

Data

Needs

Analysis



Scoping Study



Boone County
US-25
From MP 2.264 to 4.859

Prepared by
KYTC District 6

April 2020



I. PRELIMINARY PROJECT INFORMATION

SEGMENT II - KY 16 (WALTON NICHOLSON ROAD) TO KY 338 (RICHWOOD ROAD)

County:	Boone	Item No.:	06-105.00 (Recommended Plan)
Route Number(s):*	US-25	Road Name:	Dixie Hwy
Program No.:		UPN:	FD52 08 25 000-005
Federal Project No.:		Type of Work:	RECONSTRUCTION

2020 Highway Plan Project Description:

CONDUCT PLANNING STUDY TO EVALUATE OPTIONS FOR RECONSTRUCTING US 25 BETWEEN KY 14 (MARY GRUBBS HIGHWAY) AND KY 338 (RICHWOOD ROAD).

Beginning MP:	2.264	Ending MP:	4.859	Project Length:	2.595
In TIP:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Reconcile Project Information in Clearview			
State Class.:	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Secondary	Route is on:	<input type="checkbox"/> NHS <input type="checkbox"/> NN <input type="checkbox"/> Ext Wt		
Functional Class.:	<input checked="" type="checkbox"/> Urban <input type="checkbox"/> Rural Arterial	Truck Class.:	AAA	% Trucks:	11.157
MPO Area:	Cincinnati/Northern Kentucky (OKI)	Terrain:	Rolling		
ADT (current):	9,126 2017				
Access Control:	<input type="checkbox"/> None <input checked="" type="checkbox"/> Permit <input type="checkbox"/> Fully Controlled <input type="checkbox"/> Partial	Spacing:			
Median Type:	<input checked="" type="checkbox"/> Undivided <input type="checkbox"/> Divided (Type):				
Existing Bike Accommodations:	None	Ped:	<input type="checkbox"/> Sidewalk		
Posted Speed:	<input type="checkbox"/> 35 mph <input type="checkbox"/> 45 mph <input checked="" type="checkbox"/> 55 mph <input type="checkbox"/> Other (Specify):				
KYTC Guidelines Preliminarily Based on :	45 MPH Proposed Design Speed				

COMMON GEOMETRIC

Roadway Data:	EXISTING	PRACTICES**	
No. of Lanes	2	5	Existing Rdwy. Plans available?
Lane Width	10 ft	11 ft	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Shoulder Width	1 ft	Curb & Gutter	Year of Plans: _____
Max. Superelevation***	Unknown	6%	<input type="checkbox"/> Traffic Forecast Requested
Minimum Radius***	Unknown	643 ft	Date Requested: _____
Maximum Grade	Unknown	7%	<input type="checkbox"/> Mapping/Survey Requested
Minimum Sight Dist.	Unknown	360 ft	Date Requested: _____
Sidewalk Width(urban)	N/A	5 ft	Type: _____
Clear-zone [†]	Unknown	20-25 ft	
Project Notes/Design Exceptions?	Used Urban Arterial Streets		

Bridge No.:#	008B00060N (KY-16 over US-25)	
Sufficiency Rating	93.0 (Fair)	
Total Length	394 ft	Existing Geotech Data Available?
Width, curb to curb	44 ft	<input type="checkbox"/> Yes <input type="checkbox"/> No
Span Lengths	95.10 ft	
Year Built	1979	
Posted Weight Limit	None	Detour Length(s): 12.6 mi
Structurally Deficient?	No	
Functionally Obsolete?	No	
Existing Bridge Type	State	

*If more than one road is included in the project, include additional sheets.

**Based on proposed Design Speed

***AASHTO's A Policy on Geometric Design of Highways and Streets

+AASHTO's Roadside Design Guide

#If more than two bridges are located on the project, include additional sheets.

