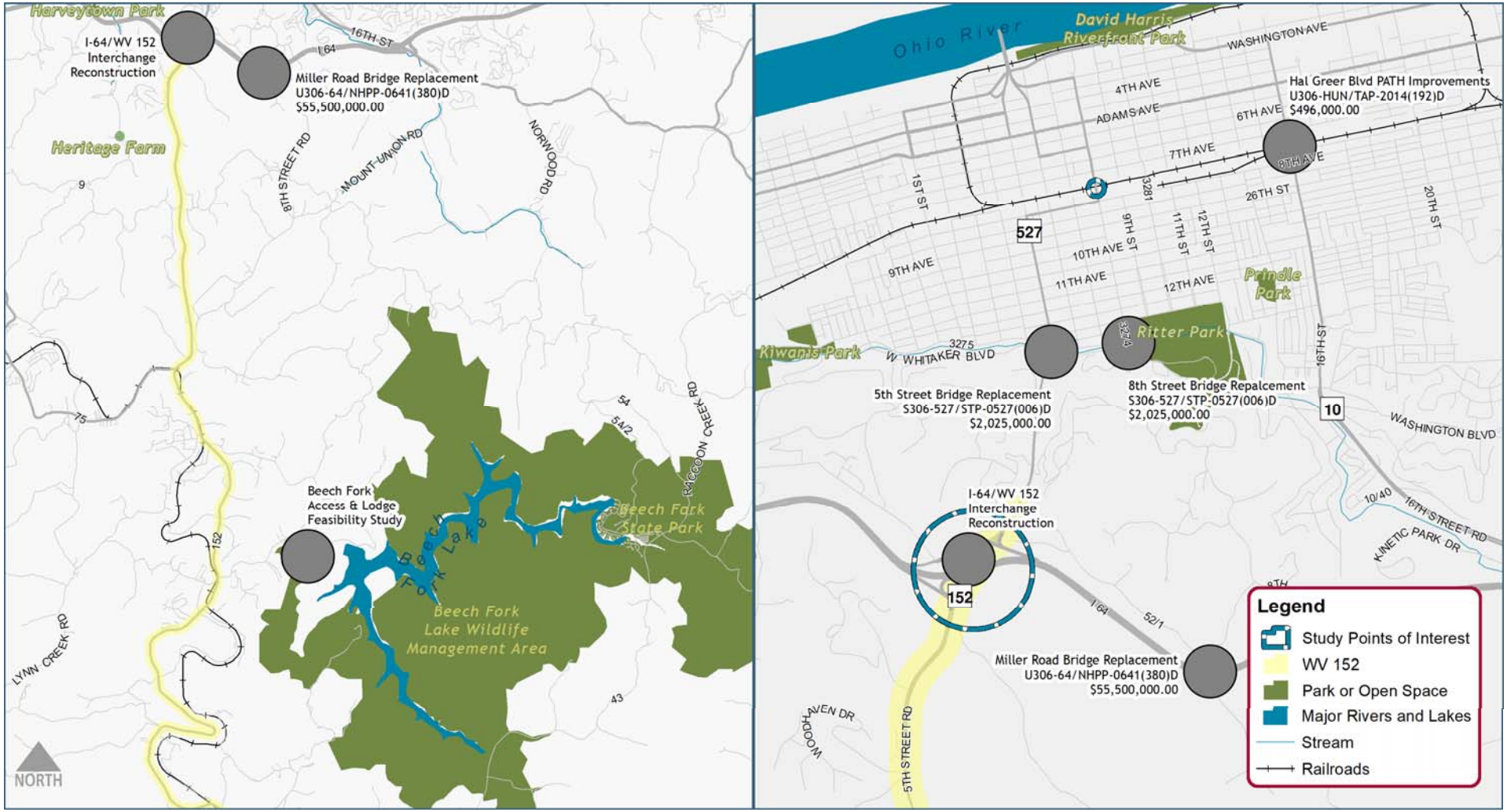


Figure 8: Exit 8/I-64 Regional Projects in the Study Area



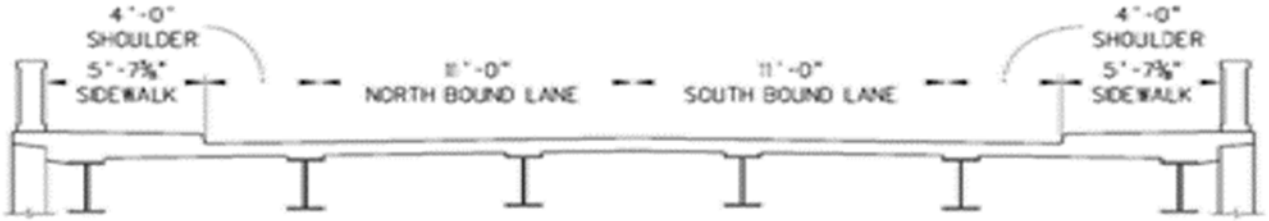
5TH STREET RITTER PARK BRIDGE

Figure 9: 5th Street Ritter Park Bridge (looking west)

Existing

- Constructed in 1921
- Two 10-foot lanes
- 4-foot sidewalk (both sides)
- 28 horizontal clearance
- Sufficiency Rating = 25.5
- 2015 ADT = 6,800

Figure 10: 5th Street Ritter Park Bridge Proposed Typical Section



Proposed

- Complete late 2020
- Three 11-foot lanes
- 4-foot shoulders (both sides)
- 5-foot sidewalks (both sides)

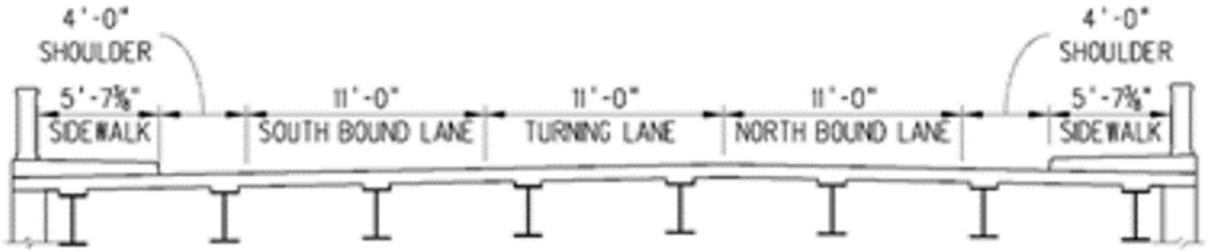
8TH STREET RITTER PARK BRIDGE

Figure 11: 8th Street Ritter Park Bridge (looking east)

Existing

- Constructed in 1920
- Two 11-foot Lanes
- 4-foot sidewalk (both sides)
- 28-foot horizontal clearance
- Sufficiency Rating = -2
- 2013 ADT = 5,300

Figure 12: 8th Street Ritter Park Bridge Proposed Typical Section



Proposed

- Complete late 2019
- Two 11-foot lanes
- 4-foot shoulders (both sides)
- 5-foot sidewalks (both sides)

BASELINE DATA

The project team gathered existing data from the study area to create mapping for analysis and use in the recommended improvements and public involvement activities. With KYOVA's assistance, this data was collected from sources such as WVDOH, West Virginia University, the 2011 MTP, and previous projects shown in **Table 4**.

Table 4: Baseline Data Overview

Data	Source	Obtained	Classification
County Boundaries	2011 MTP	2011	Boundary
Metropolitan Area Boundary	2011 MTP	2011	Boundary
Municipal Boundaries	2011 MTP	2011	Boundary
Huntington UA	Previous Project	2015	Boundary
TMA Boundary	Previous Project	2015	Boundary
Division of Highway Districts	WVDOH	2017	Boundary
Designated freight routes/intermodal connector routes	2011 MTP	2011	Transportation
Bike Trails	Previous Project	2013	Transportation
Crash Data (2009-2011)	Previous Project	2015	Transportation
Local Roads	Previous Project	2015	Transportation
Rest Areas	WVDOH	2017	Transportation
All Routes	WVDOH	2017	Transportation
Bridges	WVDOH	2017	Transportation
Byways & Backways	WVDOH	2017	Transportation
Guardrails	WVDOH	2017	Transportation
Interstate Bridges	WVDOH	2017	Transportation
Interstate Exits	WVDOH	2017	Transportation
Interstates	WVDOH	2017	Transportation
LRS Road Network Data	WVDOH	2017	Transportation
Park and Rides	WVDOH	2017	Transportation
Public Airports	WVDOH	2017	Transportation
Railroads	WVDOH	2017	Transportation
River Ports	WVDOH	2017	Transportation
State Routes/WV Routes	WVDOH	2017	Transportation
Traffic Counts	WVDOH	2017	Transportation

Data	Source	Obtained	Classification
US Routes	WVDOH	2017	Transportation
Local Parks	Previous Project	2007	Environmental
Topography/ Elevation	2011 MTP	2011	Environmental
Hydrology	Previous Project	2015	Environmental
Wetlands	Previous Project	2015	Environmental
County/City Parks	WVU	2017	Environmental
National Parks	WVU	2017	Environmental
National Wildlife Refuge	WVU	2017	Environmental
State Forests	WVU	2017	Environmental
State Parks	WVU	2017	Environmental
WV DNR Managed Lands	WVU	2017	Environmental
Hospitals	Previous Project	2009	Social
Employment centers	2011 MTP	2011	Social
Historic structures and districts	2011 MTP	2011	Social
Large Regional Employers	2011 MTP	2011	Social
Major traffic generators/activity centers	2011 MTP	2011	Social
Libraries	Previous Project	2014	Social
Cemetery	Previous Project	2015	Social
Church	Previous Project	2015	Social
Fire	Previous Project	2015	Social
Government	Previous Project	2015	Social
Historic POI	Previous Project	2015	Social
Law Enforcement	Previous Project	2015	Social
School	Previous Project	2015	Social

The data gathered in **Table 4** was analyzed and mapped to develop improvement alternatives and serve the purpose and needs of this study. The sections below include a description of each segment of baseline data that was collected. Figures for each segment of data can be seen on the following pages.

WV 152 GEOMETRY

The project team collected the roadway geometry for WV 152 to develop alternatives for the recommended improvements. The geometry—including horizontal curve radii and stations—along the WV 152 study area corridor can be found in **Appendix B**.

TRAFFIC VOLUMES

The team obtained the study area's 2016 annual average daily traffic (AADT) from the WVDOH. I-64 carries the most traffic, followed by WV 152, 5th Street, and 8th Street, respectively. AADT on I-64 is 43,464, while traffic on WV 152 is 16,614. 5th Street has an AADT of 13,813, and 8th Street has 8,591. Other counts identified in the study area are shown on **Figure 13**.

ENVIRONMENTAL OVERVIEW

The locations of parks, streams, wetlands, lakes, rivers, flood information, and railroads were identified and mapped. The main parks in the study area are Beech Fork State Park, Ritter Park, and Kiwanis Park. Three streams and their corresponding flood zones cross the study area corridor—WV 152. This map can be seen on **Figure 14**.

BICYCLE AND PEDESTRIAN FACILITIES

Existing and proposed bicycle and pedestrian facilities were identified from the 2015 PATH Trails plan, including the Future PATH Connectors outlined in the plan. These facilities can be seen in **Figure 15**. Another system of walking trails in the study area includes the Huntington Museum of Art Nature Trails.

Hiking/mountain bike trail networks identified near the study area include Beech Fork State Park Trails (11 miles south of Huntington), Barboursville Park Trails along Guyandotte River in Barboursville (13 miles east of Huntington), and East Fork Campground trails at the United States Army Corps of Engineers (USACE)-owned East Lynn Lake (26 miles south of Huntington).

The team also identified existing mountain bike, rail trails, and all-terrain vehicle (ATV) trails. The nearest rail-trails to Huntington are the Gallia County Hike and Bike Trail (OH, 50 miles north of Huntington) and Dawkins Line Rail Trail (KY, 69 miles southwest of Huntington).

ALL-TERRAIN VEHICLE (ATV) TRAILS

The project team identified authorized and unauthorized ATV trails near the study area. The Hatfield-McCoy Trail system, which is made up of more than 600 miles of trails, is specifically designed to accommodate all levels of ATV riders. The trail system is comprised of eight trails throughout Southern West Virginia. A study conducted in 2014 (*The Economic and Fiscal Impact of the Hatfield-McCoy Trail System in West Virginia, July 11, 2014*) concluded that the total economic impact—including direct, indirect, and induced effects—was more than $22 million. Nearly $19 million of this impact is attributed to non-local visitor spending. Trails at East Lynn Lake are used by ATV riders, but their use is unauthorized by USACE. However, USACE has been evaluating options to address the issue of unauthorized riding. The Hatfield-McCoy Regional Recreation Authority approached the Huntington District with a proposal to explore a "managed" ATV trails option at East Lynn Lake. If approved, the Hatfield-McCoy Regional Recreation Authority will develop a more-than-60-mile system and trailhead on the East Lynn Lake property. USACE is expected to make a decision on this expansion by early spring 2019. If approved, it would take approximately two years to develop and open.

Additionally, in Wayne County, the West Virginia Division of Natural Resources will be releasing a request for proposal (RFP) for managing trails for ATVs, utility task vehicles (UTVs), and dirt bikes in Cabwaylingo State Park in late 2018. This would result in 50 miles of trails open in the park by late summer 2019 if the Hatfield-McCoy Regional Recreation Authority were to win the bid.

Other nearby ATV trails include Bear Hollow in Milton (31 miles east of Huntington) and Hanging Rock Trail (OH, 22 miles west of Huntington).

FREIGHT NETWORK

The study area's freight network is shown on **Figure 16**.

HUNTINGTON CITY LIMITS

The city limits of Huntington relative to the study area are shown on **Figure 17**. As shown in the figure, the Exit 8 interchange area is not fully contained within the city limits of Huntington.

