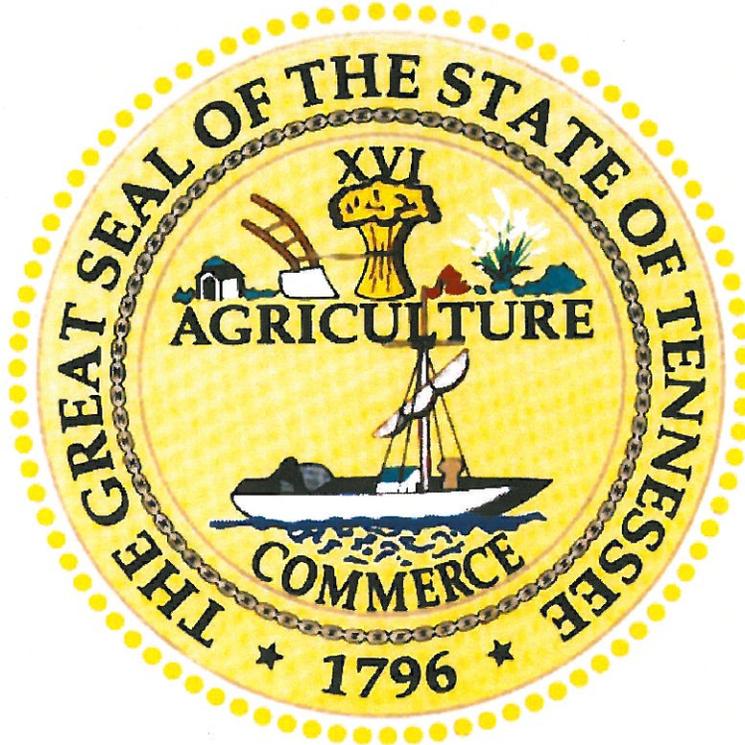


# TRANSPORTATION PLANNING REPORT

*Albert Gallatin Avenue (SR 174) and  
Hatten Track Road Extension  
FROM SR 109 TO SR 174/Dobbins Pike  
GALLATIN, SUMNER COUNTY  
PIN 111041.00*



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In Cooperation with the  
Tennessee Department of Transportation, Project Planning Division*

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*This document is covered by 23 USC § 409 and its production pursuant to fulfilling public planning requirements does not waive the provisions of § 409.*

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## 1.0 PURPOSE OF THE TRANSPORTATION PLANNING REPORT

The subject of this Transportation Planning Report (TPR) is the extension of State Route (SR) 174/Albert Gallatin Avenue and Hatten Track Road from its current western terminus westward to intersect with SR 109 in Gallatin, Sumner County, Tennessee.

The improvement under study in this TPR would begin on the west at SR 109 and would end on the east at SR 174/Dobbins Pike, a distance of approximately 1.8 miles. The western half of the study area is farmland. The eastern half of the study corridor is existing roadway, starting on the west with Hatten Track Road and then a short east-west segment of North Water Avenue. The study area ends at the intersection of north-south North Water Avenue, SR 174/Albert Gallatin Avenue and SR 174/Dobbins Pike.<sup>1</sup> Figure 1 depicts the regional context and Figure 2 depicts the study area.

This TPR is intended to identify:

- The history of planning for the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension;
- The context (setting) of the study area;
- The preliminary need and purpose (goals);
- Stakeholder issues identified early in planning;
- Options developed to satisfy the need;
- Costs of options;
- Potential environmental issues; and
- The adherence of the proposal to the guiding principles of the Tennessee Department of Transportation (TDOT).

The completed TPR will provide the data needed to take the project to the next step, which is slated to be a National Environmental Policy Act (NEPA) document as federal funding assistance has been identified. As previously stated, this TPR will present and evaluate options developed to satisfy the purpose and need. It will also provide a planning level cost estimate that can be used for budgeting purposes. Lastly, through the involvement of stakeholders in the TPR process and through the use of screening for environmental issues, avoidance of sensitive resources or community impacts can be addressed and considered early in the planning process.

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<sup>1</sup> In this TPR, several different roadways are designated as SR 174, including: Long Hollow Pike in the southwest part of Gallatin, Albert Gallatin Avenue just beyond the eastern terminus of the study and Dobbins Pike, which is the eastern project terminus.

Figure 1. Regional Context

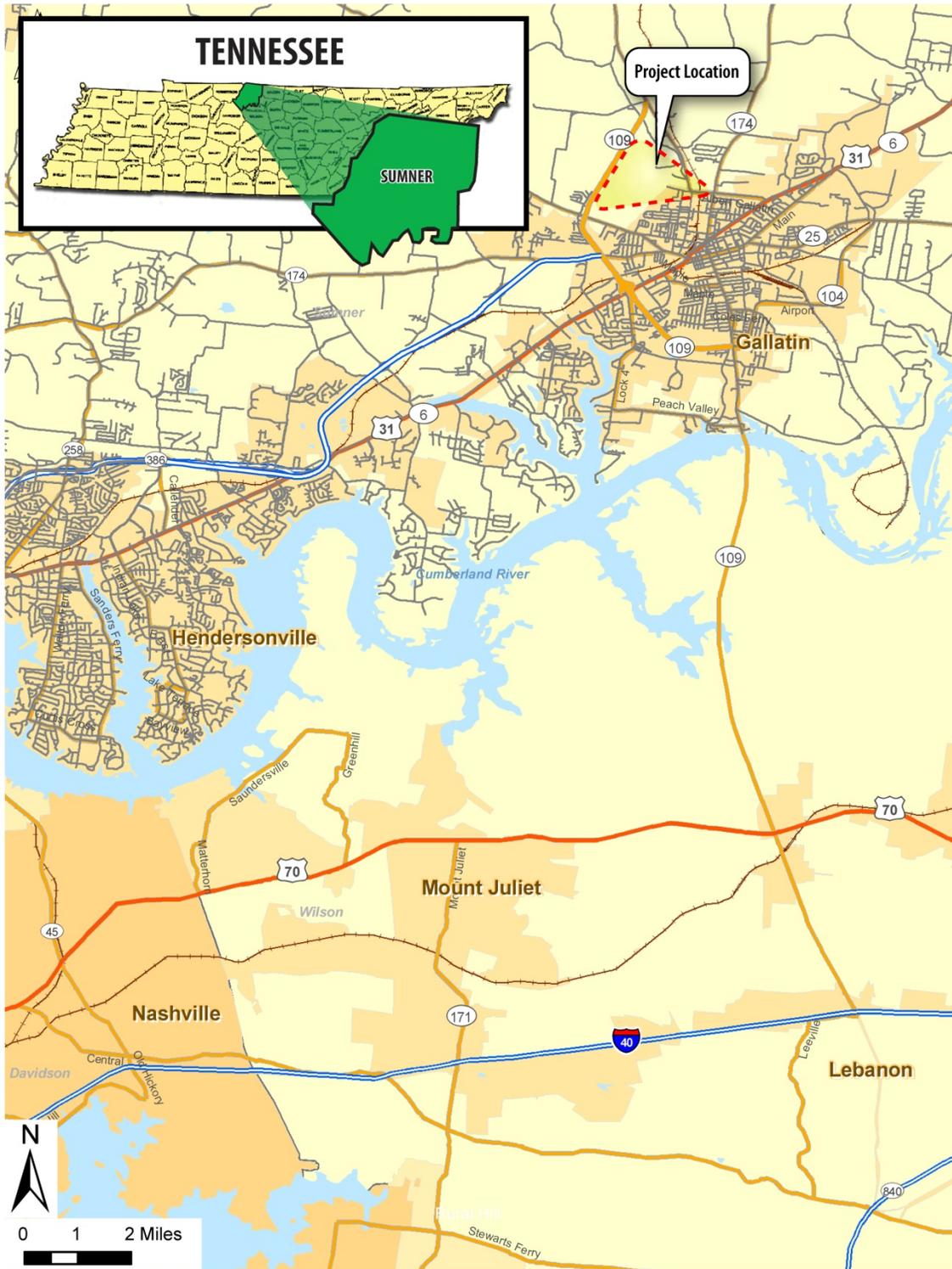
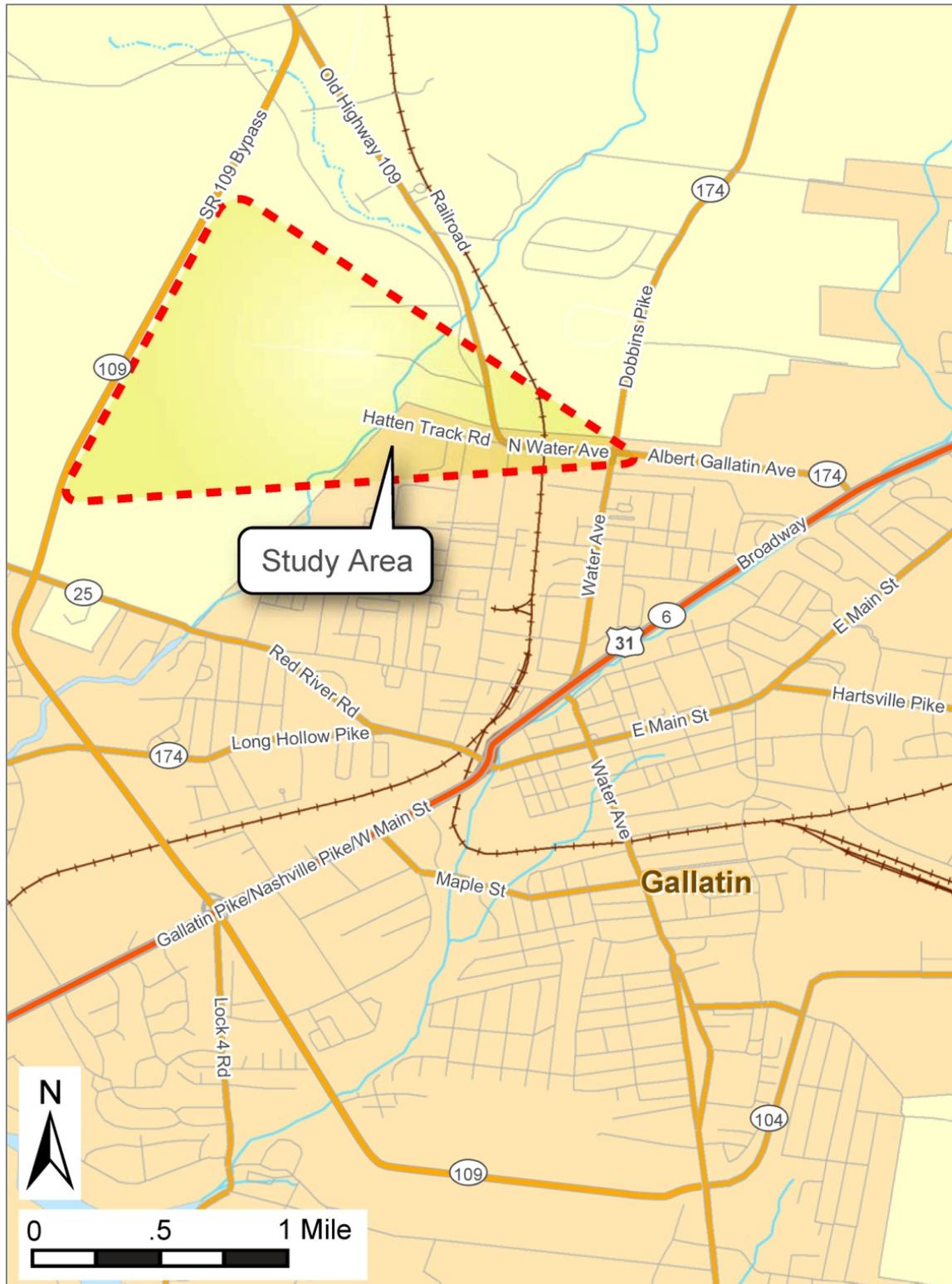


