

## Segment Analysis Section (10/17/17 Draft)

### INTRODUCTION

Completing a fully-connected trail between Parkersburg, WV to Pittsburgh, PA will be a major asset to nearby residents and will attract visitors to north central West Virginia, making it a significant economic and community development driver.

Of the 146 miles along the corridor between Parkersburg and Pittsburgh, 123.9 miles are already developed as trail, and 22.1 miles are remaining to be developed into trail. This segment analysis is divided into two types of segments: existing trails (“open”) and gaps in the trail network (“gap”).

Segment Name	Status	Segment Length (in miles)
Mon River Trails and Marion County Trails	Open	31.5
Gap - Fairmont	Gap	4.6
West Fork River Trail	Open	14.5
Gap - Shinnston to Spelter	Gap	5.3
Harrison North Rail Trail	Open	5.9
Gap - Clarksburg	Gap	7
North Bend Rail Trail	Open	72
Gap - Parkersburg	Gap	5.2
<b>Total Mileage</b>		<b>146</b>

Several spurs to the Parkersburg to Pittsburgh corridor are noted in this section, though they are not included in the official route segments and mileage above.

For existing trails, this report will discuss the existing condition of the trail, any recommended improvements, and the costs associated with those improvements. For trail gaps, this report will discuss gap characteristics, the recommended alignment, trail and trailhead facilities, proposed easements and property acquisition, operations and maintenance recommendations, and opinions of probable costs.

Opinions of probable costs were gathered from various case studies. Where possible, more recent case studies in West Virginia and the greater Appalachian area were used to inform the cost estimates. Examples from around the country were included, where needed, to get the widest range of possible costs for each element. Appendix XX details the values and case studies used for each element.

## MON RIVER TRAILS AND MARION COUNTY TRAILS

Heading south from the Pennsylvania/West Virginia border, the Parkersburg to Pittsburgh corridor utilizes several existing trails in the Mon River Trail System, which consists of three trails in Monongalia County, two of which are along the Parkersburg to Pittsburgh corridor. The Mon River Trail System then connects to the Marion County Trail (MCTrail) at the Monongalia/Marion County border. Together, these trails comprise the first 31.5 miles of the Parkersburg to Pittsburgh corridor:

Trail Name	Trail Surface	Length (in miles)
Mon River Rail-Trail North	Crushed Stone	6
Caperton Rail-Trail	Asphalt	6
Mon River Rail-Trail South	Crushed Stone	17.5
MCTrail	Asphalt	2
<b>TOTAL</b>		<b>31.5</b>

The Mon River Trail System was constructed upon former corridors of the Morgantown & Kingwood Railroad and the Fairmont, Morgantown & Kingwood Railroad. Both lines were later acquired and operated by the Baltimore & Ohio Railroad, and later CSX. In 1996, the 51-mile corridor was acquired from CSX to be railbanked as a non-motorized trail system.

### *Existing Condition*

The trails in the Mon River Trail System are kept in good shape under the watchful eye of the Mon River Trails Conservancy. The trails were first established in the late 1990s and early 2000s. Most of the trail miles are crushed stone with asphalt throughout the busier parts of the Morgantown area.

A variety of trailheads exist along the Mon River Trails System that allow users to access the network. Point Marion Community Park has a parking area that should be converted to a formal trailhead that can be used as a convenient access point to the Parkersburg to Pittsburgh corridor on either side of the Pennsylvania/West Virginia state line.

### *Trail Improvement Recommendations*

The trails in the Mon River Trail System are now approaching 20 years old in some locations. The trails have been resurfaced in certain areas for isolated emergency repairs, but none of the trails has been fully resurfaced since their original construction. Aside from isolated improvements as needed, asphalt trails should be resurfaced approximately every 10 years and natural surface trails should be resurfaced approximately every 20 years. Funding for resurfacing has historically been difficult to obtain in West Virginia, and creative and sustainable ways to fund resurfacing and other maintenance costs should be identified.

The Mon River Trails Conservancy has also begun installing directional totem signs similar to those seen on the Great Allegheny Passage. These totems can be 4 to 6 feet high and direct trail users to amenities, particularly in urban and/or commercial areas. Such totems serve several purposes: to direct trail users and tourists to commercial areas, to brand the trail, and to make it easier for new riders to navigate the trail system. The Mon River Trails Conservancy has put in 3 totems so far and has plans to install several others. These directional totems are a useful way to tie the entire trail together, and they are recommended to be placed at trailheads and major intersections along the entire Parkersburg to Pittsburgh corridor.

*Opinion of Probable Costs*

To complete the recommended trail and trailhead upgrades, probable costs are estimated between \$1,349,394 and \$3,566,588. Costs are broken down per element below.

**Resurfacing** - The Mon River Trails Conservancy is currently resurfacing the majority of Deckers Creek Rail Trail, another trail in the system that connects with the main stem of the Parkersburg to Pittsburgh corridor. Resurfacing the 19.5 miles of crushed stone on the Deckers Creek Rail Trail was recently awarded to a bidder for \$166,320, including materials, trucking and compaction. The West Virginia Department of Highways also requires engineering work for trail resurfacing that was not included in the \$166,320 award. The Mon River Trails Conservancy estimates engineering costs at an additional \$20,000-\$60,000, and these engineering costs are included in the resurfacing estimates in this report.

The remaining 31.5 miles of trail in the Mon River Trail System along the Parkersburg to Pittsburgh corridor should be fully resurfaced in the near future as funds become available. Cost estimates are broken down between type and width of trail below.

Type of Trail	Length	Low Estimate	High Estimate
Asphalt, 10' wide	2 miles	\$246,186	\$355,492
Asphalt, 12' wide	6 miles	\$860,271	\$1,227,771
Crushed Stone, 10' wide	23.5 miles	\$230,436	\$1,958,325
<b>TOTAL</b>	<b>31.5 miles</b>	<b>\$1,336,894</b>	<b>\$3,541,588</b>

**Signage** - The Mon River Trails Conservancy is currently installing directional totems at a cost between \$2,500 and \$5,000. The Mon River Trails Conservancy has plans to install an additional 5 totems, funded through grants from the WVDOH.

Description	Low Estimate	High Estimate
Directional Totems (5)	\$12,500	\$25,000
<b>TOTAL</b>	<b>\$12,500</b>	<b>\$25,000</b>

## GAP - FAIRMONT

Between the western end of the MCTrail and the eastern end of the West Fork River Trail, there is a 4.6-mile section of trail that will be acquired and built through the city of Fairmont. Fairmont is the county seat of Marion County and is the home of Fairmont State University. Connecting these two trails through Fairmont will not only help complete the Parkersburg to Pittsburgh corridor, but it will also provide a convenient, safe transportation and recreation corridor for Fairmont residents.

### *Trail Characteristics and Recommended Alignment*

A single rail-trail option is not available to complete the entire Fairmont gap. The 4.6-mile Fairmont gap can be divided into 4 distinct sections, each of which has several options for completion. These options are described in detail below.