II. PROJECT PURPOSE AND NEED

A. Legislation

As of January 2020, a project which has been supported by Representative Sal Santoro, is in the Recommended Six Year Highway Plan with the project description: conduct planning study to evaluate options for reconstructing US-25 between KY-14 (Mary Grubbs Highway) and KY-338 (Richwood Road). This project and its associated funding are subject to change once the Enacted Six Year Highway Plan is released, which is expected to be in April of 2020.	<i>Funding</i>	<i>Phase</i>	<i>Year</i>	<i>Amount</i>
		P		
		D		
		R		
		U		
	C			

B. Project Status

Local legislators have asked the Kentucky Transportation Cabinet to investigate the feasibility of reconstructing US-25 from the intersection with KY-14 (Mary Grubbs Hwy) to KY-338 (Richwood Rd). Because of the growth in the vicinity of KY-338, KYTC is actively reconstructing the I-75/KY-338 interchange (Item No. 6-18.00). Project limits for this reconstruction also include a portion of US-25, where a Single Point Urban Interchange (SPUI) will be constructed at the intersection with KY-338. From the SPUI, US-25 will be a five-lane urban section south to Transport Dr, where it will narrow down to a three-lane urban section until it ties back in with existing US-25 at Logistics Blvd. Pedestrian facilities will exist throughout entirety of the project, spanning from the intersection with Triple Crown Blvd/Grand National Blvd in the west, through the interchange, to the eastern terminus of KY-338. A shared-use path will extend southward along the west side of US-25 to Logistics Blvd.

KY-16 intersects US-25 via a flyover overpass. This overpass also bridges over two rail lines immediately east of US-25: Cincinnati, New Orleans and Texas Pacific (CNO&TP) Railway — which is operated by Norfolk Southern (NS) Railroad — and CSX Transportation. The intersection of KY-16 and US-25 is situated approximately midway between Walton and Richwood. Given the length of the corridor and based on reconstruction projects in the urban footprint being costly, it is recommended that the corridor be divided into two segments with the intersection of KY-16 being a logical terminus between the two. Therefore, each segment could have independent utility and overall project costs would be more manageable/programmable. The existing environs of the north segment are such that "traditional" widening of the corridor will be more a manner of rote, having adequate room for additional right-of-way and minimal historical concerns. For the south segment, design complexities exist due to the close adjacency of existing buildings to US-25 and the increased likelihood that some of these buildings might be culturally historic. "Simple" widening of US-25 to meet capacity and size of vehicles, in addition to making provisions for pedestrians, will necessitate creative solutions to meet transportation needs while competing for space with existing buildings and utilities. Furthermore, this segment will likely require more effort during the public involvement phase. For these reasons, a more detailed planning study is recommended for the segment of US-25 between KY-14 and KY-16.

Growth in the Walton area resulted in KY-14 being extended under CNO&TP via underpass in 2010. Further, in the FY 2020-2026 Recommended Highway Plan (dated January 2020) is Item No. 6-80: reduce congestion and improve traffic mobility at the interchange of I-75 and KY-14 in Walton.

Existing CHAF ID 20190019 encompasses this corridor and has the following description: improve safety & mobility, and address geometric deficiencies along US 25 (Dixie Hwy) between KY 16 (Mary Grubbs Hwy) and KY 338 (Richwood Road). In the 2020 SHIFT cycle, this project had score of 38.9 and was sponsored by OKI MPO.

C. System Linkage

US-25 is a south to north route functionally classified as an Urban Minor Arterial in Northern Kentucky; in Boone County, US-25 links Walton in the south, through Richwood, to Florence in the central area of the county and continues north. It is a vital corridor for growing freight logistics and distribution industries in the area. US-25 is a typical rural two-lane section on rolling terrain from north of Walton to Logistics Boulevard. US-25 is sandwiched between two major north-south facilities: Interstate 71/75 to the west and two railroads (CNO&TP and CSX) to the east. Access to I-71/75 and US-25 is provided just south of the I-71/75 split via KY-14 in Walton and via KY-338 just north of the I-71/75 split in Richwood.

II. PROJECT PURPOSE AND NEED (cont.)

D. Modal Interrelationships

US-25 is on the National Truck Network and is a major freight corridor in the Northern Kentucky Area. Truck volume on this portion of US-25 is 11.157%. This route provides access to freight logistics and distribution industries located on US-25 between Walton and Richwood. Trucks use the route to quickly access I-75 via exits at KY-14 and KY-338.

Cincinnati, New Orleans and Texas Pacific Railway (CNO&TP) — which is operated by Norfolk Southern (NS) — is situated on the east side of US-25 throughout the project limits, largely running parallel to US-25. There is an at-grade crossing on Chambers Rd which is less than 70 feet east of the intersection with US-25.