Figure 2. Study Area Location Map



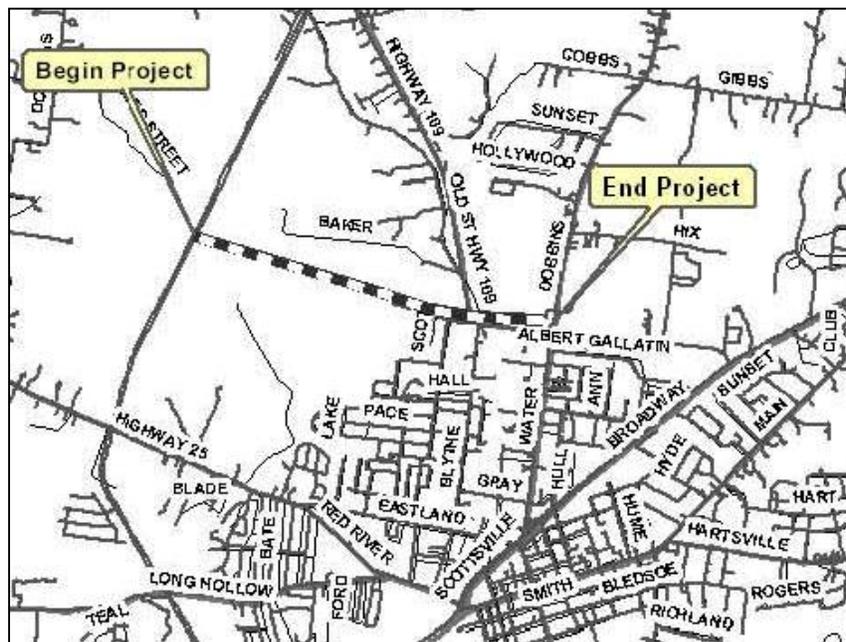
## 2.0 STUDY BACKGROUND

In the late 1990s, the City of Gallatin, in cooperation with the Nashville Area Metropolitan Planning Organization (MPO), requested that TDOT undertake an Advance Planning Report (APR) to study an extension of Hatten Track Road westward to SR 109 in order to provide an alternate route for those desiring to bypass the core of the city. Approved in March of 2000, the APR recommended extending Hatten Track Road from its current western terminus to SR 109 and then making improvements to existing Hatten Track Road and North Water Avenue and the intersection of SR 174/Albert Gallatin Avenue, North Water Avenue and SR 174/Dobbins Pike.

The 2000 City of Gallatin and MPO *Major Thoroughfare Plan* reported that the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension would alleviate some congestion along US 31E (East Broadway Street and West Main Street) allowing travelers to use SR 109 to get to the northeast side of town. Another section of the plan stated that the MPO model shows that the connector would enable drivers to “avoid the more congested Broadway [and SR 6/US 31E/West Main Street] corridor.” The proposed extension was one of six projects recommended for implementation in the short term (five years).

The City of Gallatin discussed development of this study with TDOT and it was determined that the City should take responsibility for developing it because the roadway was not a state route. The City will oversee the TPR, NEPA and design phases and TDOT will oversee the right-of-way process and will supervise construction. The study is being developed with federal funding assistance through TDOT’s Local Program Office (Contract No 080073, Project ID No. 111041.00, April 6, 2009). Figure 3 depicts the project requested by the City through TDOT’s Local Program Office (it is also the illustration from the *TIP*).

**Figure 3. Map of Proposed Extension—Submitted to TDOT Local Programs Office**



At their January 12, 2010 work session, the Gallatin City Council discussed the desirability of extending Hatten Track Road in the future across SR 109 from the existing planned extension and around (north and west of) existing development to terminate on the south at the Harris Lane/SR 386 interchange. The Council saw the need for and supported this extension. They unanimously voted to pursue this Phase 2 Extension by adding the project to the MPO's *Long Range Transportation Plan (LRTP)*, an action which is currently underway. The City also supported having a conversation with TDOT about the possibility of obtaining their assistance with a TPR for the Phase 2 extension. In February, TDOT agreed to lead the development of a TPR for Phase 2.

This study addresses the Phase 1 improvement, which is in the *LRTP* as project #5004 in the year 2016. The *LRTP* describes the project as follows: "upgrade Gallatin, Water (Dobbins to Blythe), and Hatten Track; extend Hatten Track to connect to SR-109 bypass via new interchange." It is also in the FY 2008-2011 *TIP* as project #2008-51-032, which is described as "East-West Corridor (Albert Gallatin Avenue (SR-174) / Hatten Track Road Extension. . . Extend SR 174/Albert Gallatin Avenue from SR-174/North Water Avenue intersection to new interchange onto SR-109. Roadway will address congestion occurring on SR-6 and provide alternative route to access SR-109 and SR-386."

