

# INTERSTATE DRIVE EXTENSION ALIGNMENT STUDY – SECTIONS 2 & 3 CITY OF CROSSVILLE



## Table of Contents

1.0 Introduction	
1.1 Project Limits .....	2
1.2 Purpose and Needs .....	2
2.0 Traffic Analysis .....	3
3.0 Typical Section .....	7
4.0 Alignments	
4.1 Introduction .....	7
4.2 Section 2 .....	8
4.3 Alternative A1 .....	10
4.4 Alternative A2 .....	11
5.0 Preliminary Wetland Investigation .....	13
6.0 Cost Estimates .....	14
7.0 Summary .....	18

## List of Figures

Figure 1 – Map of Project

Figure 2 – Existing 2024 AADT for Main Roadways

Figure 3 – Estimated 2026 AADT for Main Roadways

Figure 4 – Estimated 2035 AADT for Main Roadways with No-Build

Figure 5 – Estimated 2035 AADT for Main Roadways with Interstate Drive Extension Completed

Figure 6 – Interstate Drive Typical Section

Figure 7 – 15 – Alignment Views

Figure 16 – Preliminary Wetland and Stream Impacts

## 1.0 Introduction

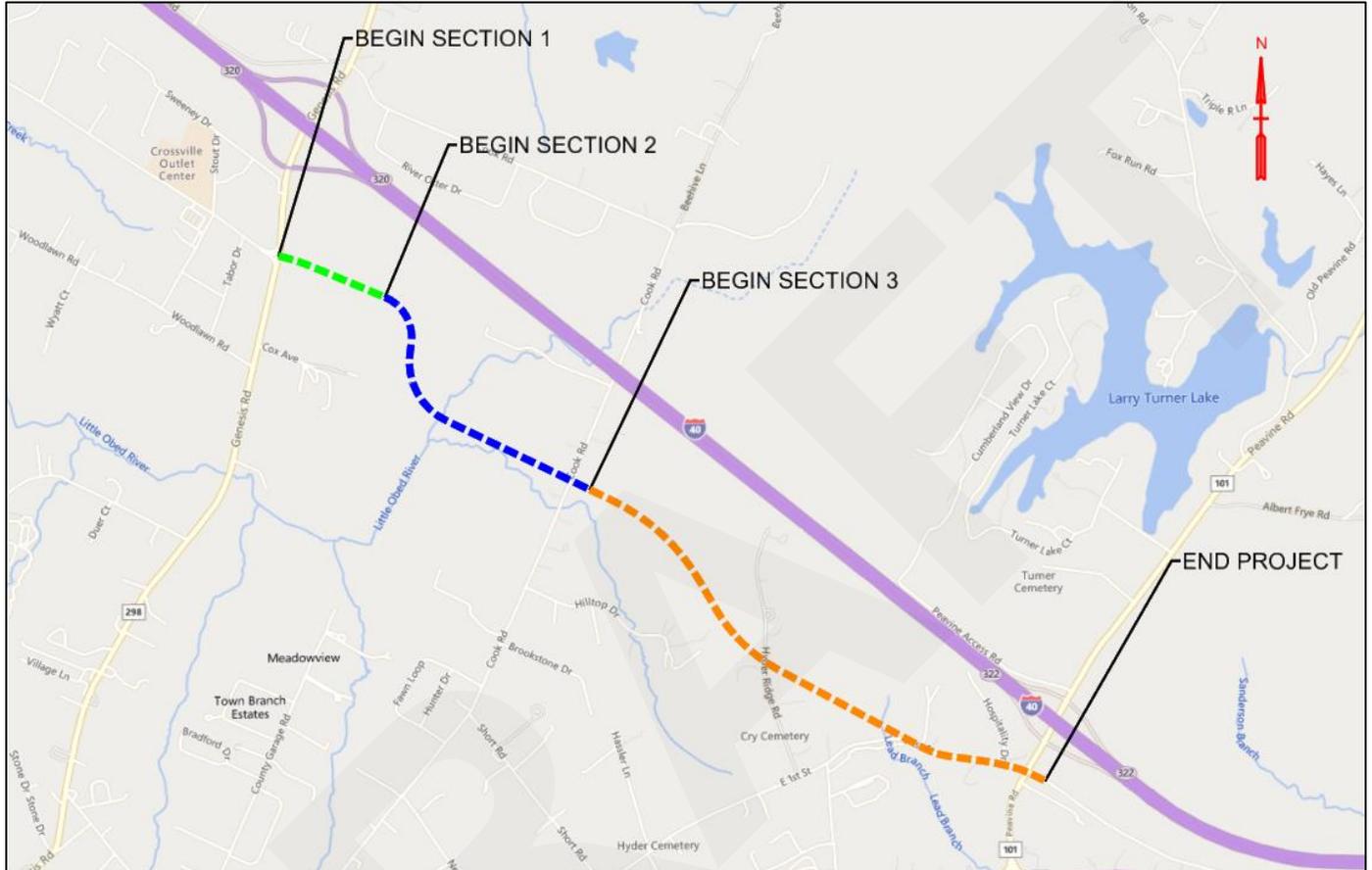


Figure 1 – Map of Project

### 1.1 Project Limits

- Overall Limits: SR 298 (Genesis Road) and SR 462 (Interstate Drive) Intersection to SR 101 (Peavine Rd) and East 1st Street Intersection
- Total Length: Approximately 2 miles
- Section 1 Limits: SR 298 (Genesis Rd) to North of CoLinX Facility (~0.2 miles)
- Design complete. Construction to begin in the Summer of 2026.
- Section 2 Limits: North of CoLinX Facility to Cook Road (~0.7 miles)
- Section 3 Limits: Cook Road to SR 101 (Peavine Rd) and East 1st Street Intersection (~1.1 miles)

### 1.2 Purpose and Needs

The purpose of this study is to evaluate potential roadway alignments to extend Interstate Drive from SR 298 (Genesis Road) to SR 101 (Peavine Road).

