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May 12, 2025

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**Subject:** Logan County Trail Feasibility Study  
Report 2 – Huntsville to Belle Center

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## Section 1.0: Introduction

This is **Report 2 – Huntsville to Belle Center**, written as part of the Logan County Trail Study and in conjunction with **Report 1 – Russells Point to Bellefontaine**. As stated in **Report 1**, The purpose of this feasibility study is to evaluate financial constraints and alternatives for a new multi-use trail that will provide a connection between and serve as a recreational facility for the communities of Logan County in the form of a paved trail that can be used by pedestrians and cyclists of all abilities. This study was conducted for Logan-Union-Champaign County Regional Planning Commission (LUC), managed by the Clark County-Springfield Transportation Coordinating Committee (CCSTCC), and in cooperation with the Villages of Huntsville, Russells Point, and Belle Center, as well as the City of Bellefontaine, Logan County, and ODOT District 7. The proposed trail utilizes former railroad RW that runs from Huntsville north to Belle Center and has been acquired primarily by private landowners. The evaluation will include recommendations for trail alignment location, crossings of streams and river, treatments at roadway crossings, and connectivity at the termini of each segment.

For this report, “segment” will refer to the proposed connection between two locations and “alternative” will refer to a potential trail alignment option within a segment.

The corridor was broken down into three segments with Segment 3 containing two alternatives.

- Segment 1 – Between the Village of Russells Point and the Village of Huntsville, along U.S. 33, approximately 6.5 miles.
- Segment 2 – Between the Village of Huntsville and the Village of Belle Center, along abandoned railbed, approximately 5.6 miles.
- Segment 3 – Between the Village of Huntsville and the City of Bellefontaine.
  - Alternative 1 – Using abandoned railbed, approximately 8.3 miles.
  - Alternative 2 – Using U.S. 33 RW then south along Troy Road, approximately 8.6 miles.

This report will only discuss the Huntsville to Belle Center segment. For information on the other segments analyzed in this study see Report 1.

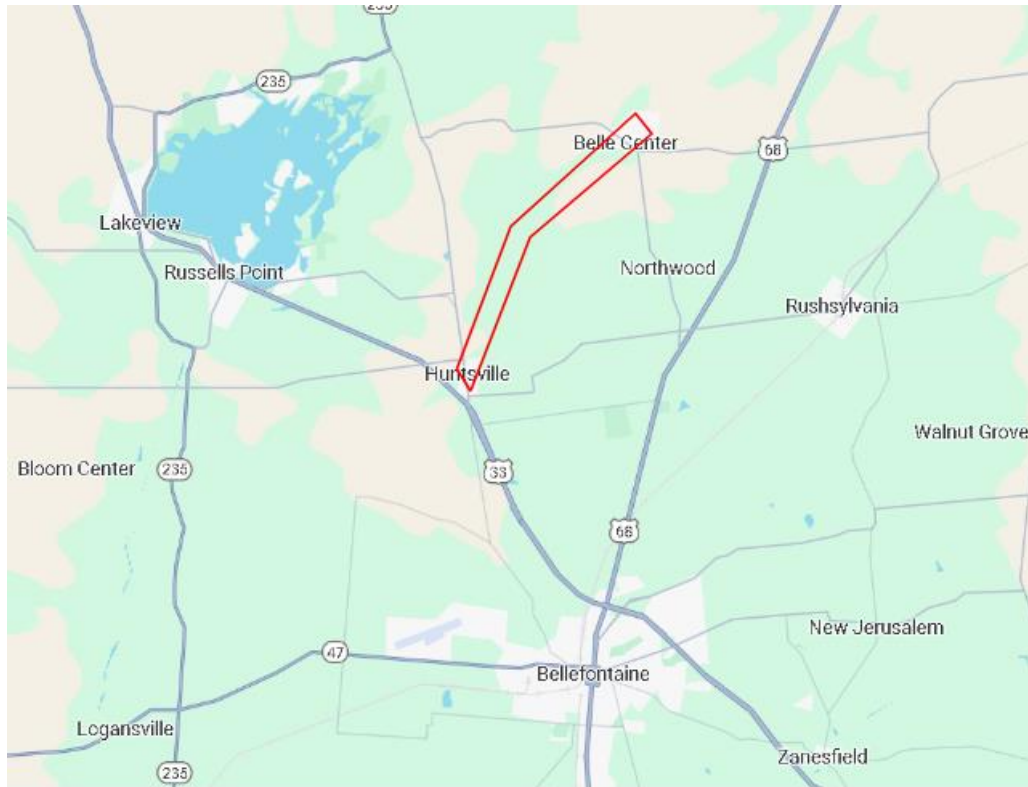
Any future trail will increase connectivity to several destinations. In Huntsville, Lions Park will serve as a trailhead for Segment 2. Lions Park contains a parking lot, bathrooms, and a paved circuit trail. In Belle Center the future trail will provide access to the Belle Center Depot, a historic landmark that once served as a depot along the New York Central Rail Line, and the current village hall for the Village of Belle Center. The Belle Center Depot is located at the intersection of Keller Avenue and Main Street. It is also located approximately 2300’ from the Richland Township Park that has restrooms and a parking lot.