Figure 13: Study Area Traffic Volumes

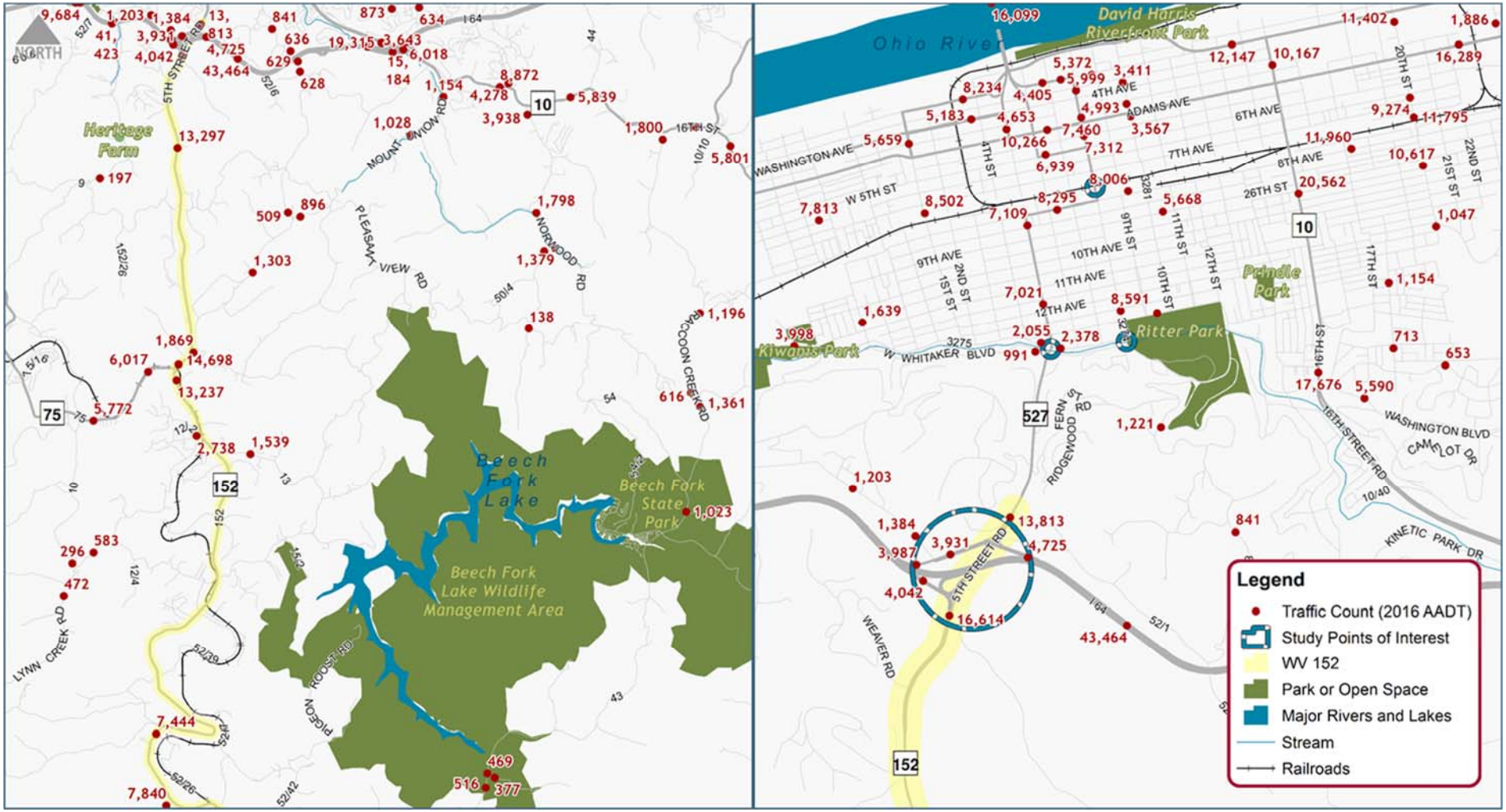


Figure 14: Environmental Overview

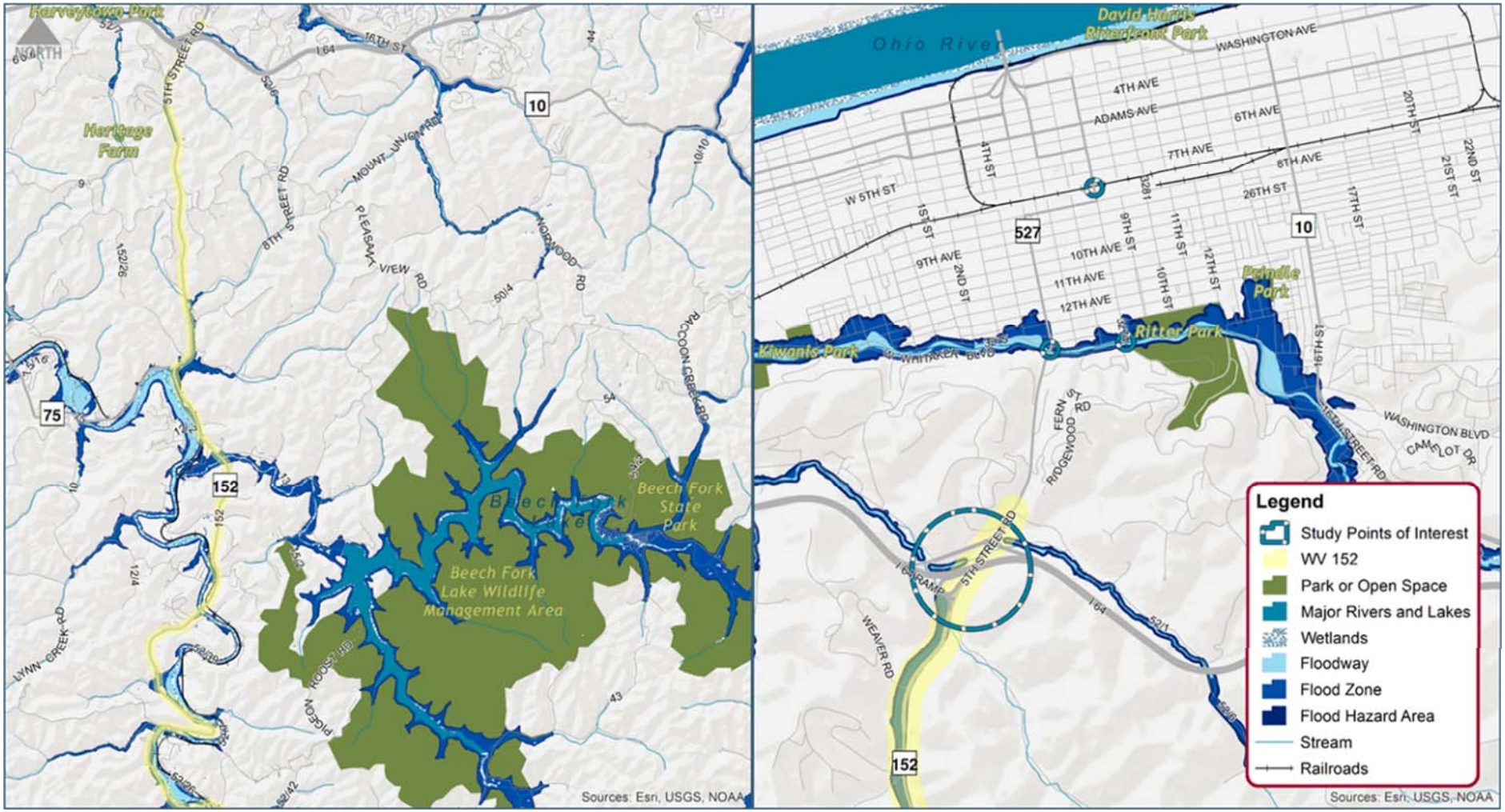


Figure 15: Bicycle and Pedestrian Connectivity

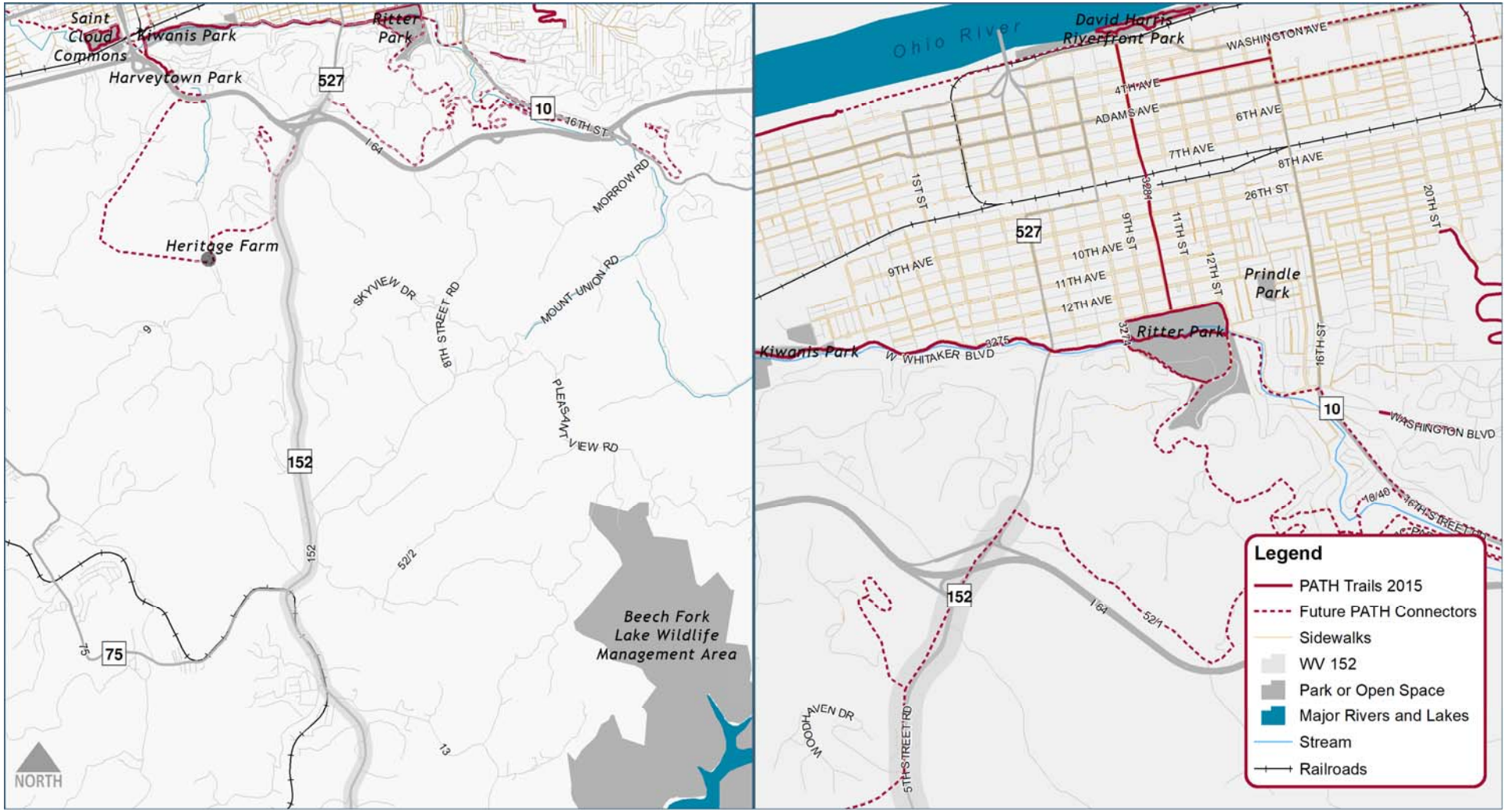


Figure 16: Study Area Freight Network

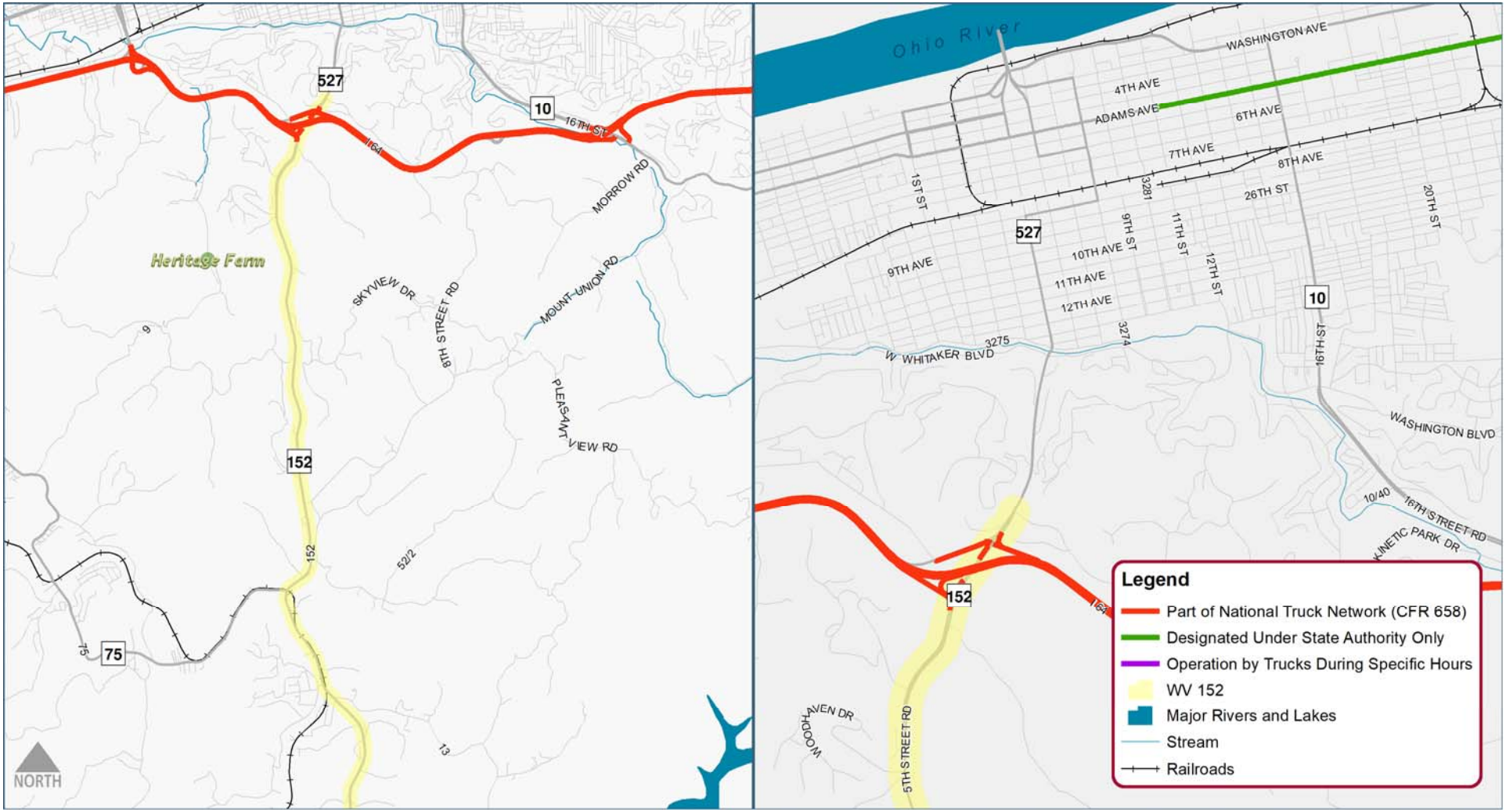


Figure 17: Huntington City Limits

CAPACITY ANALYSIS

METHODOLOGY

To assist with determining potential mobility needs, the existing corridor operations were evaluated to form a baseline of operations, with future operations determined based on land use assumptions. Synchro version 9.2 was used to model the current mobility and future mobility of the WV 152 corridor from the 5th Street and 8th Street bridges in the north to Beech Fork Road in the south. The corridor being evaluated included the following eight study intersections:

- 8th Street at North Boulevard
- 8th Street at Whitaker Boulevard
- 5th Street at North Boulevard
- 5th Street at Whitaker Boulevard
- WV 152 at I-64 EB Ramps
- WV 152 at I-64 WB Ramps
- WV 152 at WV 75
- WV 152 at Beech Fork Road
- WV 152 at Heritage Farm Connection (*Build Scenario only)*

EVALUATION SCENARIOS

The evaluation scenarios prepared for this analysis included the following:

- No Build (2017)
- No Build (2037)
- Build (2037)

The No Build (2017) scenario evaluates the existing conditions of the study area. The Build (2037) scenario evaluates the study area with the anticipated background traffic growth and the proposed land uses around the study area.

ASSUMPTIONS/TRAFFIC DATA

Traffic count data was received for the following six study intersections:

- 8th Street at North Boulevard: 15-minute traffic count data collected on 1/24/2017
- 8th Street at Whitaker Boulevard: 15-minute traffic count data collected on 1/24/2017
- 5th Street at North Boulevard: 15-minute traffic count data collected on 1/24/2017
- 5th Street at Whitaker Boulevard: 15-minute traffic count data collected on 1/24/2017
- WV 152 at I-64 EB Ramps: Hourly traffic count data collected on 9/1/2015
- WV 152 at I-64 WB Ramps: Hourly traffic count data collected on 9/1/2015

For analysis purposes, a heavy vehicle percentage of 2% was assumed for all study intersections. For intersections with 15-minute traffic count data, the peak hour factor (PHF) was calculated. For all other study intersections, a peak hour factor of 0.90 was assumed.

For the No Build (2017) scenario, traffic volume data from 2015 was grown to the year 2017 using a growth rate of 0.5% per year. The growth rate was determined from historical ADT and the projected growth from the KYOVA Regional Model. For all other study intersections where traffic count data was not collected, the KYOVA Regional Model was used to estimate intersection turning movement volumes. For analysis purposes, the existing peak hour volumes were calculated using a k-factor of 12% and a directional split of 60%/40%.

For the No Build (2037) scenario, a growth factor of 0.5% was applied to the No Build (2017) volumes to grow them to 2037. In addition to the background growth, projected trips were estimated for several proposed land uses in the area. Although these projects are not committed, they were considered in this study to better understand the worst-case traffic conditions. These proposed land uses include:

- Heritage Farm Connection and Expansion
- Beech Fork Lake Lodge and Meeting Space

For the Heritage Farm Connection and expansion, it was assumed that the traffic volume on the existing access road (480 vehicles/day) would use the new connection to WV 152 and would grow by 200% with the proposed land uses and the project visitor numbers provided by the developer.

For the Beech Fork Lake Lodge and Meeting space, projected traffic volumes were estimated based on Institute of Transportation Engineers (ITE) Trip Generation Version 10. The land use code for resort hotel was used to estimate the trips for this land use.

The project traffic was assigned to the study network based on the following distribution:

- 10% to the north on WV 152
- 10% to the south on WV 75
- 15% to the south on WV 152
- 30% to the east on I-64
- 35% to the west on I-64

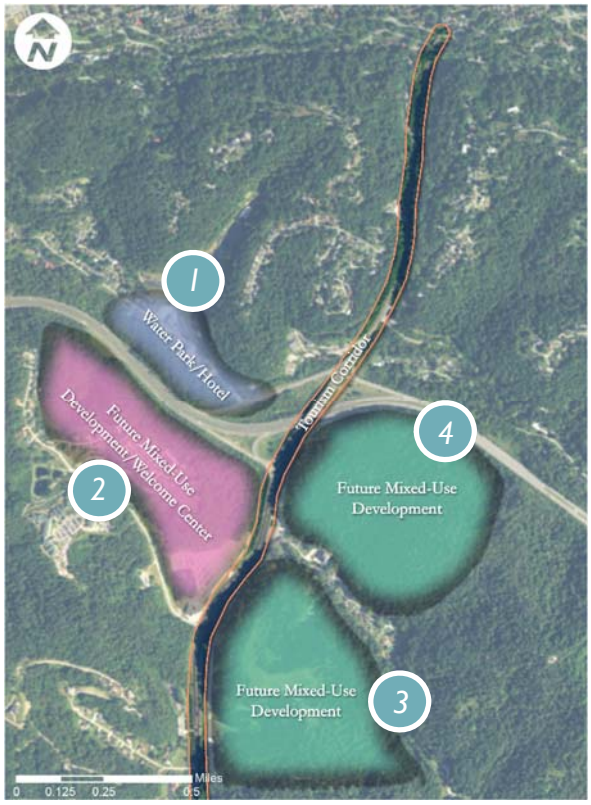
For the Build (2037) scenario, traffic was generated for the proposed land uses around the I-64 interchange. These proposed land uses include:

- Visitors Center
- Water Park
- Mixed-use Development

The ITE Trip Generation Version 10 was used to determine projected traffic volumes associated with the identified land uses. The water park/hotel area trip generation was determined based on estimated parking spaces and hotel room units (400 and 115 respectively) which corresponds to similar units for existing land uses of this combination type.

The rest of the areas for development were determined for the remaining three quadrants and summed. These quadrants are identified in **Figure 18.**

Figure 18: I-64 Exit 8 Interchange Potential Land Use Quadrants



Area 1 was identified as a single land use Water Park/Hotel.

Area 2 was identified as 80 developable acres.

Area 3 has 115 developable acres; however, due to terrain issues, 50% was assigned as developable (57.5 acres).

Area 4 has a similar size and issue; 115 acres with 50% assigned as developable (57.5 acres)

A total of 195 acres were determined to be available for development. Future land uses were assumed based on a percentage split of the developable land. A conservative approach was given with this to represent the highest growth scenario as a first step.

The land use split resulted in:

- 50% parking/roadway
- 10% housing
- 10% office
- 15% retail/industrial
- 5% restaurant
- 10% cultural (e.g., parks, open space, non-major trip generators)

The relative percent increase in volumes resulting from the trip generation exercise were compared to the projected future year volume that included background growth. Slight adjustments were made based on engineering judgement with a relative increase found to be 70%. Trips were distributed to the network based on percentage of existing traffic.

EXISTING GEOMETRICS

Two-lane highways can be classified by three types: Class I, Class II, and Class III. Class I highways typically include higher speed arterials and daily commuter routes. Class II highways typically include lower speed collector roadways and roads primarily designed to provide access. Class III highways serve moderately developed areas and often have reduced speed limits reflecting higher activity levels. WV 152 functions as a Class I highway. The speed limit along WV 152 varies from 35 mph to 55 mph.

BASE YEAR (2017) AND DESIGN YEAR (2037) OPERATIONS ANALYSIS

The analysis includes an evaluation of traffic operations for the No Build (2017), No Build (2037), and Build (2037) scenarios. AM and PM peak hour periods were evaluated for both scenarios using Synchro version 9.2.

Table 5 shows the levels of service (LOS) for the study intersections for the AM and PM peak hour for the analysis scenarios. For the system operations, **Table 6** shows the AM and PM peak hour results for the analysis scenarios. Measures of effectiveness within these tables include intersection level of service and delay, travel time, average travel speed, and arterial level of service.

Intersection LOS is shown for No Build (2017), No Build (2037), and Build (2037) on **Figures 19, 20, and 21**, respectively.

Table 5: Synchro Intersection Level of Service Summary

Condition	AM Peak Hour LOS (Delay in seconds)	PM Peak Hour LOS (Delay in seconds)
8th Street at North Boulevard (Unsignalized)		
No Build (2017)	EB – E (35.4) WB – C (15.9)	EB – C (16.2) WB – B (12.7)
No Build (2037)	EB – F (58.3) WB – C (17.5)	EB – C (18.5) WB – B (13.3)
Build (2037) – *without improvements*	EB – F (93.4) WB – C (19.4)	EB – C (21.2) WB – B (14.2)
8th Street at Whitaker Boulevard (Unsignalized)		
No Build (2017)	EB – C (17.2)	EB – B (12.5)
No Build (2037)	EB – C (21.8)	EB – B (13.7)
Build (2037) – *without improvements*	EB – D (28.7)	EB – C (15.2)
5th Street at North Boulevard (Unsignalized)		
No Build (2017)	EB – B (14.3) WB – E (39.4)	EB – C (18.2) WB – E (44.8)

Condition	AM Peak Hour LOS (Delay in seconds)	PM Peak Hour LOS (Delay in seconds)
No Build (2037)	EB – C (16.5) WB – F (61.3)	EB – C (21.5) WB – F (75.8)
Build (2037) – *without improvements*	EB – C (18.4) WB – F (84.4)	EB – C (23.8) WB – F (104.6)
5th Street at Whitaker Boulevard (Signalized)		
No Build (2017)	A (6.4)	B (10.1)
No Build (2037)	A (7.3)	B (12.3)
Build (2037) – *without improvements*	A (9.2)	B (14.2)
WV 152 at I-64 Westbound Ramps (Signalized)		
No Build (2017)	B (12.0)	B (16.9)
No Build (2037)	B (14.3)	C (21.9)
Build (2037) – *without improvements*	C (34.6)	E (66.5)
WV 152 at I-64 Eastbound Ramps (Signalized)		
No Build (2017)	B (10.9)	B (11.3)
No Build (2037)	B (12.2)	B (13.7)
Build (2037) – *without improvements*	B (18.9)	C (22.9)
WV 152 at Heritage Farm Connection (Unsignalized)		
No Build (2037)	EB – F (129.2)	EB – F (429.8)
Build (2037) – *without improvements*	EB – F (503.3)	EB – F (1138.6)
WV 152 at WV 75 (Signalized)		
No Build (2017)	C (29.1)	D (36.3)
No Build (2037)	D (43.6)	D (45.9)
Build (2037) – *without improvements*	E (66.8)	E (74.5)
WV 152 at Beech Fork Road (Unsignalized)		
No Build (2017)	WB – E (40.6)	WB – E (46.0)
No Build (2037)	WB – F (79.2)	WB – F (98.2)
Build (2037) – *without improvements*	WB – F (137.0)	EB – F (158.6)

Table 6: Synchro System Operations Summary

Condition	AM Peak Hour			PM Peak Hour		
	Travel Time(s)	Average Travel Speed (mph)	LOS	Travel Time(s)	Average Travel Speed (mph)	LOS
No-Build (2017)	NB – 523.0 SB – 541.4	NB – 42.6 SB – 41.2	NB – A SB – B	NB – 493.1 SB – 584.4	NB – 45.2 SB – 38.1	NB – A SB – B
No-Build (2037)	NB – 542.3 SB – 550.5	NB – 41.1 SB – 40.5	NB – B SB – B	NB – 501.0 SB – 607.9	NB – 44.5 SB – 36.7	NB – A SB – B
Build (2037)	NB – 582.4 SB – 586.9	NB – 38.3 SB – 38.0	NB – B SB – B	NB – 508.6 SB – 735.1	NB – 43.8 SB – 30.3	NB – A SB – C

Figure 19: No Build (2017) Intersection LOS

Figure 20: No Build (2037) Intersection LOS

Figure 21: Build (2037) Intersection LOS

CONCLUSIONS

Overall, the capacity analysis shows that the corridor has available capacity when comparing Build versus No Build scenarios, even with a high growth scenario. Some intersections will require additional modification based on the ultimate build-out in 2037. These intersections include:

- **WV 152 at I-64 Westbound Ramps** (Signalized): LOS C in the No Build (2037) condition and a LOS E in the Build (2037) condition during the PM peak hour scenario. The additional delay is associated with left-turning traffic (from off-ramp to southbound (SB) WV 152, from northbound (NB) WV 152 to on-ramp, and from ramp to northbound WV 527). The atypical configuration of access to Johnstown Road from the WB I-64 On-Ramp currently operates at an acceptable level. However; with the construction of additional land use elements such as the water park/hotel and the associated traffic, access modifications should be considered. This could include the possibility of extending Stonecrest Drive to provide a direct access point to WV 527 (5th Street Road). Further analysis and evaluation will need to be conducted in conjunction with the water park/hotel site plan to consider optimal access and circulation.
- **WV 152 at WV 75** (Signalized): LOS D in the No Build (2037) condition and a LOS E in the Build (2037) condition for AM and PM peak hour scenarios.