Benefits of the proposed new roadway alignment include:

- Completes the local bypass around the north side of the City, providing an alternate route for local traffic to bypass the Downtown district and reach surrounding destinations more easily through a reduction of travel times, turning movements, and fewer miles traveled.
- Reduces traffic volumes in the Historic Downtown district, resulting in less congestion and improved safety for motorists, pedestrians, and bicyclists.
- Provides access to prime undeveloped real estate for economic development and job creation with efficient freight access to Interstate 40 (I-40), which is located parallel to the proposed alignment of the Interstate Drive Extension.
- Due to the inability of local traffic to travel efficiently between Genesis Road (Exit 320) & Peavine Road (Exit 322), the new parallel corridor plans to reduce the amount of local motorists utilizing I-40. Currently, local traffic mixes with high-speed, long-distance traffic by entering I-40 at one of these interchanges and then immediately exits two miles later.
- Reduces turning movements at the ramp terminal intersections of the two I-40 interchanges noted above, which will improve safety and traffic operations (left turn and angle crashes are among the types of crashes that occur most frequently).
- Provides alternative access to nearby schools and residential areas.
- Improves connectivity for non-motorized modes as the roadway will include sidewalks and bicycle lanes along both sides of the roadway.

Conсор North America Inc (Conсор) has created two proposed alignments, Alternative A1 and Alternative A2, that aim to accomplish this. Given that the design of Section 1 of the alignment has been completed, this study focuses on Section 2 and Section 3.

## 2.0 Traffic Analysis

SR 462 (Northside Drive / Interstate Drive) is a local bypass of the City of Crossville. It currently connects with US 70 at the west side of the city, traveling around the north side of the city, and terminating at SR 298 (Genesis Road). The proposed Interstate Drive Extension will extend SR 462 to the east, allowing connection back to US 70 on the east side of the City, among other roadways. Thus, local motorists can bypass the Downtown district without having to enter I-40 and exit shortly after at the next interchange or the subsequent interchange.

This cursory analysis is intended to demonstrate that constructing the proposed Interstate Drive Extension (future SR 462 Extension) with a five-lane typical section (two travel lanes in each direction with a center two-way left turn lane) would be justified. The anticipated opening year of the entire proposed extension is currently unknown. This would depend on developmental commitments and funding availability. For this analysis, the opening year for the entire section of the Interstate Drive Extension from SR 298 (Genesis Road) to SR 101 (Peavine Road) was assumed to be 2035. While the project is being undertaken by the City of Crossville, the roadway is expected to become acquired by TDOT after its completion, in the same manner as the previous sections.

Per the City of Crossville's website: "The City of Crossville currently only has zoning ordinances pertaining to the airport, floodplains, signs, mobile homes, and mobile home parks. We have no ordinances which specify commercial, industrial, residential, or other areas." The scope of development that would occur with the completion of the Interstate Drive Extension is unknown.

Potential developments are likely to follow previous typical patterns. A depth of approximately 200 feet to 400 feet along the corridor's right of way would be commercial, retail, other businesses, light manufacturing and

distribution. Behind and adjacent to this width is likely to be residential, both single and multi-family.

As the scope of any potential developments along the proposed roadway is unknown, the focus of this analysis is to demonstrate that constructing the proposed Interstate Drive Extension would be justified, and to provide recommendations to help ensure that the Interstate Drive Extension is constructed to meet anticipated operational conditions without the necessity for “re-work” shortly after construction is completed, helping to ensure the effective use of limited funds.

To project future traffic volumes on a new roadway alignment, a Travel Demand Model is commonly created. This would require information that is currently unavailable and outside of the scope of this study.

Annual Average Daily Traffic (AADT) counts from 2024 for the main roadways surrounding the Interstate Drive Extension project area were obtained from the Tennessee Department of Transportation’s (TDOT) Annual Average Daily Traffic maps website. These counts are shown in **Figure 2** on the next page.

Using growth rates as described in the following paragraph, the AADT counts were projected to 2026 and the assumed opening year of 2035.