On January 25, 2010 the City of Gallatin submitted to the MPO a list of new high priority projects for the 2035 *LRTP* and the FY 2011-2014 *TIP*. The proposed project listed as priority number 1 for the City of Gallatin is the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension Phases 1 and 2. Phase 1 is the project studied in this TPR and the existing project as described in the 2030 *LRTP* (project #5004) and in the FY 2008-2011 *TIP*. Phase 2 involves the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension from SR 109 to SR 174 and SR 386, with a completion timeframe being after 2015. These two projects both have independent utility.

### 3.0 EXISTING CONDITIONS

#### 3.1 Community Characteristics

As previously stated, the study area is in the City of Gallatin, Sumner County, Tennessee, which is in south central Sumner County and is part of the Nashville Metropolitan Statistical Area. Gallatin is a rapidly-growing community located approximately 25 miles northeast of Nashville.

The study area is in the northwest part of the city, which contains a mixture of older and newer residential and commercial development, farmland, industrial and institutional uses and other development, some of it on former farmland. East Camp Creek flows through the study area. A CSX Railroad line runs north-south through the study area.

##### **Population and Growth**

In 2008, Gallatin had a population of 29,343 people. For comparison purposes, the populations for both Sumner County and the State of Tennessee are shown in Table 1. Between 1990 and 2008, Gallatin experienced a 56.1 percent increase in population, as compared to 50.5 percent for Sumner County and 27.4 percent in Tennessee as a whole. Between 2000 and 2008, Gallatin grew by 26.3 percent.

**Table 1. Population Growth**

Location	Population			Percent Change 1990-2008
	1990	2000	2008	
Tennessee	4,877,185	5,689,283	6,214,888	27.4%
Sumner County	103,281	130,449	155,474	50.5%
City of Gallatin	18,794	23,230	29,343	56.1%

Source: US Census 1990 and 2000 and 2008 US Census Population Estimates

As reflected in the above statistics, the City of Gallatin (and Sumner County as a whole) has faced a tremendous amount of growth pressure in recent years. The growth rate accelerated in the mid 1990s when the City of Gallatin adopted a major update to the *General Development and Transportation Plan* and a new Zoning Ordinance in 1998 that helped implement the plan. According to the Gallatin Economic Development Agency, the population of Gallatin is forecasted to grow by six (6) percent to 31,073 by 2013, and should continue to have a steady growth rate over the next 20 years. The Gallatin Economic Development Agency's GEAR Program – Gallatin Expansion and Retention – has assisted in helping industry leaders network in an attempt to support both industries and their workers. The SR 386 and SR 109 corridors have been identified by the City as emerging areas of future growth.

##### **Major Employers and Traffic Generators**

The largest employment sectors in Gallatin include management, professional and related occupations, sales and office occupations, production, transportation and material moving occupations. Combined, these occupation categories represent roughly 75 percent of the labor force. When compared to Sumner County and the State of Tennessee, Gallatin has a similar labor force distribution relating to occupation category.

The largest employment sector in the Gallatin area is industrial and manufacturing, which provides an estimated 7,500 jobs. There are 22 major industrial manufacturers and distributors located in existing industrial parks or commercial centers. Gallatin has planned for several new industrial centers, which is an objective in *Gallatin On the Move 2020*, the City’s long-range growth, land use and major thoroughfare/transportation plan. The plan states: “Encourage new employment centers by providing the infrastructure necessary to accommodate new industry, while also remaining flexible to future economic shifts and needs.” The plan specifically states that “land is available for manufacturing and industrial uses within the UGB [Urban Growth Boundary] on the north side between the SR 109 Bypass and Old 109,” which is in the study area.

The major employers and traffic generators in the general study area are listed in Table 2 and shown in Figure 4.

**Table 2. List of Major Employers**

Company	Industry	Employees
Gap, Inc.	Clothing distribution	1,250
Sumner Regional Health Systems	Medical center/hospital admin/ corporate office	1,201
Volunteer State Community College	Two-year public college	800
ABC Group Fuel Systems	Automotive fuel systems	305
Hoeganaes	Powdered metal products	193
Natural Industrial Concepts	Industrial manufacturing	168
Charles C. Parks	Food distribution	150
ABC Technologies	Plastic automotive parts	150

Source: Gallatin Economic Development Agency 2007 statistics

Located on Gap Boulevard and fronting on US 31E northeast of the Volunteer State Community College (VSCC), Gap, Inc. is the City’s largest employer with more than 1,500 jobs. Sumner Regional Health Systems operates Sumner Regional Medical Center, a 155-bed, full-service hospital located east of Gallatin on SR 25/Hartsville Pike. The hospital includes an emergency room, a nationally recognized cancer-treatment program, a wound care center, a cardiac catheterization lab, and a diagnostic sleep center. In 2008, Sumner Regional Health Systems opened the new Sumner Healthplex and Wellness Center on Big Station Camp Creek Road. The 112,000 square-foot facility contains a fully equipped fitness/wellness center, primary and specialty medical offices, outpatient rehabilitation, an outpatient diagnostic center and cardiac rehabilitation.

Volunteer State Community College (VSCC) is the City’s third largest employer and is located at 1480 Nashville Pike (US 31E). It is a two-year community college that offers associate degrees and technical certificates for over 70 programs to approximately 7,500 students. VSCC also offers classes for the community and area businesses through the Division of Continuing Education and Economic Development.

Figure 4. Major Employers and Traffic Generators



In addition, the Gallatin Economic Development Agency has recently announced a 207-acre expansion of the Gallatin Industrial Center. In June 2009, Silver Eagle Bus Manufacturing announced its relocation from Brownsville, Texas, to Gallatin. Once fully operational, the company's business plan anticipates hiring more than 500 people in its new 150,000 square-foot facility, which will be located well southeast of the study area and on the opposite side of US 31E from the study area.

### **Potential Future Coordination**

Initiated by the City of Gallatin, this study has involved local stakeholders, including City Council representatives and business owners, in early planning and development of the proposed project. They will continue coordination with stakeholders through project planning and construction.

A CSX Railroad line runs north-south through the study area. The bridge on North Water Avenue crossing over the depressed railroad line will need to be replaced, requiring coordination with the CSX Railroad company. A representative of CSX was invited to the stakeholder meeting, but did not attend.

Coordination with the US Army Corps of Engineers will be required for the crossing of East Camp Creek and its tributaries and possibly for wetland impacts. The Tennessee Department of Environment and Conservation will also need to be coordinated with in regard to potential permitting and possibly for hazardous materials.