Figure 1.1 shows the study limits. The conceptual layouts for all segments, showing connections, alignment location, municipalities, and crossing locations can be found on **Appendix A**.

## Definitions

**Abandoned railbed/railroad** – The abandoned railbed refers to the area where a railroad formerly lay but has since been abandoned for a variable amount of time. Any infrastructure such as bridges, culverts, or earthwork that was part of the former railroad is included in this definition.

**Former Railroad RW** – The former railroad RW refers to the area surrounding and including the abandoned railroad that was formerly owned by the railroad operator. The railroad itself has been abandoned and the RW has been broken into various properties now owned by a mix of private and public entities.



**Exhibit 1.1 – Study Limits and Existing Regional Trail Connections (photo credit: Traillink.com)**

## Section 2.0: Stakeholder Coordination

B&N met with a steering committee comprised of 24 members of the communities impacted by the proposed trail. Two virtual stakeholder meetings were held, including attendees from LUC, CCSTCC, B&N, Bellefontaine, Lake Township, Logan County, McArthur Township, Richland Township, the Simon Kenton Pathfinders, the Village of Belle Center, the Village of Huntsville, the Village of Russells Point, and Washington Township. Further details for the stakeholder meetings can be found in Report 1.

## Section 3.0: Existing Conditions

Aerial footage of the existing study limits was obtained from the Ohio Geographically Referenced Information Program (OGRIP) using the Ohio Statewide Imagery Program III (OSIP III) data. Likewise, lidar elevation data was obtained through the OGRIP OSIP I data. There is multiple state, county, and local roadway crossings.

Segment 2 is listed below in **Table 3.1** with the number of plots requiring full or partial acquisition and the area in acres required for acquisition.

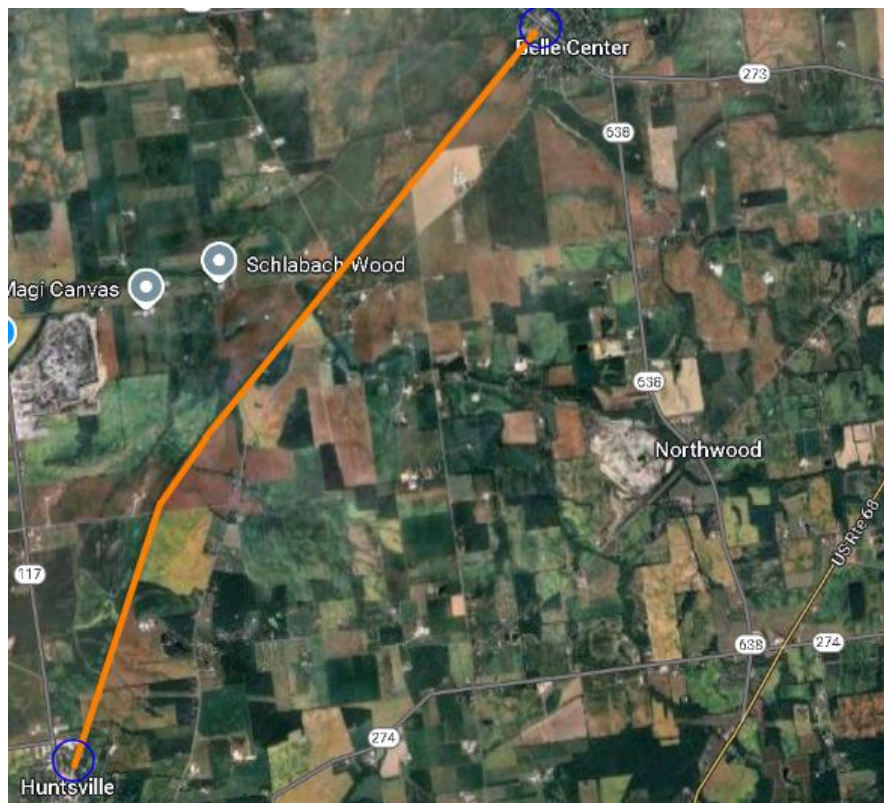
**Table 3.1 – Right-of-Way Acquisition Data**

Segment	Number of Properties That Could Be Involved In RW Negotiation	Total Acreage Needed
<b>Segment 2</b>	11	60.37

Several structures were identified Segment 2 of the study with the locations shown in **Appendix A**. B&N did not perform any assessment of the structures due to them being on private property. All former railroad bridges were assumed to be in poor condition due to the age since they have been abandoned. Any existing culverts are assumed to be usable because of the typical lifespan associated with culverts in railroad corridors.