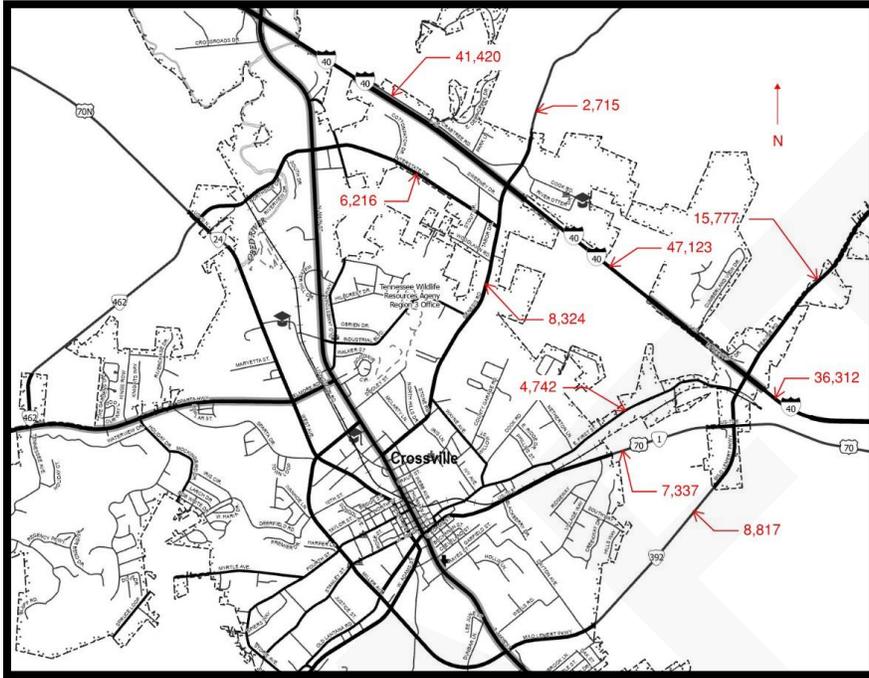
The Center Hill Rural Planning Organization (Center Hill RPO) is a collaboration between the Upper Cumberland Development District (UCDD) and TDOT to facilitate input from rural counties to TDOT for transportation planning. Per the Center Hill RPO Transportation Plan (2021), the population of the counties in the RPO, which includes Cumberland County, where Crossville is located, was 241,389 in 2018. In 2050, the population is estimated to be 289,919. This results in a 0.574% growth rate. Since the project is in Crossville, a growth rate of 1% was assumed since cities tend to grow at a faster rate than rural areas. The growth rate on I-40 was assumed to be 2% as it serves long distance traffic connecting faster and growing major urban centers in addition to connecting local cities.

Note that I-40, which parallels the proposed Interstate Drive Extension immediately to the north, carries a 2024 AADT of 47,123 vehicles per day (vpd) between the SR 298 (Genesis Road) and SR 101 (Peavine Road) interchanges, which is at least 5,703 vpd higher than the adjacent sections of I-40 west and east of these interchanges. This indicates that motorists are using I-40 as a local roadway between SR 298 (Genesis Road) and SR 101 (Peavine Road). The SR 462 Interstate Drive Extension will reduce traffic volumes on I-40 between these two diamond interchanges, as it will parallel I-40 immediately to the south, and local traffic would not have to enter I-40 and immediately exit at the next interchange. This will result in improved operations at the two interchanges and provide a buffer to accommodate the interchanges handling increased traffic volumes from future developments.

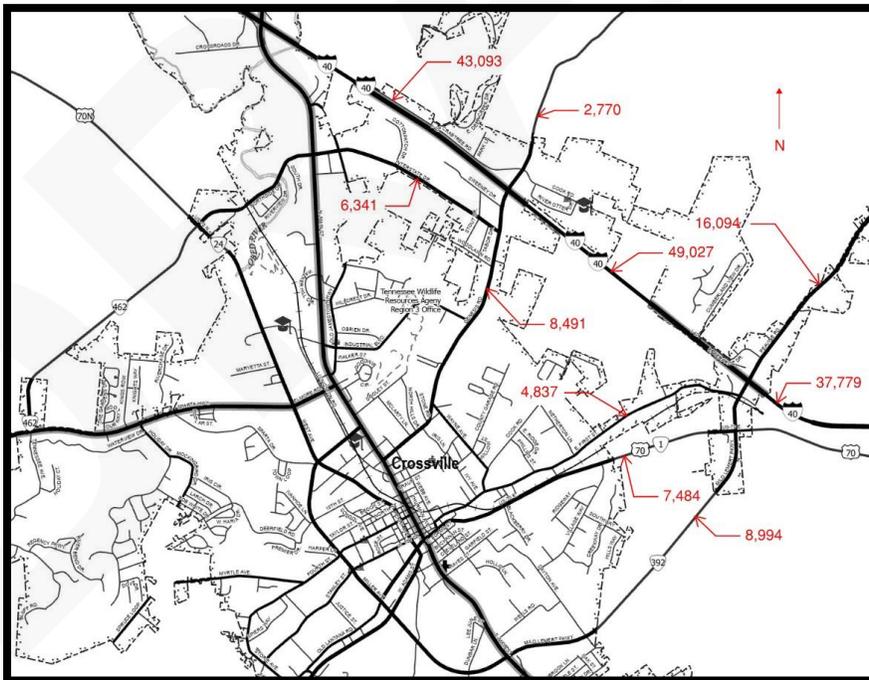
**Figure 3** on the next page illustrates the projected 2026 AADT’s.

**Figure 4** on Page 6 illustrates the projected 2035 AADT’s, without the proposed Interstate Drive Extension being constructed.

**Figure 5** on Page 6 shows the projected opening year 2035 AADT of the proposed SR 462 Interstate Drive Extension along with the same roadways in Figures 3 and 4 considering that the project is fully opened from SR 298 (Genesis Road) to SR 101 (Peavine Road). The new roadway would be expected to relieve local traffic from having to utilize I-40 between the SR 298 (Genesis Road) and SR 101 (Peavine Road) interchanges. It would also relieve volume from US 70 through Downtown Crossville and slightly relieve volume from East 1st Street.