Segment Name	Starting Point	Ending Point	Length (in miles)
MCTrail to Palatine Park	Winfield St/MCTrail	East Bank of Monongahela River/Palatine Park	1.7
Crossing Monongahela River	East Bank of Monongahela River/Palatine Park	West Bank of Monongahela River	0.1
Monongahela River to Fairmont Ave	West Bank of Monongahela River	End of West Fork River	1.8
Industrial Contracting	End of West Fork River	West Fork River Trailhead/Edgeway Dr	1.0
<b>TOTAL</b>			<b>4.6</b>

Note: The gap could also be connected using a 5-mile corridor along the Monongahela River, connecting Hickman Run to the Mon River Trail Trailhead, bypassing the MCTrail. This route is less direct to complete this connection but would be a great addition to the Marion County Parks and Recreation Commission (MCPARC) trail system. Because this trail segment would be a spur to the Parkersburg to Pittsburgh corridor trail, it is not analyzed further in this report.

Segment Name	Starting Point	Ending Point	Length (in miles)
Riverbend Spur	Hickman Run	MCTrail/Mon River Trail Trailhead	5.0

### MCTrail to Palatine Park

From the existing MCTrail trailhead, the trail will travel west along Winfield Street, where it would navigate an unsignalized crossing of Morgantown Avenue. Traffic analysis is needed to determine if an enhanced crossing (with a crosswalk and flashing pedestrian beacons) would be sufficient for trail user safety, or if a full traffic signal would be warranted at this location. The trail would then head west along Dixie Avenue, a low-volume dead-end street. After 450 feet, the alignment will transition to a dedicated trail along the former Buckhannon Northern Railway line, which requires a slight elevation change. The trail would then need to transition to an inactive CSX rail corridor after travelling approximately 1200 feet on the Buckhannon Northern corridor, which will require moderate earthwork to make this connection. There is a large, flat area between the Buckhannon Northern Railway and CSX corridors that is in Marion County ownership that could potentially be appropriate for recreational use such as a trailhead pavilion or camp sites.

The trail has two options to cross Hickman Run: transition the trail **back** to a city access road before returning to the CSX corridor, or construct a new bridge to cross Hickman Run to remain on the CSX corridor. Three options exist to connect the trail from Hickman Run to Palatine Park:

- *Hickman Run to Palatine Park - Option 1:* Follow the former Buckhannon Northern Railway corridor west to Alta Vista Avenue. Widen sidewalks and/or install bike lanes on Alta Vista Avenue, East Park Avenue, and Auburn Street, where the trail turns west and enters Palatine Park.
- *Hickman Run to Palatine Park - Option 2:* Follow the CSX corridor westward to the Mont Levine property, where the trail can transition to the adjacent MCPARC-owned land and a city-owned right-of-way just south of the Mont Levine property. A fence may be needed between the new trail and the Mont Levine property. The trail then heads north along Auburn Street and west into Palatine Park.
- *Hickman Run to Palatine Park - Option 3:* Follow the CSX corridor westward to the Mont Levine property, and construct the trail on a flat bench along the Monongahela River. A memorandum of use will be needed to access some of this property, and a bridge will be needed to cross a stormwater discharge point along the Monongahela River. A fence may be needed between the new trail and the Mont Levine property. The trail then heads south along Auburn Street and west into Palatine Park.

Once the trail enters Palatine Park, it heads west towards the crossing of the Monongahela River. Palatine Park is a relatively new addition to the riverfront and an ideal location for a trailhead with parking and amenities.

### Crossing Monongahela River

The Nickel Bridge (or Low Level Bridge) formerly crossed the Monongahela River at Palatine Park. It was deemed unsafe in the 2000s and was demolished, but the abutments on each side of the river (and one in the middle of the river) are still present, providing a glimpse of what could exist. Providing a trail-like crossing the Monongahela River would be best accomplished by rebuilding a bridge at this crossing. Temporary routing can be provided by crossing the river on the existing Jefferson Street bridge; however, the existing sidewalk along the bridge is undersized for a trail and there is not adequate room to expand the sidewalk into a trail without removing a lane of automobile traffic. Trail users would also need to negotiate automobile traffic at intersections on either side of the bridge, which is not ideal for a permanent trail.

### Monongahela River to West Fork River

Once across the Monongahela River, the trail continues to head southwest along Cleveland Avenue and Everest Drive or immediately transitioning to a trail adjacent to an active CSX corridor. Everest Drive is an option for continuing the trail southwest because a bridge over Coal Run is structurally deficient for vehicles. The City of Fairmont is considering whether to reconstruct the bridge; if they choose not to, it could leave a large stretch of Everest Drive available for the sole use of walking and biking.

At the 3rd Street Bridge, the trail alignment has several options:

- *Virginia-Gaston - Option 1:* Transition to the former Beltline Railway corridor and replace and reconfigure the fencing at the Board of Education Bus Depot to allow trail access. The trail would then follow Minor Avenue, which would require about 2,000 feet of sharing the road. At the southern end of Minor Avenue, the trail could then connect with a brief section of abandoned CSX corridor as it heads west under the Watson Bridge at Fairmont Avenue.
- *Virginia-Gaston - Option 2:* Follow Virginia Avenue south to 7th Street, where it would then transition to the Beltline Railway corridor and follow the path of Option 1.
- *Virginia-Gaston - Option 3:* Follow Gaston Avenue and Virginia Avenue by converting them to one-way streets with bike lanes. At 10th Street, the trail could then head east to connect with Minor Avenue or continue south along Virginia Avenue to 14th Street, where both options connect with the brief section of abandoned CSX corridor to the Watson Bridge. A fully on-road option heads west at 14th Street and crosses the Watson Bridge at grade at Beverly Street.

### Industrial Contracting

After the trail crosses the Watson Bridge at Fairmont Avenue, it can follow Industrial Contracting Road, which is a low-volume, dead-end road. The trail should be built adjacent to the road, which wouldn't require significant separation or physical protection, and a temporary on-street routing option can be provided by placing trail signage on Industrial Contracting Road.

The West Fork River Trail currently ends at Edgeway Drive, where trail users now must continue up a steep hill into Edgemont. Instead of continuing up the hill into the neighborhoods, the new trail will continue travelling along the West Fork River adjacent to the Industrial Contracting property on a bench along the river. Moderate earthwork will be required to create a proper trail base, repair washouts, create a few small bridges, and protect against flooding. The project team has engaged with the owner of the Industrial Contracting property, who is amenable to a trail being routed along the edge of the property with adequate security (i.e., a fence separating the trail from equipment).

### *Trail and Trailhead Facilities*

A formal trailhead currently exists at the western extent of the MCTrail at Winfield Street. Users looking to access the West Fork River Trail from the eastern extent must park in a nearby shopping center or on neighborhood streets and follow a road to the trail. A formal trailhead should be developed at this eastern extent. Also, with its access to parking and restroom facilities, Palatine Park can act as a logical trailhead between the two. Signage would help enhance all three trailheads.

### *Proposed Easements and Property Acquisition*

Segment Name	Starting Point	Ending Point	Length (in miles)	Acreage	Appraised Value
MCTrail to Palatine Park	Winfield St/MCTrail	East Bank of Monongahela River/Palatine Park	1.7		
Crossing Monongahela River	East Bank of Monongahela River/Palatine Park	West Bank of Monongahela River	0.1	N/A	
Monongahela River to Fairmont Ave	West Bank of Monongahela River	Fairmont Ave	1.8		
<i>Below Moore Place &amp; 11th Street (CSX)</i>			0.83	8.53	\$21,500
Industrial Contracting	Fairmont Ave	West Fork River Trailhead/Edgeway Dr	1.0		

The first mile heading east from the West Fork River Trailhead is privately-owned by Industrial Contracting. The City of Fairmont, Marion County and the Northern West Virginia Brownfields Assistance Center have been in discussions with the owner of Industrial Contracting to obtain an easement to route the trail along the property's riverfront.