Currently, the Transit Authority of Northern Kentucky (TANK) runs an express route from Walton to Covington, serving residents who work in the Covington/Cincinnati area. However, TANK is actively re-evaluating system needs and current proposals show this route longer existing once the system redesign is implemented. These changes, if approved as proposed, are expected to go into effect in late 2020.

E. Social Demands & Economic Development

This portion of US-25 is a critical route, providing access to homes, businesses, and communities between Walton and Richwood. Boone County is attractive to freight logistics and distribution industries, due to proximity to major interstates, CVG Airport, rail yards, and ports which allow freight distribution on a local, regional, and global scale. With an estimated 1.1% growth rate over the past year, Boone County is the fastest growing county in the OKI region and one of the fastest growing areas in the state of Kentucky. The type of growth expected in the direct vicinity of this project is expected to be mostly industrial, with plans to add more logistics and distribution hubs along the corridor.

KY-14 is heavily commercialized between I-75 and US-25. KY-338 is also commercialized, including two truck stops, between US-25 and I-71/75. Going eastward on KY-338 beyond the US-25 intersection lies a large industrial park. Boone County's 2035 Planning outlook indicates more residential and commercial growth in Walton and more industrial growth near Richwood. Thus, this approximately four-mile stretch of arterial has a strong origin-destination association with I-71/75. It is no coincidence so many freight logistics and distribution industries are located along US-25 with such immediate access to I-75.

F. Transportation Demand

There is one count station on this segment of US-25. Station 008360, located at mile point 4.5 just north of Transport Dr, is a volume count with an AADT of 9,216 in 2017. A truck percent of 11.157% is inferred from the classification count at Station 008R04, three miles south. In 2011, this station reported an AADT on 9,360; the count dropped to 8,377 in 2014 before rising to its 2017 number. These traffic volumes are expected to continue increasing due to growth in freight logistics hubs and distribution facilities planned in the area. However, a traffic forecast is recommended for this segment in order to ascertain a more definitive analysis.

G. Capacity

This portion of US-25 has two through-lanes, providing adequate capacity to handle current traffic volume. However, the projected growth in the area is expected to increase traffic volumes in the very near future. As noted in Section F above, a traffic forecast is recommended for this segment.

II. PROJECT PURPOSE AND NEED (cont.)

H. Safety

A total of 130 crashes occurred during the five-year period beginning February 3, 2015 on this portion of US-25, 89 of which happened on dry pavement. Of these 130 crashes, 29 resulted in injury, 1 was fatal, 58 involved a single vehicle, and 25 were rear-end collisions. A high concentration of these crashes exists at various major intersections along US-25. There is also a high concentration of crashes along the curve between mile points 2.7-3.0, most of which occur in wet conditions. Additionally, Cincinnati, New Orleans and Texas Pacific Railway (CNO&TP) runs on the east side of US-25 throughout the project limits. On October 3, 2014 — just prior to the five-year period in which crash data was analyzed — a fatality crash involving a train occurred at the at-grade railroad crossing of Chambers Rd.

Based on the crash data above, a Critical Rate Factor (CRF) of 0.52 can be calculated over the length of the segment. While this is not typically indicative of concerning safety issues along the corridor, positive Excess Expected Crash (EEC) values exist at several spot locations. In most cases, positive EEC values can be used as a better predictor of safety issues than CRF. The area with highest EEC (21.15) exists between Logistics Blvd and Transport Dr; this location is being addressed with Item No. 6-18.00. The next-highest EEC (7.55) exists at the intersection with KY-16. A third potentially troubling safety issue exists at the intersection with KY-2951 (Chambers Rd), where an EEC of 3.95 exists. This safety data is valuable at the planning level as a way to identify potential problem areas; however, more in-depth safety analysis is recommended for this segment during Phase 1 Design.

I. Roadway Deficiencies

Much of the roadway characteristics of the US-25 corridor date back to its construction in the 1940's. Lane widths and shoulders are narrow — 10 ft and 1 ft, respectively — which is problematic given the amount of truck traffic present along the corridor. The route follows rolling terrain which results in limited sight distances along the corridor, especially at intersections and drive entrances. The paved shoulders are degrading along some portions of the roadway, with asphalt slumping away along the edges. Pavement conditions are poor in some areas which are likely caused by some combination of inadequate subgrade, poor soil conditions, and sliding side slopes. These roadway characteristics indicate US-25 is contextually a rural road with increasingly urban needs. As noted in Section D above, there is an at-grade crossing of CNO&TP less than 70 ft east of US-25 on Chambers Rd.