## Huntsville to Belle Center

Segment 2 connects the Village of Huntsville and the Village of Belle Center, as shown in **Figure 3.2**. Between Huntsville and Belle Center there is former railroad RW that has been divided into parcels and acquired by private individuals or businesses. Belle Center owns two plots of the former railroad RW south of the Village along W Vine Street and S Elizabeth Street. Structures and drainage (such as ditches) have not been maintained along the abandoned railbed, and in most areas the existing ballast has been removed or washed away. The former railroad RW is generally overgrown and heavily wooded, but there is an existing dirt path where the former railbed used to be. There are 13 road crossings within the Segment as shown in **Table 3.3**. Additionally, the former railroad RW crosses the South Fork of the Great Miami River as well as an unnamed tributary of the same river. Existing bridge abutments remain at these crossings; however, the bridges themselves have been removed. In addition to the two bridges, there are four existing culverts crossing the abandoned railroad.



**Figure 3.2 – Segment 2 Limits**



**Table 3.3: Segment 2 Roadway Crossings**

Roadway	Roadway Classification	Posted Speed	No. Lanes	AADT (if known)*
<b>Rude Street</b>	Local	25 mph	1 lane/direction	
<b>Neal Ave</b>	Local	25 mph	1 lane/direction	
<b>Lima Street</b>	Major Collector	35 mph	1 lane/direction	9220
<b>Wishart Street</b>	Local	25 mph	1 lane/direction	163
<b>TR-100</b>	Local	# 55 mph	1 lane/direction	654
<b>CR-96</b>	Local	# 55 mph	1 lane/direction	459
<b>CR-97</b>	Local	# 55 mph	1 lane/direction	236
<b>TR-49</b>	Local	# 45 mph	1 lane/direction	168
<b>E Main Street</b>	Local	25 mph	1 lane/direction	

\* AADT based on available ODOT TIMS data

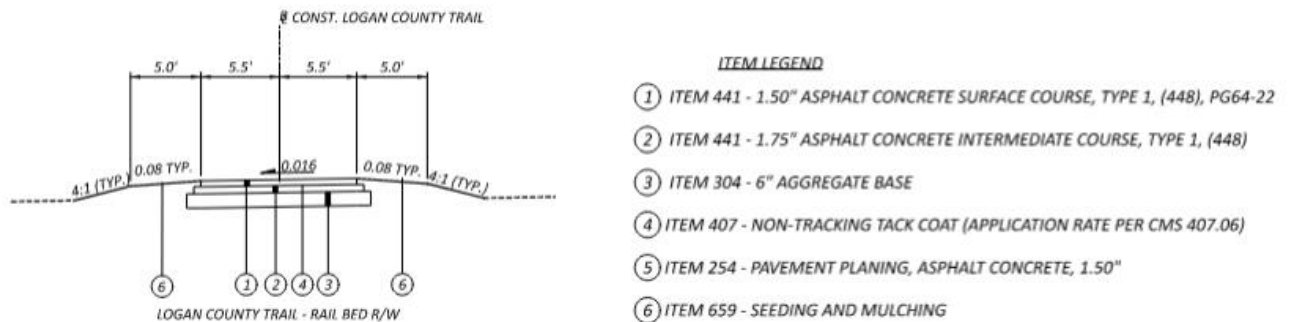
# Posted Speed recorded from WAZE when no other posted speed data was available

## Section 4.0: Proposed Condition

### Typical Section

The trail typical section varies based on the location of the trail. The studied segments identified three potential locations: a trail within the former railroad RW, a trail along a roadway, and a farm crossing.

There are some locations along the abandoned railbed that farmers use to drive their equipment over. For these locations an enhanced pavement design will be used which includes a 4" concrete base below the asphalt concrete pavement and 8" of compacted aggregate on side slopes to accommodate farm machinery that needs to cross the proposed trail. **Figure 4.1** shows the typical section for the former railroad RW. The typical section for the trail within the abandoned railroad RW follows the ODOT *Multimodal Design Guide*, Chapter 5. The proposed trail width is 11', with 5' graded shoulders and 4:1 foreslopes. Along U.S. 33 the trail will utilize existing ditches when possible. In areas where the foreslope is required to be greater than 3:1 or the 5' graded shoulder cannot be used, bike fencing is proposed to protect users.