#### *Operations and Maintenance*

#### *Opinion of Probable Costs*

To complete the new trail segments and the recommended trail and trailhead upgrades, probable costs are estimated between \$3,003,286 and \$10,025,304. Costs are broken down per element below, the majority of which is estimated for constructing 4.5 miles of new trail and the new bridge crossing the Monongahela River.

**Trail Construction** - Completing the trail gaps in Fairmont could be accomplished with trail that is entirely made of a natural surface, asphalt, or a combination of both with asphalt surface through the more urban areas of Fairmont. All three options are priced out below.

Option 1	Length	Low Estimate	High Estimate
Crushed Stone	4.5 miles	\$483,359	\$1,487,427
<b>Option 1 TOTAL</b>		<b>\$483,359</b>	<b>\$1,487,427</b>

<b>Option 2</b>	<b>Length</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Crushed Stone	3.5 miles	\$378,168	\$1,104,000
Asphalt	1 mile	\$293,272	\$1,161,332
<b>Option 2 TOTAL</b>		<b>\$671,440</b>	<b>\$2,265,332</b>
<b>Option 3</b>	<b>Length</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Asphalt	4.5 miles	\$1,284,724	\$4,898,000
<b>Option 3 TOTAL</b>		<b>\$1,284,724</b>	<b>\$4,898,000</b>

**Bridge** - A new bridge is required to provide a separated trail crossing the Monongahela River. The bridge can be reconstructed using the remaining 3 abutments (including the remaining one within the river itself) from the Nickel/Low Level Bridge, which was originally built in 1908 and spanned the Monongahela River until it was deemed unsafe in the 2000s and was demolished. Also, minor improvements will need to be made on an existing low water crossing bridge over Hickman Run to make it safer for cyclists and trail users.

<b>Description</b>	<b>Length</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Crossing the Monongahela River	650 feet	\$2,295,150	\$4,590,300
Crossing Hickman Run	50 feet	\$45,507	\$69,045
<b>TOTAL</b>		<b>\$2,340,657</b>	<b>\$4,659,345</b>

**Fencing** - Industrial Contracting has stipulated that they will require some fencing between the trail and their property to protect their property and assure public safety. The fence would need to be at least 6 feet high and extend the length of their property. In the table below, estimates are provided for chain link fencing along the entire length of the Industrial Contracting property as well as just the yard portion without fencing in the parking lot. Likewise, estimates for fencing along the Mont Levine property are added as a conservative measure.

<b>Description</b>	<b>Length</b>	<b>Low Estimate</b>	<b>High Estimate</b>
6-foot-high, chain link fencing along Industrial Contracting property	1,500-2,400 feet	\$22,875 (low price, without fencing the parking lot)	\$116,400 (high price, includes fencing the parking lot)
6-foot-high, chain link fencing along Mont Levine property	4,000 feet	\$61,000	\$194,000
<b>TOTAL</b>		<b>\$83,875</b>	<b>\$310,400</b>

**Street Crossings** - The trail will need to cross several streets, depending on the final alignment chosen. These crossings should have new crosswalks, warning signage, and, where appropriate, bollards to ensure that drivers do not drive onto the trail. Analysis of traffic counts should be conducted to determine if a traffic signal is warranted at the crossing at Morgantown Avenue, which would significantly increase the costs of that crossing. Sharrows or bike lanes should also be installed along any on-road connections that are part of the final alignment.

<b>Description</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Crosswalks (4)	\$1,536	\$6,000
Signs (10)	\$1,500	\$20,000
Bollards (4)	\$2,000	\$6,000
Sharrows (12)	\$3,600	\$4,200
<b>TOTAL</b>	<b>\$8,636</b>	<b>\$36,200</b>

**Trailhead** - A new trailhead should be constructed near the western extent of the Fairmont gap. The trailhead should include a new parking area, toilet, and signage indicating that it is part of the trail network. Estimates below do not include any potential costs for property acquisition or easements. The other two trailheads in this section should also get upgraded signage and trailhead totems.

<b>Description</b>	<b>Low Estimate</b>	<b>High Estimate</b>
New trailhead (engineering, construction of parking lot, toilet, installation of toilet)	\$78,359	\$94,359
Signage at Trailheads (3)	\$900	\$6,000
Trailhead Totems (3)	\$7,500	\$15,000
<b>TOTAL</b>	<b>\$86,759</b>	<b>\$121,359</b>

## WEST FORK RIVER TRAIL

The West Fork River Trail is a 14.5-mile trail beginning at the southern end of Fairmont, WV and ending in Shinnston, WV. The trail is along a section of the former Baltimore and Ohio Railroad.

Trail Name	Surface	Length
West Fork River Trail	Asphalt	11.4 miles
West Fork River Trail	Crushed Stone	3.1 miles
<b>TOTAL</b>		<b>14.5 miles</b>

### *Existing Condition*

Heading west from Fairmont, the trail is paved for the 11.4 miles through the rest of Marion County. The trail becomes surfaced with crushed stone once it enters Harrison County for its remaining 3.1 miles. The trail surface in Harrison County has some divots and deep grooves that need to be repaired.

Trailheads of various levels exist along the West Fork River Trail, including informal parking lots in the areas of Monongah, Everson, Worthington and Enterprise. A more formal trailhead exists at the western extent of the West Fork River Trail in Shinnston at the Sue Ann Miller Trailhead, which provides parking, shelter, and a picnic table.

### *Trail Improvement Recommendations*

The crushed stone trail surface in Harrison County has some divots and deep grooves that need to be repaired. The asphalt in Marion County is in good shape but should be resurfaced in the near future for routine maintenance. The entire surface of the West Fork River Trail has not been resurfaced since it was originally built.

A new trailhead at the eastern end of the West Fork Rail Trail, as discussed in the Fairmont segment, would provide clear access to the trail from the east. The trailheads and parking lots at Monongah, Everson, Worthington and Enterprise should have additional signage to formalize their presence along the trail.

### *Opinion of Probable Costs*

To complete the recommended trail and trailhead upgrades, probable costs are estimated between \$1,403,900 and \$2,226,636. Costs are broken down per element below.

**Resurfacing** - The West Fork River Trail should be resurfaced for regular maintenance.

Type of Trail	Length	Low Estimate	High Estimate
Asphalt	11.4 miles	\$1,356,260	\$1,932,304

Crushed Stone	3.1 miles	\$36,439	\$258,332
<b>TOTAL</b>		\$1,392,700	\$2,190,636

**Signage** - The informal trailheads at Monongah, Everson, Worthington, and Enterprise should have additional signage and directional totems to maintain consistency along the trail.

<b>Description</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Signage (8)	\$1,200	\$16,000
Directional Totems (4)	\$10,000	\$20,000
<b>TOTAL</b>	\$11,200	\$36,000

## GAP – SHINNSTON TO SPELTER

The West Fork River Trail currently terminates at its northern extent at the Sue Ann Miller trailhead in Shinnston. The suggested route for the Shinnston to Spelter Extension is to continue the trail south for 5.3 miles along the inactive railway, briefly cutting through town to bypass the Harrison Power Station. The extension will connect with the Harrison North Rail-Trail at Spelter Road in Spelter.