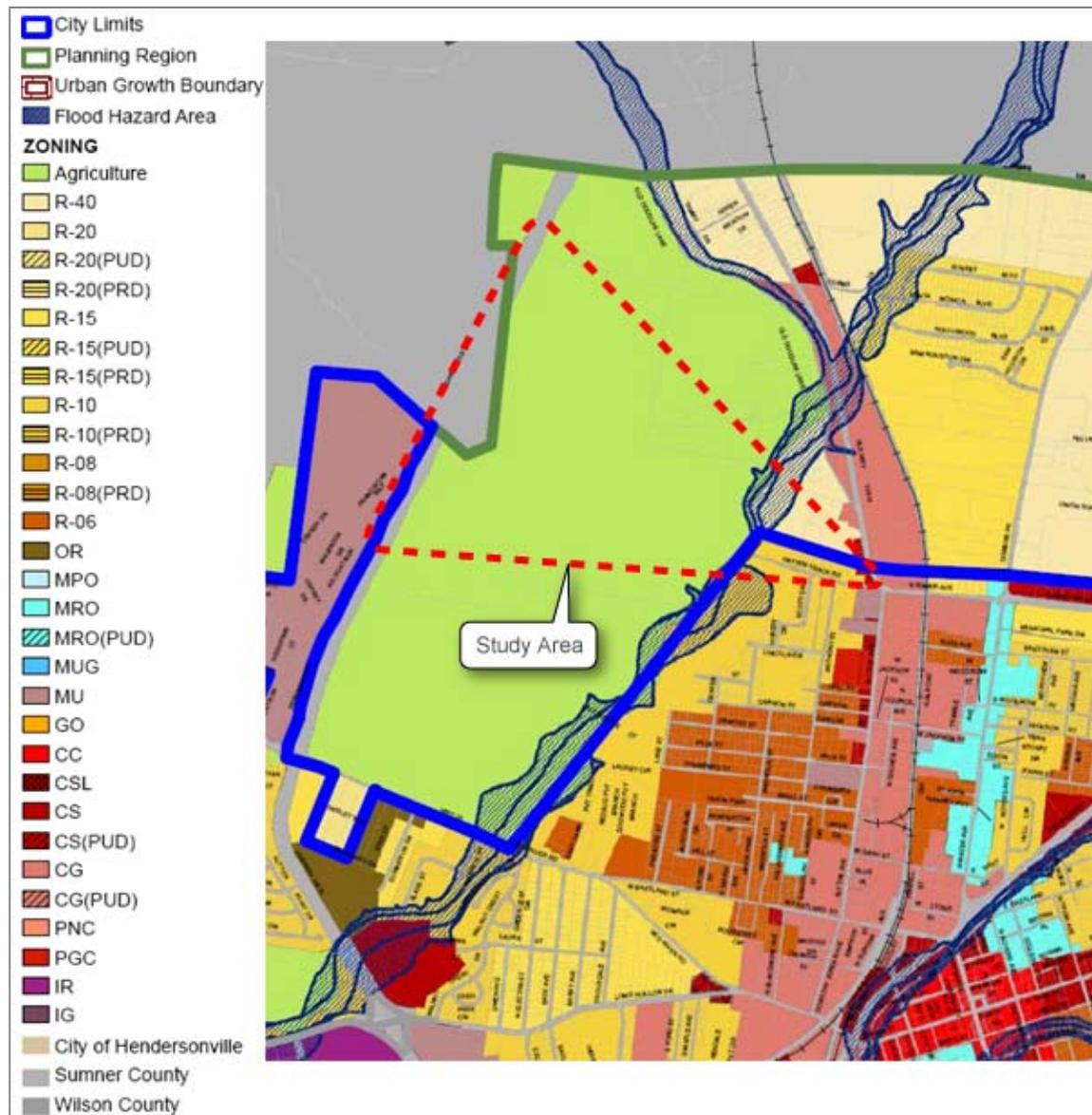
Lastly, although neighborhood representatives have attended either the stakeholder meeting or a briefing for the local Councilman and his invitees, additional public outreach is anticipated in the next study phase (NEPA). Coordination with TDOT will also be required during the design phase for the intersection/interchange at SR 109 and the new route. Additionally, coordination will be required with the MPO and the City in regard to the potential future extension of Hatten Track on the west side of SR 109.

## **3.2 Land Use**

Land use is rural/agricultural from SR 109 east to the dead end of Hatten Track Road. Land use along Hatten Track Road is residential and includes a day care facility. To the east along Water Avenue, land uses include commercial, industrial, and residential. Corridor businesses include: Terry's Grocery, the Blue Diamond Bar, Gallatin Pay Lake, Liberty Cabinets, BP Gas Station, and the Cumberland Electric Membership Corporation. Single-family residences are located primarily to the south of the study area, and the Gallatin Parks and Recreation campus is located to the east of the study area on SR 174/Albert Gallatin Avenue, west of its intersection with SR 174/Dobbins Pike. Union Elementary Year Round School is located to the south of the study area (in the neighborhood bordered on the north by Hatten Track Road) and two schools are east of the study area, Benny C. Bills Elementary School and Joe Shafer Middle School.

The current City of Gallatin Zoning Map from May 2009 (shown in Figure 5) classifies the western half of the study area as *Agricultural* (west of East Camp Creek). In the vicinity of Hatten Track Road, there is an *R-10 Medium Density Residential* district on both sides of the street. Zoning districts at and adjacent to the Hatten Track Road/North Water Avenue/Blythe Avenue/Old Highway 109 intersection include *CS Commercial Services*, *MU Mixed-Use*, and *CG Commercial General*.

**Figure 5. City of Gallatin Zoning Map**

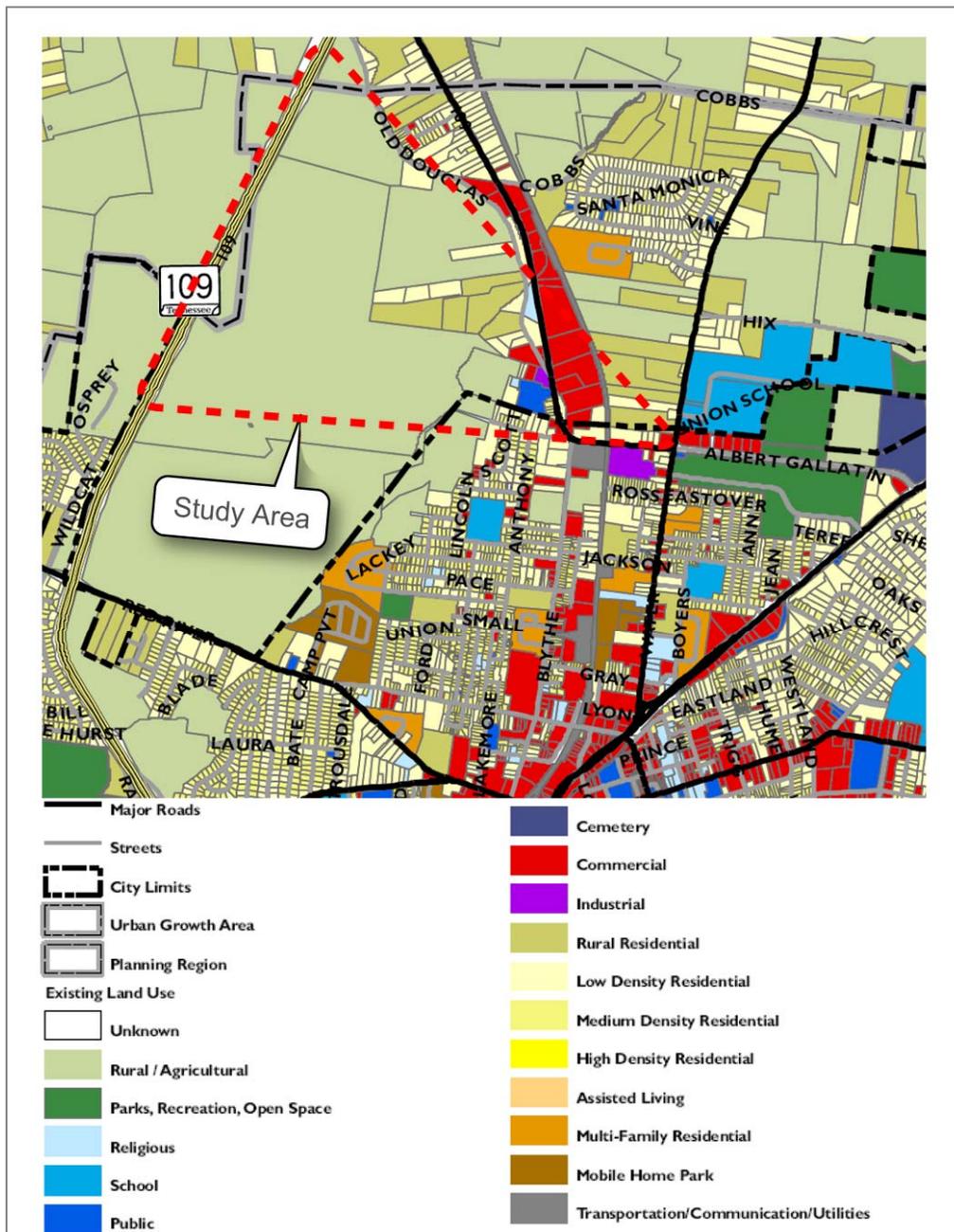


Source: City of Gallatin Zoning Map, May 2004

East of the railroad tracks, on the north side of North Water Avenue, is a *R-15 Medium Density Residential* district. The *MRO Multiple Residential and Office* district is present at the intersection of North Water Avenue, SR 174/Albert Gallatin Avenue and SR 174/Dobbins Pike.