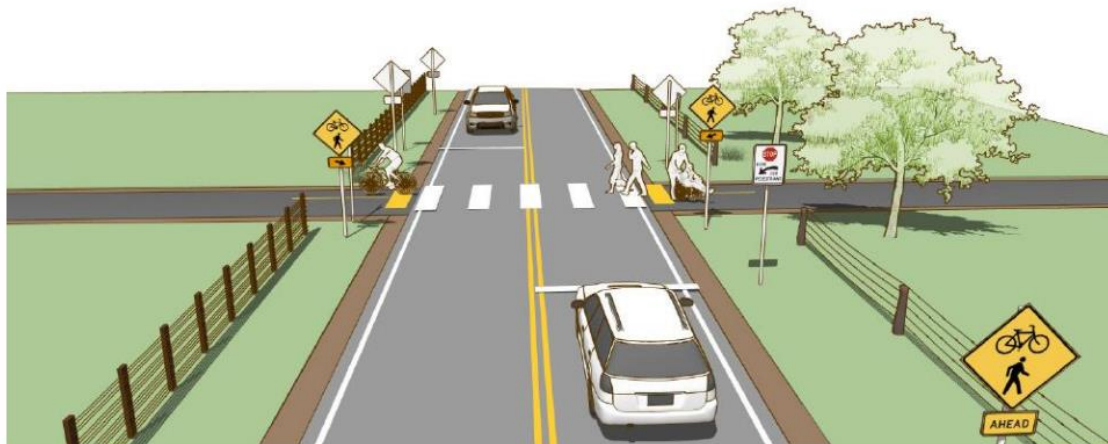
**Figure 4.1 – Typical Section on Abandoned Rail Bed**

## Proposed Grade

The grade of the proposed trail generally matches the existing berm or ground that the trail follows. On the abandoned railbed, the maximum grade proposed is 5%. When the proposed trail is contained within the roadway RW the grade shall not exceed the general grade of the roadway according to the ODOT *Multimodal Design Guide*, Section 5.3.6.

## Roadway Crossings

This study proposes marked crosswalks as shown in **Figure 4.2**. See **Appendix B** for a schematic showing a typical crosswalk with signage for this segment. Marked crosswalks utilize signage and pavement markings to draw attention to pedestrians. Additionally, some crossings occur at intersections with existing traffic signals or stop signs (existing stop-controlled intersection), and at these existing intersections new crosswalk pavement markings are proposed. Tables with each crossing identified and the crossing type labelled can be found below in **Table 4.1**.



**Figure 4.2 – Marked Crosswalk (image credit: Small Town and Rural Multimodal Networks, FHWA)**

## Segment 2 – Huntsville to Belle Center

At Lions Park in Huntsville, the existing paved trail network connects to a 4-foot-wide sidewalk on the west side of Lima St (SR-117), which is one lane in each direction. On the west side of Lima St there is a narrow paved shoulder, straight curb (ending north of Rude St), and a 4 to 9-foot tree lawn on the west side. The residential property lines along Lima St are 18 to 20 feet from the edge of pavement. The Build Alternative for Segment 3 proposes utilizing the existing sidewalk, tree lawn, and 3 feet of space beyond the sidewalk to implement the trail adjacent to Lima St. Alternatively, a constrained width path could be constructed along Lima St while maintaining the tree lawn buffer.

The proposed trail crosses Lima St at the signalized intersection with Napoleon St and utilizes the wide shoulder on the east side of Lima until reaching 4<sup>th</sup> St. The wide shoulder would be converted to a buffered two-way bike lane between Napoleon St and 4<sup>th</sup> St. Two-way bike lanes are not preferred for long distances without protective infrastructure because the counterflow bike lane is not anticipated by drivers, which can increase conflicts between trail users and turning vehicles. However, the proposed two-way bike lane would not cross any streets for the short distance it is proposed, so this safety concern is mitigated. Its application would both provide a separated facility for trail users while also avoiding any impacts to the businesses adjacent to Lima St. The trail then turns down 4<sup>th</sup> St, a low-volume low-speed local road, as a separated facility directly adjacent to the edge of pavement. It is recommended that the trail be constructed out of concrete while adjacent to 4<sup>th</sup> Street to differentiate it from the roadway pavement. The trail then crosses Wishart St and enters Huntsville Park.

From the park, the trail moves adjacent to Huntsville Self Storage and enters the former railroad RW. The trail follows this corridor for 5 miles until reaching East Main Street in the Village of Belle Center where the trail connects to the Belle Center Depot at the intersection of Keller Avenue and E Main Street, which was a connection noted in the second stakeholder meeting. Along the proposed trail, there are four existing culverts which B&N assumes can be used with minor rehabilitation based on aerial imagery, and two proposed pedestrian bridges over an unnamed tributary of the South Fork Great Miami River. The conceptual layouts for Segment 2 showing bridge replacements as well as existing culverts, and crossing locations can be found on in **Appendix A**.