III. PRELIMINARY ENVIRONMENTAL OVERVIEW

A. Air Quality

Project is in: Attainment area Nonattainment or Maintenance Area PM 2.5 County

STIP Pg. #: [redacted] TIP Pg. #: [redacted]

Boone is in maintenance for Ozone in 2015 8-hr std. OKI TIP must meet transportation conformity

B. Archeology/Historic Resources

Known Archeological or Historic Resources are present

The Robert Chambers House at 118 Chambers Road is listed on the NR with a boundary that extends to the ROW line of Chambers Road and approx 200 feet to the west from US-25. The other listed property is the Abner Gaines House on 150 Old Nicholson Road. As this and other potentially eligible structures within the footprint are on the other side of NS, it is unlikely this project would have a direct impact. However, visual impacts could exist and create an adverse effect. A full historic and archaeological survey for eligibility and effects is required.

C. Threatened and Endangered Species

Species that could potentially be impacted in this area are Running Buffalo Clover, Indiana Bat and Northern Long Eared Bat. Mitigation for Bat impacts to suitable trees would require use of Imperiled Bat Programmatic MOA and payment into the mitigation fund or following tree cutting restrictions.

D. Hazardous Materials

Potentially Contaminated Sites are present Potential Bridge or Structure Demolition

A Phase 1 Environmental Site Assessment will be required to determine if any past and present uses of properties in this stretch of US-25 has potential for contaminated soils. Several EPA facilities exist in the general area, but not specifically in this section of US-25, according to the EPA database. Asbestos testing will be required for any building or bridge demolitions.

E. Permitting

Check all that may apply: Waters of the US MS4 area Floodplain Impacts Navigable Waters of the US Impacts
Are 401/404 Permits likely to be required? Yes No Impacts to: Wetlands Stream/Lake/Pond
 ACE LON ACE NW ACE IP DOW IWQC Special Use Waters

No stream or wetlands appear to be present in the area impacted by this project, based on NWI data. Verification through DEA permits section will be done in the design phase.

F. Noise

Are existing or planned noise sensitive receptors adjacent to the proposed project? Yes No
Is this considered a "Type I Project" according to the [KYTC Noise Analysis and Abatement Policy?](#) Yes No

If additional lanes are added, then a detailed noise study would be required due to residences in area.

G. Socioeconomic

Check all that may apply: Low Income/Minority Populations affected Relocations Local Land Use Plan available

Due to potential relocations, environmental justice surveys may be required.

H. Section 4(f) or 6(f) Resources

The following are present on the project: Section 4(f) Resources Section 6(f) Resources

The historic 4(f) resources are detailed above in Section B. No known recreational 4(f) resources are identified in the project area.

Anticipated Environmental Document: CE Level 1 

IV. PROJECT SCOPING, NEEDS & PURPOSE

A. Scoping & Need:

The US-25 corridor between Walton and Richwood was constructed in the early 1940's and has had minimal upgrades to keep pace with the economic growth of the communities. In the vicinity of Walton, homes and businesses are constructed close to the edge of the roadway, reflective of a bygone era. The city dates back to the 1840s, raising historical concerns. Walton buildings front onto sidewalks, many being brick-laid. Overhead utilities also exist within the narrow footprint. On the northern section of the corridor near KY-338 (Richwood Rd), farms have been developed into large warehouses.

With US-25 and Cincinnati, New Orleans and Texas Pacific (CNO&TP) Railway — which is operated by Norfolk Southern (NS) Railroad — being so closely situated to each other, consideration of the adjacency will affect potential design solutions. For the proposed north section of the corridor split, Chambers Rd has an at-grade crossing with CNO&TP that is approximately 70 feet from the intersection with US-25. Being so close, the at-grade crossing will influence design. For the south section, CNO&TP crosses US-25 at-grade immediately south of Alta Vista Dr. Three approach roads in this segment have at-grade crossings with the railroad which have the potential to affect design: Locust St (~335 feet), Church Street (~255 feet), and Depot St (~350 feet).

Based on the former KY-14 (Mary Grubbs Hwy) extension project and the active KY-338 Interchange reconstruction project, dealing with NS will be long, difficult, and costly; as such, the widening of US-25 at Alta Vista Dr must be considered a design challenge for the project.