### *Trail Characteristics and Recommended Alignment*

The gap between Shinnston and Spelter can be divided into three segments:

Segment Name	Starting Point	Ending Point	Length (in miles)
Shinnston to Power Station	Bridge St, Shinnston	Lincoln Dr, Shinnston	1.6
Power Station to Gypsy	Lincoln Dr, Shinnston	Gypsy Camp, Gypsy	0.5
Gypsy to Spelter	Gypsy Camp, Gypsy	Spelter Rd, Spelter	3.2
<b>TOTAL</b>			<b>5.3</b>

#### Shinnston to Power Station

The proposed Shinnston extension will continue south on the inactive railway from the Sue Ann Miller trailhead for 1.6 miles. The railway parcels adjacent to the trailhead are under private ownership, including a large section that is owned by First Energy.

#### Power Station to Gypsy

The inactive railway continues to follow the West Fork River around the First Energy Harrison Power Station. This power station is not compatible with a trail, and options exist to avoid this area. The proposed alternate route is suggested to follow an existing utility corridor from the inactive railway to Cervullo Road, where the trail crosses State Route 20 and passes through a residential area before rejoining the inactive railway to the south. Additional reconnaissance as well as negotiations with public and private property owners are needed before the alignment along this section can be confirmed.

#### Gypsy to Spelter

Heading south from where the trail rejoins the inactive railway, the proposed route travels through several properties in Gypsy. These properties were previously bisected by the railway. Additional research is required to determine if the corridor, which was previously controlled by CSX Industries, has been divested to the adjacent, private landowners or if it remains in public ownership. Private property owners appear to be maintaining the corridor and have, in some cases, displayed “No Trespassing” signage.

In Spelter, a garden center was constructed over a small portion of the inactive corridor. The route could run through the southern portion of the garden center parking lot. If reassembling the corridor through the garden center is infeasible, a boardwalk along the West Fork could be constructed to achieve connectivity through Meadowbrook.

*Trail and Trailhead Facilities*

The Sue Ann Miller trailhead exists at the western terminus of the existing West Fork River Trail in Shinnston, which includes public parking and a pavilion with a picnic table. A new trailhead should be constructed at the existing eastern terminus of the Harrison North Rail-Trail on Spelter Road in Spelter. No additional trailhead facilities are recommended for the Shinnston to Spelter Extension.

*Proposed Easements and Property Acquisition*

The Shinnston to Spelter section requires additional analysis to determine an exact alignment and any proposed easements and/or properties that need to be acquired.

*Operation and Maintenance*

*Opinion of Probable Costs*

To complete the new trail segments and the recommended trail and trailhead upgrades, probable costs are estimated between \$754,603 and \$2,504,981. Costs are broken down per element below.

**Trail Construction** - The trail should be constructed using a crushed stone or other similar material to the existing West Fork River Trail and Harrison North Rail Trail.

Description	Length	Low Estimate	High Estimate
Crushed Stone	5.3 miles	\$567,512	\$1,748,303
<b>TOTAL</b>		<b>\$567,512</b>	<b>\$1,748,303</b>

**Bridge** - A new bridge will be required over Elk Creek at the western extent of the Shinnston to Spelter Extension. Option 1 assumes that the trail can be constructed through the southern end of the garden center. Option 2 assumes that the trail would need to be routed along the West Fork River and will require elevated boardwalks for the trail to avoid flooding.

Option 1	Length	Low Estimate	High Estimate
Crossing Elk Creek at Garden Center	100 feet	\$101,014	\$158,091
<b>OPTION 1 TOTAL</b>		<b>\$101,014</b>	<b>\$158,091</b>

<b>Option 2</b>	<b>Length</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Crossing Elk Creek along West Fork River	100 feet	\$101,014	\$158,091
Installing a boardwalk-style trail along West Fork River	900 feet	\$160,075	\$467,228
<b>OPTION 2 TOTAL</b>		<b>\$261,089</b>	<b>\$625,228</b>

**Street Crossings** - The trail will need to cross three streets. Cervullo Road is a low-volume, dead-end street and only requires two yield signs. Seminole Street and Meadowbrook Road are higher-volume streets and require enhanced crosswalks, yield signs, advanced warning signs and bollards to prevent vehicles from entering the trail.

<b>Description</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Crosswalks (2)	\$768	\$3,000
Signs (10)	\$1,500	\$20,000
Bollards (5)	\$2,500	\$7,500
<b>TOTAL</b>	<b>\$4,768</b>	<b>\$30,500</b>

**Trailhead** - A new trailhead should be constructed at the western extent of the Shinnston to Spelter Extension, where the trail meets the Harrison North Rail-Trail at Spelter Road. Property may need to be acquired at this location for a trailhead - the cost of property acquisition is not included in the estimates below. The trailhead should, at minimum, have a parking lot, a toilet, and signage. Additional amenities can be provided based on community desires.

<b>Description</b>	<b>Low Estimate</b>	<b>High Estimate</b>
New trailhead at Spelter Road (engineering, construction of parking lot, toilet, installation of toilet, signage, and trailhead totem)	\$81,159	\$100,859
<b>TOTAL</b>	<b>\$81,309</b>	<b>\$100,859</b>

## HARRISON COUNTY NORTHERN RAIL TRAIL

The Harrison County Northern Rail Trail follows the West Fork River for 7 miles between Spelter and the North View neighborhood in Clarksburg. The trail was originally along the B&O Railroad, which conveyed the railbanked property to the West Virginia Railroad Maintenance Authority (RMA) in 1983. Harrison County Commission then entered into a lease agreement with the RMA in 1987 to develop the corridor as a public hiking and biking trail.

A group of citizens recently formed a friends group, Harrison Rail Trails, Inc., to expand rail trails in Harrison County and increase programming on the trails. The Harrison County Northern Rail Trail and other trails within the County are greatly benefitted by the energy and enthusiasm of this group of interested citizens.

### *Existing Condition*

The Harrison County Northern Rail Trail is primarily composed of gravel, grass, and cinder. The trail was recently repaired in some sections, though it remains rough and in need of additional grading and resurfacing in others.

Adjacent to the southern terminus of the Harrison North Rail-Trail lies the Fourco property (formerly the North 25th Street Glass and Zinc Site). The Fourco property has a history of glass and zinc manufacturing, which has left lead, arsenic and zinc in the soil. In 2010, the Environmental Protection Agency capped the areas as a temporary measure at the request of the West Virginia Department of Environmental Protection. The site was officially added to the National Priorities List in the fall of 2016, and it is now eligible for federal funding for cleanup. The first step of the cleanup process is a Remedial Investigation to determine the extent of the contamination and analyze potential remedial options.<sup>1</sup>

Based on its proximity to the Harrison North Rail-Trail, the Fourco site is a priority for remediation. The team plans to pursue an EPA Cleanup Grant in conjunction with the State Rail Authority, which will provide funding for the cleanup process of the site.

[Inset box: As part of the Superfund remediation process, the Fourco property was placed on the National Priorities List in 2016. The following list outlines the Superfund remediation process:

- Preliminary assessment & site investigation
- National Priorities List site listing
- Remedial investigation & feasibility study (current step)
- Remedy decisions
- Remedial design & action
- Construction completion
- Post-construction assessment
- National Priorities List deletion
- Site reuse/redevelopment]

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<sup>1</sup> WV Brownfield Assistance Center, Harrison County Rail Trails Connectivity Plan, April 2017.

