

# WILMORE TRAIL FEASIBILITY STUDY

For the City of Wilmore, KY.
From Downtown Main Street 2.5 Miles North to the KY 29 / US 68 Intersection







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## A. Project Background and Need

Local City of Wilmore officials and other community leaders have identified a need to provide pedestrian and bicycle facilities for Wilmore citizens, Asbury University, and Asbury Seminary students to access the campus and the existing regional pedestrian and bicycle system near the existing trail head at the KY 29 / US 68 intersection.

Shared or multi-use paths provide desirable space for physical activity, which in turn can reduce medical costs and prevent or decrease some types of chronic illnesses due to increased physical activity. Shared use paths can also provide mental health benefits by providing a place to exercise, which has been linked to decreasing mental health conditions such as depression and anxiety. Multi-use paths have an impact on encouraging users to increase their levels of physical activity. Additionally, multi-use paths connect people to jobs, schools, parks, grocery stores, medical facilities, and other transportation routes. This can be especially important when considering the transportation needs of disadvantaged residents. Pedestrian and bicycle facilities provide a reduction in vehicle miles traveled and in total vehicle trips. This reduces vehicular congestion and eliminates tons of greenhouse gases and other noxious chemicals that would otherwise contribute to polluting the atmosphere. Shared use paths can deter crime by creating lively and inhabited spaces.

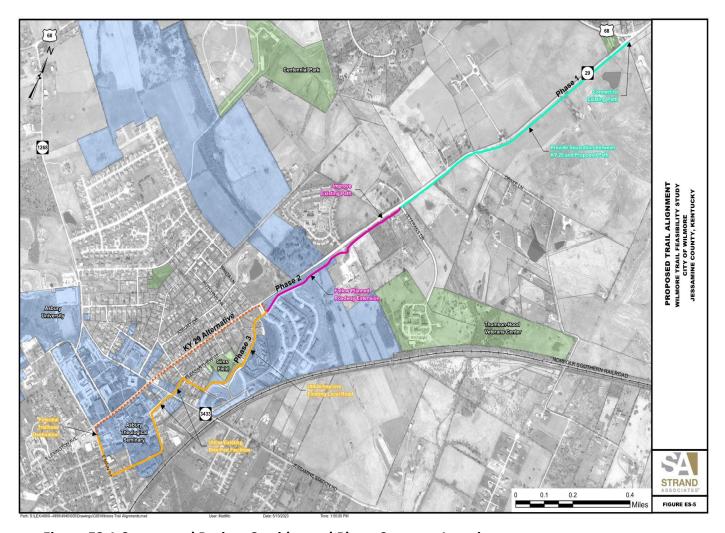


Figure ES-1 Conceptual Project Corridor and Phase Segment Locations

Multi-use paths play an important role in providing an accessible route for people to walk, roll, and bike for many different trip purposes. Shared use paths can provide vital accessibility to several transportation-disadvantaged populations for utilitarian, commuting, recreational, and exercise purposes.

The entire corridor study location is shown in Figure ES-1 above, and generally runs for approximately 2.5 miles from downtown Main Street in the City of Wilmore, north to the KY 29 / US 68 intersection. Conditions along the corridor change from urban to rural with varying roadway characteristics, existing right of way widths, existence of pedestrian facilities, speed limits, and land uses. The corridor study area contains downtown businesses, portions of the Asbury University and Asbury Seminary campus buildings, housing, and other facilities, residential housing, churches, public parks, community gardens, and federal administrative services. Although there are a few existing pedestrian and bicycle facilities situated along the Phase 2 and 3 segments of the corridor, many students, pedestrians, and bicyclists are routinely observed sharing the road with motorists, walking along narrow roadway shoulders, or through grass fields next to the roadways. Many of the existing user street crossings are situated at or near uncontrolled or unsafe locations.

The new pedestrian and bicycle facility would connect the City of Wilmore to the existing US 68 trail and provide regional connectivity to Lexington and Nicholasville. A potential ultimate goal is to extend the comprehensive trail system in Jessamine and Fayette County to the KY Horse Park. The existing US 68 trail is currently over 5 miles in length. The trail was recently extended slightly further south toward Wilmore by KYTC, through the reconstruction of the Wilmore "Y" at US 68. Completing an additional missing link of less than 1 mile would provide a connection to the City of Wilmore's bicycle and pedestrian system. Through community engagement for other regional studies, it was also discussed that additional planned projects by Wilmore and local community partners could eventually provide connectivity to High Bridge at the Kentucky River.

### **B.** Physical Conditions Investigation and Site Analysis

In order to address the need, the City of Wilmore has partnered with the Kentucky Transportation Cabinet and the Lexington Area Metropolitan Planning Organization to conduct a planning study to suggest a safe and integrated facility to enable bicycles, pedestrians, and users to walk and bike within the city and provide connectivity to the regional trail system near the KY 29 / US 68 intersection. As the lead engineering service, the KY Transportation Cabinet has selected Bacon Farmer Workman (BFW) Engineering along with Strand Associates to assist the City of Wilmore in conducting a conceptual feasibility study. The study will develop a conceptual plan providing options for connecting Main Street in downtown Wilmore to the existing trailhead at the KY 29 / US 68 intersection. This connection will ultimately provide regional connectivity for the City of Wilmore users to the Lexington / Nicholasville bicycle and pedestrian trail system.

Throughout the corridor, safety was identified as a prominent concern for motorists, cyclists, and pedestrians, especially concerning bikes and pedestrians traveling the corridor along Main Street and KY 29. Where feasible, measures to mitigate some of these concerns will be addressed during the final design phase.