**Table 4.1: Segment 2 Roadway Crossings with Crossing Type**

Roadway	Roadway Classification	Posted Speed	No. Lanes	AADT (if known)*	Crossing Type
<b>Rude Street</b>	Local	25 mph	1 lane/direction		Existing Stop Controlled
<b>Neal Ave</b>	Local	25 mph	1 lane/direction		Existing Stop Controlled
<b>Lima Street</b>	Major Collector	35 mph	1 lane/direction	9220	Marked Crosswalk
<b>Wishart Street</b>	Local	25 mph	1 lane/direction	163	Marked Crosswalk
<b>TR-100</b>	Local	55 mph**	1 lane/direction	654	Marked Crosswalk
<b>CR-96</b>	Local	55 mph**	1 lane/direction	459	Marked Crosswalk
<b>CR-97</b>	Local	55 mph**	1 lane/direction	236	Marked Crosswalk
<b>TR-49</b>	Local	45 mph**	1 lane/direction	168	Marked Crosswalk
<b>E Main Street</b>	Local	25 mph	1 lane/direction		Marked Crosswalk

\* AADT based on available ODOT TIMS data

\*\* Posted Speed recorded from WAZE when no other posted speed data was available

## Section 5.0: Evaluation of Segments and Alternatives

### Evaluation Criteria

Segment 2 is evaluated by comparing the Build Alternative to the No Build Alternative. In the existing condition there is no route for pedestrians to travel between Huntsville and Belle Center. Although CR-39 connects the communities, it has no dedicated bicycle or pedestrian facilities and is high speed with a posted speed limit of 55 miles per hour. This creates a condition where only experienced and confident cyclists can utilize the route. Based on the difficulty for cyclists and pedestrians to safely travel between these communities, the No Build Alternative has been removed from consideration as a recommended alternative.

The proposed Build Alternative for the Huntsville to Belle Center Segment was evaluated against the No-Build Alternative based on the following key issues:

- Trail User Experience
- Connection to Key Locations
- Right-of-Way Impacts
- Construction Cost

#### Trail User Experience

The comfort of trail users considers the surrounding context of the trail location. This could include proximity to high-speed roadways, amount of tree cover, noise concerns, grade of the trail, and overall sense of security.

#### Connection to Key Locations

Connection to key locations considers the ability of the trail to provide access to point of interest locations identified by the stakeholder group. These locations include Lions Park, the Solomon Town Historical Marker and the associated Quaker Cemetery, and the Belle Center Depot.

#### Right -of-Way Impacts

The amount of RW as well as the cost and assumed difficulty in acquiring the RW were considered.

#### Construction cost

The construction cost was estimated for major items such as path pavement, structures, excavation and embankment, and street crossing applications. To account for additional construction items that may emerge during detailed design of the trail, a 25% contingency was applied to the subtotal of the construction estimate. Construction dollars were calculated in 2025 dollars based on current ODOT bid tabulations and other relevant data associated with the trail construction elements, and inflated to a 2028 cost, assuming a 16% inflation factor based on ODOT's inflation calculator spreadsheet. A full cost estimate with each category for Segment 2 is shown in **Appendix C**.

Each construction cost table is broken down into several categories. How each category was calculated as well as the item included in each category is explained below.

- **Roadway:** The roadway category includes costs for excavation/embankment, as well as clearing and grubbing.
- **Drainage:** The drainage category is a lump sum calculated as a percentage of total cost based on previous projects of a similar scope, as well as assumptions made about each segment, such as existing drainage patterns.
- **Erosion Control and BMP elements:** Erosion control and BMP elements is a lump sum for items such as vegetated filter strips and other erosion control measures. The cost was calculated as a percentage of the total cost.
- **Pavement:** Pavement costs include new shared use path pavement. The unit costs were calculated using current ODOT bid tabulations and an assumed pavement thickness.

- **Traffic Control:** Traffic control was calculated by itemizing the number of crossings proposed for the segment, as well as a lump sum for signing and pavement markings. This lump sum was calculated as a percentage of the total cost based on similar studies.
- **Right of Way Acquisitions:** Right of way acquisitions were calculated using data from the county auditors map for property values and acreage. This includes the cost for temporary and permanent RW and the associated consultant costs.
- **Structures:** Each structure was calculated as a lump sum based on the assumed length and width of the structure. The unit cost was calculated assuming a prefabricated pedestrian bridge.
- **Incidentals:** Incidentals include mobilization, construction layout stakes, and a field office. These costs were calculated using ODOT guidelines.

## Segment 2 – Huntsville to Belle Center

**Trail User Experience** – The proposed trail runs through a wooded tree line that provides shade and natural scenery for trail users. There is a short stretch (about 2000') of the trail in Huntsville that runs alongside Lima Street which has a posted speed of 35 mph, but otherwise the trail stays within the former railroad RW until Belle Center. In Belle Center the trail crosses Main Street but there is no portion of the trail that runs alongside a roadway for any considerable distance. Segment 2 follows the alignment of the abandoned railbed which is offset a considerable distance (600-1000') from CR-39 so noise pollution would not be significant.