**Figure 2 - Existing 2024 AADT For Main Roadways**  
*(Note: Obtained from TDOT AADT Maps Website)*



**Figure 3 - Projected 2026 AADT For Main Roadways**

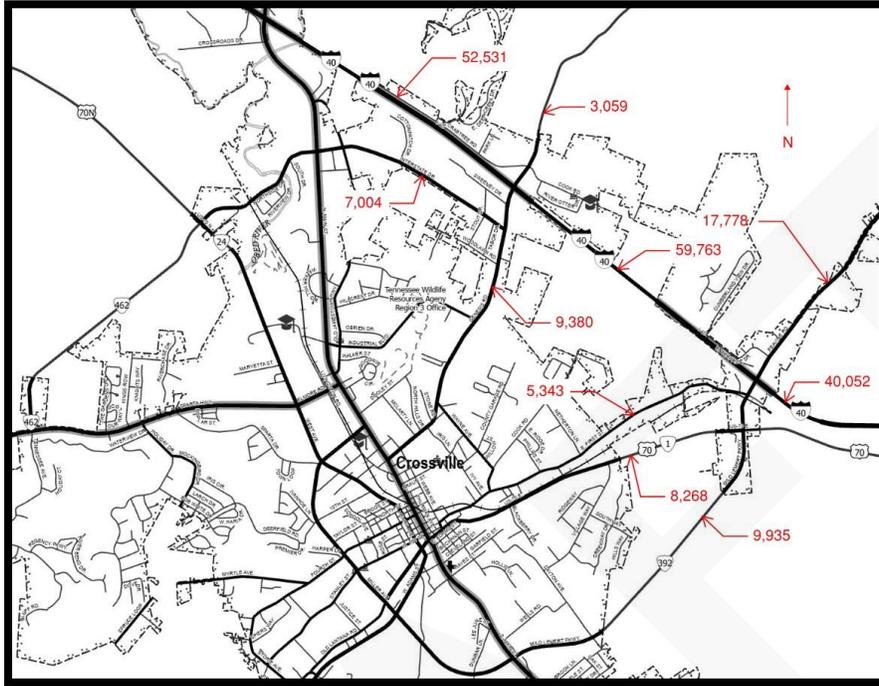


Figure 4 - Projected 2035 AADT For Main Roadways with No-Build

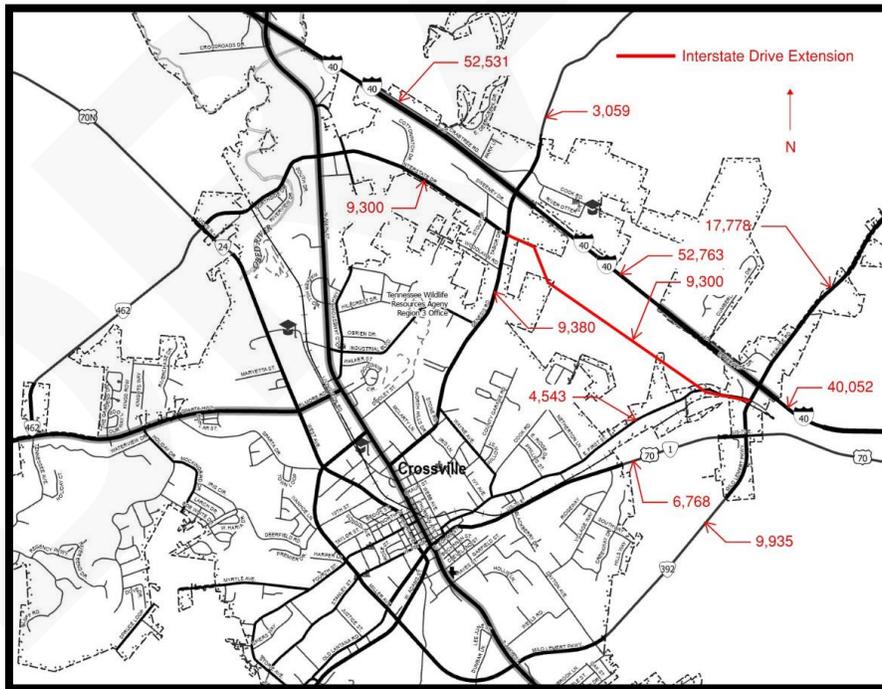
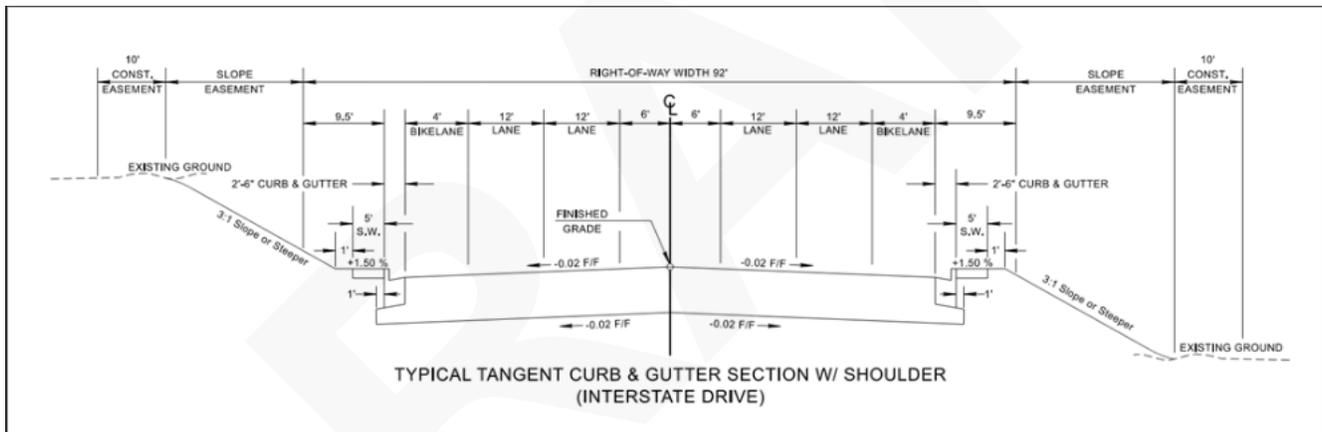