Two trailheads exist along the Harrison County Northern Rail Trail - a trailhead with unmarked parking at the trail's southern terminus on N. 25th Street in Clarksburg, and a second trailhead with unmarked parking two miles north where the trail crosses Fall Run (off Glen Falls Road).

*Trail Improvement Recommendations*

The Harrison County North Rail-Trail has not been resurfaced in its entirety since it was originally constructed and should be resurfaced to maintain its integrity and usefulness. Also, upgrades to trailheads at both ends of the trail are addressed in the sections of the adjoining gaps. The trailhead at Fall Run should be more formalized with trail signage.

*Opinion of Probable Costs*

To complete the recommended trail and trailhead upgrades, probable costs are estimated between \$72,403 and \$589,331. Costs are broken down per element below.

**Resurfacing** - The 7 miles of the Harrison County North Rail-Trail should be resurfaced with new stone.

Type of Trail	Length	Low Estimate	High Estimate
Crushed Stone	7 miles	\$69,703	\$583,331
<b>TOTAL</b>		<b>\$69,703</b>	<b>\$583,331</b>

**Trailhead** - Signs, including a directional totem, should be placed at the Falls Run Trailhead to further establish it has a trailhead along the Parkersburg to Pittsburgh corridor.

Description	Low Estimate	High Estimate
Signs at Fall Run Trailhead (2)	\$300	\$4,000
Directional Totem	\$2,500	\$5,000
<b>TOTAL</b>	<b>\$2,800</b>	<b>\$9,000</b>

## GAP - CLARKSBURG

A 5.9-mile gap exists in the P2P corridor from the southern end of the Harrison County Northern Rail Trail to the eastern extent of the North Bend Rail Trail through the city of Clarksburg.

### *Trail Characteristics and Recommended Alignment*

The gap through Clarksburg can be divided into four segments:

Segment Name	Starting Point	Ending Point	Length (in miles)
Harrison County Northern Rail Trail Connection	N 25th Street Trailhead (Clarksburg)	State Route 50 (northern side)	0.7
Crossing State Route 50 and West Fork River	State Route 50 (northern side)	West Fork River (western side)	0.2
Adamston	West Fork River (western side)	CSX BA 304 (rail lines split)	0.5
North Bend Rail Trail Extension	CSX BA 304 (rail lines split)	Wolf Summit	4.5
<b>TOTAL</b>			<b>5.9</b>

### Harrison County North Rail Trail Connection

The Clarksburg segment begins at the existing Harrison County Northern Rail Trail's 25th Street Trailhead at N 25th Street and Hamill Avenue. The trail heads south and west along an abandoned CSX rail line. Topography along this section makes trail development challenging, and there is a section of the abandoned corridor that has serious erosion damage. Falling rock and loose soil line the corridor where the hillside has cut in and will need to be removed. This soil and rock could prove useful in regrading and revegetating the eroded hillside. A series of terraces could be used to stabilize the hillside, using live staking techniques to help control and prevent erosion while being more cost effective and attractive than conventional retaining walls. Enhanced structural engineering techniques may be used in more severe areas, and a combination of techniques may prove to be the most structurally sound and cost-effective option.

If the slip section is determined to be infeasible to repair, an alternate trail route may be determined through private property alongside the West Fork River. This alternate route would require traversing elevation change at each end of the section, which makes it a less attractive alternative.

### Crossing State Route 50 and West Fork River

The trail continues south across State Route 50 and an active CSX line. WVDOT removed the former train trestle that crossed State Route 50 to accommodate overheight vehicles. CSX has also discussed removing the two

bridges that cross the active rail line to accommodate train cars that are double-stacked. New bridges will need to be built to cross both facilities at a height that is amenable to both WVDOT and CSX. WVDOT left the bridge abutments in place to cross State Route 50, which could be reused for the new bridges, reducing total costs.

Once the trail crosses State Route 50 and the active CSX line, the trail then needs to head west and cross the West Fork River. There is one bridge that currently crosses the river in this location; however, it carries the active CSX rail line and there is not an opportunity to expand it for trail. A new bridge will be needed. Option A would span both the river and the embankment, while Option B spans only the river and uses trail switchbacks to scale the embankment to the State Route 50 bridge crossing. Option A would be significantly longer, and as such, be significantly more expensive; Option B is the more cost-effective option.

Adamston

After the crossing of the West Fork River to Adamston, the trail would utilize an abandoned CSX rail line that parallels an active CSX line for approximately a half mile. The trail would continue on this segment until the active tracks turn north over State Route 50 behind the new shopping center on Adams Avenue.

North Bend Rail Trail Extension

The final segment in the Clarksburg gap begins where the active tracks fork northward and the abandoned corridor continues westward. This segment extends 4.5 miles along the abandoned rail corridor to the Wolf Summit trailhead at the intersection of School Street and Wilsonburg Road. CSX identifies 7 bridges on this segment, the condition of which needs to be assessed.

CSX sold about 1,000 feet of this segment to Ronald Lane, Inc., which has since expanded its property over the corridor and has indicated that they will not reopen it for a trail. This location is along Wilsonburg Road between roughly Limestone Run Street and Hanna Street, where the trail will need to be completed in the approximately 20-foot buffer between the Ronald Lane, Inc property and Wilsonburg Road. Some type of physical barrier should be provided between the trail and automobile traffic. Several residents along this brief section utilize the 20-foot buffer next to the road for parking and will need to be consulted before an alignment is finalized. After the trail passes the Ronald Lane, Inc. property, the trail can jog back towards the abandoned corridor on its way to the Wolf Summit trailhead.

The trail will also connect south to a future extension of the Harrison County South Rail-Trail. This study addresses the connection from the crossing at State Route 50 to the Wendy's on Milford Street. Harrison County should continue to study how to connect the remaining distance between the cemetery and the existing Harrison County South Rail Trail.

Segment Name	Starting Point	Ending Point	Length
South from Clarksburg	State Route 50 Crossing	Milford Street (Wendy's)	0.75

South from Clarksburg

From the bridges that are needed to cross the active CSX line and State Route 50, a trail spur will continue southward to connect to the existing Harrison South Rail Trail. The 0.75-mile segment would run along an abandoned CSX line, crossing Elk Creek. The existing bridge crossing Elk Creek can be retrofitted for rail trail use, upon consultation of a licensed engineer to assure structural soundness.

This segment will also require two challenging at-grade road crossings at W Pike Street and Milford Street, as well as navigating around the Wendy’s parking lot. The trail will move adjacent to the Wendy’s parking lot, along a gravel strip. The trail will utilize crosswalks to cross W Pike Street and Milford Street. The island in the center of the intersection will be utilized as a waiting area and can be landscaping accordingly. Additional enhanced waiting areas will be located on either side of the road. Road signs to alert automobile traffic of the trail crossings will be placed at an appropriate distance for reaction time as well as immediately at the crossings. Additional suggestions could include the use of bollards, lighting, and bench seating to activate the waiting areas.[include image of example crossing treatment?]

*Trail and Trailhead Facilities*

Trailheads exist at both ends of the Clarksburg gap and are addressed in other segments. However, a formal trailhead would be useful in Adamston at the end of N 26th Street.