Existing land uses in the study area as shown in *Gallatin on the Move 2020* are depicted in Figure 6. Along the SR 174/Albert Gallatin Avenue, North Water Avenue and Hatten Track Road corridor, land use is mixed low density residential, commercial and public land uses. The commercial development is primarily located along Old Highway 109. To the west of East Camp Creek, development becomes sparse and the land is mostly utilized for rural/agricultural uses.

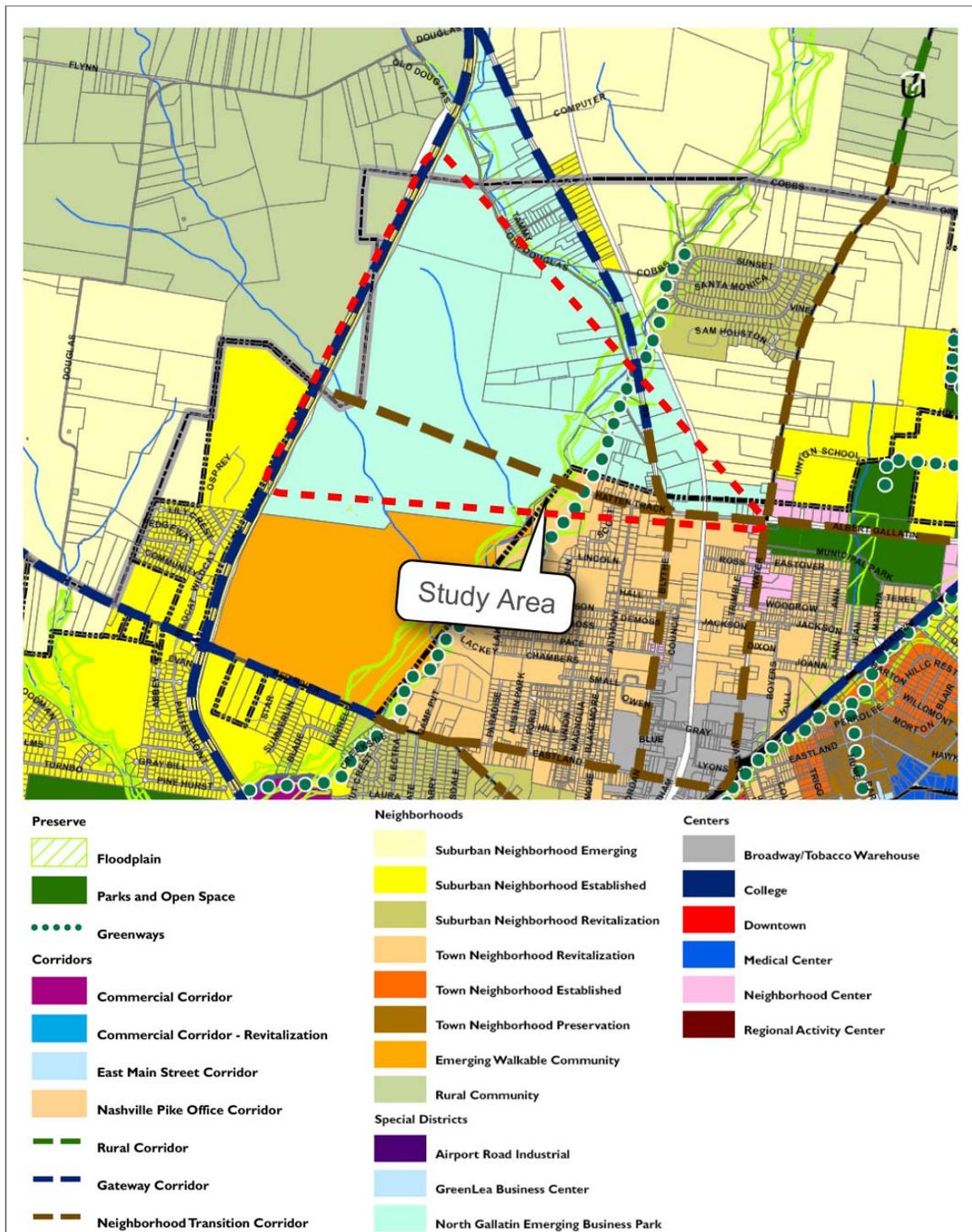
Figure 6. City of Gallatin Existing Land Use map



Source: *Gallatin on the Move 2020*

The Community Character Map from *Gallatin on the Move 2020* incorporates categories that describe in detail the City’s vision for growth and development for the next 20 years. The Community Character Map serves as a future land use map for the City. A close-up of the Community Character Map that shows the study area is shown in Figure 7. Five (5) major development categories are shown in the study area: North Gallatin Emerging Business Park, Emerging Walkable Community, Town Neighborhood Revitalization, Neighborhood Center and Suburban Neighborhood Established. A brief summary of these categories are shown in Table 3.

Figure 7. Community Character Map (Future Land Use Map)



Source: Gallatin on the Move 2020

**Table 3. Community Character (Future Land Use) Map Categories**

Community Character Map Category	Primary Land Uses	Appropriate Density/Intensity
Town Neighborhood Revitalization	Single family residential, small-scale apartments and townhomes	5-8 units per acre
Emerging Walkable Community	Single and multiple family residential, office, retail, civic	Varies
North Gallatin Emerging Business Park	Light industry, business parks, warehouse, commercial, hospitality, transportation/communication/utilities	0.5 Floor Area Ratio
Neighborhood Center	Small and large scale apartments and townhomes, vertical mixed-use, neighborhood commercial	0.35 Floor Area Ratio
Suburban Neighborhood Established	Single family residential, small and large scale apartments and townhomes	2-5 units per acre