Figure 5- Projected 2035 AADT For Main Roadways with Interstate Drive Extension Completed

Currently, Interstate Drive between Main Street & Genesis Road carries an AADT of 6,216 vpd as shown in **Figure 2**. With the completion of Section 2 & 3 of the Interstate Drive Extension, it can be assumed that the volumes would mimic the volumes carried on the existing sections to the west. It is assumed that 2,000 vpd would divert from US 70, 800 vpd would divert from East First Street, and 7,000 vpd would divert from I-40. Thus, the AADT for the extension is estimated to be 9,300 vpd without any additional commercial or residential developments included.

It can be conservatively estimated that future development along the new extension could range from commercial and residential developments such as strip shopping plazas, single-family housing developments, apartment complexes, and light manufacturing or warehousing. For example, utilizing the ITE Trip Generation Manual, a development of 100 single-family homes would generate approximately 943 trips on an average day. 250,000 square feet of light industrial would generate approximately 1,249 trips on an average day. Thus, even with a moderate amount of development along the proposed extension, the AADT would be expected to easily surpass 10,000 vpd. Volumes below 10,000 vpd are typically well-served by a roadway with one travel lane in each direction. Two travel lanes in each direction for the Interstate Drive Extension are recommended to match the previously constructed sections to the west and to account for the unknown scope of future developments.

### 3.0 Typical Section



**Figure 6 – Interstate Drive Typical Section**

**Figure 6** shows the typical section that is used for the Interstate Drive Extension, based on TDOT Standard Drawing RD18-TS-6. Using the recommendations from the traffic analysis, the section was selected to match the existing section of Interstate Drive west of Genesis Road. All end conditions discussed throughout this study are based on this typical section.

## 4.0 Alignments

### 4.1 Introduction

Alternatives A1 and A2 were designed to avoid large natural features, major changes in grade, and to minimize the number of relocations that would be required while still providing room for any future developments. The majority of the two (2) alignments are identical except for how they tie into the existing roadway at East 1st Street.

The preliminary topographic features that have been identified and will be discussed further in the study are as follows:

Alternative A1	Alternative A2
Two Stream Locations	Two Stream Relocations
One Stream Crossing	One Stream Crossing
One Residential Relocation	Two Residential Relocations
Approximately 0.26 Acres of Wetland Impacts	Approximately 0.20 Acres of Wetland Impacts
2.01 Miles Long	2.02 Miles Long

## 4.2 Section 2



Figure 7 – Alternative A1 & A2, Section 2 of Alignment

Section 2 of the proposed alignment is identical for Alternative A1 & A2. At the beginning of Section 2, a tight curve is utilized to reduce potential impacts to the tributary flowing southwest. **Figure 8** shows the layout of Curve #1 and Curve #2 as it moves between the existing CoLinX Facility & new development to the east of the alignment.

In **Figure 8**, the cut slope (denoted by the solid red line) can be seen overlapping with the CoLinX parking lot. A retaining wall could be employed in this location to prevent impacts to the parking lot and reduce acquisition; this will be further evaluated during the design phase of Section 2.

At the end of Curve #2, the alignment crosses a wetland formed by the meeting of two (2) contributors of the Little Obed River. Immediately following this wetland, the alignment crosses the Little Obed River. A box culvert or slab bridge will be required at this location and will be further evaluated during design.



Figure 8 – Section 2 Curve #1 & #2

Between Curve #2 and Cook Road, the tangent section of the alignment closely follows a branch of the Little Obed River, as shown in Figure 9. This will allow more area for future land developments to the north of the corridor; however, it will cause a small stream relocation. Section 2 ends to the east of Cook Road to simplify construction of Section 3



Figure 9 – Section 2 Intersection with Cook Road

### 4.3 Alternative A1



Figure 10 – Alternative A1, Section 3 of Alignment

Alternative A1 and A2 alignments mirror each other until the intersection with Hyder Ridge Road. As the alignment progresses through Section 3, the existing topography rapidly increases in elevation, with grades as high as 35%. To alleviate tough driving conditions for trucks & heavy vehicles, a maximum allowable vertical grade of 6% has been maintained throughout the alignment, with strategic use of vertical curves between cut & fill sections to maintain a more balanced earthwork ordinate.

Additionally, as shown in **Figure 11**, at the start of Section 3 and before the start of Curve #4, the proposed alignment crosses four (4) channels. Drainage will be further evaluated during design.



Figure 11 – Alternative A1, Section 3 Channel Crossings

In an effort to limit the number of required residential relocations, Curve #4 is positioned so that the alignment ties into East 1st Street north of the existing stone yard. As seen in **Figure 12**, the alignment does not intersect with Hyder Ridge Road at a ninety-degree angle due to the considerable number of residences along Hilltop Drive. Therefore, Hyder Ridge Road will be realigned into two separate T-Intersections spaced roughly 250' apart. The same concept is applied to the intersection with East 1st Street where the new tie-in is shifted approximately 600' to the west of the existing roadway.