The City of Walton has a Local Public Agency project to provide pedestrian access on High St over CNO&TP. Challenges with meeting the American Disabilities Act and requirements of CNO&TP and NS have delayed the design of the project. While the intent of the project is not part of this DNA's scope, a general awareness of the existence of the project is important.

Relocation of utilities overall, will be more complex for the south section than the north section.

The environmental document could be done for the entire corridor or each respective section. Complexities of the south section are such that it is probable that a Categorical Exclusion 3 document will be necessary. The north section could possibly qualify as either a Categorical Exclusion 1 or 2. As noted above, with a section break at KY-16 both projects have individual utility.

B. Draft Project Purpose:

The purpose of this project is to improve regional connectivity and growth, improve travel times and safety. Improvements to safety shall reflect improved sight distances as can be effected by roadway geometry: at intersections and for horizontal and vertical curves. The project should also assess and improve safety as related to potential challenges associated to nearby at-grade rail crossings on approach roads. The project shall address meeting the multimodes of pedestrians, transit, freight and rail.

V. PROJECT ESTIMATE & METHODOLOGY

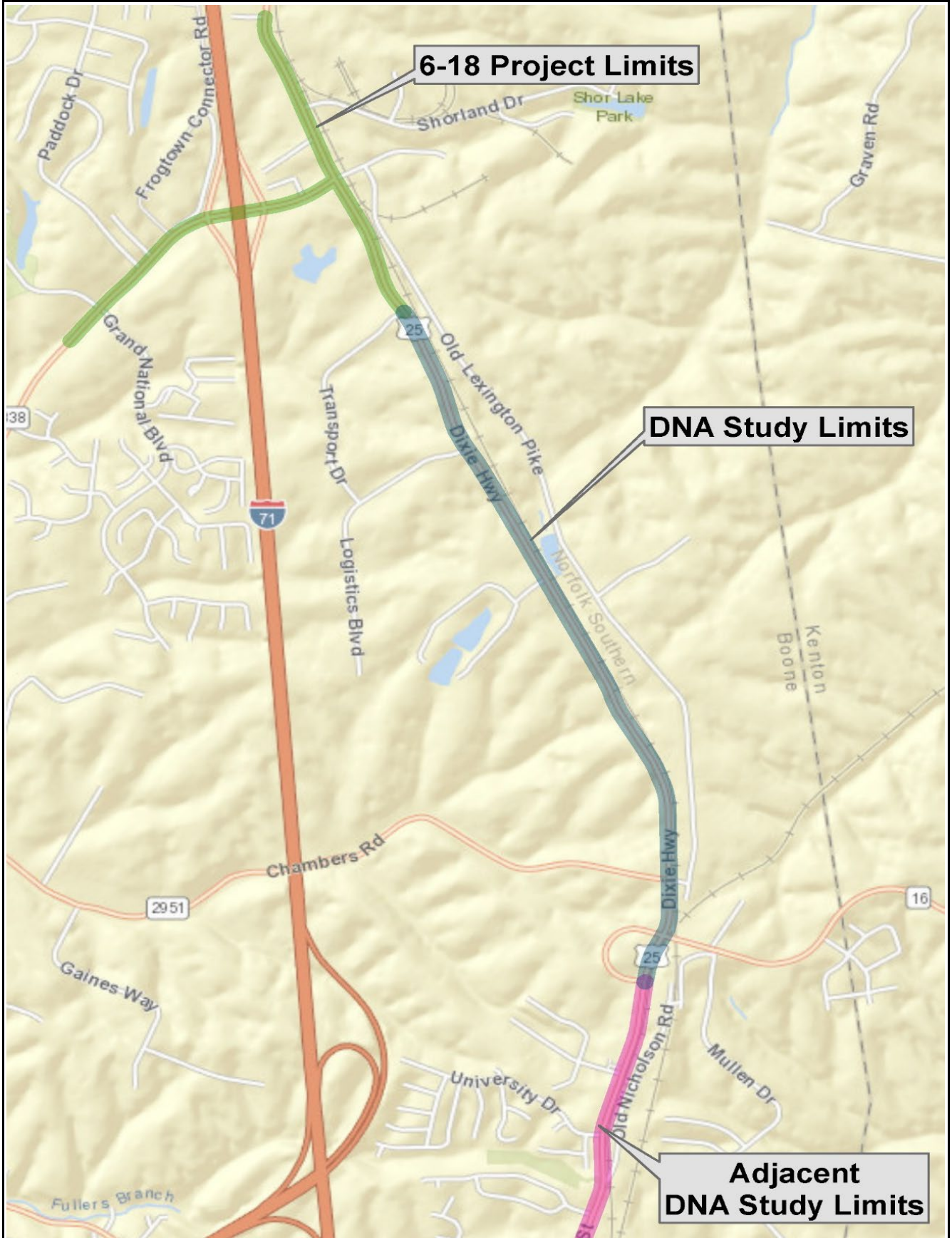
Estimate Methodology:	Current Estimate	
Estimate was based on reconstructing US-25 from a 2-lane rural typical section to a 5-lane urban typical section with curb, gutter, and a shared-use path on one side from KY-16 (mile point 2.262) to just north of Transport Dr (mile point 4.481), where it will tie in with the 5-lane section being constructed with Item No. 06-18.00. Right of Way and Utility costs are based on recent similar projects in the vicinity of the project area. An amount of \$500,000 was added to the Utility estimate for coordination with the railroad.	<u>Phase</u>	<u>Estimate</u>
	Planning	
	Design	\$3,330,000
	R/W	\$12,710,000
	Utilities	\$2,780,000
	Const	\$22,190,000
	Total	\$41,010,000