**Connection to Key Places** – Segment 2 provides connection to Lions Park in Huntsville as well as the Belle Center Depot. Along the trail, users can access the historic Quaker Cemetery near the Solomon Town Historical Marker.

**Right-of-way** – Segment two utilizes the former railroad RW for much of the trail, most of which is privately owned. These parcels would require acquisition. Belle Center owns two plots of former railroad RW south of the Village. Segment 2 will require 60.37 acres of acquisition across 11 properties for a total cost of \$563,400.

**Construction Costs** - The estimated construction cost is summarized in **Table 5.4** below.

**Table 5.4 – Segment 2 Construction Cost**

	Segment 1
Roadway	\$990,500
Drainage	\$200,000
Erosion Control and BMP Elements	\$200,000
Pavement	\$1,134,800
Traffic Control	\$100,000
Right of Way Acquisitions	\$563,400
Structures	\$1,986,000
Incidentals	\$275,400
25% Contingency	\$2,161,450
2025 Cost	\$8,645,800
2028 Cost (16% Inflation)	\$12,191,000

Segment 2 requires two new bridges where former railroad bridges once existed but have since been removed. The roadway cost is driven primarily by earthwork cut and fill quantities to establish ditches for trail drainage and an embankment that the trail will be built upon. Pavement is the third major cost driver for Segment 2 as new asphalt pavement will be required for the entire length of Segment 2 which includes a surface course and intermediate course as seen in **Figure 4.1**.

## Section 6.0: Segment Summary and Recommended Next Steps

**Segment 2** – The Build Alternative is recommended because it provides connection and a recreational facility for the communities of Huntsville and Belle Center in Logan County that can be utilized by pedestrians and cyclists of all abilities, while the No Build alternative does not.

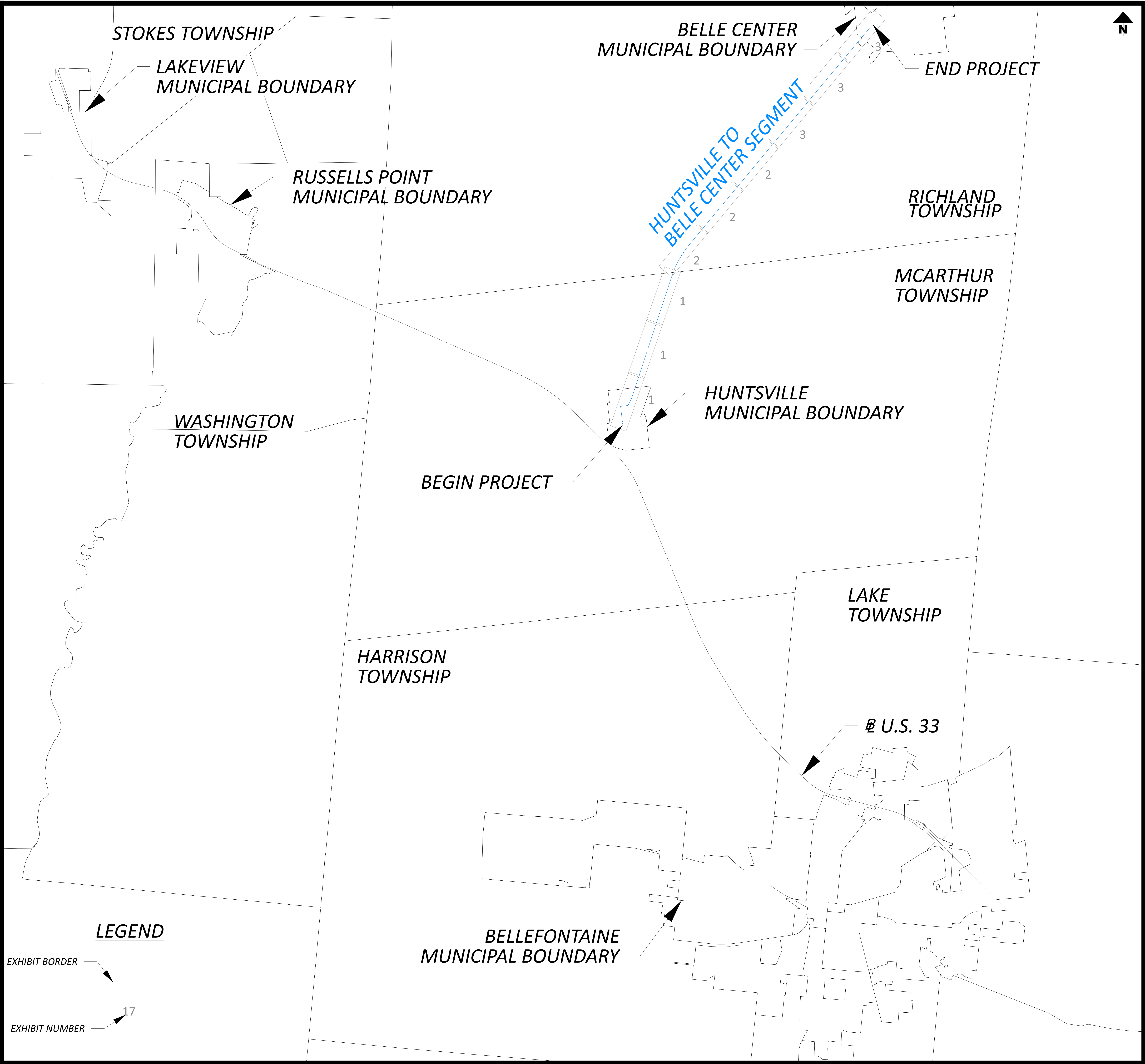
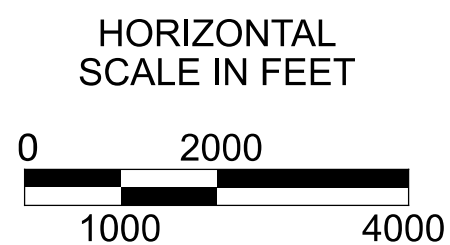