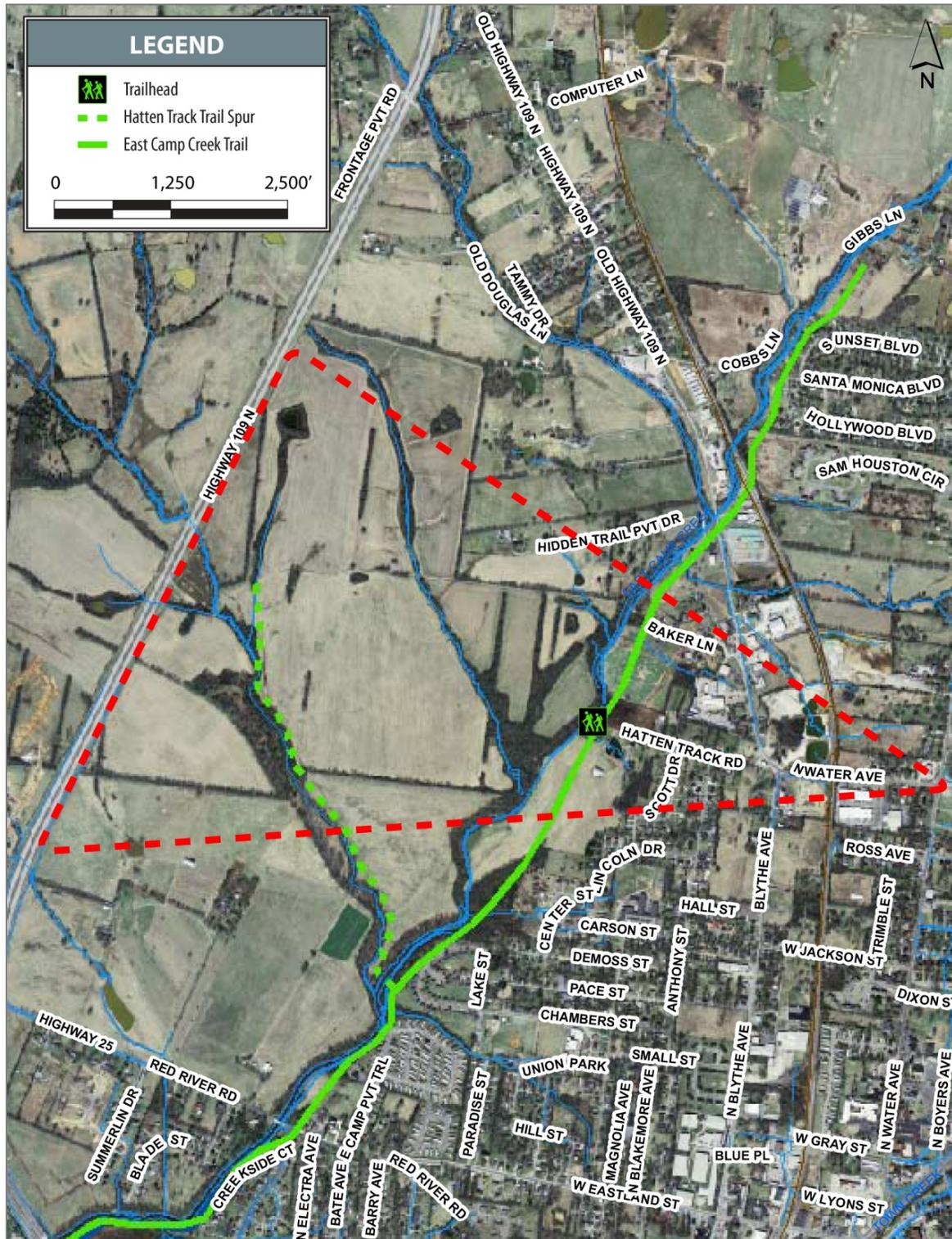
Source: *Gallatin on the Move 2020*

One of the objectives in *Gallatin on the Move 2020* is to “Promote desired development patterns with incentives and preparation of master plans for large undeveloped areas where growth is expected over the next 20 years.” The plan specifically refers to the Bowles property in the western portion of the study area. It states, “Along with the completion of new infrastructure, such as the extension of the Hatten Track Road through the Bowles property, the City should coordinate with property owners to establish a detailed vision” (i.e., master plan) that is consistent with the overall City vision, thus allowing the City to promote specific goals and objectives.

The City of Gallatin *2006 Greenways Master Plan* includes the 4.72-mile East Camp Creek Trail that will start just south of US 31E and run in a northeasterly direction along the creek. The plan organized the greenways into eight corridors prioritized according to their feasibility, availability and level of connectivity. This trail was ranked six (6) out of eight (8) on the priority list in the plan. The East Camp Creek trail is shown in *Gallatin on the Move 2020* under the “Proposed Bike/Ped Projects” as Project 9 and it is designated as a “Greenway Multi-Use Path.” The Plan also shows a Hatten Track Trail Spur “to provide a trail spur extending into the Hatten Track from the East Camp Creek Trail to provide bicycle and pedestrian access into the development area.” These proposed greenways are shown on Figure 8.

*Gallatin on the Move 2020* states that bike lanes should be planned for the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension (Project 23). As summarized in the plan, these bike lanes would be “between SR 109 Bypass to Dobbins Pike [SR 174]/North Water Avenue. These bike lanes would connect the SR 109 Bypass to other facilities. Bike lanes are recommended east of North Water Avenue, thus completing a bike system (Project 27).” The genesis of these proposed bike lanes is the *2000 Major Thoroughfare Plan* and the *City of Gallatin Bicycle and Pedestrian Plan*. Project 27 is the SR 174/Albert Gallatin Avenue bike lanes that would be “from North Water Avenue to East Broadway Avenue [US 31E]. This bike route runs along the north side of Gallatin Municipal Park and would connect with multiple bike facilities.”

Figure 8. Proposed Greenways



Source: Adapted from City of Gallatin 2006 Greenways Master Plan

### 3.3 Crash History

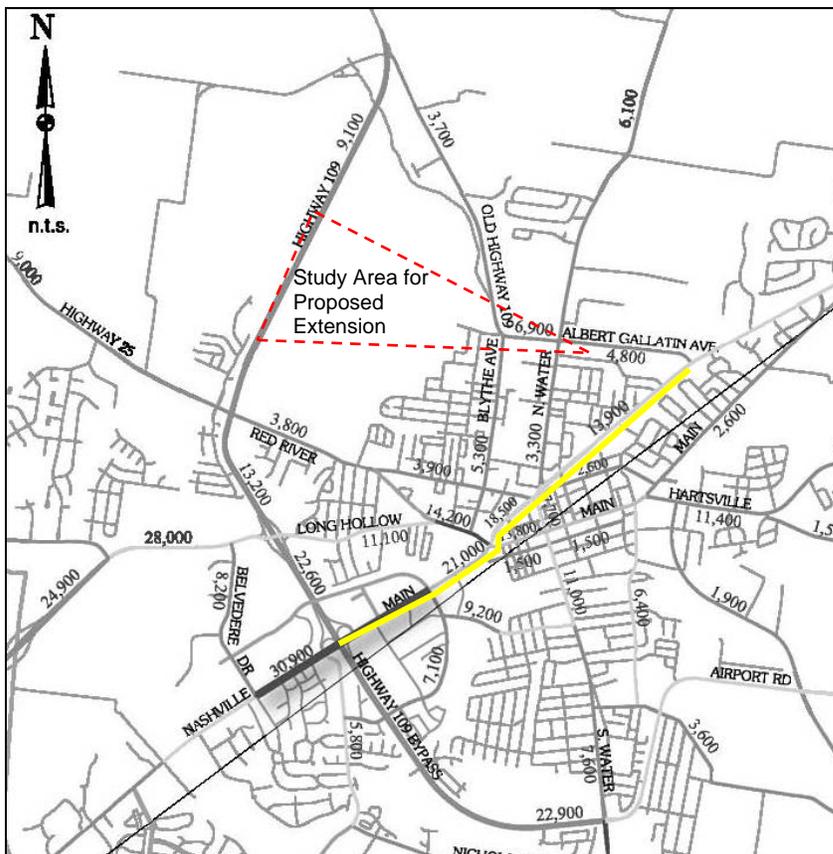
Crashes are not tied to the project need because they have not been identified as an issue in the area of the proposed extension. However, an analysis was undertaken to determine if the extension of Hatten Track could have an impact on crashes occurring on roads in the study area. Existing SR 109 between SR 174/Long Hollow Pike and the proposed extension would carry traffic to the extension, but it does not currently have any safety issues (a crash rate of only one-half of the statewide average).

Traffic studies prepared for this TPR have indicated that as approximately 12 percent of existing traffic on US 31E will be diverted to the proposed extension via SR 109, the proposed extension could have a beneficial impact on safety along US 31E. Table 4 below summarizes the crash data for US 31E for the latest three (3)-year period for which data is available (2006 – 2008). As the table indicates, two (2) sections of US 31E (SR 109 to SR 25 and SR 25 to Joann Street) have crash rates that approach two (2) times greater than the statewide rate for a roadway of this classification. Figure 9 depicts the sections of US 31E that were analyzed.

**Table 4. Crash Summary of US 31E**

From/to	# Crashes	Crash Rate	State Average Rate*
SR 109 to SR 25	160	4.76	2.59
SR 25 to Joann Street	58	3.31	2.08
Joann Street to SR 174/Albert Gallatin Ave.	10	1.08	2.5

\*for this type of roadway



**Figure 9.** Map showing area of crash study on US 31E (in yellow). Intersections are not included in the study.

### 3.4 Geometrics

SR 174/Albert Gallatin Avenue, Old State Highway 109, SR 174 and SR 109 are all truck routes. In addition, SR 109 has been identified by TDOT as a strategic freight corridor of regional significance. A summary of geometric data is provided in Table 5. There are currently no provisions for bicycles or pedestrians along the corridor, which features rolling terrain and commercial and residential driveways. The functional classification (from *Gallatin on the Move 2020*) for the roads within the study area is listed below:

SR 174/Albert Gallatin Ave.	Minor arterial	Old Highway 109	Minor arterial
Blythe Avenue	Minor arterial	SR 109	Major arterial
North Water Avenue	Minor arterial	SR 174	Minor arterial
Hatten Track Road	Local street	US 31E	Urban principal arterial

There are no stop signs along the study corridor, but there are existing traffic signals at the intersection of SR 174/Albert Gallatin Avenue with US 31E east of the study area (Log Mile 15.500) and in the study area at the intersection of North Water Avenue and SR 174/Dobbins Pike (Log Mile 16.310). On North Water Avenue there is a bridge over CSX Railroad at Log Mile 0.200.