Alternative A1 crosses a wetland prior to tying into the existing roadway. Following this tie-in, the alignment follows the existing roadway and replaces the current two-lane section with the proposed five-lane, curb and gutter section. The final section of the extension contains a total of seven (7) driveway ramps and two (2) T-Intersections before intersecting Peavine Road, where the proposed signalized intersection would improve movement operations over the existing stop condition.

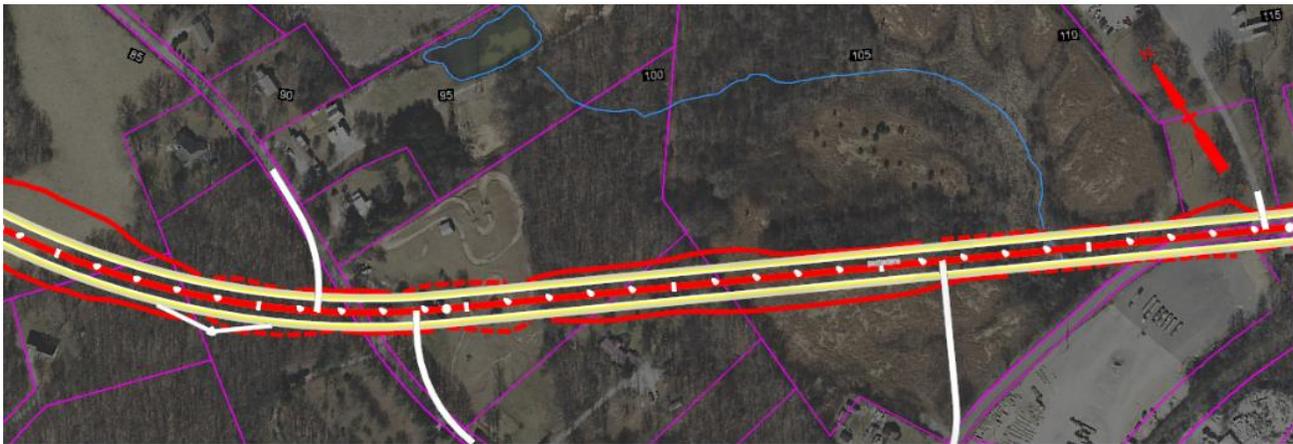


Figure 12 – Alternative A1, Section 3 Intersections with Hyder Ridge Road & E 1st Street

#### 4.4 Alternative A2



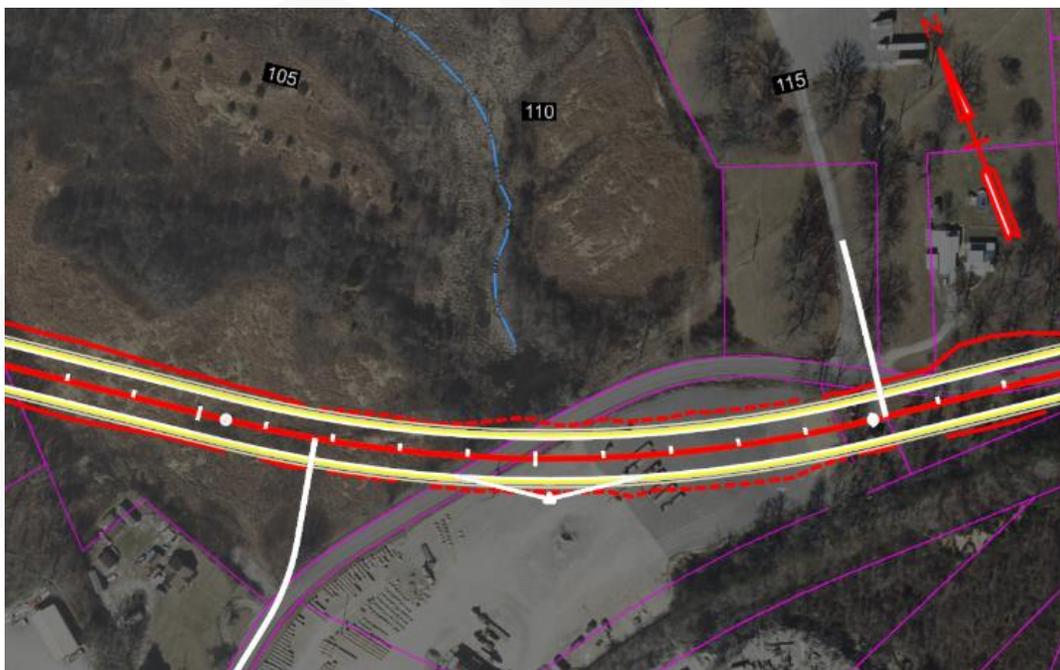
Figure 13 – Alternative A2, Section 3 of Alignment

Beginning at Curve #4, Alternative A2 differs from A1 with a shorter horizontal curve allowing the exit tangent to travel in a more southeasterly direction. This change allows a smoother transition to the final tangent of the proposed alignment before the intersection with Peavine Road. However, the shorter curve length requires an additional property acquisition along Hyder Ridge Road.



**Figure 14 – Alternative A2, Section 3 Intersection with Hyder Ridge Road**

A further consequence of shifting the alignment to the south is that it cuts through the existing stone yard as shown in **Figure 15**. While the impact to the stone yard and required acquisition has greatly increased, the proposed roadway now avoids the existing wetlands north of East 1<sup>st</sup> Street. Additionally, both East 1<sup>st</sup> Street and Tennessee outdoors Drive will require realignment, with the former having reduced impacts and the latter having greater impacts compared to Alternative A1. Following Curve #5, the tangent section follows the existing centerline, matching Alternative A1.