If it is deemed to proceed, the recommended next step would be to initiate a detailed preliminary engineering study of Segment 2 to verify the feasibility of the alignment and alternatives. Specific items that are recommended to be performed during the next phases of this project include the following.

- Further refine conceptual layouts for Segment 2 to obtain better estimates for construction and right-of-way costs.
- Perform structural inspections of the existing culverts and bridges to confirm the assumptions made in this study.
- Perform geotechnical work to determine soil and slope stability.
- Investigate conceptual best management practices (BMP's) that will be required for the project.
- Depending on the funding source, engage the public and other stakeholders.
- Obtain detailed field survey to be used in detailed design for the final alignment.

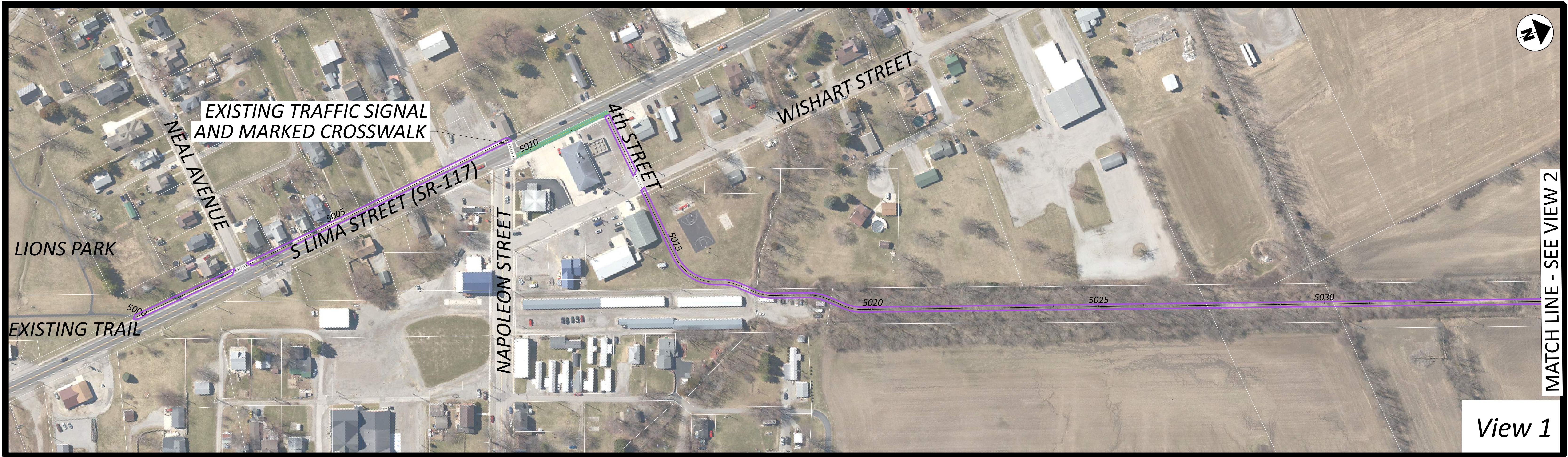
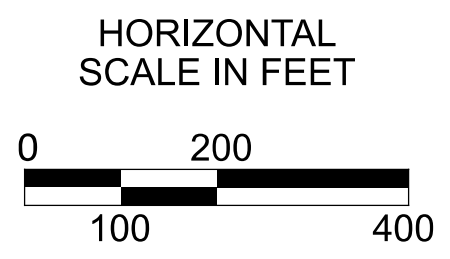
Appendix A  
Roadway Exhibits  
Segment 2

Logan County Trail Feasibility Study  
Belle Center Segment  
Schematic Baseline Layout