### 3.5 Base and Design Year Traffic Conditions

#### ***Traffic Projections***

A traffic analysis was conducted in support of this study. TDOT provided Average Annual Daily Traffic (AADT) volumes on roadways within the study area for 2011 and 2031, which were calculated using the Nashville MPO travel demand model, as well as 24-hour machine counts from 2009. These projected volumes were used in conjunction with historical AADT counts and knowledge of anticipated development in the area of the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension to develop 2010 and 2030 AADT and Design Hour Volumes (DHV) for this TPR. Additionally, 2010 turning movement counts were obtained in 2010 in support of the TPR for the intersections of: 1) Old Highway 109, Hatten Track Road, Blythe Avenue and North Water Avenue; and 2) North Water Avenue and SR 174/Dobbins Pike. These turning movement counts were used as the base to develop the design year (2030) turning movements at the intersections for the No Build and Build conditions. The options analyzed are summarized below and explained in more detail in Chapter 6.

**No Build:** This option assumes that no modifications or improvements are made over the 20-year planning horizon to add capacity on the roadway segments or at the signalized intersections beyond maintenance activities.

**Build:** The Build option assumes that the section of the proposed extension involving Hatten Track Road and new alignment west to SR 109 will have either a three (3)-lane or two (2)-lane median section. The segment of North Water Avenue between Old Highway 109 and SR 174/Dobbins Pike will be widened to a five (5)-lane section, while the segment of SR 174/Albert Gallatin Avenue between SR 174/Dobbins Pike and US 31E will remain in its existing three (3)-lane section.

**Table 5. Existing Roadway Geometrics**

Roadway	Log Miles/ Length of Segment	Avg. ROW	Total Lanes	Avg. Lane Width	Avg. Inside Shoulder Width	Avg. Outside Shoulder Width	Median Type & Avg. Width	Speed Limit	Bicycle Facilities/ Sidewalks	Land Use	Topography
SR 109 (from SR 25 to beginning of Old Highway 109)	5.280 - 7.600; 2.32 miles	250'	4	12'	4'	10'	38' grass	45-55 mph	None	Rural	Rolling
SR 174/Albert Gallatin Ave (from US 31 E to SR 174/ Dobbins Pike & North Water Avenue)	15.500 - 16.310; 0.81 miles	80'	2	10'	0'	2'	N/A	25-40 mph	Sidewalks	Public Use (Parks, Schools)	Rolling
SR 174 (from intersection with Dobbins Pike/North Water Avenue to leave Gallatin City Limits)	16.310 - 16.374; 0.064 miles	50'	2	10'	0'	2'	N/A	40 mph	Sidewalks	Mixed Residential Commercial	Rolling
Hatten Track Road (from begin Hatten Track Road to gate/dead end)	0.000 - 0.268; 0.268 miles	30'	2	7'	0'	1'	N/A	20 mph	None	Residential	Rolling
Old Highway 109/North Water Avenue (from intersection with SR 174/Dobbins Pike to bridge across East Camp Creek)	0.000 - 0.850; 0.85 miles	40-100'	2	11-20'	0'	2-10'	N/A	30-55 mph	None	Commercial	Rolling

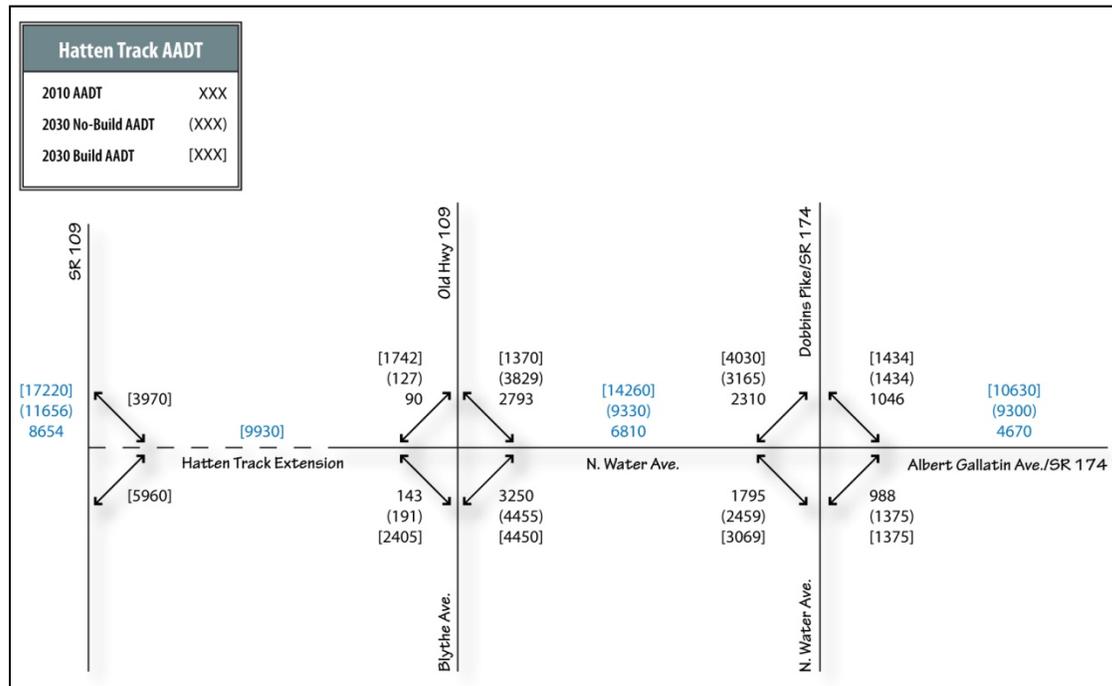
Source: TDOT TRIMS Database

The Design Hour Volumes (DHV) for both the AM and PM peak hours (Table 6) were developed for the intersections of: 1) Old Highway 109, Hatten Track Road, Blythe Avenue and North Water Avenue and 2) North Water Avenue at SR 174/Dobbins Pike (2010, 2030 No Build, 2030 Build), as well as the turning movements at the intersection of the extension and SR 109 (2030 Build). The DHVs for the turning movements within the study limits were developed using the collected turning movement counts (2010) and increasing them using an annual growth rate of 3.5 percent and by redistributing traffic for some movements based on background growth and the future development intended in the vicinity of the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension. It should be noted that at the intersection of North Water Avenue and SR 174/Dobbins Pike, the 10-year historical growth rate was used for the movements that will not be affected by the extension and associated commercial development. Figure 10 illustrates the projected AADT in the study area.

**Table 6. AADT for Base Year and Design Year Conditions**

Roadway Segment	AADT		
	2010	2030	
	No Build	No Build	Build
Hatten Track Road Extension (to SR 109)	N/A	N/A	9,930
North Water Avenue. -Old Highway 109 to SR 174/Dobbins Pk.	6,810	9,330	14,260
SR 174/Albert Gallatin Ave. SR 174/Dobbins Pk. to US 31E	4,670	9,300	10,630
SR 109 at Hatten Track Road	8,654	11,656	17,220

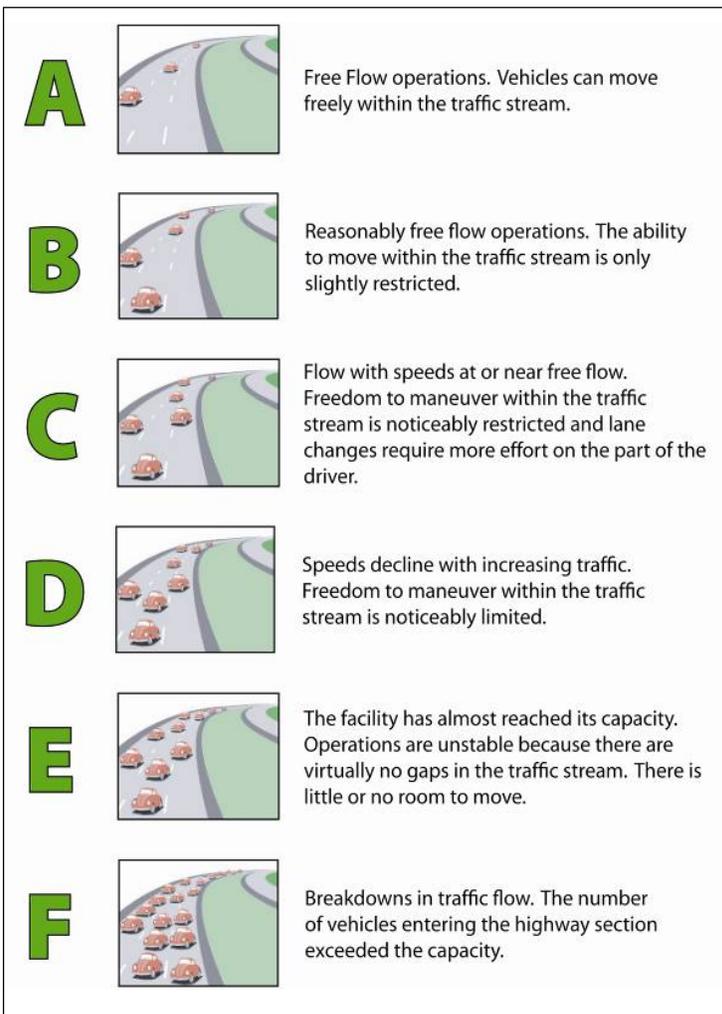
**Figure 10. Annual Average Daily Traffic**