In addition to meeting with project stakeholders, the BFW/Strand design team members have gathered data about the existing conditions along the project corridor by means of site visits, photographs, and the analysis of data available from local and state agencies. Available information was gathered to assist the team with assessing physical roadway conditions including posted speed limits, traffic and crash data, right-of-way parameters, potential pedestrian / vehicular conflict areas, existing utility locations, existing pedestrian and bicycle facilities, nearby recreational facility information, and future overall bike and trail considerations.

Conclusions derived from the available data information obtained identified many hazardous and / or challenging safety conditions facing users as well as potential opportunities for enhancing safety improvements where feasible. It appeared vehicular speeds along KY 29, available onstreet parking, existing user crossing locations, local government and Asbury University and Seminary campus facilities, recreational facilities, property impacts and available rights of way, utilities, and environmental impacts will all need to be considered and further evaluated during the design process.

## C. Utility Owners (For Information Only)

City of Wilmore, KY Water & Sewer

Delta Gas Gas

LGE & KU Power

Windstream Cable/Communications

#### D. Development of Overall Conceptual Phase Segment Locations

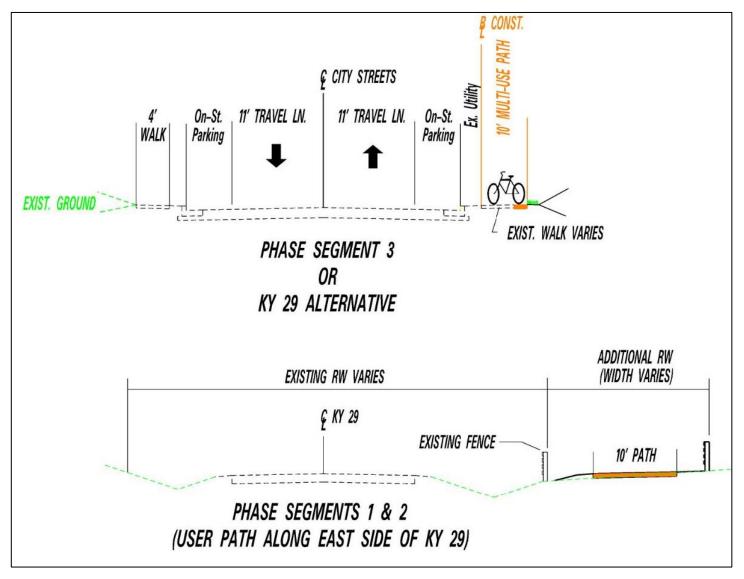
Based on feedback from the City of Wilmore, Asbury University, and Asbury Seminary representatives, the project team initiated the study by identifying four (4) conceptual corridor phase segments from Main Street to the KY 29 / US 68 intersection to be considered for determining estimated feasibility, impacts, and estimated construction costs. In the downtown area, (with available opportunity), both the Phase 2 and 3 segments were essentially considered the preferred locations. The KY 29 Alternative segment shown on Figure ES-1, is considered as an optional location should the Phase 2 and 3 segments later become infeasible to construct. Some portions of Phase segments 2, 3, and the KY 29 Alternate may provide opportunity for either share the road, or bike lanes with sidewalks adjacent to the existing streets.

Within the less developed and rural segments (Phase 1 and Phase 2), independent corridor locations have been considered to generally parallel existing KY 29 or provide some opportunity for street separation and "cross-country" locations.

User safety improvement opportunities along with other constraints were identified and used to develop concepts for connections to the City of Wilmore, Asbury University, Asbury Seminary, neighborhoods, and connectivity to the overall regional trail system near the KY 29 / US 68 intersection.

As mentioned, the typical sections will likely need to vary depending on the segment or phase that is under consideration. The more rural portion of the corridor encompasses Phases 1 and 2. The proposed path would be constructed outside of a buffer zone that would likely be outside of the roadway ditch. This would provide more separation between path users and vehicular traffic on KY 29. This will improve safety for the pedestrians and cyclists due to inherently higher speeds along the rural segment of KY 29 (see Figure ES-2 below). The typical section for phases 3 and / or the KY 29 Alternate would most likely be more urban in nature. In order to utilize the established roadways and / or private facilities between Main Street and Latimer Boulevard, the multi-use path or sidewalk would likely be constructed in conjunction with a curb and gutter typical section with a varied utility strip (see Figure ES-2 below). The feasibility of developing usable paths between Main Street and Latimer Boulevard will predominantly hinge upon flexibility and partnerships between the city, the seminary, and private property owners to find the most appropriate combination of facilities.

**Figure ES-2 Typical Sections** 



## E. Evaluation of Project Phase Segments and Implementation Plan

Each conceptual Phase segment location was evaluated based on a weighted scale of GOOD / FAIR / POOR based on estimated costs, utility impacts, environmental impacts, safety, mobility, and overall project implementation. The Phase segments were scored in a decision matrix (see Figure ES-3) by the BFW Engineering team based on how well segments satisfied each particular category. In accordance with the purpose and need for this project, the highest weight was placed on feasible opportunities to improve safety for bicyclists and pedestrians and connectivity to the overall regional trail system near the KY 29 / US 68 intersection. Each Phase segment was given a general score intended to assist in determining which project Phase should be given priority for implementation and completion. The "No Build" segment in the Segment Evaluation and Impact decision matrix (Figure ES-3) does not meet the Project need.