SAFETY ANALYSIS

Available crash data was reviewed to analyze safety in the study area. Although the exact location of crashes was not available, the data could be separated into two regions: north of the I-64 Exit 8 interchange to North Boulevard and south of the I-64 Exit 8 interchange to Lavalette. In addition, crash data was provided prior to recent reconstruction of the I-64/WV 152 interchange. **Figures 22 and 23** show what was found in the crash data review. North of the interchange the predominant type of crash was angle collisions. This is likely a result of increasing numbers of access points (driveways and intersections) in the urban area. Rear-end collisions are the predominant type of crash south of the interchange. With a lack of turn lanes, vehicles have a higher likelihood to rear-end another vehicle that is stopped and turning into a driveway or intersection.

Figure 22: Crash History North of I-64 Interchange – Manner of Collision

- 39 crashes
- 28% injury crashes
- No fatal crashes
- Highest number of crashes occurring:
  - September (15%)
  - Friday (23%)

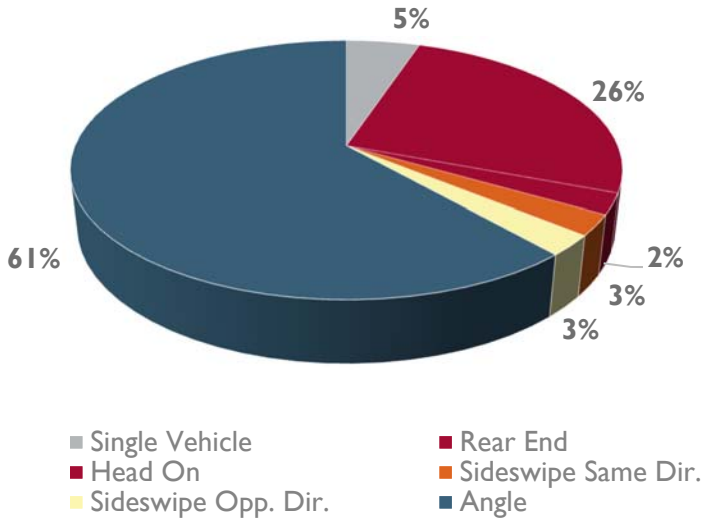
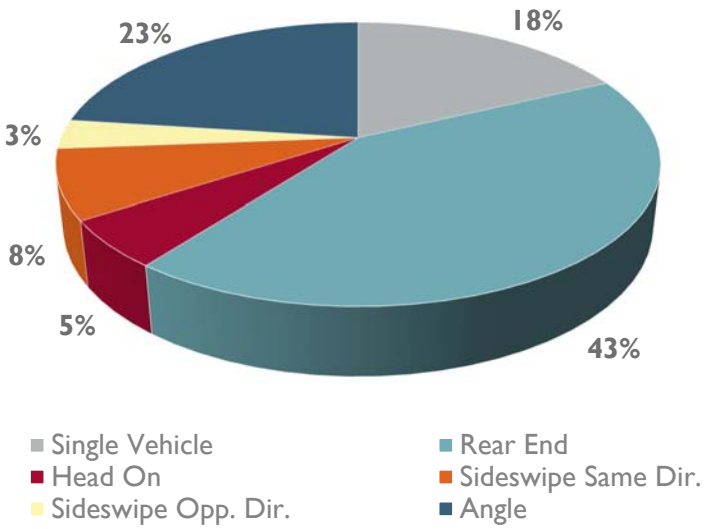


Figure 23: Crash History South of I-64 Interchange – Manner of Collision

- 240 crashes
- 38% injury crashes
- 1 fatal crash
- Highest number of crashes occurring:
  - September (12%)
  - Thursday (51%)



ECONOMIC STUDY AND MARKET ANALYSIS

AREA ASSESTS AND TOURISM DRIVERS

Future development at the I-64/WV 152 interchange area can leverage a wide array of existing attractions that already promote tourism to the local Huntington market. The City of Huntington and the surrounding region host many attractions, including museums, performance venues, shopping destinations, and parks within easy access of visitors traveling on I-64.

Huntington has a rich industrial history with several enduring assets that can be leveraged to distinguish the City and its unique heritage. There are two railroad-oriented museums in Huntington as well as rail tours offering local day trips and multi-day excursions. There are several other museums offering visitors a wide variety of collections and experiences. Destinations of note include the Huntington Museum of Art, Heritage Farm Museum and Village, Museum of Radio and Technology, and the Madie Carroll House.

Marshall University plays a significant role in the community and economy of Huntington. It is located at the east end of downtown near the riverfront. As of 2016, there were approximately 13,654 students enrolled and approximately 500 faculty members. While on-campus housing is available, many students live off campus. Offering nine undergraduate colleges, three graduate colleges, and a regional center for cancer research, the school is a primary driver in attracting visitors to Huntington, including current and future students, visiting family, and perspective faculty and staff members.

Huntington is also home to several shopping centers that draw visitors from around the region. The City's primary retail and entertainment destination is Pullman Square, located in the center of downtown near the riverfront, which opened in 2004 and features local and national brands. The complex includes unique and upscale boutiques, restaurants, a movie theater, and an open-air public square for events and entertainment. As the anchor of downtown, it is within easy walking distance of Marshall University, Harris Riverfront Park, and other downtown shops and offices. Heritage Station, shown in **Figure 24**, is another of the City's unique retail and entertainment destinations. The mixed-use development is housed in a former Baltimore and Ohio Railroad passenger station, a relic of the City's rail heritage, and includes more than a dozen locally-owned shops ranging from clothing stores and eateries to fitness studios and lodging. Other shopping destinations include an antique district featuring several shops in Old Central City as well as the Huntington Mall and Merritt Creek Farm in nearby Barboursville.

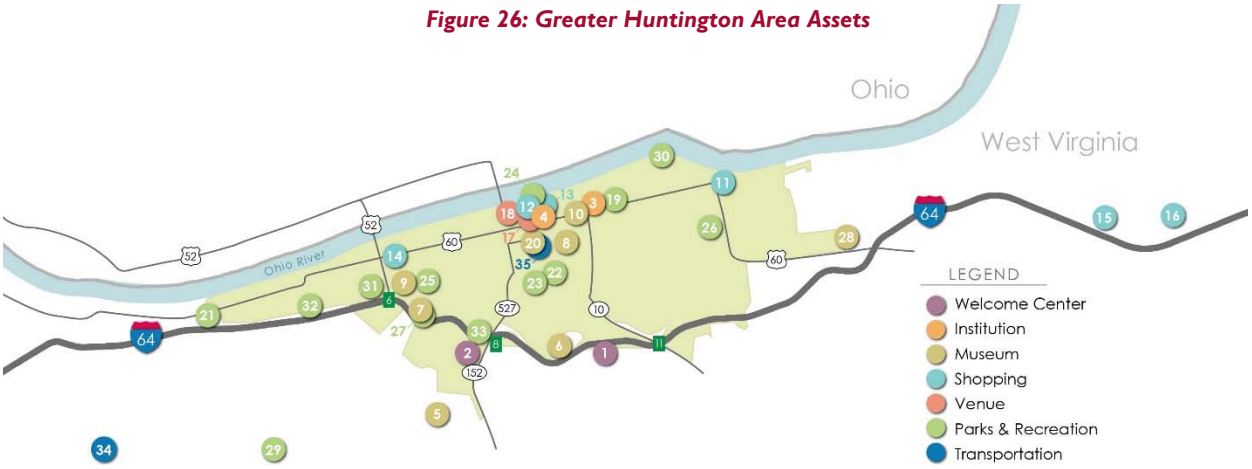
Figure 24: Heritage Station

Figure 25: Keith Albee Performing Arts Center

There are two primary performance venues in Huntington. The Big Sandy Superstore Arena is a multi-purpose Arena that seats 9,000 and is located downtown near the riverfront. It has an attached convention center and hosts concerts, trade shows, and athletic competitions year-round. Located nearby is the Keith Albee Performing Arts Center, shown in **Figure 25**, which opened in 1928 and is one of the most ornate landmarks in the region. Several restoration projects have been spearheaded in recent years by the Keith Albee Performing Arts Foundation, which owns the building. The more-than-2,000-seat theatre currently hosts Marshall University's Artist Series, which features Broadway shows, concerts, stand-up comedians, notable speakers, and ballet companies. Recent and upcoming acts include Steve Martin and Martin Short, Jersey Boys, the State Ballet Theater of Russia, and Barenaked Ladies.

Other area assets, as shown in **Figure 26**, include the extensive Greater Huntington park system, which boasts more than ten parks and a robust events and activities program. In addition to the publicly-owned park and recreation centers, Camden Park is a privately-owned 26-acre amusement park in nearby Ceredo that offers more than 30 rides and attractions.

Figure 26: Greater Huntington Area Assets



MAP KEY		
1 Existing I-64 Eastbound Welcome Center	13 Heritage Station	25 Memorial Park
2 Proposed Exit 8 Welcome Center	14 Central City Antique District	26 Rotary Park
3 Marshall University	15 Merritt Creek Farm	27 Harveytown Park
4 Robert C. Byrd Institute	16 Huntington Mall	28 Altizer Park
5 Heritage Farm Museum and Village	17 Keith Albee Performing Arts Center	29 Camp Mad Anthony Wayne
6 Huntington Museum of Art	18 Big Sandy Superstore Arena	30 McClelland Park
7 Museum of Radio and Technology	19 Joan C. Edwards Stadium	31 St. Cloud Commons
8 Collis P. Huntington Railroad Historical Society	20 New River Train Excursions	32 Westmoreland Park
9 Chesapeake and Ohio Railroad Museum	21 Camden Park	33 Proposed Water Park, Hotel & Welcome Center
10 Geology Museum at Marshall University	22 Ritter Park	34 Huntington Tri-State Airport
11 Madie Carroll House	23 Ritter Park Rose Garden	35 Huntington Amtrak Station
12 Pullman Square	24 Harris Riverfront Park	

WV 152 CORRIDOR

The area south of Huntington, along WV 152 into Wayne County, is home to a multitude of outdoor recreational opportunities as shown in **Figure 27**. Popular destinations are primarily concentrated in two areas on Beech Fork Lake in Beech Fork State Park, which is a 720-acre Army Corps of Engineers (ACOE) impoundment. Near the eastern end of the lake is the Beech Fork Lake Campground, which hosts a welcome center and state park offices, cabins and camp sites, a camper store, picnic shelters, a swimming pool, sport courts and fields, and a game room. Near the westernmost section of the lake is the ACOE welcome center and public beach, and a privately-managed marina. Additionally, the state park features hiking and mountain biking trails. Also in this area is the site of the proposed Beech Fork lodge, a project that local leaders have sought for decades. The proposed Beech Fork lodge—which may be modeled after the 75-room Chief Logan Lodge in Lodge County, WV—will leverage the area's tourism and recreation opportunities while helping meet the need for modern, quality meeting space with overnight accommodations. A feasibility study, prepared for the West Virginia Department of Natural Resources in 2013, concluded that there was sufficient market demand to support the proposed lodge. Rustic Ravines, a cabin rental resort, is another lodging option along WV 152 that also offers special event planning. Activities include trails, kayaking and canoeing, ziplining, fishing, hunting, archery, and golfing.

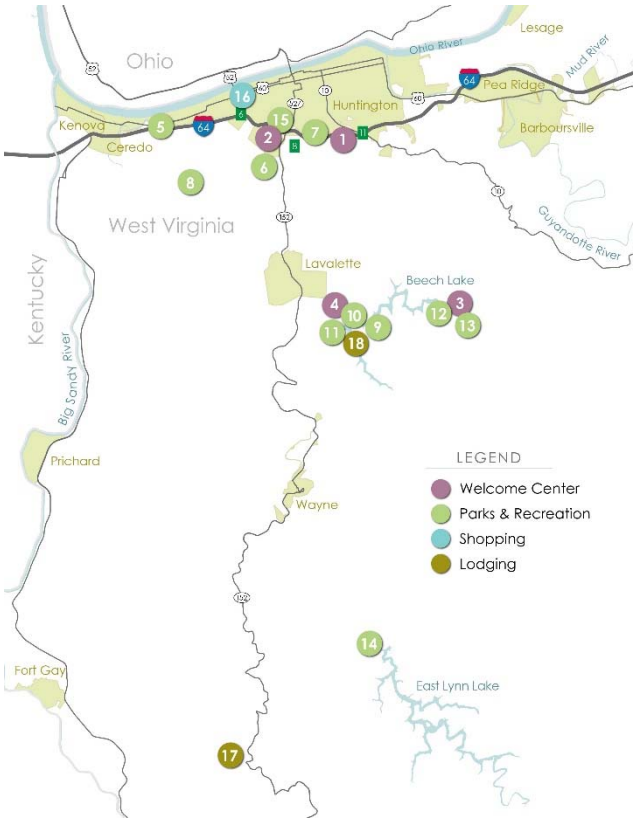
The 600-plus-mile Hatfield-McCoy Trails, used primarily by ATVs, dirt bikes, and utility vehicles, are another major draw for visitors. Created in 1996 by the West Virginia Legislature to help spur economic development in the area, the trail network first opened in 2000 and has expanded into one of the largest off-highway vehicle trail systems in the world. It is made up of seven individual trail systems located in six counties, which are located on more than 250,000 acres of privately held land. An expansion is proposed near East Lynn Lake shown on the map below as well as another proposed trailhead at Cabwaylingo State Forest.

Important to note is the significant role of effective wayfinding signage in the success of drawing travelers from I-64 to this area. While the local road network near the City of Huntington is relatively easy to navigate, the roads south of I-64, including WV 152, are narrow and windy and may be difficult for those from outside the area.

MAP KEY	
1	Existing I-64 Eastbound Welcome Center
2	Proposed Exit 8 Welcome Center
3	Beech Fork State Park Visitor Center
4	Army Corps of Engineers' Visitor Center
5	Camden Park
6	Heritage Farm Museum and Village
7	Huntington Museum of Art & Trails
8	Camp Mad Anthony Wayne
9	Beech Fork Lake & State Park
10	Beech Fork Lake Marina
11	Army Corps of Engineers' Public Beach
12	Beech Fork State Park Cabins/Campgrounds
13	Beech Fork State Park Pool
14	Proposed Hatfield-McCoy Trailhead
15	Proposed Water Park & Hotel
16	Old Central City Antique District
17	Rustic Ravines
18	Proposed Beech Fork Lodge Site

Source: Kimley-Horn

Figure 27: WV 152 Corridor Assets



THE CROOKED ROAD: VIRGINIA'S HERITAGE MUSIC TRAIL – A CASE STUDY

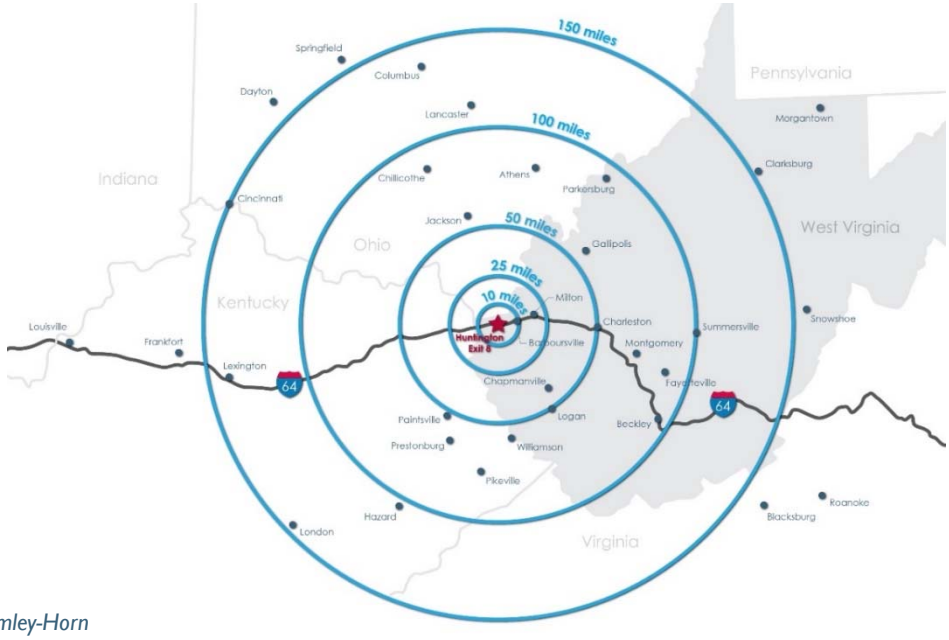
The nearly 300-mile-long Heritage Music Trail in southwest Virginia, called The Crooked Road, provides a successful example of an economic development strategy rooted in the culture and history of the Appalachian Region. The trail follows US Route 58 through 19 counties from Rocky Mount, VA to Breaks Interstate Park near the state border with Kentucky. Envisioned in 2003, the trail showcases traditional Appalachian music and dance. More than 60 music venues are marketed along the trail, and six of the nine major venues reported a 5–15% increase in revenue and attendance because of The Crooked Road's marketing efforts.

It has helped attract tourists to the area, grow local businesses, and expand appreciation for the region's rich culture. An economic impact analysis in 2016 concluded that The Crooked Road facilitates $6.4 million of tourist spending annually and supports 108 full-time jobs in the region. Approximately 42% of visitors to trail venues came from outside the region, nearly half of which said The Crooked Road was their primary destination. Multiday visitors also took advantage of other cultural and entertainment offerings unaffiliated with The Crooked Road, such as museums, hiking trails, and shopping, resulting in a positive spillover effect. The greater Huntington area surrounding Exit 8 on I-64 presents a unique opportunity in the region to replicate the success of The Crooked Road Heritage Music Trail by leveraging its cultural and recreational assets with a coordinated marketing campaign.

REGIONAL CONNECTIVITY AND ATTRACTION

As previously noted, Huntington offers a highly centralized location in the Tri-State area, including West Virginia, Ohio, and Kentucky. A variety of jurisdictions are located within 150 miles of Huntington, enhancing the competitiveness of the Exit 8 interchange area potential to attract travelers seeking a local destination or passing through along I-64 as shown in **Figure 28**.