*Proposed Easements and Property Acquisition*

Segment Name	Starting Point	Ending Point	Owner	Length (in miles)	Acreage	Appraised Value
Harrison North Rail Trail Connection	N 25th Street Trailhead	Crossing State Route 50 (northern side)	CSX	0.70		
Crossing State Route 50 and West Fork River	Crossing State Route 50 (northern side)	West Fork River	CSX, WVDOT	0.20		
North Bend Rail Trail Extension 2	West Fork River	CSX Mile Marker BA 304 (Intersection of State Route 50 and Route 19)	CSX	0.49	4.23	\$21,000
North Bend Rail Trail Extension 1	CSX Mile Marker BA 304 (Intersection of State Route 50 and Route 19)	North Bend Rail Trail Connection at Wolf Summit	CSX	4.49	48.0	\$144,000

The following table includes the breakdown for the spur headed south to the Harrison County Southern Rail Trail.

Segment Name	Starting Point	Ending Point	Owner(s)	Length (in miles)	Acreage	Appraised Value
South from Clarksburg 1	State Route 50 Crossing	Milford Street (Wendy's)	CSX	0.47		
South from Clarksburg 2	Milford Street (Wendy's)	Cemetery	CSX; others to be determined	0.28 (CSX)	2.27 (CSX)	\$11,500 (CSX)

Harrison County is already in negotiations with CSX to purchase the portions of the 0.28 miles south of the Wendy's to the cemetery that are owned by CSX. There are additional property owners along this segment with whom negotiations will also need to take place.

*Operation and Maintenance*

*Opinion of Probable Costs*

To complete the new trail segments, bridges and the recommended trail and trailhead upgrades, probable costs are estimated between \$3,255,421 and \$7,537,656. Costs are broken down per element below.

**Trail Construction** - Cost estimates for trail construction assume that the trail will be built using asphalt to tie into the existing asphalt at the Harrison North Rail Trail and connecting through Adamston. The trail would switch to crushed stone or a similar material where the CSX rail lines split for 4.5 miles to the connection with the North Bend Rail Trail.

Material Type	Length	Low Estimate	High Estimate
Crushed Stone	4.5 miles	\$483,360	\$1,487,427
Asphalt	1.4 miles	\$416,580	\$1,557,600
<b>TOTAL</b>		<b>\$899,940</b>	<b>\$3,045,027</b>

For the connection south from Clarksburg to the Wendy's on Milford Street, these cost estimates assume that the trail will be built using asphalt.

Material Type	Length	Low Estimate	High Estimate
Asphalt	0.75 miles	\$232,454	\$843,000
<b>TOTAL</b>		<b>\$232,454</b>	<b>\$843,000</b>

**Bridges** - Two entirely new bridges are required to complete this segment across State Route 50 and the West Fork River, while two existing bridges crossing CSX tracks and Elk Creek could be refurbished and retrofitted or provided new for bicycle and pedestrian use. There are also 7 bridges along the section of the North Bend Rail Trail extension. The condition of these bridges needs to be more formally assessed before any estimates can be made for retrofitting.

Location	Length	Low Estimate	High Estimate
State Route 50 (new)	125 feet	\$300,000	\$450,000
CSX Railroad Tracks (new/retrofit)	80 feet	\$192,000	\$288,000
West Fork River (new)	300 feet	\$1,059,300	\$2,118,600
North Bend Rail Trail Extension Bridges (7)	Additional research is needed on their condition		
Elk Creek (retrofit)	275 feet	\$153,450	\$239,800
<b>TOTAL</b>		<b>\$1,704,750</b>	<b>\$3,096,400</b>

**Slope Stabilization** - The slip between US 50 and the N 25th Street Trailhead needs to be stabilized before a trail can be constructed in this section.

Description	Length	Low Estimate	High Estimate
Slope Stabilization	1000 feet	\$323,000	\$387,000
<b>TOTAL</b>		<b>\$323,000</b>	<b>\$387,000</b>

**Trail Separation** - At the Ronald Lane, Inc. property along Wilsonburg Road, the trail will be constructed along the edge of the property and public right-of-way. Some form of physical separation between the trail and automobiles is required. For a lower price, delineators could be used every 25 feet; curb, a more secure and aesthetically-pleasing option, could be provided for a higher price.

Description	Length	Low Estimate	High Estimate
Physical separation between trail and road at Ronald Lane property	1,000 feet	\$1,800 (delineators, low estimate)	\$13,370 (curb, high estimate)
<b>TOTAL</b>		<b>\$1,800</b>	<b>\$13,370</b>

**Street Crossings** - Crosswalks and additional signage should be added to increase the visibility of locations where the trail will cross public streets. Two enhanced crosswalks are necessary where the trail will cross W. Pike

Street and Milford Street, as well as channelizers to encourage bike and pedestrian crossing at the crosswalks because the streets are higher volume and speed. Benches should also be placed at these crossings to create a more park-like environment. Finally, crossing signage should be placed at these two locations and on each approach of the trail intersecting W. Virginia Avenue and Coleman Avenue.

<b>Description</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Crosswalks (2)	\$768	\$3,000
Crossing Signage (8 signs)	\$1,200	\$16,000
Benches (2)	\$1,200	\$4,000
<b>TOTAL</b>	<b>\$3,768</b>	<b>\$12,600</b>

**Trailheads** - A new trailhead should be constructed in Adamston, including a new parking lot, a toilet, and signage. Also, directional totems and signage should be placed at the N. 25th Street Trailhead and the new trailhead in Adamston, as well as at the bridge crossing Route 50 and the new bridge crossing the West Fork River.

<b>Description</b>	<b>Low Estimate</b>	<b>High Estimate</b>
New trailhead in Adamston (engineering, construction of parking lot, toilet, installation of toilet)	\$78,359	\$94,359
Signage and Directional Totems (at 2 trailheads and 2 major bridges)	\$11,200	\$36,000
<b>TOTAL</b>	<b>\$89,559</b>	<b>\$130,359</b>

## NORTH BEND RAIL TRAIL

At 72 miles, the North Bend Rail Trail is the longest completed segment of the P2P corridor and one of the longest rail trails in the country. The trail was formerly a Baltimore and Ohio Railroad, which initially opened in this part of West Virginia in 1857. Later, the line became part of the CSX railroad and was taken over by the West Virginia State Parks system, initially opening in 1991. The trail travels through 13 tunnels, 10 of which are passable, and crosses 36 bridges.

### *Existing Condition*

The North Bend Rail Trail is comprised of a variety of surfaces throughout the 72 miles, including ballast, cinder, crushed stone, dirt, grass, and gravel. The trail is single-track in some locations and double-track in others. The surface is smooth and even in some locations and in need to leveling and resurfacing in others.

Trailheads of various levels of sophistication exist in 14 locations along the trail. Six of the trailheads (in bold below) are more formalized trailheads with public parking and signage, while the others are access points for the North Bend Rail Trail.

- **Mile marker 70.9 (Wolf Summit)** - Parking
- Mile marker 66.6 (Bristol) - Rest area, toilet, shelter, camping
- **Mile marker 65 (Salem)** - Parking, services in town
- Mile marker 54.2 (Smithburg) - Parking, picnic tables, shelter, camping
- Mile marker 51.5 (West Union) - Parking, services in town
- Mile marker 50 - Rest area, toilet, shelter, camping
- Mile marker 42.1 (Toll Gate) - Parking
- **Mile marker 38.7 (Pennsboro)** - Parking, services in town
- **Mile marker 33.4 (Ellenboro)** - Parking, services in town
- Mile marker 28.9 (North Bend State Park) - Parking, restrooms, camping, food (within the state park)
- **Mile marker 26 (Cairo)** - Parking, services in town (including a bike shop)
- **Mile marker 18.8 (Petroleum)** - Parking, shelter, toilet, fire ring, camping, picnic tables
- Mile marker 11.8 (Walker) - Parking
- Mile marker 0.9 (Parkersburg - Happy Valley) - Signage

### *Trail Improvement Recommendations*

The North Bend Rail Trail is an amazing amenity for north central West Virginia, but it has suffered from a lack of investment in continued maintenance. The trail has not been fully resurfaced since it was first built, and North Bend Rail Trail State Park staff nobly operate under a triage mode to address immediate concerns.