## F. Overall Phase Segment Recommendation

Of all the Phase segments considered, the Phase 1 segment is the only segment that provides direct connectivity to the existing regional trail system near the KY 29 / US 68 intersection. The Phase 1 segment provides a facility where there is no existing bicycle or pedestrian accommodations other than users to occupy and operate within the KY 29 travelway. Although somewhat limited widths and ADA non-compliant, the Phase 2 and 3 segments are primarily situated along lower speed and calmer roadways and streets. Thus, Phases 2 and 3 could be substituted by the use of existing sidewalks and combined street use in the interim while more appropriate facilities can be designed and constructed.

Therefore, based on priority and the preliminary evaluation of each of the four Phase segments considered, the Phase 1 segment was considered to be the priority trail segment for the initial construction of the City's overall project corridor considered in this study. Following implementation of the recommended Phase 1 segment, all other remaining Phase segments (2, 3, and the potential KY 29 Alternative) will be evaluated and prioritized for compatibility, constructability, and feasibility to assist in determining the next segment to be implemented.

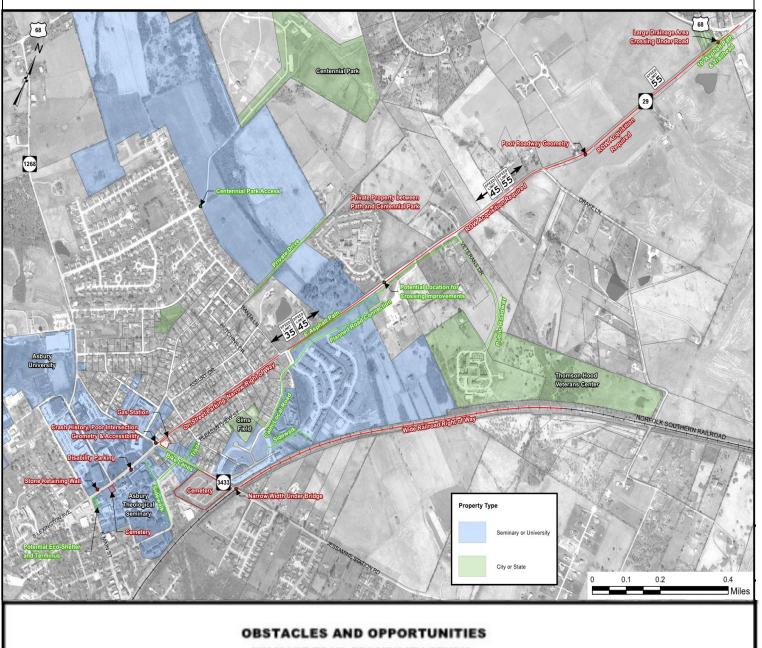
Situating the Phase 1 segment along the east side of KY 29 (as shown in Figure ES-1) appears to have fewer property parcel impacts and right-of-way acquisition(s) than situating the segment on the west side of KY 29. Additionally, fewer utility and environmental impacts are realized by constructing the multi-use path facility on the east side of KY 29. In addition, situating the Phase 1 segment on the east side of KY 29 enhances user safety by eliminating the need for two (2) additional user crossings on KY 29 (one at the end of the Phase 2 segment to get to the west side of KY 29, and one to cross back to the east side of KY 29 at the US 68 intersection). It appears, each of these crossing locations are situated in or near 55 mph speed zone sections. Crossing at an unsignalized location creates a dangerous situation for both pedestrians and drivers. Pedestrians may put themselves in danger if they misjudge the speed of approaching vehicles and the time it takes to safely cross the street. Drivers may be startled and confused by the pedestrian crossing the street, causing a driver to slam on the brakes. Since the existing facilities are currently located on the east side of US 68 and KY 29, the project team strongly recommends future facilities be constructed on the east side of KY 29.