Figure 28: Travel Distances from Exit 8 to Notable Regional Destinations, 2018



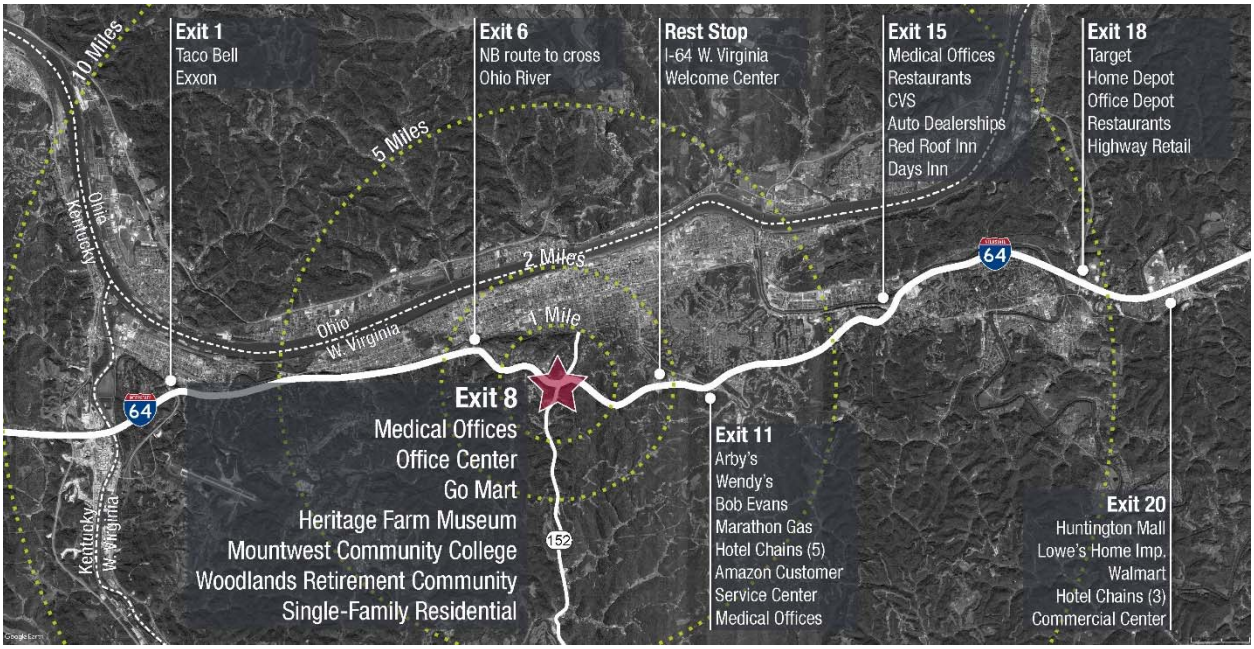
Source: Kimley-Horn

The project team consulted the recently updated KYOVA Travel Demand Model to provide a frame of reference on the proportion of vehicles traveling to and from the interchange area. The base year of the model is 2015, with a horizon year of 2040. The team performed a select link analysis to identify I-64 travelers with a destination north or south of the interchange based on drivers' travel origin. The external station represents the furthest boundary of the model and represents the portion of traffic that is not local to the Huntington area. As shown in **Figure 29**, currently the proportion of traffic that is travelling along I-64 and has a destination at the interchange is approximately 7% north of the interchange and 2% south of the interchange. Additional recreation growth poses the opportunity to capture this traffic and increase the regional demand.

Figure 29: Exit 8 Interchange Travel by Direction, 2018

The exits serving Huntington (shown in **Figure 30**) largely offer highway-oriented land uses, seeking to attract through-travelers on I-64. Of the three Huntington interchanges, Exit 11 has the most highway-oriented uses in the immediate vicinity, including fast food chains, lodging, and a gas station. Huntington High School, an Amazon customer service center, and medical offices are also sited nearby. Exits 15, 18, and 20 to the east also offer concentrations of traditional highway-oriented land uses. A notable opportunity exists for the Exit 8 area to distinguish itself with strong connections to natural resources and other outdoor adventure-related tourism.

Figure 30: Surrounding I-64 Interchange Profiles



Source: Kimley-Horn

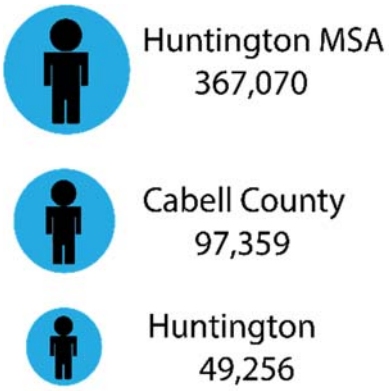
LOCAL MARKET DYNAMICS

PEOPLE

Huntington's total population during the past decade, shown in **Figure 31**, has remained stable with nearly 50,000 residents. As the region's primary residential and employment center, the City is home to 13.4% of the total population of the Huntington-Ashland, WV-KY-OH MSA (Huntington MSA) and is projected to maintain this share for the next five years.

Huntington is home to a significantly larger concentration of Millennials when compared with Cabell County and the Huntington MSA, attributable to the presence of Marshall University. In fact, nearly one-third of all Huntington residents are between the ages of 15 and 34. Huntington residents have the highest levels of education when compared against the County and MSA, with nearly 40% having completed an Associate's Degree or higher-level degree. This is likely supported by Marshall University as well as the concentration of local healthcare facilities.

Figure 31: Total Population, 2018



Source: ESRI, Kimley-Horn

Tapestry segmentation, provided by Environmental Systems Research Institute, divides households into 67 groups based on consumer spending patterns and lifestyle attributes. Data provided in this type of analysis is increasingly being used by developers, builders, and retail tenants in the site selection and due diligence process. Small Town Simplicity comprises the largest tapestry segment at 24.9%, followed by Set to Impress at 9.3%, and College Towns at 9.2%. The most influential tapestry segments in Huntington represent a widely varied population base, including older residents with a general skepticism of technology to younger residents, attracted to the area by Marshall University. A common trait among the top three segments is price-conscious spending decisions, driven either by retirement or limited student incomes. Brief descriptions of the three most common tapestries in the City of Huntington are provided below.

SMALLTOWN SIMPLICITY (24.9%)

In these neighborhoods, the lifestyle is down-to-earth and semirural, with television for entertainment and news, and emphasis on convenience for both young parents and senior citizens. This is an older market, with almost half of the householders aged 55 years or older, and predominantly single-person households.

Defining Traits

- Median home value of $88,000; about half the US median
- Labor force participation at lower than average at 51%
- Education: 65% with high school diploma or some college
- Connected, but not to the latest or greatest gadgets
- Community-oriented residents

SET TO IMPRESS (9.3%)

This market is found mostly in urban areas, but also in suburbs. Although many residents live alone, they preserve close connections with their family. This is a younger market that tends to live in rental housing.

Defining Traits

- Single-person households make up more than 40% of households
- They're image-conscious consumers that dress to impress
- Internet is used for social media, video games, and TV
- Quick meals on the run are a reality of life

COLLEGE TOWNS (9.2%)

About half the residents of College Towns are enrolled in college, while the rest work for a college or the services that support it. College Towns are all about new experiences, tend to be bike and pedestrian friendly, and residents seek out variety and adventure in their lives.

Defining Traits

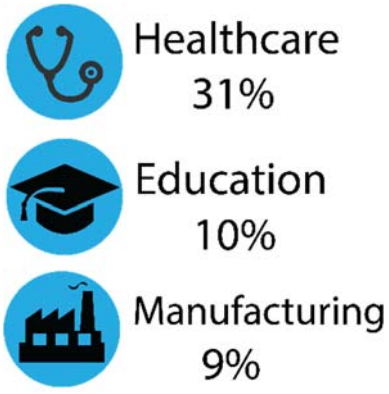
- Off-campus, low rent apartments are 50% of the housing stock
- Prefer doing things online than in person
- They keep up with the latest fashions of the season
- Median household income and net worth are significantly below the US medians

Employment

Huntington serves as the employment center for the larger Huntington MSA, hosting more than a quarter of the region's jobs. While these workers do not necessarily live in Huntington, they do drive demand for local real estate markets and recreation opportunities through commuting patterns.

As of 2015, the most recent year for which data is available, the largest industry in Huntington is Healthcare and Social Assistance, comprising 31% of the City's total employment. Two of the area's major healthcare-related employers include St. Mary's Hospital and Cabell Huntington Hospital. Educational Services is the next largest sector, supported in part by Marshall University, which has an academic staff of more than 800 employees. Manufacturing continues to have a sizable base in the Greater Huntington area, making it the City's third largest industry. Leading manufacturing companies in the region include Huntington Alloys Corporation, Alcon Manufacturing, and Steel of West Virginia. These percentages are shown in **Figure 32**.

Figure 32: Largest Industries by Employment, Huntington, 2015



Source: LEHD On the Map

TOURISM-SUPPORTING REAL ESTATE SECTORS

RETAIL OVERVIEW

There are several local and national retailers distributed throughout the Huntington area, including grocers, pharmacies, and discount stores. Pullman Square is the primary retail center anchoring downtown Huntington. In addition to the Walmart Supercenter on the eastern edge of the City, other big box stores serving the residents of Huntington are located primarily in two shopping centers in nearby Barboursville near I-64 and US 60. As mentioned in the discussion of area assets, Merritt Creek Farm is a shopping center anchored by Target and Home Depot. On the other side of Mud River is the Huntington Mall, which is home to Dick's Sporting Goods, JCPenney, and Sears. Also nearby is Lowe's Home Improvement, Best Buy, and another Walmart Supercenter.

Supercenters	WAL*MART
Grocery Stores	Kroger, ALDI, Save a lot
Pharmacy	Walgreens, RITE AID, CVS pharmacy
Discount Stores	DOLLAR GENERAL, DOLLAR TREE

There are two retail centers currently under construction along US 60. The Summit Eatery, Lifestyle & Wellness Center is expected to contain 40,000 to 50,000 of square feet of commercial retail space with lifestyle and health-related tenants. It is located between Huntington and Barboursville and is expected to be completed in late 2018. Tanyard Station is being developed in Barboursville a few miles east on US 60 from The Summit. Expected uses include a grocery store, retail outlets, a bank, a hotel, and a gas station. Totaling more than 200,000 square feet, it will be one of the largest retail developments in Cabell County when finished in the fall 2019. The development of new retail centers indicates the comparative strength of this real estate sector, one that is important in supporting tourism activities.

Huntington is home to several locally-owned and national restaurants, ranging from fast food chains to upscale eateries. The City's restaurants are primarily located downtown along 3rd and 4th Avenues and 9th Street. Serving the students of Marshall University and Huntington residents, there is a wide range of offerings including bars, lounges, and sit-down restaurants. There is also another cluster of restaurants in West Huntington within a few blocks of US 52. Travelers along I-64 can easily access both areas via US 52 or WV-527. There are no restaurants near the highway interchanges at Exits 6 or 8. There are a few fast food chains and a fast-casual restaurant near Exit 11.

HOSPITALITY OVERVIEW

There are currently 14 hotels in the Huntington Area with nearly 1,400 rooms, a quarter of which were constructed since 2000. Another 33% were built in the 1990s. The yearly average room occupancy is roughly 65%. Five of the hotels are located near the I-64 Exit 11 interchange. The lodging options in the Huntington area include:

- Comfort Inn
- Pullman Plaza Hotel (future DoubleTree by Hilton)
- Fairfield Inn & Suites by Marriott
- TownePlace Suites by Marriott
- Best Western
- Comfort Suites
- Hampton Inn by Hilton
- Ramada
- EconoLodge
- Super 8
- Holiday Inn
- Days Inn
- Motel 6
- Red Roof Inn

The Pullman Plaza Hotel, which is Huntington's only true full-service hotel offering meeting space and dining facilities, is undergoing renovations and rebranding as a DoubleTree by Hilton. A 100-room hotel is included in the site plan for Tanyard Station in Barboursville, but no details about the brand or timeline have been released. In nearby Milton, a resort-style hotel called the Grand Patrician featuring 100 rooms is proposed as part of the adaptive reuse of the former Morris Memorial Hospital. Construction is tentatively scheduled to begin in 2019. With the projected growth, there is a demand for additional hospitality in the interchange area. Furthermore, there is a lack of specialty lodging in the interchange area that can cater to tourists, travelers, and adventure enthusiasts.

MARKET SUMMARY

The market analysis prepared for this project focuses on momentum in the Huntington area that would support tourism-related uses at the Exit 8 interchange area. Huntington benefits from a variety of existing tourism-based attractions, through-traffic along I-64, and momentum in local real estate sectors that is suggestive of future development opportunities near Exit 8. Additionally, a notable opportunity exists for the Exit 8 area to distinguish itself from other local interchanges with strong connections to natural resources and other outdoor adventure-related tourism. Due to the demand for lodging—as well as the lack of any tourism-specific lodging—a tourism-centered hotel would likely be in demand.

WELCOME CENTERS

As part of the land use and market opportunities, this exit has been identified as an opportunity to develop into a strong tourism and recreation base that serves as a gateway to the activities and destinations offered and planned for development along the WV 152 corridor.

Figure 33 shows the locations of major welcome centers in West Virginia. Most are located at major entry points into West Virginia or where there are major route crossings. The welcome center at Williamstown is of particular significance in that it serves northbound and southbound traffic. Also of note is Tamarack in Beckley and the J.W. and Hazel Ruby West Virginia Welcome Center. The J.W. and Hazel Ruby Welcome Center is part of the Summit Bechtel Reserve and not part of the West Virginia Tourism Department. Both centers serve as examples of configurations and land uses that could influence the model of a welcome center at Exit 8. **Figure 34** shows the location of the existing I-64 Welcome Center located just east of the Exit 8 interchange.

Part of the land use analysis examines the location of a welcome center and the consideration of development at Exit 8. Exit 8 is a desired confluence of routes as it captures travelers headed eastbound into West Virginia along I-64 as well as traffic from the adjacent US 52 interchange that serves traffic headed into West Virginia from Ohio. Also shown on **Figure 33** is the current traffic volume at the major welcome centers in West Virginia and at Exit 8. This interchange currently serves approximately 43,460 vehicles per day which is the fourth highest in the state.

To capture this traffic and possibly increase attraction to this location, investment was evaluated to incorporate a welcome center into the Exit 8 interchange land use plan. Initially it could be co-located with the water park/hotel land use but could serve in the future as a stand-alone site that helps to distinguish this location as a recreation/tourism destination. It also serves as a gateway/landmark to orient travelers to the WV 152 corridor. **Figure 35** shows the current welcome center located just east of Exit 8 and compares that to the new J.W. and Hazel Ruby Welcome Center. This welcome center was constructed in conjunction with the Boy Scouts of America heritage and the investment of that group in the area. Similar to that investment, branding Exit 8 as a tourism/recreation corridor would support the development of a new welcome center at this location.

Figure 33: Major Welcome Centers, West Virginia, 2018

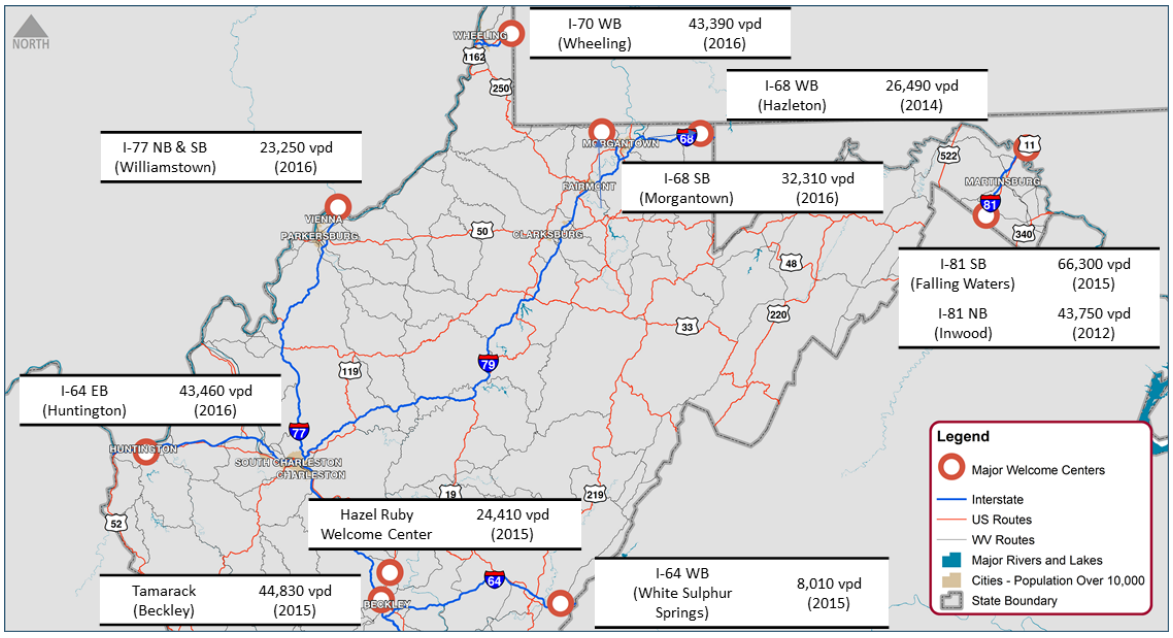


Figure 34: Location of I-64 Welcome Center

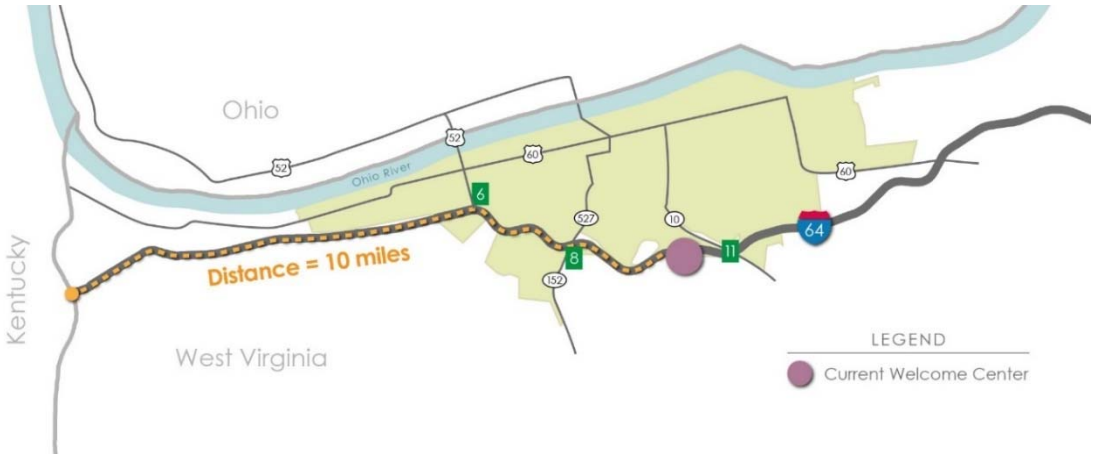
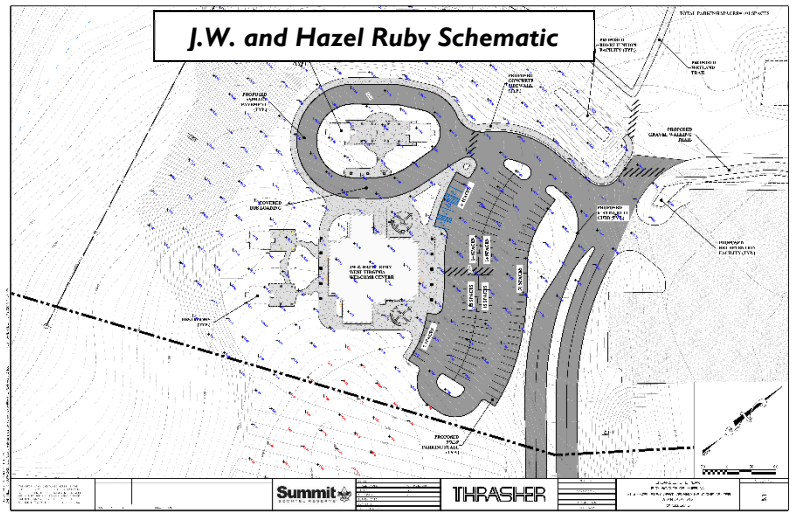


Figure 35: Welcome Center Pictures



ALTERNATIVES DEVELOPMENT AND EVALUATION

INTRODUCTION AND OVERVIEW

Once the existing conditions, market research, capacity analysis, and safety analysis were completed and identified challenges, the project team began developing and mobility needs alternatives. Input gathered from the steering committee, internal work group, and the public throughout the preliminary stages was an integral part in developing alternatives for consideration. Insights about the future development and direction of the study area based on the preliminary information that was compiled were the driving forces behind the alternatives development.