The North Bend Rail Trail received a \$1,000,000 grant from the West Virginia Department of Highways to ditch and resurface 12 miles of trail from the Doddridge/Ritchie county line to the crossing of State Route 50 in Smithburg. The trail will be ditched to 12 inches in some places and 3 different types of gravel will be added and rolled to form a base and surface. This grant will be very helpful in bringing this section of the North Bend Rail

Trail to a state of good repair, and funding should be secured and set aside to fully resurface the remainder of the trail in the near future.

The current state of each of the bridges and tunnels along the North Bend Rail Trail should also be documented in a future effort, and their upkeep should be added to the list of priorities for funding.

*Opinion of Probable Costs*

To complete the recommended trail and trailhead upgrades to the North Bend Rail Trail, probable costs are estimated between \$546,758 and \$5,070,000. Costs are broken down per element below. Continued maintenance costs for bridges and tunnels are not included in this list but should be further explored and programmed.

**Resurfacing** - A full resurfacing of the North Bend Rail Trail would do wonders for the trail user experience. Twelve miles of trail in Doddridge County are being resurfaced now, and the remaining 60 miles should be resurfaced in the near future.

Type of Trail	Length	Low Estimate	High Estimate
Crushed Stone	60 miles	\$511,758	\$5,000,000

**Trailheads** - Fourteen trailheads exist along the North Bend Rail Trail and, in conjunction with the various towns that the trail passes through, a sufficient number of amenities for trail users exist. However, trailheads could benefit from having directional totems similar to those along the Mon River Trail System to direct people to services along the trail, especially at towns. The estimates below factor for two directional totems at 7 trailheads (the 6 with formal parking areas and Happy Valley).

Description	Quantity	Low Estimate	High Estimate
Directional Totems	14	\$35,000	\$70,000

## GAP – PARKERSBURG

The final segment of the P2P corridor extends 5.2 miles from the western end of the North Bend Rail Trail to Point Park in Parkersburg along the Ohio River. Parkersburg and Wood County are investing in continuing trail along the Ohio River north, which is not addressed in this feasibility study.

### *Trail Characteristics and Recommended Alignment*

The 5.2 miles of the gap extending into Parkersburg can be divided into 5 distinct segments:

Segment Name	Starting Point	Ending Point	Length (in miles)
North Bend Rail Trail Extension	Happy Valley Trailhead Parking	I-77	0.8
I-77 to Browns	I-77	Browns	1.1
Browns to Corning Park	Browns Asphalt Paving	Corning Park	1.3
Staunton Ave	Corning Park	Mary Street	0.3
Little Kanawha Connector Trail	Mary Street	Point Park	1.7
<b>TOTAL</b>			<b>5.2</b>

Once the trail is completed, the North Bend Rail Trail and Little Kanawha Connector Trail will come together at the end of the North Bend Rail Trail State Park at I-77.

### North Bend Rail Trail Extension

The West Virginia State Parks Department owns the 0.8 miles of corridor between the Happy Valley trailhead parking lot at the end of the existing North Bend Rail Trail and the eastern extent of I-77. This section of trail will be straight-forward to complete, except for a slip on the western side of the I-77 bridge that will require shoring before the trail can be completed.

### I-77 to Browns Asphalt Paving

CSX owns the 1.1-mile segment of rail between I-77 and the driveway at Browns Asphalt Paving, and this segment is in a state of disuse. CSX is willing to sell this portion of disused rail, and the project team and CSX have completed an appraisal, which came in at \$200,000. Once the project team can find the funding and acquire this segment of corridor from CSX, the trail can be placed on the old rail line and connect to the extension of the North Bend Rail Trail.

### Browns Asphalt Paving to Corning Park

CSX also owns the 1.2 miles of rail line between Browns Asphalt Paving and Corning Park, and it is in a state of disuse. Using the rail line to complete the trail would be ideal for this section, and negotiations with CSX are

ongoing to obtain this portion. Once the trail crosses the bridge at Worthington Creek, it can head north through Corning Park to Staunton Avenue. Corning Park provides a great parking area with restrooms and a boat launch.

#### Staunton Avenue (Corning Park/Kenner Street to Mary Street)

From Corning Park (Kenner Street), the trail will either enter Staunton Avenue. At this point, the roadway of Staunton Avenue is approximately 35 feet wide with parking allowed on one side of the road and sidewalks on both sides. Options to complete the trail on this section to Mary Street include:

- Widening the sidewalk on the south side of Staunton Avenue to 8 feet wide (or narrower in isolated locations where necessary)
- Removing on-street parking, relocating the street centerline, and painting two way bike lanes on the south side of Staunton Avenue with delineator posts every 25 feet

#### Little Kanawha Connector Trail

The Little Kanawha Connector Trail is a partially-complete trail that makes the final connection for the P2P corridor into Parkersburg's Point Park. The Little Kanawha Connector currently starts at the intersection of Mary Street and Staunton Avenue and weaves through Parkersburg until it reaches the terminus in Point Park. The trail has been upgraded in several areas, including an 8-foot-wide concrete shared use path along Mary Street, trail crossings under the East Street Bridge and 5th Street Bridge, and bike lanes on 2nd Street and Depot Street.

Parkersburg has completed significant work to bring this trail up to a usable standard, and additional investments will make it an attractive connection into the terminus of the P2P corridor. It is important to upgrade this section of trail as it travels through a highly-urbanized area and interacts with automobile traffic much more than the rest of the Parkersburg to Pittsburgh corridor. These investments should include:

- Providing an element of physical separation from traffic on the shared-use path on East Street (for example, a railing) and widening by 1-2 feet
- Providing an element of physical separation from traffic on the two-way bike lane on Depot Street (for example, installing delineator posts every 25 feet or adding curb to make the trail usable by pedestrians as well)
- Upgrade the crossing on the two-way bike lane on Depot Street at the railroad crossing by adding additional pavement at the crossing to fully separate non-motorized traffic (widening the road for about 100 feet by another 10 feet to make the trail separate)
- Provide additional signage and sharrows on the on-street portions of the trail on Harris Street and Gale Avenue
- Provide additional signage at the trail crossing under 5th Street
- Provide additional signage at trail crossings with city streets (4th Street, 3rd Street, 2nd Street)
- Relocate the utility pole at the ramp onto the trail at 2nd Street
- Reinstate the protected bike lanes on 2nd Street through a two-directional bike lane protected by on-street parking or a similarly protected facility
- Provide additional signage and sharrows on 2nd Street between Juliana Avenue (where the bike lanes end) and Point Park

- Repave sections of the trail that need it (roughly 2000 feet)

### *Trail and Trailhead Facilities*

Three existing parking lots provide logical trailheads for the Parkersburg gap - Point Park, Corning Park and the State Route 50 Park and Ride. These trailheads will need signage and map kiosks to designate them as formal trailheads for the Little Kanawha Connector Trail. There is a North Bend Rail Trail sign at the trail crossing with Happy Valley Road, but there is no dedicated parking at this location. The sewer utility adjacent to the trail crossing has expressed willingness to dedicate some land for a parking lot, and additional negotiations should be undertaken to make this an official trailhead. Restrooms currently exist at Point Park and Corning Park and would also be advisable at a future expanded Happy Valley trailhead. Corning Park also has a boat launch into the Little Kanawha River, which would be a convenient connection to the River Trail currently in development.