VI. UTILITIES POTENTIALLY AFFECTED - CONTACT INFORMATION

Company Name -	Walton Water Works
Contact -	Roger Williams
Address -	P.O. Box 95, Walton KY 41094
Phone No. -	(859) 485-4383
Company Name -	Boone County Water District
Contact -	Mike Rouse
Address -	2475 Burlington Pike, Burlington, KY 41005
Phone No. -	(859) 586-5190
Company Name -	Duke Energy (Electric)
Contact -	Nick Melillo
Address -	2010 Dana Avenue, Cincinnati, OH 45207
Phone No. -	(513) 458-3825
Company Name -	Duke Energy (Gas)
Contact -	Gerry Helm
Address -	1262 Cox Avenue, Erlanger, KY 41018
Phone No. -	(859) 534-4357
Company Name -	Owen Electric Cooperative
Contact -	Lucas McNally
Address -	8205 Highway 127 North, P.O. Box400, Owenton KY 403
Phone No. -	(502) 563-3494
Company Name -	Sanitation District No. 1
Contact -	Andy Aman
Address -	1045 Eaton Drive, Fort Wright, KY 41017
Phone No. -	(859) 578-6880
Company Name -	Cincinnati Bell
Contact -	Angela Roach
Address -	221 East Fourth Street, Building 121-900, Cincinnati OH 45201
Phone No. -	(513) 565-7187
Company Name -	Charter/Spectrum
Contact -	Joseph Angel
Address -	10920 Kenwood Road, Blue Ash, OH 45242
Phone No. -	(513) 233-5705
Company Name -	Windstream
Contact -	Mark Ware
Address -	619 15th Street, Ashland, KY 41101
Phone No. -	(606) 329-6195
Company Name -	Cincinnati, New Orleans and Texas Pacific Railway
Contact -	E. W. Chambers (Norfolk Southern Corporation)
Address -	1200 Peachtree St, Atlanta GA 30309
Phone No. -	(404) 782-4950
Company Name -	CSX Transportation, Inc.
Contact -	Troy Creasy
Address -	4900 Old Osborne Turnpike, Suite 200, Richmond VA 23231
Phone No. -	(804) 226-7718

Please contact KYTC Central Office Rail Coordinator prior to making any contact with railroad contacts listed above