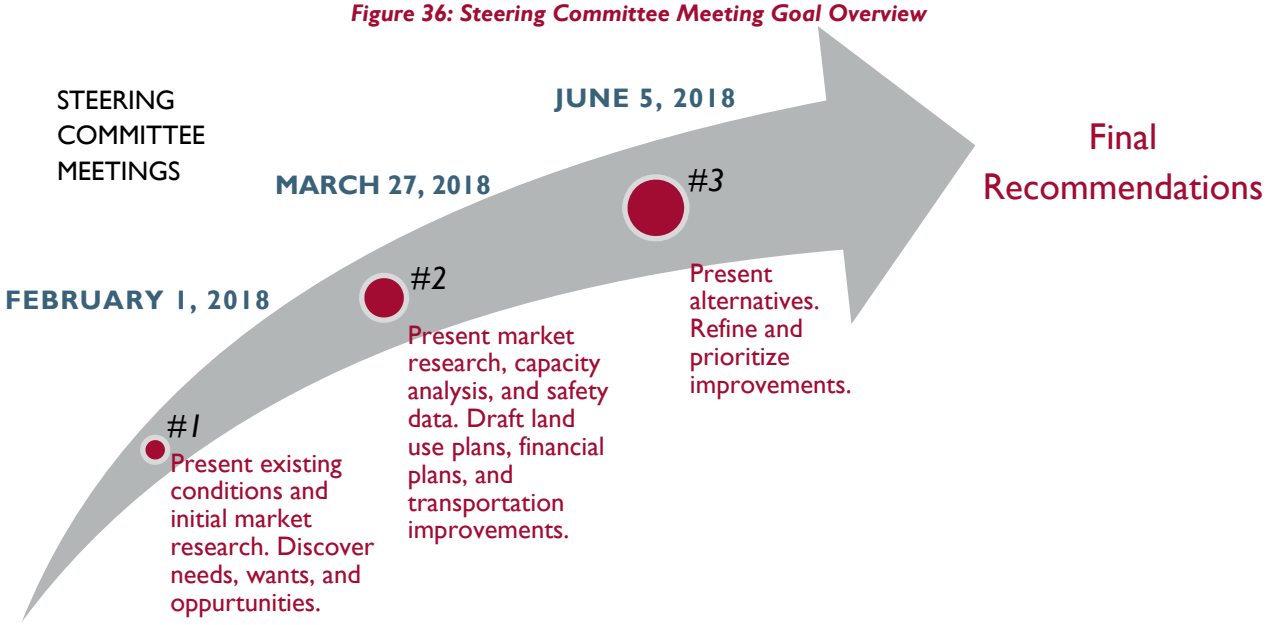
STEERING COMMITTEE ENGAGEMENT

The project team coordinated with the steering committee to develop alternatives for a comprehensive mobility and land use plan for the study area. The committee consisted of stakeholders that could provide insight of any local issues and concerns from constituents and help give direction for the development of alternatives. Members of the committee invited to the meetings included representatives from:

- KYOVA Interstate Planning Commission
- WVDOH
- Appalachian Heartland Highway Committee
- Cabell County Commission
- City of Huntington
- Heritage Farm
- Huntington Convention and Visitors Bureau
- Huntington Municipal Development Authority
- Huntington Museum of Art
- Marshall University
- Wayne County Commission
- Wayne County Economic Development Authority
- Kimley-Horn
- Thrasher

There were three key meetings with the steering committee that navigated developing the alternatives. The meetings were held at the office of the KYOVA Interstate Planning Commission at 400 3rd Avenue, Huntington, WV 25701. **Figure 36** shows an infographic providing an overview of these meetings, including dates and goals.

Figure 36: Steering Committee Meeting Goal Overview



TRANSPORTATION IMPROVEMENT CATEGORIES

A range of transportation improvement categories were identified based off of the purpose and need for this project, issues/opportunities identified by the technical analysis, and input from the first steering committee meeting, including:

Physical

- Capacity: Passing lanes/lane additions/signal timings
- Multimodal: bicycle/pedestrian facilities
- Safety: Spot improvements
- Freight: Limit routes/expand routes

Policy

- Urban Service Boundary Expansion
- Uniformity (signage, plantings)

Related to the physical improvements categories, the study area corridor was subdivided into three locations. These locations were selected based on breaking the corridor between major points of interest along 5th Street/WV 527 and WV 152 such as Downtown Huntington, the I-64 Exit 8 interchange, the proposed Heritage Farm Access Road intersection, and the entrance to Beech Fork State Park at the intersection of Beech Fork Road. These locations include:

- Location #1: 5th Street Bridge Over Fourpole Creek to I-64 Exit 8
- Location #2: I-64 Exit 8 near Miller Road to Proposed Heritage Farm Intersection
- Location #3: Proposed Heritage Farm Intersection to Beech Fork Road

These locations provided an opportunity for the Steering Committee to express their visions for specific segments of the corridor and allowed for strategic planning tactics for the development of alternatives going forward.

PHYSICAL TRANSPORTATION IMPROVEMENTS DEVELOPMENT AND EVALUATION

Initial focus was given to developing and evaluating corridor improvements that resulted in actual changes to the typical section. Options developed include:

- Modifications to typical roadway section
- Wayfinding and gateway signage
- Corridor aesthetics
- Bicycle connectivity

TYPICAL SECTION

For reference, the existing typical sections for each location area are presented. Variations to these typical sections were discussed and evaluated with the steering committee in a workshop format. During the second steering committee meeting, members of the committee were asked to give insights on the development of the corridor's three locations. The workshop activity involved the participants piecing together portions of a typical section side by side to create a desired roadway cross section for each location of the corridor listed above. Some examples of the tiles included various width driving lanes, paved shoulders, bike lanes, sidewalks, medians, and other typical corridor segments to choose from. It was also a chance to spur discussion on the needs and wants of the committee for the corridor.

Due to the size of the committee, participants were separated into two groups. The existing typical sections of the three locations were shown in the StreetBuilder tile format to show participants how to complete the activity and what the current roadway characteristics look like. These locations were selected based on major transitions in the existing roadway typical sections. Shoulder tiles were not available at the time of the creation of the existing typical sections. The existing and proposed tile configurations for each location created during the exercise can be found in **Appendix C**.

Location #1

The existing roadway configuration for Location #1 is a three-lane section with two SB travel lanes and one NB travel lane with varying shoulder widths from 1 foot to 4 feet.

The results and discussion for the proposed configuration of Location 1 indicated that the first group would like to see a separated multi-use path and island for multimodal use in this segment. They mentioned that pedestrians walk along this segment, and cyclists use it for recreation purposes. The second group had no multimodal options but wanted to see consistent shoulders incorporated.

It was determined during the discussion that the right-of-way does not provide enough room for the separated multi-use path and island without substantial costs. The second group mentioned that cyclists only use this segment for recreation purposes due to the steep grade, and that other multimodal options for commuters could be explored near the intersection. The committee came to the consensus that making the shoulders a consistent width would provide refuge for vehicles to safely pull over in emergency situations while also providing a space for pedestrians. A concern for drainage along this segment, as well as re-routing freight traffic was also discussed.

Location #2

Location #2 has two altering segments of roadway including a four-lane section with 10-foot shoulders and landscaped median from the I-64 Exit 8 interchange to Wood Haven Drive along WV 152. From there to the proposed Heritage Farm Access Road intersection, it transitions to a two-lane section with 4-foot shoulders.

Both groups' consensus was to continue the four-lane section to the proposed Heritage Farm Access Road intersection. It was also mentioned that the tight roadway of the existing two-lane section as well as the grade would be dangerous for pedestrians, and that the shoulder could alleviate this danger if pedestrians chose to use this corridor as well as provide refuge for vehicles in emergency situations.

Location #3

The existing roadway of Location #3 begins as a two-lane section with 4-foot shoulders and transitions into a two-lane, two-way left turn lane section starting near the Lavalette Food Fair along WV 152.

Due to time constraints of the meeting, the second group was not able to complete the last location's tile arrangement. However, over discussion it was determined that the main goal for Location #3 would be to have consistent shoulders throughout the segment for the same reasons mentioned for the shoulders in the previous locations. It was also discovered that the current consistency of the two-way left turn lane was not strategic in its original placement, and that options to be more tactical with left turn lanes to utilize this extra space could be explored. The railroad that runs parallel to the two-way left turn lane segment will need to be considered when developing alternatives.

General Conclusions

The committee decided that having a uniform feel throughout the corridor was desired, while carefully transitioning from rural to urban once past the interchange. This was considered when determining how to approach combining these segments of the corridor during the alternatives development.

With the results stemming from this activity, the project team could begin developing more detailed alternatives to be considered paired with the technical analysis

WAYFINDING AND GATEWAY SIGNAGE

Options for improving the experience for travelers were identified as part of this study and include consideration of a uniformity sign with symbols that are unique to the corridor to direct travelers to area destinations. A gateway (sign or identifying marker) leading north to Huntington and south to the rest of the corridor will help identify the corridor as a "different" route and sets the expectations that there may be more to experience.

CORRIDOR AESTHETICS

To assist with the identification portion of the corridor, treatments along the route are explored that provide visual cues that the traveler is still on the tourism route. This could include aesthetically pleasing guardrail, consistent plantings, and/or consistent maintenance with landscaping.

BICYCLE CONNECTIVITY

Developing bicycle connectivity alternatives in the study area began by using the existing trails along with the proposed PATH trails for the City of Huntington. These trails are shown in the exiting conditions section of this report. The desire for connectivity between Downtown Huntington, Heritage Farm, and Beech Fork State Park was expressed by the steering committee and this vision was reflected in the alternatives development.

POLICY DEVELOPMENT AND EVALUATION

A second set of improvement alternatives were presented and discussed with the steering committee and project team that would enhance the physical improvements and lead to a cohesive master plan for the Exit 8 interchange and WV 152 corridor. This includes:

- Land use plan
- Urban service boundary

LAND USE

Land use was one of the driving factors behind the need for this study. Due to the necessity for land use alternatives to inform accurate capacity analysis, the development of the land use alternatives began towards the beginning of the study with close correspondence with the steering committee. The land uses were developed with guidance from the steering committee, the Appalachian Heartland Highway Commission, and results from the market research analysis. Land use was altered as needed based on the evaluations by the project team.

A significant portion of the proposed development is located adjacent to the I-64 Exit 8 Interchange. The development was influenced by the steering committee and AHH's Project Huntington development. Initial plans considered a hotel/water park, welcome/visitor's center, and general mixed-use.

As the study progressed, the land use plans changed to balance out the desire for recreation-based development, what is supportable based on research, and maximizing the use of existing development.

Aside from development at the Exit 8 Interchange, Heritage Farm Museum & Village has major plans to develop additions to their property by teaming up with the same entity that provided the concept for the hotel/water park. Heritage Farm Museum & Village is a Smithsonian Affiliate offering Appalachian history education in a fun, family atmosphere. Accompanying this addition is an access road connecting Heritage Farm with WV 152. The additions will add several new features including a wildlife park, zip lines, mini golf, obstacle courses, hiking and mountain bike trails, and more.

With an understanding of these considerations, a land use plan was developed and is presented in the recommendations section.

To enable the land use planning to be enforced, the evaluation considered the urban service boundary for Huntington falls just short of areas of this interchange. To fill in the gaps and enable the City of Huntington to regulate development at the interchange, the option to expand the boundary was included as part of the alternatives.

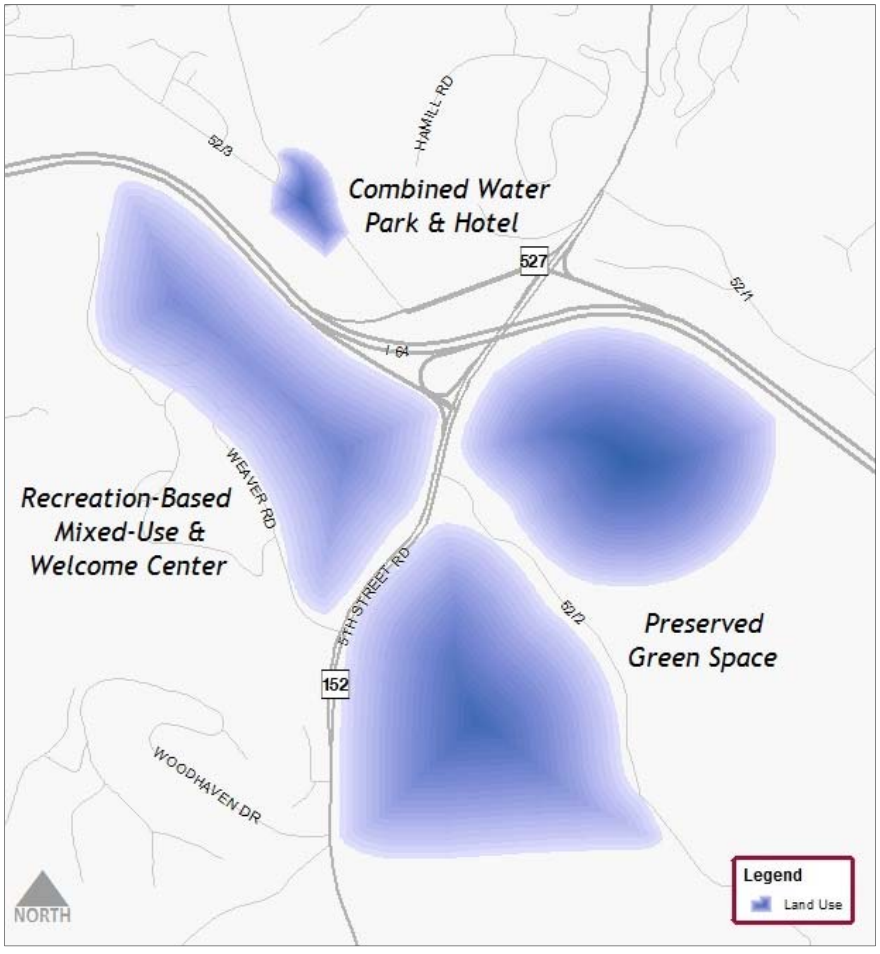
RECOMMENDATIONS AND IMPROVEMENTS

LAND USE

The area surrounding the I-64 and WV 152/527 interchange currently is largely undeveloped. This is due to a variety of reasons including challenging topographic elements. Several land uses were proposed and evaluated as part of this study to help service as a guide for this gateway to Downtown Huntington and to the Tourism Corridor itself. The market research undertaken as part of this study vetted potential land uses. The traffic analysis considered varying intensities in the land uses related to trip generation to determine what the existing transportation network could support and what infrastructure modifications would be needed.

The results of this research and analysis led to a recommended land use plan shown in **Figure 37**. The plan is based on balancing the need for opportunities in the arts, entertainment, and recreation employment base with utilizing the availability in the dense, core area of development in downtown Huntington. As a result, the land use map shows recreation-based development on the west side of WV 152, with preservation space on the east. The northwest quadrant presents the strongest opportunity for a destination-driven recreation use, such as a water park and any associated lodging. As development occurs, a stand-alone welcome center should be considered as part of a mixed-use development pattern in the southwest quadrant.

Figure 37: I-64 Exit 8 Recommended Land Use



PHYSICAL IMPROVEMENTS

ROADWAY

Following further refinement and planning-level design evaluation, the following improvements are recommended for each of the identified corridor locations. Detailed information is listed below with graphical representations shown in **Figures 38–43**. Estimated construction costs were developed based on unit quantities and bid unit prices based upon the most recent WVDOH unit bid price data.

Location #1 – 3,250 linear feet (LF) of WV 527 from 5th Street Bridge over Fourpole Creek to Miller Road near I-64 Exit 8:

- Widen narrow rock cut around the roadway crest
- Add 4-foot paved shoulders for safety and bike/pedestrian mobility
- Overlay and stripe roadway for three 12-foot lanes (2 uphill, 1 downhill)
- Estimated construction costs = $667,000

Further investigation was performed for this section to explore the impacts of widening the shoulders to 8 feet or 6 feet as opposed to 4 feet. Adding 8-foot paved shoulders on both sides of WV 152 is roughly the maximum allowable width before right-of-way acquisition will be required. In addition to the extra excavation and pavement costs, this change will require the relocation of many light and power poles. This change adds $468,000 to the cost, bringing the total to $1,135,000. For 6-foot shoulders, the additional cost would be $302,000 for the excavation and pavement (cost already includes the relocation of light and power poles) bringing the total to $969,000. At this time, the recommendation is for 4-foot shoulders as the additional widening to 6-foot or 8-foot shoulders substantially increases the cost. Additional research would be necessary during the design phase to determine the cost/benefit ratio for increasing the shoulder width beyond 4 fee.

Location #2 – 6,000 LF of WV 152 from Wood Lane south of I-64 Exit 8 to the uphill grade just past Skyview Drive:

- Widen four narrow rock cuts to provide improved clear zones.
- Widen roadway to provide a two-way left turn lane (TWLTL) to accommodate multiple drives and intersections.
- Project improves sight distance for future Heritage Farm Connector and Skyview Drive intersections
- Add 4-foot paved shoulders for safety and bike/pedestrian mobility
- Overlay and stripe roadway for three 12-foot lanes (2 travel lanes and 1 TWLTL)
- Estimated construction costs = $2,847,000

Location #3A – 15,800 LF of WV 152 from the uphill grade between Skyview Drive and German Ridge Road to the Food Fair entrance and from the bridge over Beech Fork to just past the Tractor Supply Company (TSC) entrance:

- Widen rock cuts in eleven locations to provide improved clear zones.
- Add 4-foot paved shoulders for safety and improved bike/pedestrian mobility
- Overlay and stripe for 12-foot travel lanes
- No improvements proposed for existing 3-lane section of WV 152 through Lavalette
- Estimated constriction cost = $2,541,000

Location #3B – 2,000 LF of WV 152 from just south of the TSC entrance to the Lakeview Manor Apartment entrance:

- Existing WV 152 curve beside TSC is too sharp for the posted speed limit of 55 mph
- Relocate 2,000 LF of WV 152 to satisfy the geometric design requirements for a 55 mph reverse curve
- Improve the intersection sight distance for Sugarwood Road and the future Beech Fork connector
- Proposed typical section is two 12-foot travel lanes and 4-foot paved shoulders
- Estimated construction cost = $2,559,000