**Figure 15 – Alternative A2, Section 3 Intersection with E 1st Street**

## 5.0 Preliminary Wetland Investigation

A water resource inventory was performed in Section 2 of the proposed alignments to evaluate specific site characteristics and features, including wetland delineations. This inventory determined that Section 2 contains one (1) seep, four (4) streams, one (1) wet weather conveyance, and five (5) wetlands. The most notable of these findings are the four (4) wetlands that are impacted by the alignment, as shown in **Figure 16**.

In addition to the wetlands, an additional stream was revealed along the branch of the Little Obed River, as shown in **Figure 16**. This will require an additional crossing beyond what was originally identified. Prior to any work being performed, the features identified will need to be identified and permitted by TDEC and USACE.

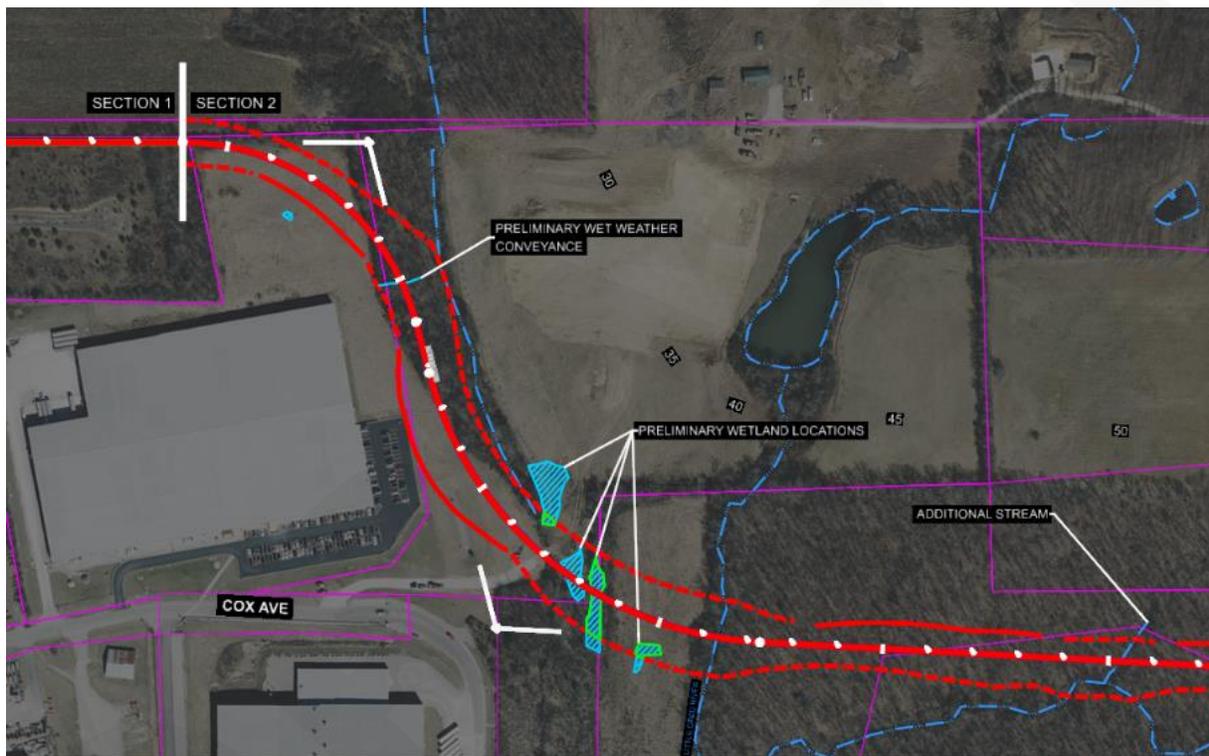


Figure 16 – Preliminary Wetland and Stream Impacts

## 6.0 Cost Estimates

### Preliminary Cost Estimates by Section

- Section 2: Approximately \$13,000,000
- Section 3: Approximately \$21,000,000

See the tables below for a further breakout of the cost of each Section.

Section 2 Cost Estimate			
Project Name	Interstate Dr Extension Alignment Study Section 2		
PIN			
Route	SR 462		
Project Description			
Estimated By	Braden Long	Date	Tuesday, February 10, 2026

Approximate Route Log Mile (BEGIN) =	3.025	(END) =	3.761
Project Length =	0.736	miles	3886 ft
Current Fiscal Year (July-June) =	2026		
Assumed Construction Year =	2030		
Construction Items Inflation Factor =	1.24		4 yrs. for CN inflation
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr.) =	5.50%		
Assumed Yearly Inflation for Right of Way (%/yr.) =	5.50%		
Assumed ROW Year =	2029		
ROW Inflation Factor =	1.17		3 yrs. for ROW inflation
Other Items not Estimated (% of Construction) =	25.0%		
Preliminary Engineering (% of Construction) =	10.0%		
Construction Engineering (% of Construction) =	6.5%		

Construction Items	Cost	Notes
Roadway and Drainage	\$5,625,000	-
TSMO	\$29,000	-
Structures	\$1,750,000	-
	-	-
Subtotal	\$7,404,000	-
Items not Estimated (25%)	\$1,851,000	-