VII. TABLES AND EXHIBITS



6-18 Project Limits

DNA Study Limits

**Adjacent
DNA Study Limits**

Exhibit 1: Project Location Map

VII. TABLES AND EXHIBITS (cont.)

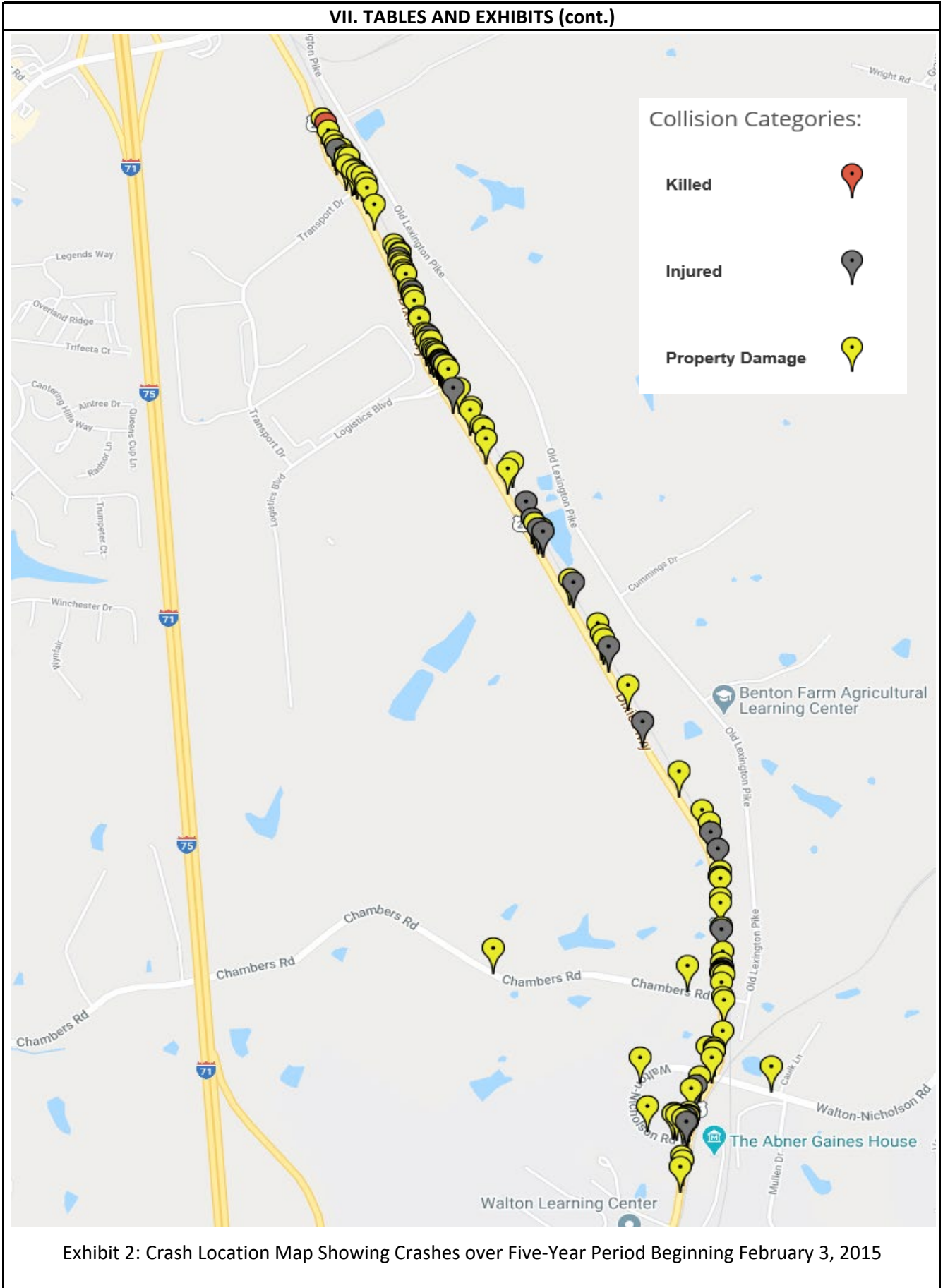


Exhibit 2: Crash Location Map Showing Crashes over Five-Year Period Beginning February 3, 2015

VII. TABLES AND EXHIBITS (cont.)



Exhibit 3: View from KY-16 Looking East towards US-25 Intersection



Exhibit 4: View of US-25 and KY-2951 (Chambers Rd) Intersection Looking Southwest

VII. TABLES AND EXHIBITS (cont.)



Exhibit 5: US-25 Looking North, Situated Just North of KY-2951 (Chambers Rd)



Exhibit 6: US 25 Looking North Approaching Logistics Blvd Intersection

VII. TABLES AND EXHIBITS (cont.)



Exhibit 7: US-25 and Logistics Blvd Intersection Looking Northwest



Exhibit 8: US-25 Looking South, Just South of Logistics Blvd