**Figure ES-3 Phase Segment Evaluation and Impacts** 

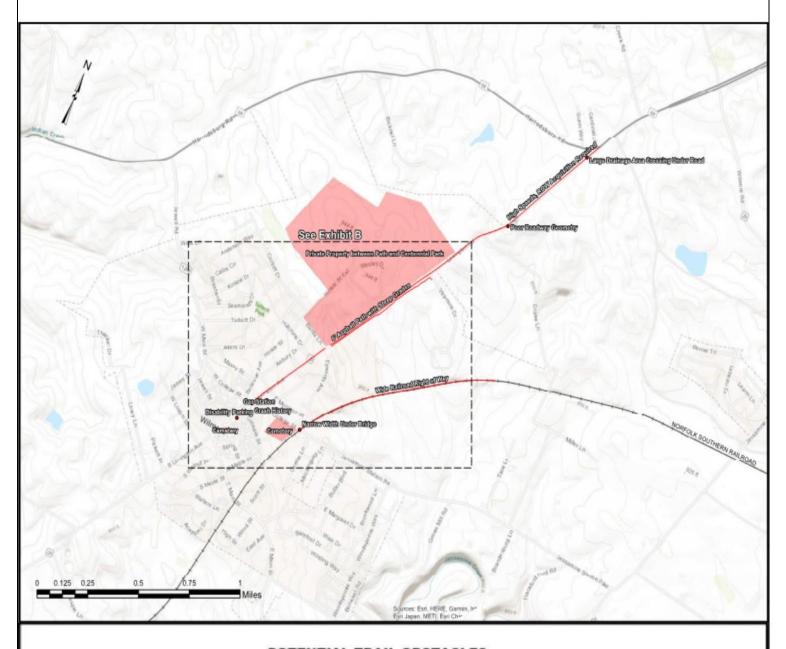
	2	PHASE	SEGMENT	/ EVALUATION AND IMPACTS			
SCREENING	CRITERIA	No Build	PH 1 5100 LF. \$1.40 M	PH 2 3100 LF. \$1.22 M	PH 3 4900 LF. \$1.48 M	KY 29 ALT 3700 LF. \$1.20 M	
тер соѕт	* Right of Way Utilities Construction Design	N/A	\$336 K \$119 K \$765 K \$183K	\$385 K \$217 K \$465 K \$160K	\$327 K \$126 K \$840 K \$194K	\$354 K \$105 K \$585 K \$156K	
IIMA	TOTAL	N/A	\$1.22 M	\$1.05 M	\$1.29 M	\$1.04 M	
ES	Number of Adjocent Properties (Estimated)	N/A	4	7	15	18	
17	CRITERIA    No Build   S100 LF.   S1.40 M   S3   S1.50 K   S1.19 K   S1.19 K   S1.19 K   S1.19 K   S7.65 K   S1.19 K   S7.65 K	Yes	Yes	Yes			
	Will existing Public Power System be impacted?	N/A	Yes	Yes	Yes	Yes	
TES	Will existing Public Gas System be impacted?	N/A	No	Yes	Yes	Yes	
THE STATE OF	Will existing Public Sewer System be impacted?	N/A	No	Yes	Yes	Yes	
2	Will existing Cable System be impacted?	N/A	Yes	Yes	Yes	Yes	
	OVERALL SEGMENT SUMMARY	N/A	Good	Fair	Poor	Poor	
	Will wetlands be impacted?	N/A	No	Yes	Yes	No	
	Will WMA areas potentially be impacted?	N/A	No	No	No	No	
AL	Will Public Parks be impacted?	N/A	No	No	Yes	No	
VIRONMENT	CONTROL OF STREET OF STREET OF STREET STREET, STREET STREE	N/A	Potentially	Na	Potentially	Churches, Cemetery, Stone Walls, Asbury Entrance Calumn	
EN	[H. [마니티] 사람들이 아름다면 없는 사람들이 되었다면 하나 아니라 하나 아니라 하나 아니라 하다 하다.	N/A	Yes	Yes	Yes	Yes	
	Are there potential hazardous materials?	N/A	No	No	No	No	
	OVERALL SUMMARY	N/A	Good	Fair	Fair	Fair	
		N/A	2	1	4	4	
SAFETY	Will the Phase segment vertical & horizontal geometry meet the AASHTO recommended	N/A	Yes	Yes	Yes	Yes	
Š	OVERALL SEGMENT SUMMARY	N/A	Good	Good	Good	Good	
		N/A	No	Yes	Yes	Yes	
	Does the Phased Path segment provide Regional	N/A	Yes	No	No	No	
		N/A	18	18	18	18	
≥		N/A	Yes	Yes	Yes	Yes	
МОВІГІ	Does the Phase segment provide direct connectivity	N/A	No	No	Yes	Yes	
-5-11		N/A	Yes	Yes	Yes	Yes	
		N/A	No	Yes	Yes	Yes	
	OVERALL SEGMENT SUMMARY	N/A	Good	Good	Good	Good	
>	(Land Use Plan and Transportation Plan for Jessamine County / City of Wilmore	Not Compatable	Yes / Highly	Yes	Yes	Yes	
TATION	Is Phase segment compatible with other proposed	N/A	Yes	Yes	Yes	Yes	
IMPLEMENT	이 마리면서 가지가 되면서 기계에 있는데 발생들이라면 된 이번 경기를 받았다. 아이를 가득하지 않는데 하는데 가지 않는데 그렇다.	N/A	Yes	Yes	Yes	Yes	
	Can the Phase segment be phosed to meet pedestrian & bicycle needs and available funding?	N/A	Yes	Yes	Yes	Yes	
	OVERALL SUMMARY	N/A	Good	Good	Good	Good	
5	OVERALL CORRIDOR SUMMARY	N/A	GOOD	FAIR+	FAIR	FAIR	

<sup>\*</sup> Basis of the Estimated RW Cost were developed by "overlaying" the Conceptual Phase Locations onto the Jessamine County PVA mapping and estimating the costs associated with acreage, residential and commercial acquisitions and proximity damages.