Figure 38: Location #1 Roadway Improvements

Figure 39: Location #1 Typical Section

Figure 40: Location #2 Roadway Improvements

Figure 41: Location #2 Typical Section

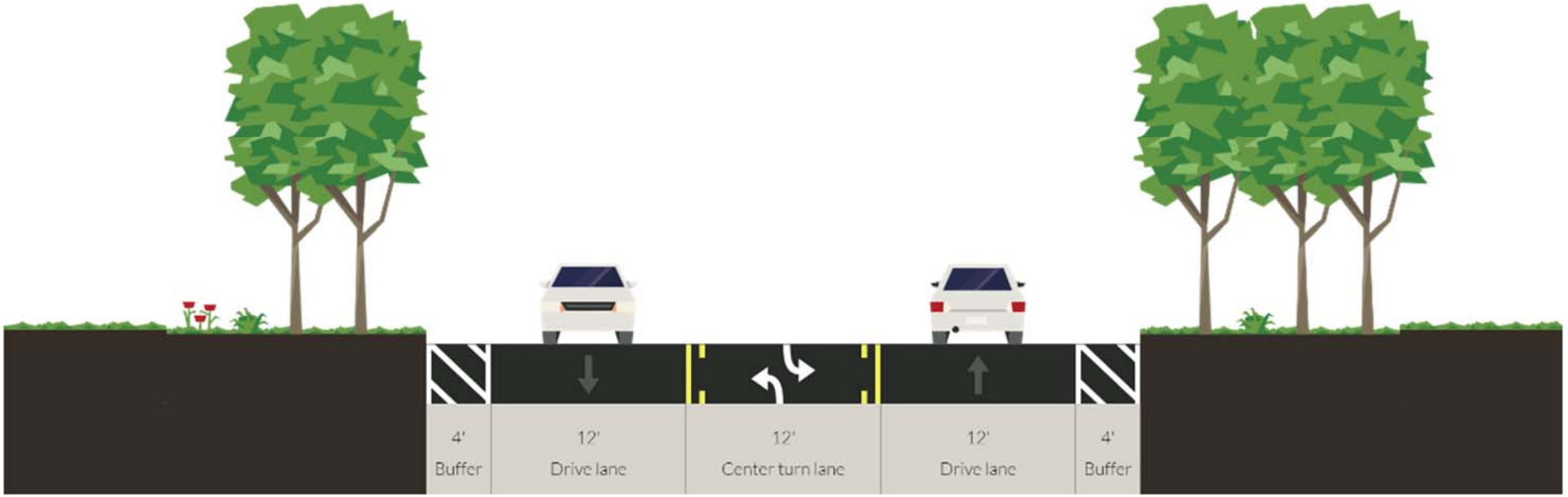


Figure 42a: Location #3A Roadway Improvements

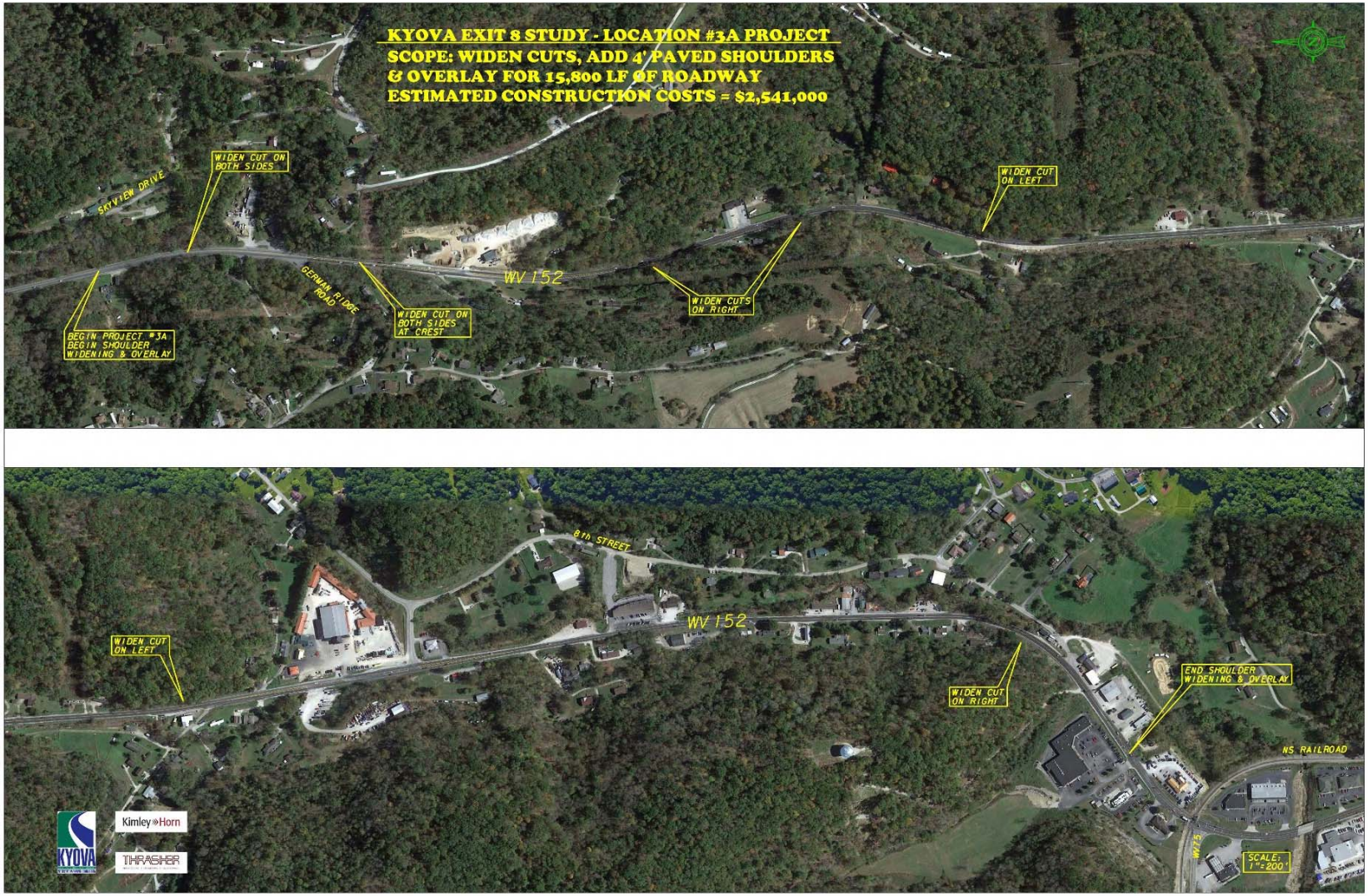


Figure 42b: Location #3A and #3B Roadway Improvements

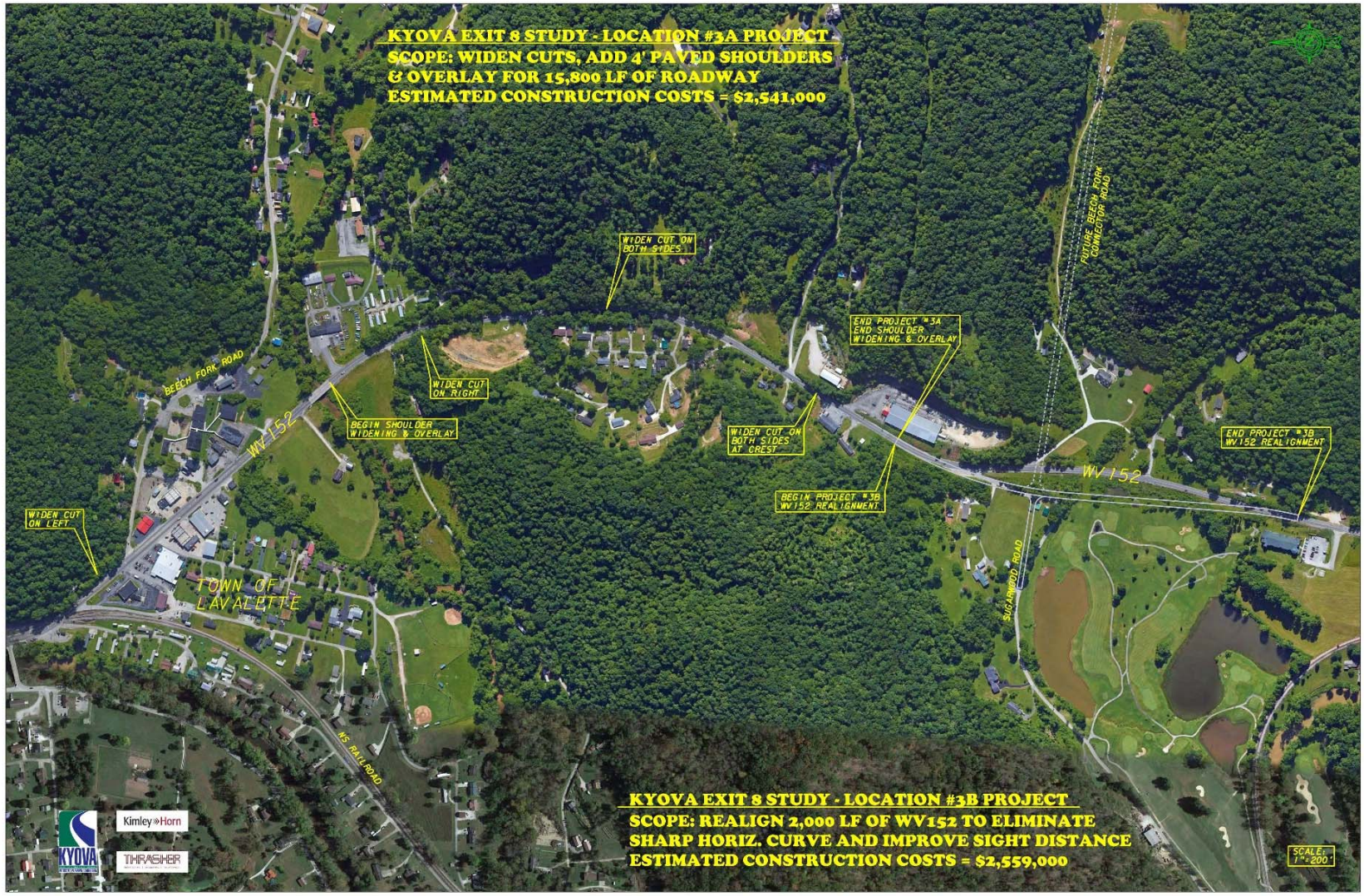


Figure 43: Location #3 Typical Section

WAYFINDING AND GATEWAY SIGNAGE

It is recommended to incorporate wayfinding and gateway signage due to the tourism nature of the corridor. Gateway signage would provide a visual entry point and define the location the tourists are entering or leaving. Wayfinding signage would connect people to places and increase the tourism population. These signs can be read quickly and should be placed in a predictable and accessible manner. The recommendation for this study is to include these components as part of the overall design.

CORRIDOR AESTHETICS

Guardrail Treatment

To have a uniform, tourism feel for the Tourism Corridor, it is recommended to install aesthetic guardrail treatments along the corridor such as wooden, painted, or other types of treatments in place of the existing guardrail. This would also be an opportunity to add guardrail as needed for improved safety along the corridor.

Tree/Shrub Removal and/or Trimming

The removal of trees and shrubs will create a cleaner, more uniform, and aesthetically pleasing landscape for tourists on their route to and from Huntington, Heritage Farm, or Beech Fork State Park.

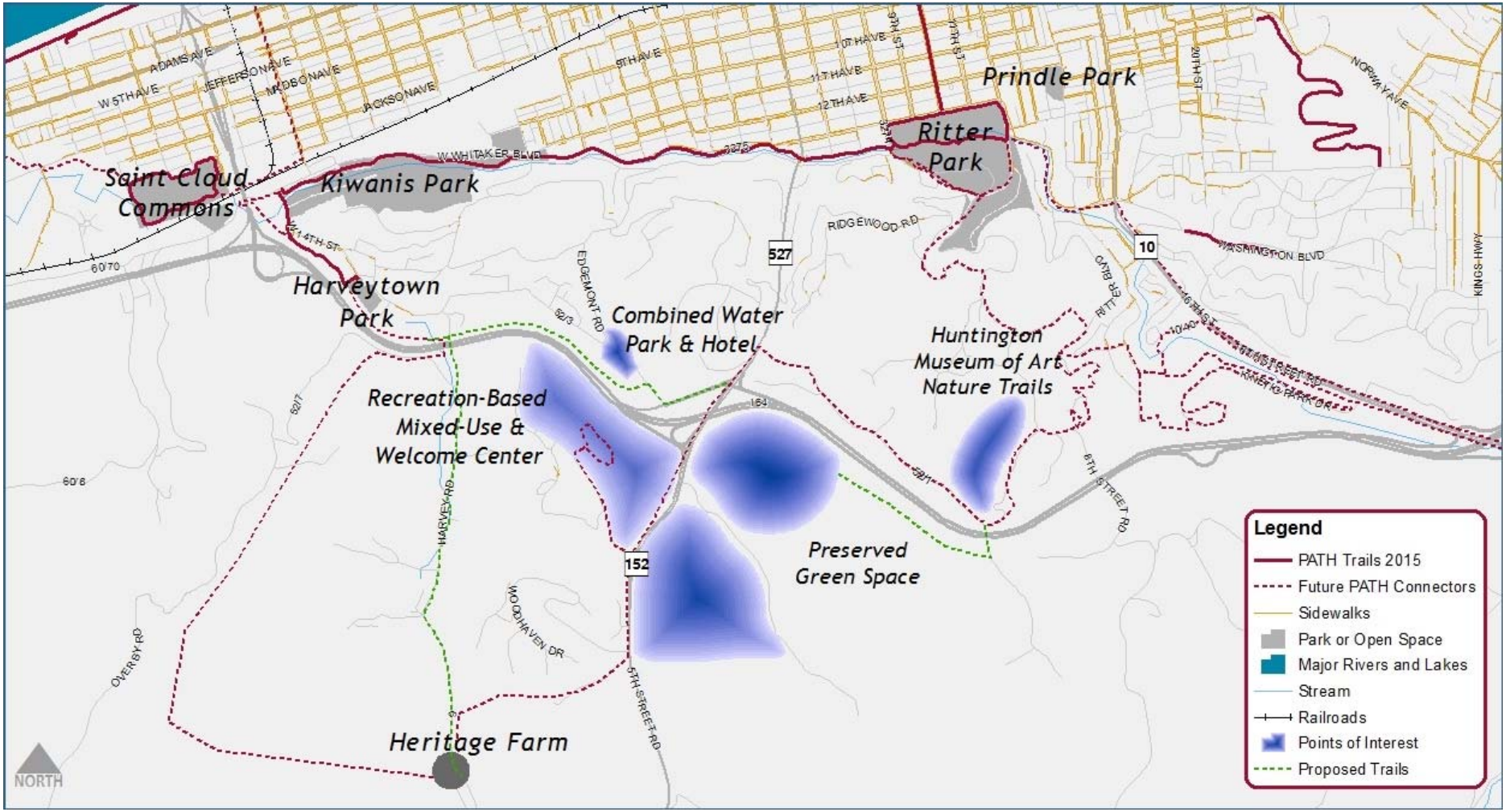
Consistent Plantings

The addition of consistent vegetation including trees, shrubs, etc. can enhance the visual quality of the roadway by integrating the corridor into the landscape context in a uniform way. Also, plants, especially trees, can provide climatic benefits, air filtration, erosion control, slope stability, storm water retention, and natural habitats.

BICYCLE CONNECTIVITY

To build upon existing multimodal planning efforts in the study area, several additional trails are proposed to increase bicycle connectivity in, and through the study area. These improvements are shown in **Figure 44**.

Figure 44: Recommended Bicycle Connectivity Improvements



POLICY IMPROVEMENTS

Aside from the physical improvements shown above, there are a few changes to local policy that are recommended including:

- Designating WV 152 as the Appalachian Heartland Highway and noted as a tourism corridor
- Expanding Urban Service Boundary to incorporate the area adjacent to the interchange
- Developing uniformity regulations for the Tourism Corridor
- Exploring tax increment financing as an option for funding

PERFORMANCE MEASUREMENT

The KYOVA Metropolitan Transportation Plan (MTP) was developed with an emphasis on performance measurement. Specifically, projects identified in the MTP should address transportation needs in one or more of the seven key areas identified as national performance goals through MAP-21 and the FAST Act. These key areas include:

- Safety
- Infrastructure
- Congestion reduction
- System reliability
- Freight movement and economic vitality
- Environmental sustainability
- Reduced project delivery delays

Keeping in line with the national performance goals and the objectives of the MTP, the projects identified for this study were assessed in comparison to the key goals.

Safety	Infrastructure Condition	Congestion reduction	System Reliability
• 4-foot shoulders • Improved geometry • Improved sight distance • Improved clear zones with rock cuts	• Builds upon new bridges • Pavement overlay • Shoulders reduce pavement degradation	• TWLTL separates movements • Reduction in slow or stopped traffic leads to air quality improvements	• TWLTL and 4-foot shoulders provides room for maneuverability with breakdowns

Freight Movement and Economic Vitality	Environmental Sustainability	Reduced Project Delivery Delays
• Tourism-based recreation land uses recommended • Wider shoulders improve safety for freight movement	• Aesthetic treatments take advantage of natural elements • Land use plan calls for greenspace preservation	• Roadway improvement projects scaled to limit property/environmental impacts to be feasible

As shown by this assessment, the study projects address needs for each of the seven areas.

PRIORITIZATION

Many projects have been identified that could be completed independently from the overall master plan for the interchange and corridor. To identify the projects that have the most impact relative to cost, the prioritization process referenced the MTP guiding principles. These include:

Goods Movement
Promotes freight movement and enhances intermodal connections

Livability and Complete Streets
Enhances gateways and improves Beautification while making corridors more multimodal

Congestion Mitigation
Tackles issues identified in the travel demand model through strategic capacity improvements

Multimodal Integration
Creates a coordinated network of bicycle and pedestrian facilities and transit / passenger rail services

Barriers to Mobility
Addresses concerns related to natural and manmade obstacles to safety and mobility

Tourism and Recreation
Protects the character of communities and promotes economic vitality

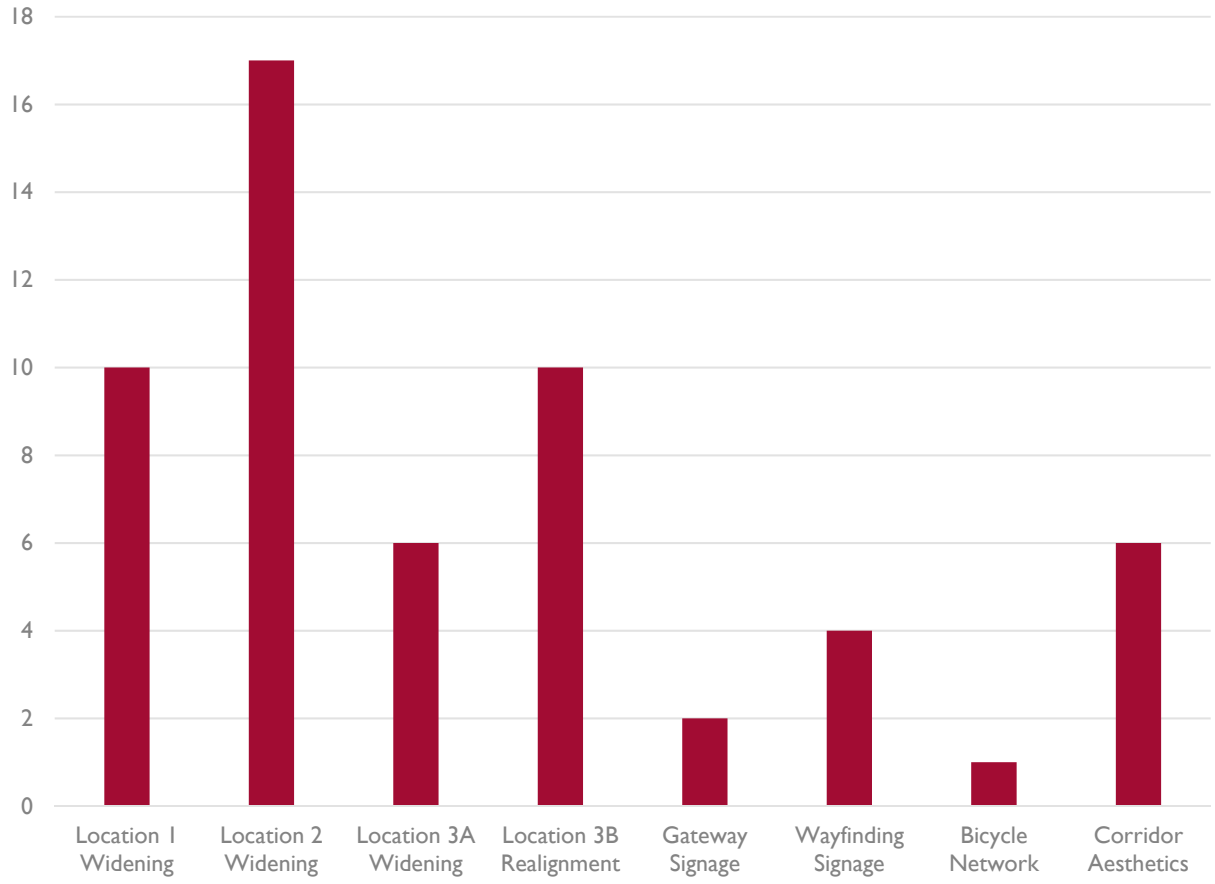
Projects that incorporate one or more of these principles could have a higher benefit and therefore a higher priority. **Table 7** lists the projects and associated principles developed for evaluation.