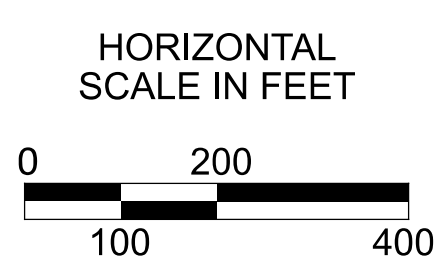


Logan County Trail Feasibility Study  
Huntsville to Belle Center Segment  
Exhibit 1 of 3



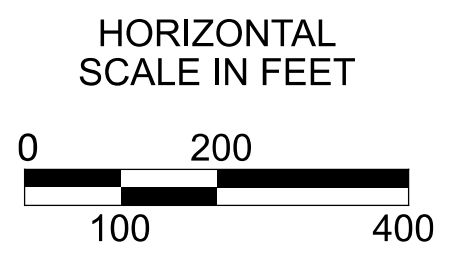


Logan County Trail Feasibility Study  
Huntsville to Belle Center Segment  
Exhibit 2 of 3





Logan County Trail Feasibility Study  
Huntsville to Belle Center Segment  
Exhibit 3 of 3





Appendix B

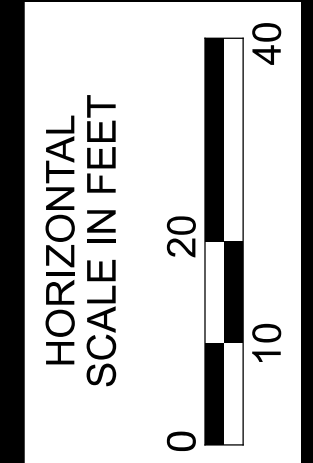
Typical Crossing Detail

Segment 2



LEGEND

- DETECTABLE WARNING
- ASPHALT PAVEMENT



Typical Roadway Crossing Detail

DESIGN AGENCY	
<b>B&amp;N</b> burgessniple.com	
DESIGNER	ITB
REVIEWER	NJL
DATE	2/19/25
PROJECT ID	
SHEET	TOTAL
n/a	n/a



## Appendix C

### Construction Cost Estimate

Logan County Trail  
Huntsville to Belle Center Segment

03/21/25

DESCRIPTION	TOTAL QUANTITY	UNIT	UNIT PRICE	TOTAL PRICE (2025 dollars)
<b>ROADWAY</b>				
Clearing and Grubbing	1	LUMP	\$100,000.00	\$100,000
Excavation	6,987	CU YD	\$25.00	\$174,663
Embankment	35,788	CU YD	\$20.00	\$715,755
<b>ROADWAY SUBTOTAL</b>				<b>\$990,500</b>
<b>DRAINAGE</b>				
Drainage	1	LUMP	\$200,000.00	\$200,000
<b>DRAINAGE SUBTOTAL</b>				<b>\$200,000</b>
<b>EROSION CONTROL &amp; BMP ELEMENTS</b>				
Erosion Control	1	LUMP	\$200,000.00	\$200,000
<b>EROSION CONTROL SUBTOTAL</b>				<b>\$200,000</b>
<b>PAVEMENT</b>				
SUP Pavement	35,462	SQ YD	\$32.00	\$1,134,795
<b>PAVEMENT SUBTOTAL</b>				<b>\$1,134,800</b>
<b>TRAFFIC CONTROL</b>				
Traffic Control	1	LUMP	\$100,000.00	\$100,000
<b>TRAFFIC CONTROL SUBTOTAL</b>				<b>\$100,000</b>
<b>RIGHT OF WAY ACQUISITIONS</b>				
Temporary Right of Way	1	LUMP	\$1,074,016.43	\$1,074,016
Permanent Right of Way	1	LUMP	\$2,685,041.08	\$2,685,041
<b>RIGHT OF WAY ACQUISITIONS SUBTOTAL</b>				<b>\$3,759,100</b>
<b>STRUCTURES</b>				
Prop. Bridge	1	LUMP	\$ 1,191,550.00	\$1,191,550
Prop Bridge	1	LUMP	\$ 794,366.67	\$794,367
<b>\$794,366.67</b>				<b>\$1,986,000</b>
<b>INCIDENTALS</b>				
Field Office, Type B	12	MONTH	\$1,050.00	\$12,600
Construction Layout Stakes	1	LUMP	\$62,778.00	\$62,778
Mobilization	1	LUMP	\$200,000.00	\$200,000
<b>INCIDENTALS SUBTOTAL</b>				<b>\$275,400</b>
<b>CONSTRUCTION COST TOTAL, 2025</b>				<b>\$8,645,800</b>
Inflation (2025 to 2028)	16.0%			\$1,383,328
Cost Contingency - Preliminary Engineering	25.0%			\$2,161,450
<b>CONSTRUCTION COST, 2028 DOLLARS</b>				<b>\$12,191,000</b>