**Figure ES-4 Potential Obstacles and Opportunities** 

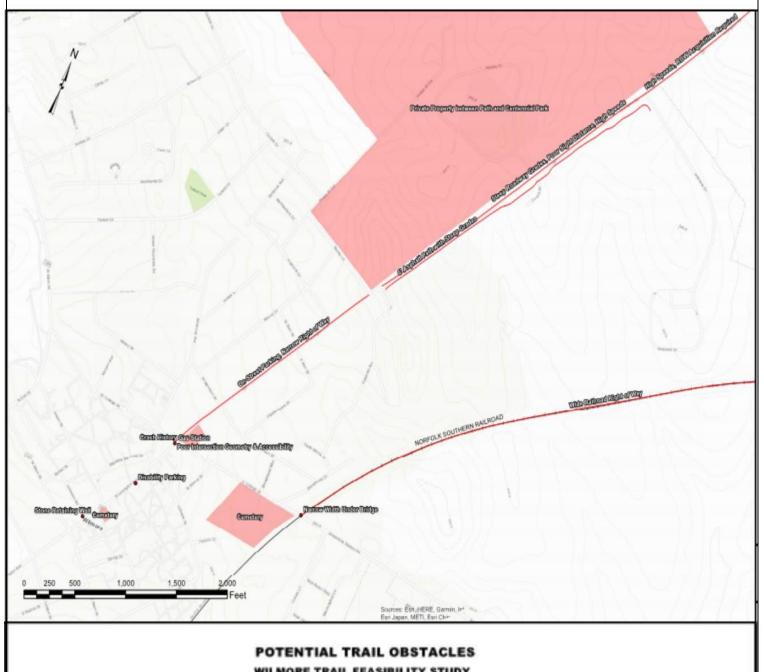




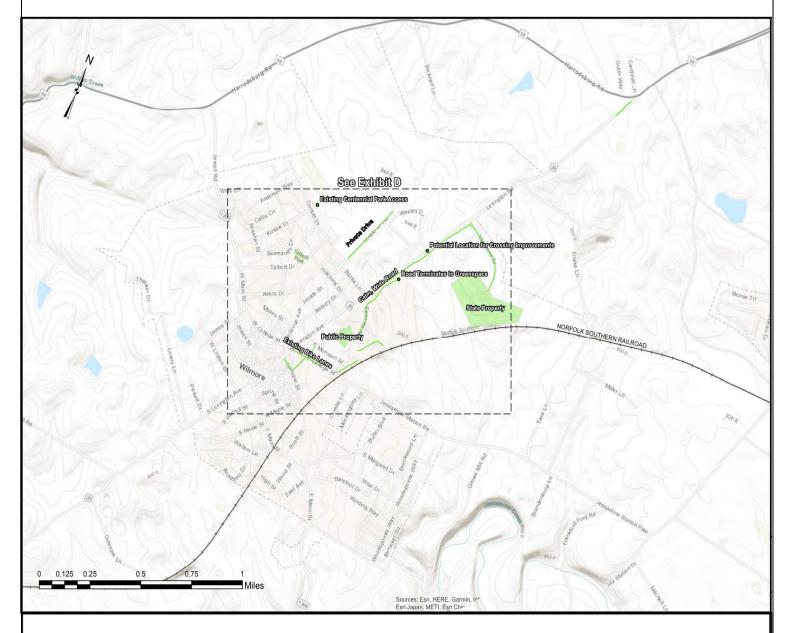


POTENTIAL TRAIL OBSTACLES
WILMORE TRAIL FEASIBILITY STUDY
CITY OF WILMORE
JESSAMINE COUNTY, KENTUCKY

Figure Exhibit B – Potential Trail Obstacles – Focused





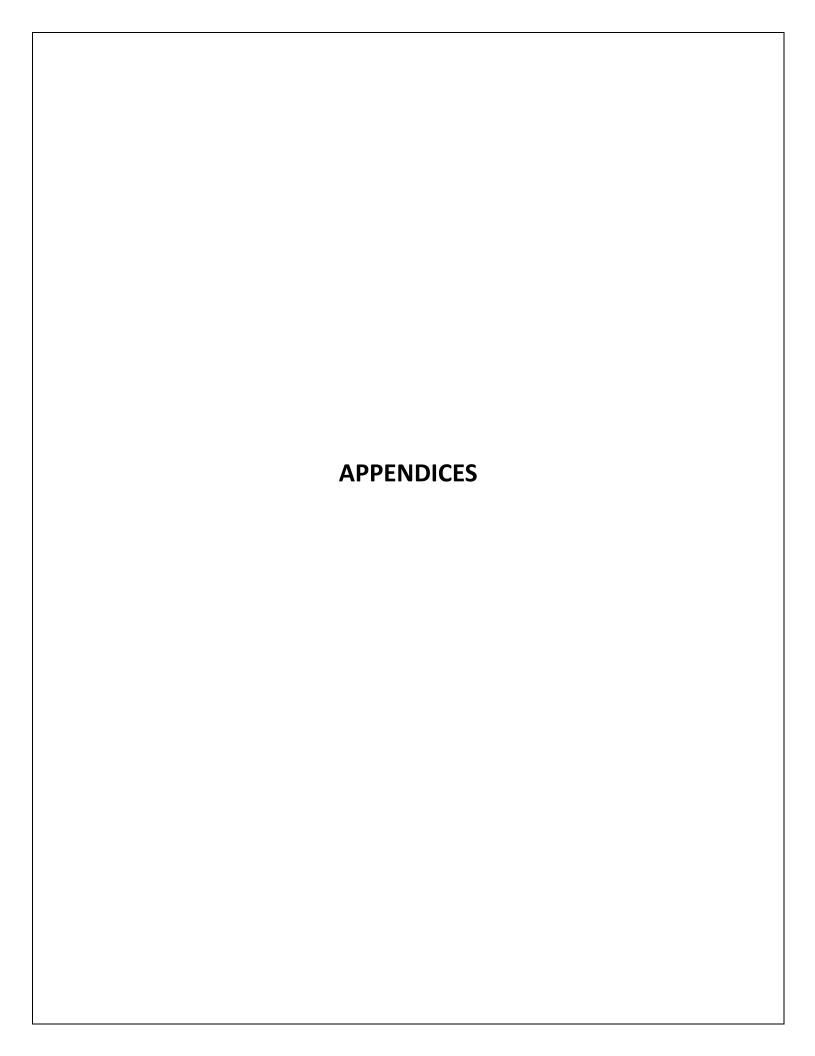


## POTENTIAL TRAIL OPPORTUNITIES





### **POTENTIAL TRAIL OPPORTUNITIES**



# **APPENDIX A – ESTIMATED RIGHT OF WAY COST**

Alignment Alternative	Segment 1 US 68 to Veterans Dr	<b>Segment 2</b> Veterans Dr to Latimer Blvd	Segment 3 Latimer Blvd to Main St	KY 29 Alternative Along Lexington Rd
Total Segment Length (ft)	5100	3100	4900	3700
Number of Parcels	4	7	15	18
Number of Appraisals	3	5	2	3
Damages / Site Improvements	\$50,000	\$20,000	\$25,000	
Property Cost	\$206,000	\$206,000	\$93,000	\$80,000
Acquisition Cost	\$52,000	\$90,000	\$158,000	\$192,000
Contingency 30%	\$78,000	\$89,000	\$76,000	\$82,000
Total Alternative ROW Cost	\$336,000	\$385,000	\$327,000	\$354,000