### *Proposed Easements and Property Acquisition*

West Virginia State Parks currently owns the right-of-way to extend the North Bend Rail Trail to I-77. At I-77, the trail will connect with a rail corridor owned by CSX. The first 1.1 miles of rail line (to Brown's) are no longer in use by CSX, who has appraised this section at \$200,000 and is a willing seller. Negotiations with CSX need to continue to extend the trail along the next two sections, which are along a seldom-used section of rail between Brown's and Corning Park. If discussions with CSX are not successful to extend the trail to Corning Park, DOH has said that they would allow the trail to be built along the right-of-way of Route 47 and extended through the Park and Ride property to the underpass of State Route 50, where Wincore Windows has already expressed consent to allow the trail to be built along the outside of their property. The last section of trail before connecting with the Little Kanawha Connector Trail would be built along Staunton Avenue, which has excess right-of-way that could likely be converted to trail without further property acquisition or easements.

<b>Segment Name</b>	<b>Starting Point</b>	<b>Ending Point</b>	<b>Length (in miles)</b>	<b>Owner</b>	<b>Acreage</b>	<b>Appraised Value</b>
North Bend Rail Trail Extension	Happy Valley Trailhead Parking	I-77	0.8	WV State Parks	State already owns, committed to building this section	
I-77 to Brown's	I-77	Browns	1.1	CSX	12.61	\$200,000
Brown's to Corning Park	Brown's Asphalt Paving	Corning Park	1.2	CSX	13.13	To be determined
Staunton Ave	Corning Park	Mary Street	0.4	DOH	Use excess right-of-way from Staunton Ave	
Little Kanawha Connector Trail	Mary Street	Point Park	1.5	DOH	Already constructed	

### *Operation and Maintenance*

*Opinion of Probable Costs*

To complete the new trail segments and the recommended trail and trailhead upgrades, probable costs are estimated between \$1,167,589 and \$4,701,112. Costs are broken down per element below.

**Trail Construction** - The following cost estimates for trail construction assume two scenarios. Option 1 includes surfacing the trail with a crushed stone or similar material to the North Bend Rail Trail from the eastern extent of the gap to where the trail turns onto Staunton Avenue at Corning Park/Kenner Street. Option 2 includes surfacing with asphalt, which is the preferred surface type of Wood County. Both options include surfacing the trail with asphalt or concrete along Staunton Avenue until it connects with the existing trail on Mary Street.

<b>Option 1</b>	<b>Length</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Crushed Stone	3.3 miles	\$395,661	\$1,151,548
Asphalt	0.4 miles	\$112,458	\$450,348
<b>Option 1 TOTAL</b>		<b>\$508,119</b>	<b>\$1,601,896</b>
<b>Option 2</b>	<b>Length</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Asphalt	3.7 miles	\$951,717	\$3,489,837
<b>Option 2 TOTAL</b>		<b>\$951,717</b>	<b>\$3,489,837</b>

**Slope Stabilization** - The slip along the western side of the I-77 bridge will need to be stabilized before trail construction can begin.

<b>Description</b>	<b>Length</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Slope Stabilization	1,000 feet	\$323,000	\$387,000
<b>TOTAL</b>		<b>\$323,000</b>	<b>\$387,000</b>

**Street Crossings** - As the trail crosses several roads and major driveways, crosswalks and additional signage should be added to increase their visibility. The crosswalks are necessary where the trail will cross Camden Street and 3rd Street, and crossing signage should be placed on each approach of the trail intersecting a major driveway (i.e., Debarr Trucking).

<b>Description</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Crosswalks (2)	\$768	\$3,000
Crossing Signage (10 signs)	\$1,500	\$20,000

<b>TOTAL</b>	<b>\$2,268</b>	<b>\$23,000</b>
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**Trailheads** - As indicated earlier, there are 4 logical places for trailheads along the Parkersburg gap. All 4 currently have parking lots and would only need signage to reinforce their use for a trailhead. A toilet would also be advisable at the Happy Valley trailhead.

<b>Description</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Toilet (at Happy Valley Trailhead)	\$20,000	\$25,000
Signage and Trailhead Totems (at all 4 trailheads)	\$10,600	\$28,000
<b>TOTAL</b>	<b>\$30,600</b>	<b>\$53,000</b>

**Little Kanawha Connector Trail Improvements** - The Little Kanawha Connector Trail is an established trail, but some targeted investments would make it a safer, attractive and more useful facility. The items below are suggestions that would significantly improve the trail connection into Parkersburg and likely increase its perceived safety and use.

<b>Description</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Widening East Street path to 8' wide	\$82,275	\$193,604
Providing physical separation from trail on East Street (some type of railing)	\$74,440	\$168,000
Providing physical separation from bike lanes on Depot Street	\$4,955 (replace delineator posts)	\$53,117 (new curb/median separation)
Upgrade where bike lanes cross railroad on Depot Street (widen road by 10' over 100' section)	\$70,164	\$176,312
Provide additional signage on Harris Street, Gale Avenue, 5th Street, 4th Street, 3rd Street, 2nd Street (24 signs)	\$3,600	\$48,000
Provide sharrows on Harris Street, Gale Avenue, 2nd Street (12 sharrows)	\$3,600	\$4,200
Reinstate protected bike lanes on 2nd Street	\$1,000	\$2,000
Relocate utility pole at 2nd Street trail entrance	\$0	\$5,000
Repave sections of existing trail (roughly 2000 feet of asphalt)	\$63,567	\$98,040
<b>TOTAL</b>	<b>\$303,302</b>	<b>\$748,274</b>

**COST ESTIMATE SUMMARY** (call out boxes)

Table XX - Costs Estimates by Segment

<b>Segment Name</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Mon River Trails	\$1,349,394	\$3,566,588
Gap - Fairmont	\$3,003,286	\$10,025,304
West Fork River Trail	\$1,403,900	\$2,226,636
Gap - Shinnston to Spelter	\$754,603	\$2,504,981
Harrison North Rail Trail	\$72,403	\$589,331
Gap - Clarksburg	\$3,255,421	\$7,537,656
North Bend Rail Trail	\$549,758	\$5,070,000
Gap - Parkersburg	\$1,167,589	\$4,701,112
<b>PROJECT TOTAL</b>	<b>\$11,553,354</b>	<b>\$36,221,608</b>

Table XX - Cost Estimates by County

<b>County</b>	<b>Low Estimate</b>	<b>High Estimate</b>
Monongalia County	\$1,317,136	\$3,374,923
Marion County	\$4,400,204	\$12,176,274
Harrison County	\$4,182,843	\$11,519,298
Doddridge County	\$154,433	\$759,997
Ritchie County	\$218,168	\$2,413,329
Wood County	\$1,280,270	\$5,977,789
<b>PROJECT TOTAL</b>	<b>\$11,553,354</b>	<b>\$36,221,610</b>