<b>Construction Subtotal</b>		\$9,255,000	-
P.E. Cost	(10%)	\$926,000	
C.E. Cost	(7%)	\$602,000	
Mobilization (% of Construction)	8.00%	\$740,000	
Traffic Control (% of Construction)	5.00%	\$463,000	
Right of Way		\$580,000	
Utilities		\$405,000	

Cost Estimate Totals		2026	2029	2030
<b>Construction</b>		\$10,458,000		\$12,956,000
P.E.		\$926,000		\$1,147,000
C.E.		\$602,000		\$746,000
Right of Way		\$580,000	\$680,000	
Utilities		\$405,000		\$502,000
TDOT Oversight	3.00%	\$389,000		\$482,000
	<b>TOTAL</b>	<b>\$13,360,000</b>	<b>\$680,000</b>	<b>\$15,833,000</b>

<b>Line and Grade Cost Estimate</b>	<b>TOTAL</b>	<b>\$13,360,000</b>	<b>\$680,000</b>	<b>\$15,833,000</b>
-------------------------------------	--------------	---------------------	------------------	---------------------

1 Traffic signal at SR 101 (Peavine Road) will be paid for by new development

---

### Section 3 Cost Estimate

<b>Project Name</b>	Interstate Dr Extension Alignment Study Section 3		
<b>PIN</b>			
<b>Route</b>	SR 462		
<b>Project Description</b>			
<b>Estimated By</b>	Braden Long	<b>Date</b>	Wednesday, January 14, 2026

Approximate Route Log Mile (BEGIN) =	3.761	(END) =	5.045
Project Length =	1.284	miles	6,780 ft
Current Fiscal Year (July-June) =	2026		
Assumed Construction Year =	2030		
Construction Items Inflation Factor =	1.24		4 yrs. for CN inflation
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr.) =	5.50%		
Assumed Yearly Inflation for Right of Way (%/yr.) =	5.50%		
Assumed ROW Year =	2029		
ROW Inflation Factor =	1.17		3 yrs. for ROW inflation
Other Items not Estimated (% of Construction) =	25.0%		
Preliminary Engineering (% of Construction) =	10.0%		
Construction Engineering (% of Construction) =	6.5%		

Construction Items	Cost	Notes
Roadway and Drainage	\$10,639,000	-
TSMO	\$51,000	-
Structures	\$887,000	-
	-	-
Subtotal	\$11,577,000	-
Items not Estimated (25%)	\$2,894,000	-
<b>Construction Subtotal</b>	<b>\$14,471,000</b>	<b>-</b>
P.E. Cost (10%)	\$1,447,000	
C.E. Cost (7%)	\$941,000	
Mobilization (% of Construction) 8.00%	\$1,158,000	

Traffic Control (% of Construction)	5.00%	\$724,000	
Right of Way		\$1,050,000	
Utilities		\$755,000	

Cost Estimate Totals	2026	2029	2030
Construction	\$16,353,000		\$20,258,000
P.E.	\$1,447,000		\$1,793,000
C.E.	\$941,000		\$1,166,000
Right of Way	\$1,050,000	\$1,230,000	
Utilities	\$755,000		\$935,000
TDOT Oversight	3.00%	\$616,000	\$763,000
	<b>TOTAL</b>	<b>\$21,262,000</b>	<b>\$1,230,000</b>
			<b>\$24,915,000</b>

Line and Grade Cost Estimate	<b>TOTAL</b>	<b>\$21,262,000</b>	<b>\$1,230,000</b>	<b>\$24,915,000</b>
------------------------------	--------------	---------------------	--------------------	---------------------

1 Traffic signal at SR 101 (Peavine Road) will be paid for by new development

\*Relocation Costs are not included in this estimate

## 7.0 Summary

- For consistency in traffic operations, driver expectation, and capacity, match the typical section utilized in the recent widening of Interstate Drive west of SR 298 (Genesis Road) extending to US 127/SR 28 - two travel lanes in each direction with a center two-way left turn lane, bicycle lanes, and sidewalks on both sides of the roadway.
- The proposed five-lane typical section would be sufficient to meet capacity demands and provide an acceptable level of service for the foreseeable future.
- Due to anticipated traffic volumes, a traffic signal at the east end of the project, at SR 101 (Peavine Road), would need to be constructed or modified if a traffic signal was installed prior to the project. This is currently the intersection of SR 101 (Peavine Road) and East 1st Street/Chestnut Hill Road. If this intersection is signalized before the Interstate Drive Extension is constructed, the signal design should accommodate the widening of the west leg of the intersection. This intersection should be analyzed to determine if dual left turn lanes would be necessary for the eastbound to northbound movement. A raised median should be considered on the Interstate Drive Extension on its approach to the SR 101 (Peavine Road) intersection due to the Hospitality Drive intersection, Comfort Suites driveway, and the Mr. Zip/Shell gas station/convenience store driveway located near the intersection.
- Most likely a traffic signal would be warranted at the intersection of the Interstate Drive Extension and the realigned approach of East First Street (depending on traffic counts after construction is completed, and the extent of development), located approximately one-half mile west of SR 101 (Peavine Road). Additionally, during the preliminary design phase, a roundabout should be analyzed for viability. While additional right-of-way acquisition and lighting design would be required, roundabouts provide smoother traffic operations and increase public safety when employed at warranted intersections.
- Due to the proximity of Stone Elementary School, located approximately 0.4 miles south of the proposed roadway, and Stone Memorial High School, located approximately 1.4 miles north of the proposed roadway, the intersection of Cook Road with the proposed alignment will require a traffic signal or roundabout as warranted during the preliminary design phase..