# **APPENDIX B – ESTIMATED UTILITY RELOCATION COST**

	Alignment			Segment 1	Segment 2	Segment 3	KY 29 Alternative	
	Alternative			US 68 to Veterans Dr	Veterans Dr to Latimer Blvd	Latimer Blvd to Main St	Along Lexington Rd	
1	Total Segment Length (ft)			5100	3100	4900	3700	
Electric/	Poles (Each)	\$	5,000	5	4	10	15	
Communication	S							
Water	Main Relocation (LF)	\$	300	200	400	100		
vvate	Hydrant (Each)	\$	5,000		3	2		
Gas	Main Relocation (LF)	\$	300					
Gas								
Design &	40%			\$34,000	\$62,000	\$36,000	\$30,000	
Contingency	40 /0			ψ3+,000	ψ02,000	\$30,000	ψ30,000	
Total Alte	Total Alternative Utility Cost		\$119,000	\$217,000	\$126,000	\$105,000		

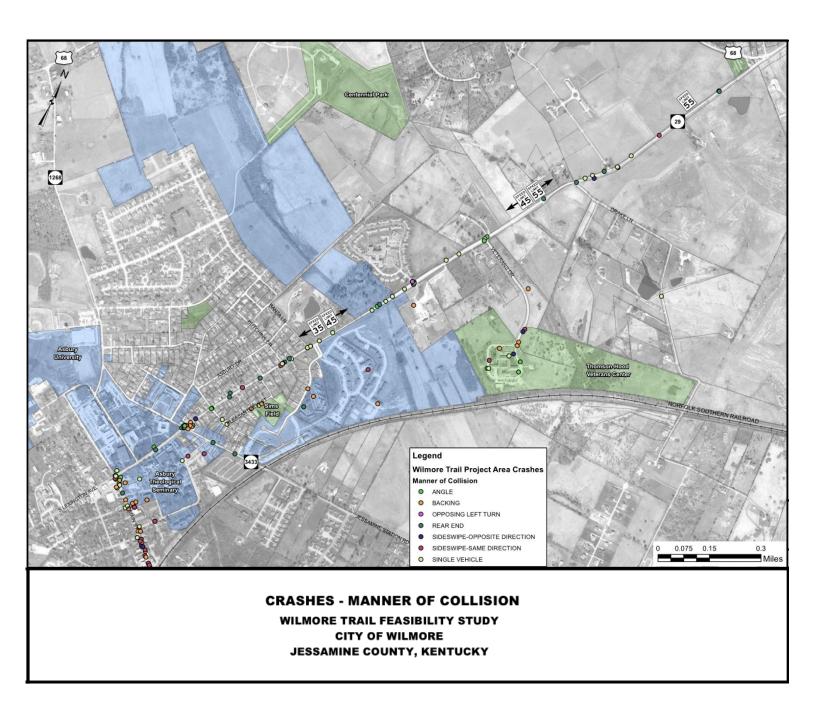
# **APPENDIX C - EXISTING CONDITIONS**

		Typical Section (Units in Feet)					
		Existing West/South Side Pavement Width East/North Side					
		Right of Way	Sidewalk	Ut. Strip	(Not Including C&G)	Ut. Strip	Sidewalk
	Main Street (KY 1268) to College Street (KY 3433)	*	5	1.5	29	1.5	5
( 29)	College Street (KY 3433) to Morrison Street	40*	5.5	-	29	-	4
d (K	Morrison Street to Barr Street	40*	4	1.5	29	2	4
Roa	Barr Street to Hutchins Drive	40*	4	1.5	29	-	5
Lexington Road (KY 29)	Hutchins Drive to Latimer Boulevard	40*	-	-	21	6	5
Lexii	Latimer Boulevard to Veterans Drive	40-120	-	-	21-45	-	-
	Veterans Drive to Drake Lane	40	1	-	20-38	-	-
	Drake Lane to Harrodsburg Road (US 68)	40	-	-	20-24	-	-
	Veterans Drive	50**	-	-	24	-	-
	Church Street	50	-	-	27	4	4
	College Street (KY 3433)	35	6	-	30	-	6
Latimer Boulevard		80	4	4	20 (x2)	4	4
Epworth Avenue		50	4	8	22	8	4
Pleasantview Street		30	-	-	22	-	-
Morrison Street		30	-	-	22	-	-
	Walnut Street	36***	6	4	13 (x2)	4	6
	Gillespie Street	30***	5.5	-	28	-	-
	Maple Street	30***	4	1.5	20	1.5	4