Table 7: Prioritization Activity Example

Project Type	Description	Guiding Principles	Cost
Location 1 Widening	Add 4-foot paved shoulder and restripe for three 12-foot lanes		$667,000
Location 2 Widening	Add 4-foot paved shoulder; TWLTL, improved clear zone		$2,847,000
Location 3A Widening	Add 4-foot paved shoulders and improved clear zones		$2,541,000
Location 3B Realignment	Improve intersection sight distance for future Beech Fork Connector		$2,559,000
Gateway Signage	Iconic entry point design to Huntington (north) and recreation (south)		Varies dependent on selected size and treatment
Wayfinding Signage	Develop brand, destinations, and determine locations		$150,000 (Study Only)
Bicycle Network	Signage, pavement markings, transition improvements (no new facilities)		$400,000
Corridor Aesthetics	Replace guardrail; remove/trim trees and shrubs; new plantings where appropriate		$1,000,000

At the third steering committee meeting, attendees were asked to score the projects to identify what the group consensus was on priority. Attendees were given a total of 8 points that could be assigned to projects. Stipulations included all points could not be assigned to one project; they must be split between at least 2 projects. A zero could be assigned to a project. A one could be assigned to each project if all were viewed equally. A total of seven members participated in the exercise. The results of this exercise are shown in **Figure 45**.

Figure 45: Prioritization Exercise Results



As shown in **Figure 45**, the Location 2 Widening was viewed as the highest priority project.

The results of this evaluation should be used as guidance for future project development and prioritization.

CONCLUSION

The Exit 8 Mixed-Use Development and Traffic Mobility Study offers a master plan for the most beneficial land use mix at Exit 8 combined with the mobility needs to support recreation-based development. The I-64/WV 152 interchange is a dominant gateway to the region, and establishment of WV 152 as a tourism corridor will help to accelerate growth, leveraging assets from Beech Fork Lake to Heritage Farm to downtown Huntington. The recommendations included in this study are high-level and it is expected that more in-depth design will be conducted related to proposed roadway improvements.

The recommendations from this study are ultimately meant for consideration in the region's MTP and as a communication tool for member agencies and jurisdictions. Implementation of said recommendations will be dependent on identification of available funding, federal and state, and partnership with local state and federal agencies.

ADDITIONAL RESOURCES

The following studies and websites were used to provide input to the study process.

Beech Fork Lake Lodge Entrance, Engineering Division of the West Virginia Division of Highways (WVDOH), February 3, 2012

The Economic and Fiscal Impact of the Hatfield-McCoy Trail System in West Virginia, July 11, 2014

Market Feasibility Report for a New State Park Lodge at Beech Fork State Park near Lavalette, WV, Mareth Advisors, LLC, January 2013

Paul Ambrose Trail for Health Master Plan, Rahall Transportation Institute, 2016

KYOVA 2040 Integrated Metropolitan Transportation Plan, Kimley-Horn, April 2017

www.kyovaipc.org/KYOVA_2040_Integrated_MTP_Complete.pdf

Huntington Museum of Art Hiking Trails

Https://www.hmoa.org/nature/hiking-trains

APPENDIX A – PURPOSE AND NEED DOCUMENTATION

Appalachian Heartland Highway (AHH) Committee

Vision for Exit 8/WV 152 as a Tourism Corridor

"Where you can find 152 ways to say AHH…"

Mission Statement: To grow, develop, and market a Tourism Corridor that is anchored to the north by the City of Huntington and the Ohio River, continues south along WV 152 into southern West Virginia, and concludes at the entrance to the Hatfield-McCoy Trail System.

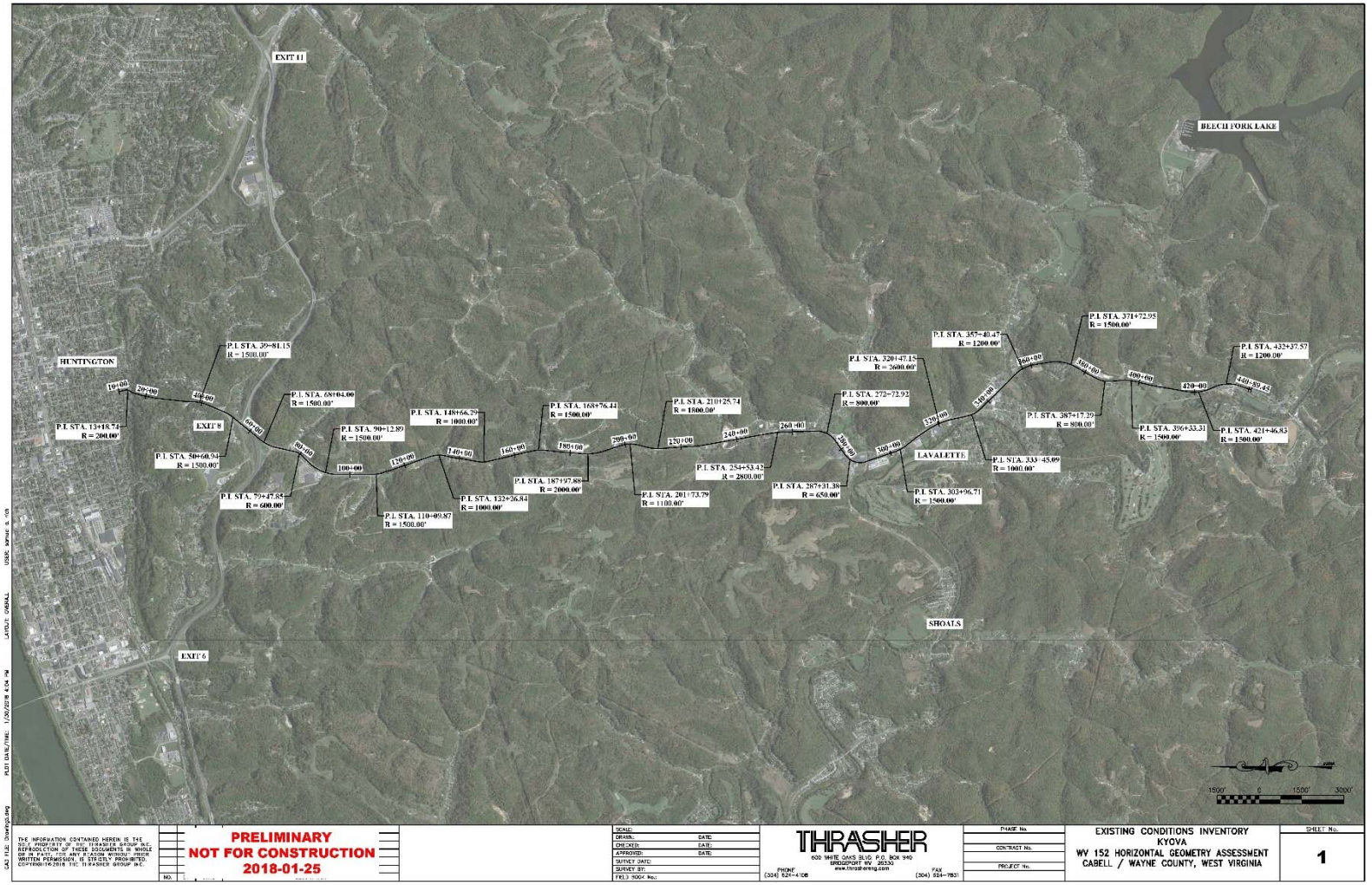
- The future of Exit 8 should be a planned development around a culture that already exists.
- Exit 8 and the surrounding area have something to offer every type of tourist, and we can capitalize on that versatility to attract more families and groups for longer visits
    - Cultural and Heritage Tourism
    - Sports and Adventure (extreme sports, parks and recreation, water/lake, golfing, amusement park, geocaching, etc.)
    - Food Tourism
    - Museums and Art
    - Railroad History
    - Antiques
    - African-American History
- Not another "Gas Station and Fast Food Exit"
- We can utilize assets we already have (Camden Park, Beech Fork, Museums, etc.)
- Any tourism plan must emphasize our Appalachian heritage, history, and <u>authenticity</u>
    - Our authenticity may be our strongest asset; WV is the only state completely located in the "Appalachian Region"
- Working on a renewed partnership with the State of WV through the Division of Tourism and Development Office
    - There is a mutual benefit to a successful Tourism Corridor

- Need to re-envision the Exit with an emphasis on earthwork, landscaping, possible shifts in traffic flow, and beautification of the Exit to help draw traffic from the Interstate and attract new visitors
- Need to do a better job of connecting different destinations through transportation, wayfinding, better signage, etc.
    - As a tourist arrives at one destination, they should see signs to direct them to their next adventure (either for that same day, or something for the next day)
    - Creation of a smartphone app, or other digital application, to assist tourists
- Need signage on the Interstate to advertise how many more miles to Exit 8
    - Similar to signs on the WV Turnpike that provide the remaining miles to Tamarack
- Need a cohesive marketing plan, with continuing collaboration and participation from the different businesses and entities
    - Need a better branding effort for the Exit and Tourism Corridor – logo on all signage?
- Need a better understanding of who is traveling past Exit 8, and who we should be targeting with advertising
    - Which states/areas are most likely to travel past this exit?
    - Should we be targeting people within a 3-hour drive of the exit who normally do not travel a long distance for vacations?

*The Hatfield-McCoy Trails are expected to be in Wayne County near East Lynn Lake soon.

*If/when Beech Fork Lodge is constructed, there will be numerous additional opportunities for conventions and meetings.

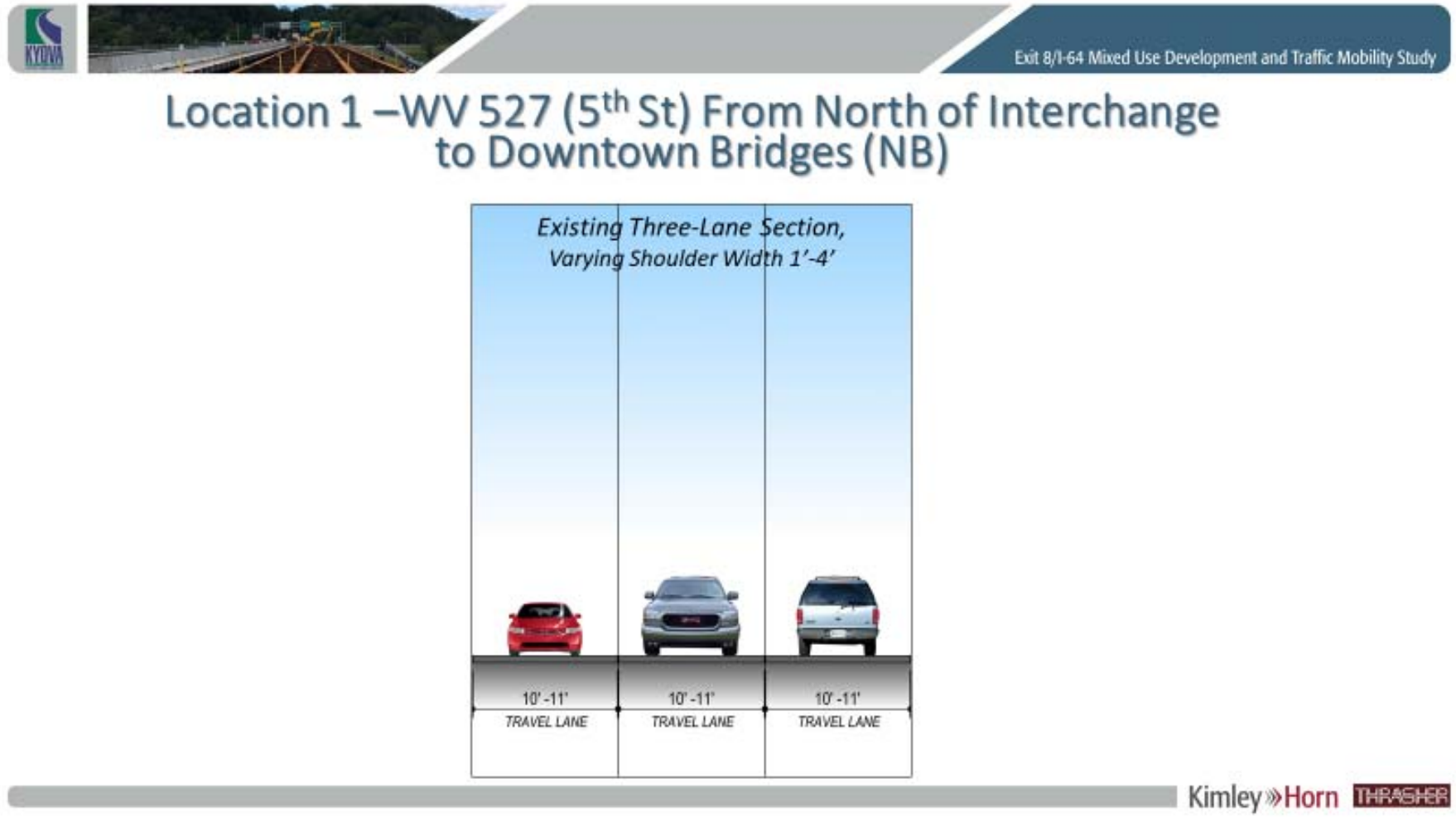
APPENDIX B – HORIZONTAL GEOMETRY



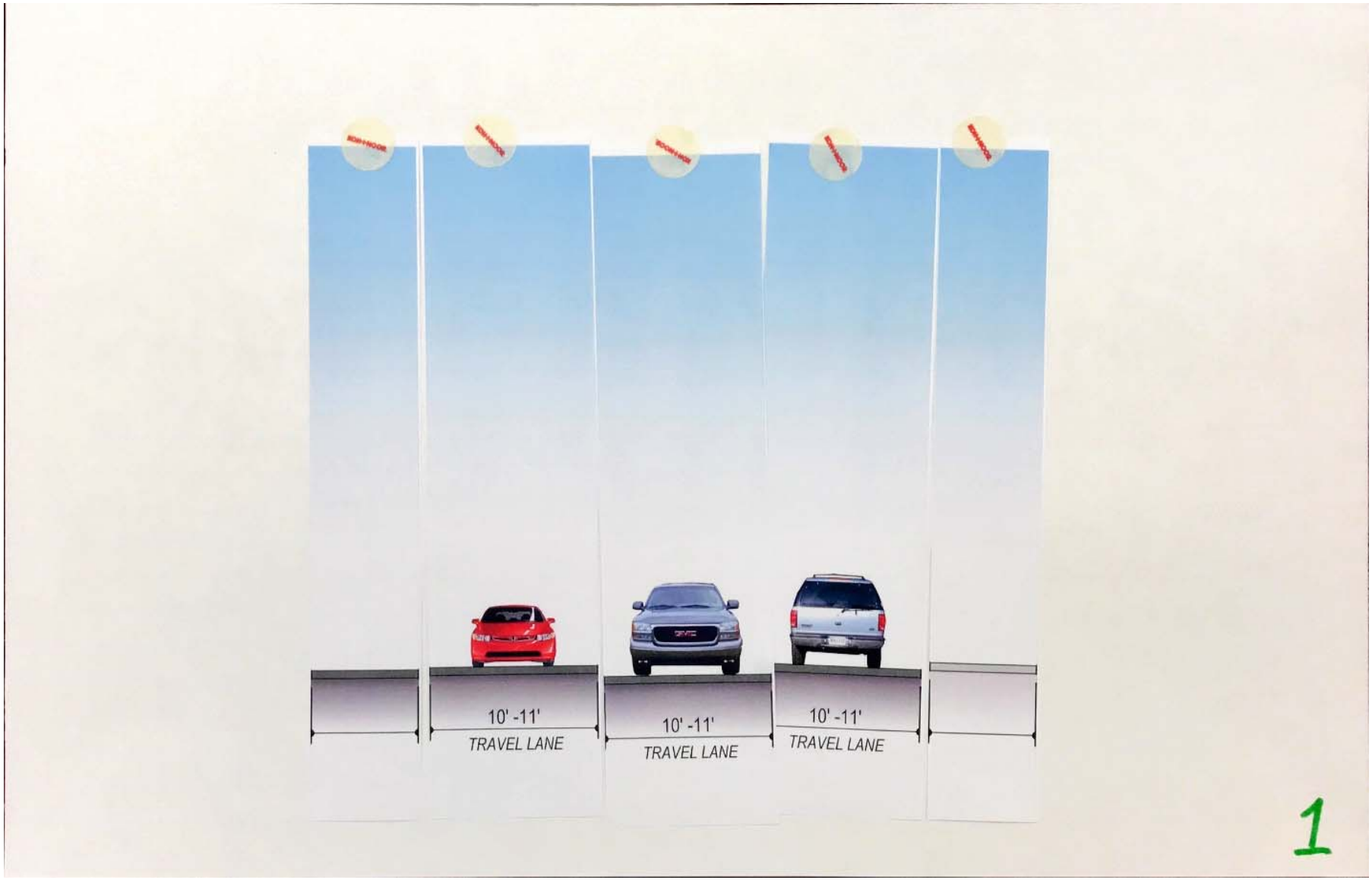
APPENDIX C – STREETBUILDER EXERCISE RESULTS

Location #1

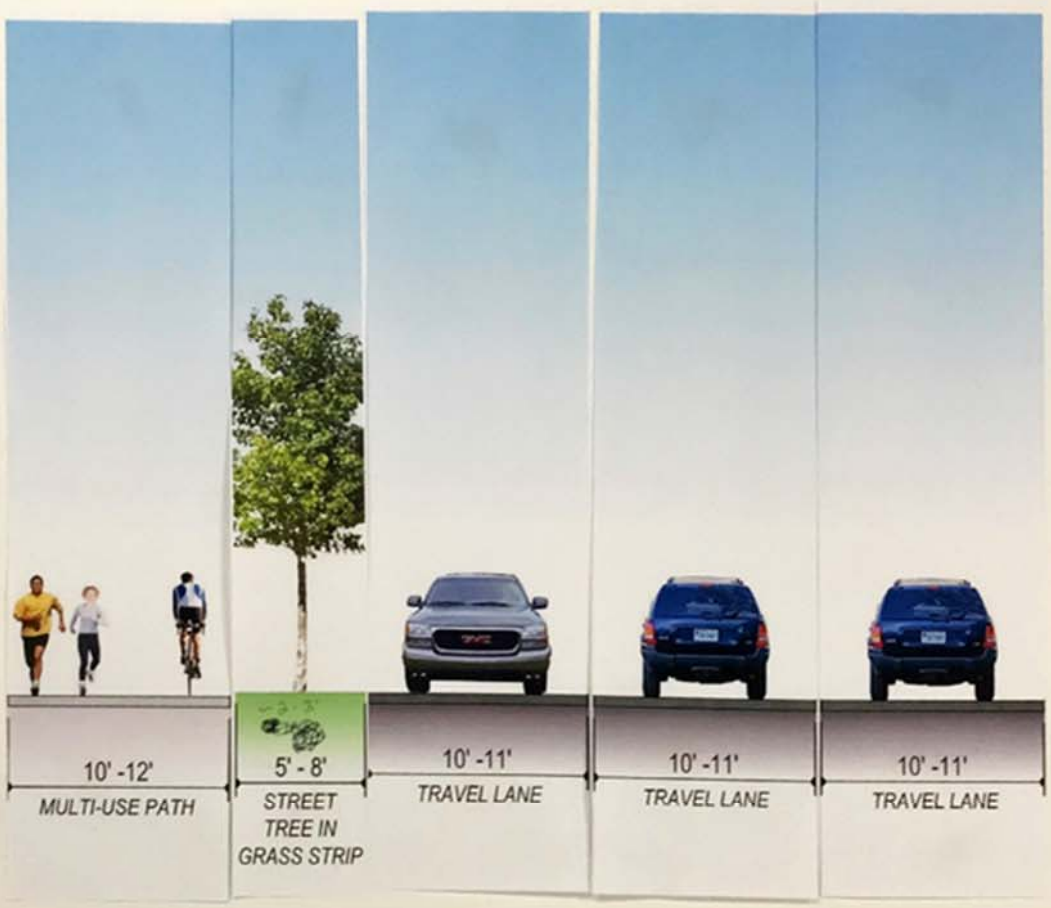
Existing:



Proposed:

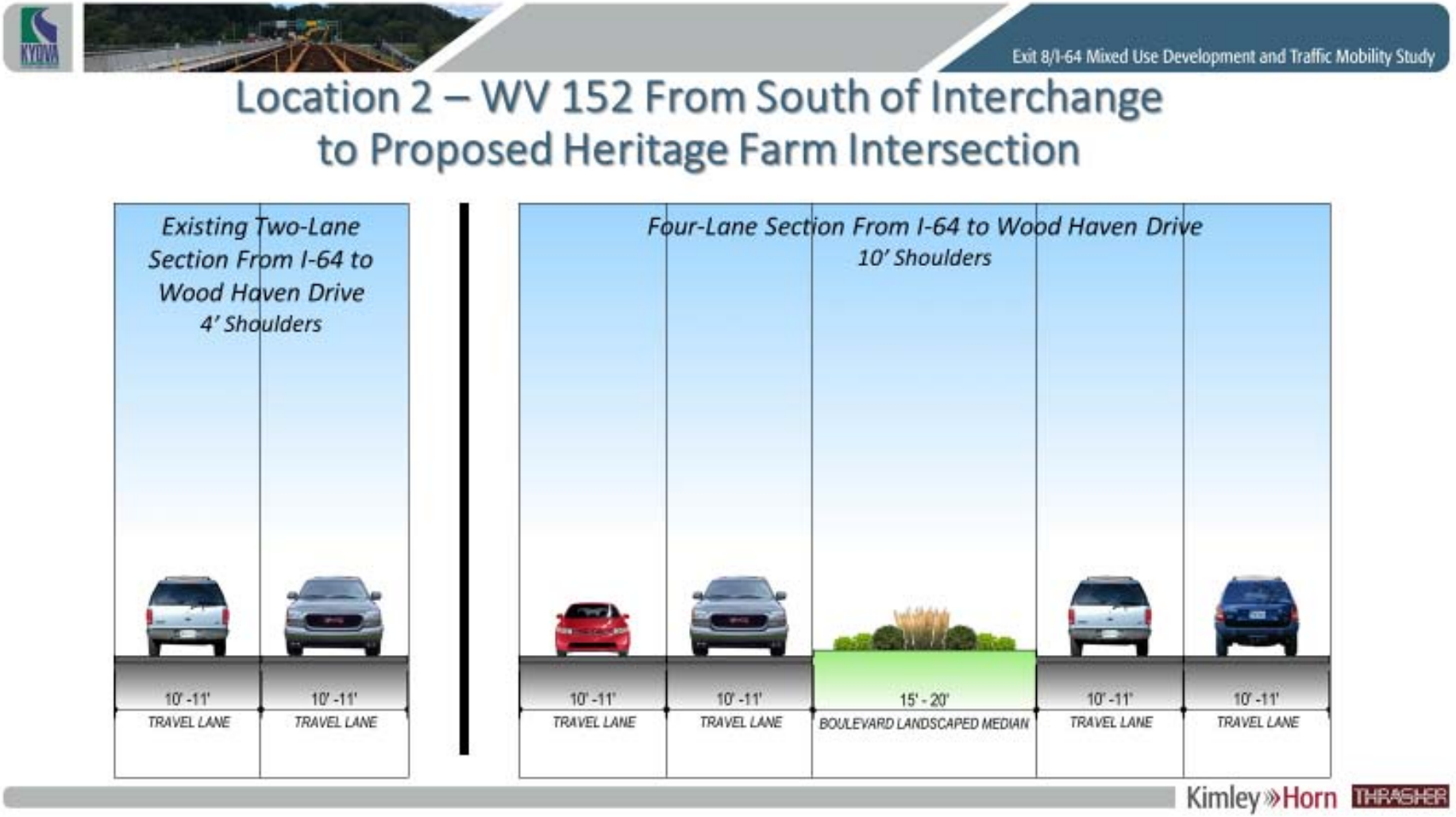


Location 1

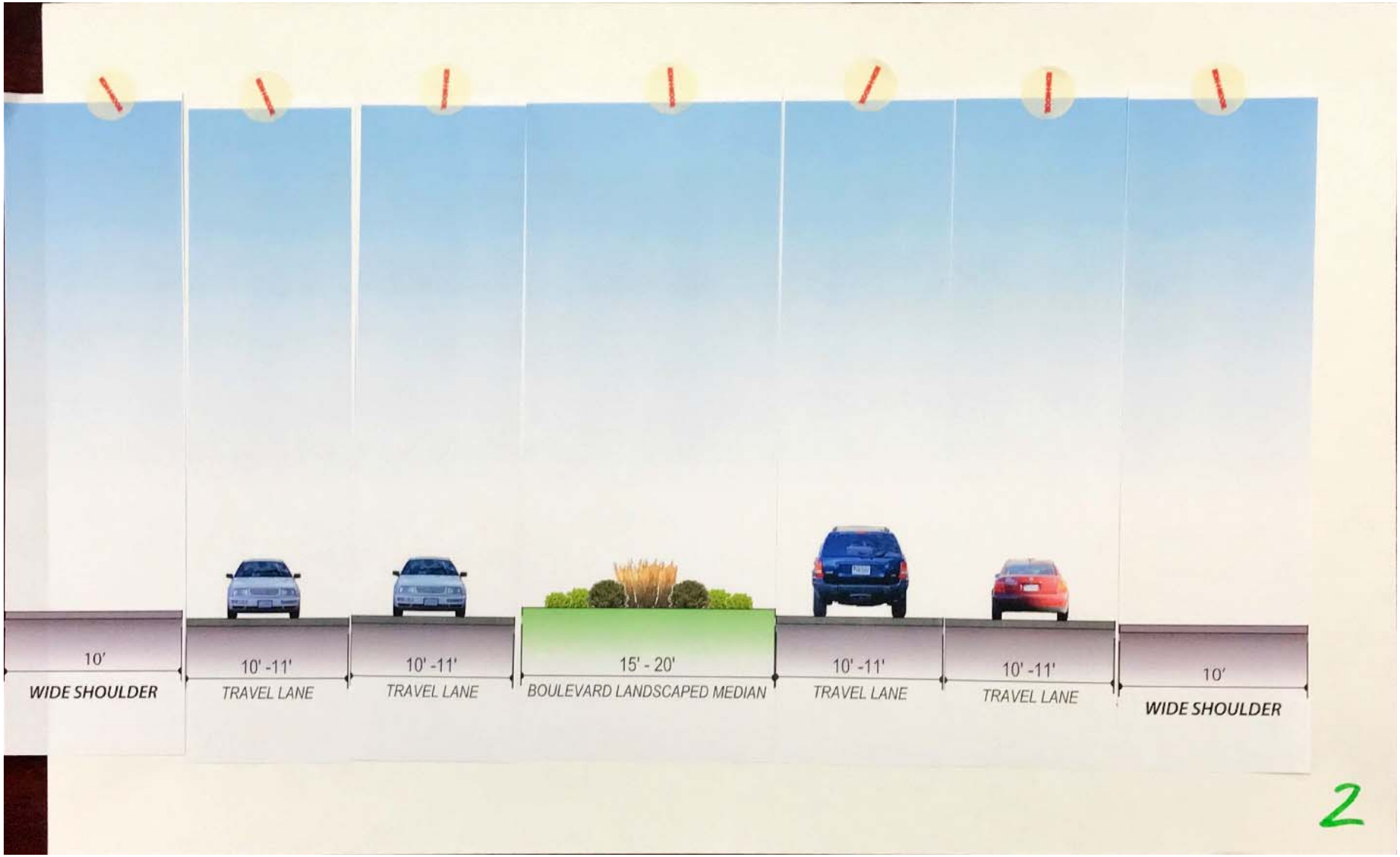

10' -12'
MULTI-USE PATH
5' - 8'
STREET TREE IN GRASS STRIP
10' -11'
TRAVEL LANE
10' -11'
TRAVEL LANE
10' -11'
TRAVEL LANE

Location #2

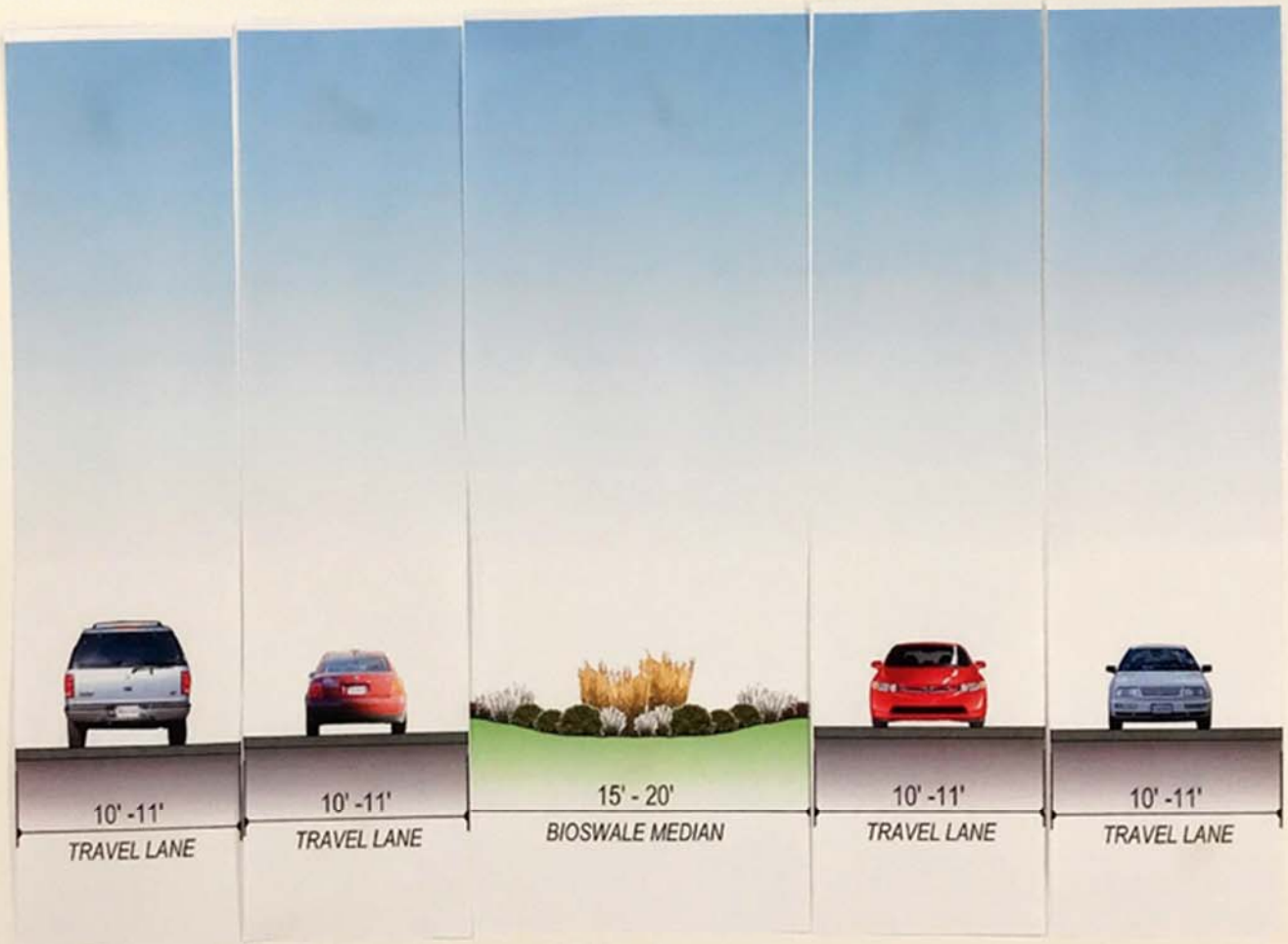
Existing:



Proposed:

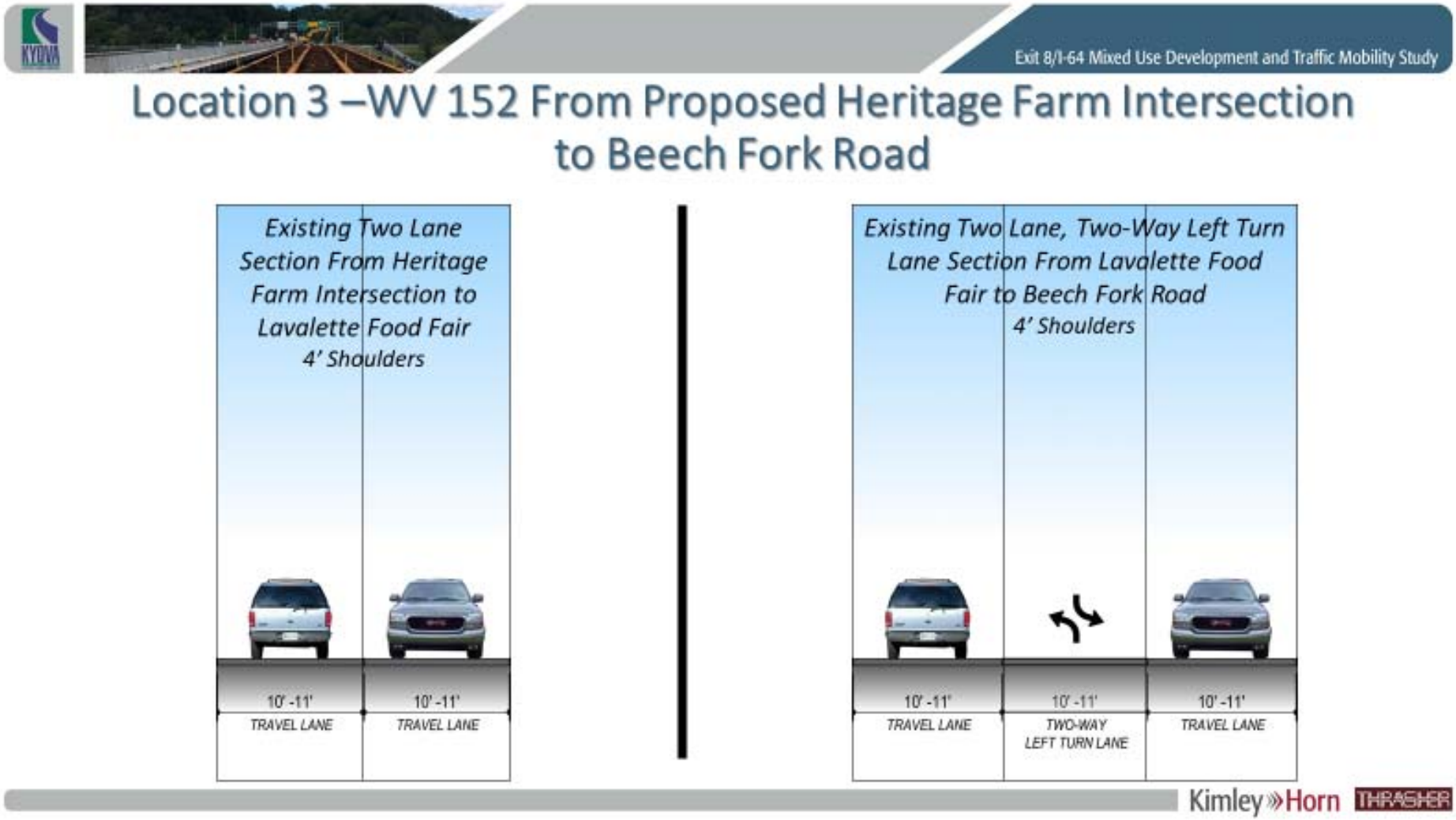

10'
WIDE SHOULDER
10' -11'
TRAVEL LANE
10' -11'
TRAVEL LANE
15' - 20'
BOULEVARD LANDSCAPED MEDIAN
10' -11'
TRAVEL LANE
10' -11'
TRAVEL LANE
10'
WIDE SHOULDER
2

Location 2

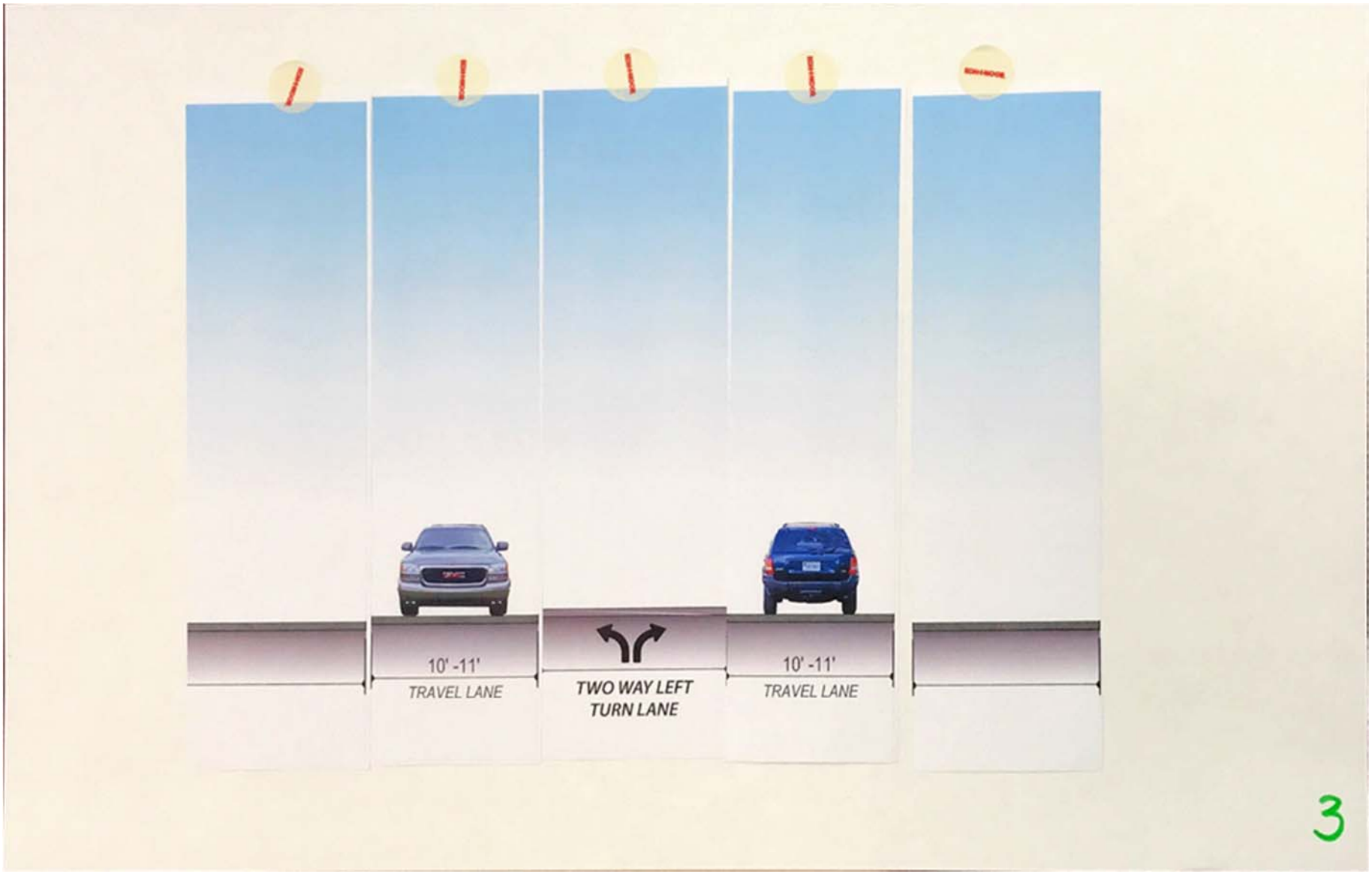

10' -11'
TRAVEL LANE
10' -11'
TRAVEL LANE
15' - 20'
BIOSWALE MEDIAN
10' -11'
TRAVEL LANE
10' -11'
TRAVEL LANE

Location #3

Existing:



Proposed:



This report was prepared in cooperation with the U.S. Department of Transportation, Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), the West Virginia Department of Transportation (WVDOT/WVDOH), the Kentucky Transportation Cabinet (KYTC), the Ohio Department of Transportation (ODOT) and local communities. The contents of this report reflect the views of KYOVA Interstate Planning Commission which is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the West Virginia Department of Transportation (WVDOT/WVDOH), the Kentucky Transportation Cabinet (KYTC), the Ohio Department of Transportation (ODOT), the U. S. Department of Transportation, the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA). This report does not constitute a standard, specification or regulation.