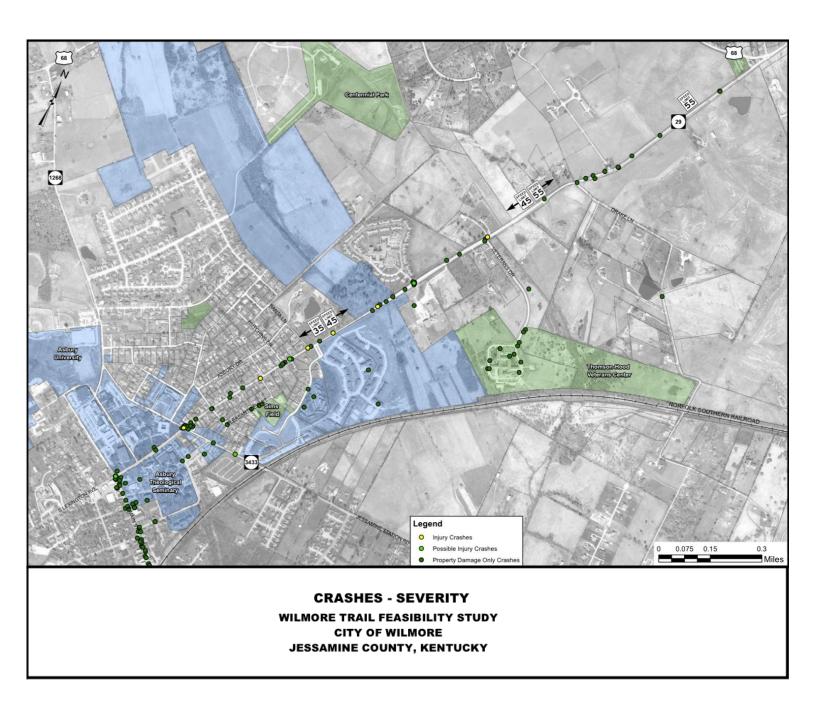
<sup>\*</sup> Often no formal dedication - will be per KRS (width being used by public)
\*\* Additional width from permanent easements - 100 feet total or more

<sup>\*\*\*</sup> Unclear public dedication from Asbury

# **APPENDIX D – TRAIL CRASHES-MANNER OF COLLISION**



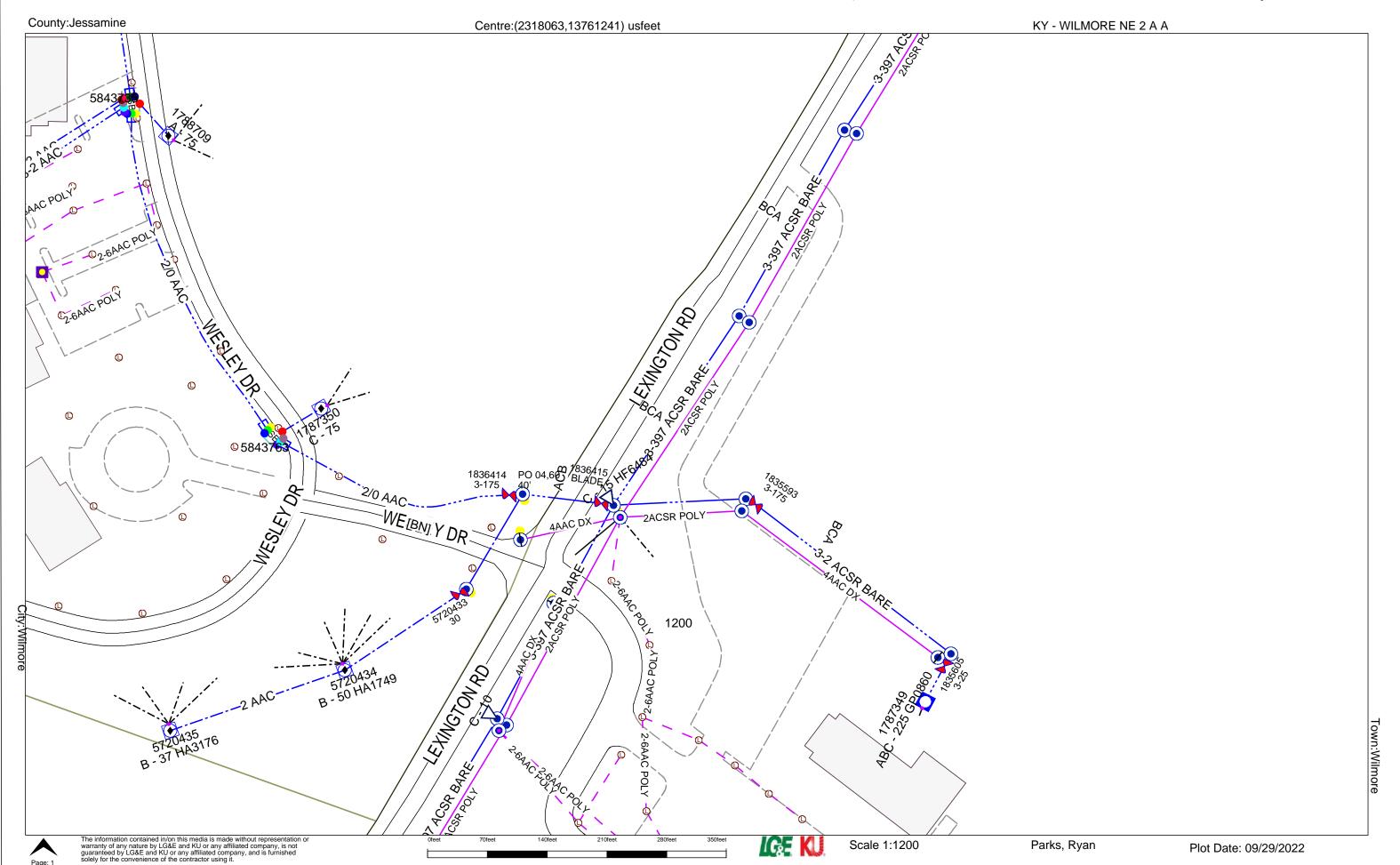
# **APPENDIX E – TRAIL CRASHES-SEVERITY OF COLLISION**

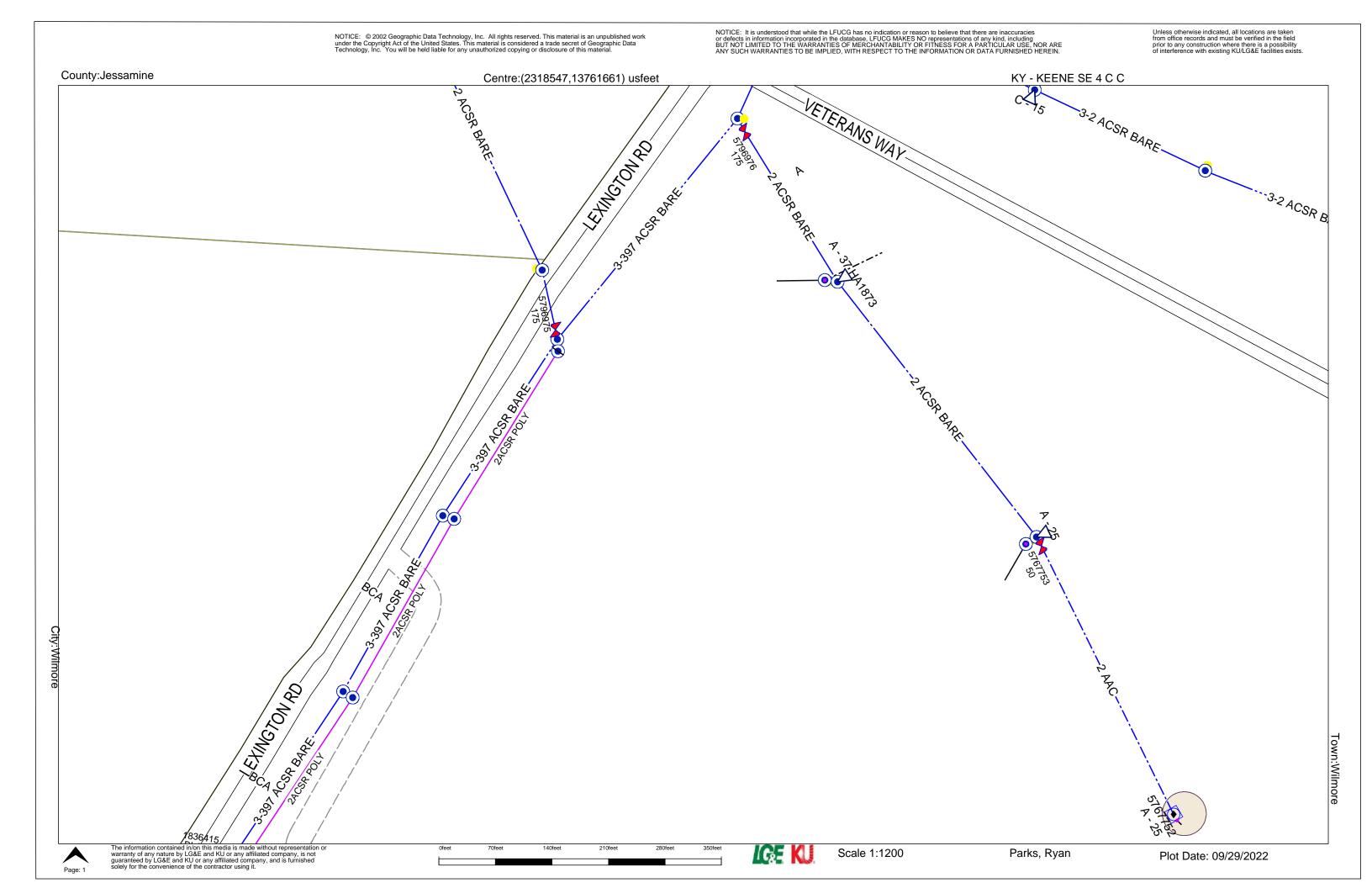


# **APPENDIX F – UTILITIES IN STUDY AREA**



Unless otherwise indicated, all locations are taken from office records and must be verified in the field prior to any construction where there is a possibility of interference with existing KU/LG&E facilities exists.





Date: 10/4/2022 KY RT/29 orrison St W College St Broadhurst Dr E College St MV/mo. EarthLink Fiber Windstream Fiber Windstream MFS/Adesta Fiber Conduit 0.15 Miles 0.04 0.07 Copper Windstream Conduit --- Aerial - - Aerial - Aerial — Third Party Conduit - - Buried ---- Buried - - Buried --- Aerial ---- Buried 0.05 0.1 0.2 Kilometers

Date: 10/4/2022 **KY RT 29** EarthLink Fiber Windstream Fiber Windstream MFS/Adesta Fiber Conduit 0.09 Miles 0.02 0.04 Copper --- Aerial Windstream Conduit - - Aerial --- Aerial ---- Buried — Third Party Conduit - - Buried - - Buried --- Aerial ---- Buried 0.03 0.07 0.13 Kilometers