### Level of Service Analysis

Level of Service (LOS) is a qualitative measure that describes traffic conditions related to speed and travel time, freedom to maneuver and traffic interruptions. There are six levels, ranging from “A” to “F”, with “F” being the worst. Each level represents a range of operating conditions. Figure 11 illustrates the traffic flow conditions and approximate driver comfort level at each LOS.

**Figure 11. Definition of Level of Service**



Hatten Track Road is a narrow, two (2)-lane roadway with single-family residences on both sides. The road intersects Old Highway 109, Blythe Street and North Water Avenue at a sharp skewed angle. North Water Avenue from Old Highway 109 to SR 174/Dobbins Pike is also a two (2)-lane roadway with eleven (11)-foot lanes and narrow shoulders. SR 174/Albert Gallatin Avenue east of the eastern terminus currently consists of a three (3)-lane section with two (2) twelve (12)-foot travel lanes, a center turn lane and narrow shoulders.

Under 2030 Build conditions, the projected AADT volume of 9,930 for the segment of Hatten Track Road from its intersection with Old Highway 109 extending westward to SR 109 warrants a three (3)-lane section. A three (3)-lane arterial can generally accommodate up to 11,600

AADT and maintain a minimum LOS of B. The projected AADT volume of 14,260 on the segment of North Water Avenue between Old Highway 109 and SR 174/Dobbins Pike is near capacity of a three (3)-lane section and would more appropriately warrant a five (5)-lane section, which can typically accommodate up to 17,600 AADT and maintain a minimum LOS B. Finally, the projected AADT volume of 10,630 on the segment of SR 174/Albert Gallatin Avenue between SR 174/Dobbins Pike and US 31E does not warrant any changes to the existing three (3)-lane typical section.

An LOS analysis for the intersections of: 1) Old Highway 109, Hatten Track Road, Blythe Avenue, North Water Avenue; 2) Proposed Hatten Track Extension and SR 109 (2030 Build); and 3) North Water Avenue and SR 174/Dobbins Pike (2010, 2030 No Build,

2030 Build) was used to gauge operational performance. Using the design hour traffic data, LOS was determined for the three intersections using the Highway Capacity Software (HCS+). It should be noted, that due to the unconventional configuration of the Old Highway 109/Hatten Track Road intersection (i.e., adjacent streets are stop-controlled, instead of opposing streets), LOS analysis was not performed for the 2010 or 2030 No Build conditions for this intersection.

Old Highway 109, Hatten Track Road, Blythe Avenue, North Water Avenue: This intersection met Warrant 3; Peak Hour Warrant in the *Manual of Uniform Traffic Control Devices (MUTCD)*. Capacity analysis was performed for this intersection for the 2030 Build Condition, and it was determined that the intersection will operate at an acceptable Level of Service in the AM (LOS C) and PM (LOS B) with the following improvements. The intersection of Old Highway 109, Hatten Track Road, North Water Street and Blythe Avenue should be realigned to provide for approaches that convene at 90-degree angles and signalized or, a roundabout should be constructed.

Construction of a roundabout is a second option for this intersection. From a traffic standpoint, the roundabout option operated at an acceptable intersection LOS B for the 2030 design year, compared to an acceptable LOS C for the signalized intersection. Capacity analysis was performed for the roundabout using the SIDRA analysis software, and it was determined that the roundabout operates slightly better than the signalized intersection option under the AM (LOS B) and PM (LOS A) peak hour conditions.

Benefits to using a roundabout, as opposed to a signal, at the intersection of Old Highway 109, Hatten Track Road, Blythe Avenue and North Water Avenue include improved operational performance when compared to a signal in terms of vehicle stops, delay, fuel consumption and emissions. The northbound, eastbound and westbound approaches all operate at a higher LOS with the roundabout configuration than a traditional signalized intersection. It should be noted that if the roundabout option is selected for traffic control at the intersection, it is critical for the designer to consider the truck volume that will use the roundabout and select a design that will accommodate trucks and buses, likely to include a truck apron.

SR 109 and Hatten Track Extension: Under the 2030 Build condition, from an operational and safety standpoint, it is recommended that the intersection of the Hatten Track Extension and SR 109 be signalized due to the expected volume of traffic on SR 109 and intersecting left-turn traffic from the Extension. This intersection met Warrant 3; Peak Hour Warrant in the *Manual of Uniform Traffic Control Devices (MUTCD)*. It is understood that SR 109 was constructed as a “bypass” and currently is access controlled between SR 25 and Old Highway 109.

The installation of a traffic signal at the intersection of the Extension and SR 109 is anticipated to slightly decrease travel speeds along SR 109 – a study conducted by the Texas Transportation Institute has reported that a two (2) to three (3) mph speed reduction for every added signal per mile can be expected. However, the LOS for the SR 109 approaches will operate at A (in PM Peak) and B (in AM Peak). Although the delay on SR 109 will increase slightly, it is recommended that this signal be coordinated with the existing signal at SR 25 to ensure that optimum travel speeds, and minimum delays and stops occur along SR 109. Capacity analysis was performed for this intersection for the 2030 Build Condition. The approach delay on SR 109 with the proposed signal is 12.1 seconds for northbound traffic and 14.9 seconds for southbound traffic correlating to a LOS B. The overall approach delay on Hatten Track Road is 20.6

seconds correlating to LOS C for 2030 traffic volumes. This is due to the heavy left-turn volume from Hatten Track Road to southbound SR 109 of 458 AM DHV. Dual left turn lanes are proposed on the Extension. There is an existing signalized intersection at SR 25 and SR 109 approximately 4,500 feet south of the Corridor B intersection.

North Water Avenue and SR 174/Dobbins Pike: The analysis shows that the intersection approaches of North Water Street at SR 174/Dobbins Pike operate at an acceptable LOS in each of the scenarios (i.e., 2010 No Build, 2030 No Build and 2030 Build). When analyzed as a signalized intersection under the 2030 Build condition, the intersection of Old Highway 109, Hatten Track Road, Blythe Avenue and North Water Avenue also operates at an acceptable LOS for each intersection approach.

The results of the LOS analysis are summarized in Tables 7, 8 and 9.

**Table 7. Level of Service for 2010 No Build**

	Intersection	Intersection LOS	NB Approach LOS	SB Approach LOS	EB Approach LOS	WB Approach LOS
<b>AM Peak</b>	Dobbins Pike and SR 174/Albert Gallatin Ave	C	B	C	B	C
<b>PM Peak</b>	Dobbins Pike and SR 174/Albert Gallatin Ave	B	B	B	B	B

**Table 8. Level of Service for 2030 No Build**

	Intersection	Intersection LOS	NB Approach LOS	SB Approach LOS	EB Approach LOS	WB Approach LOS
<b>AM Peak</b>	Dobbins Pike and SR 174/Albert Gallatin Ave	C	C	C	C	C
<b>PM Peak</b>	Dobbins Pike and SR 174/Albert Gallatin Ave	B	B	B	C	C

**Table 9. Level of Service for 2030 Build**

	Intersection	Intersection LOS	NB Approach LOS	SB Approach LOS	EB Approach LOS	WB Approach LOS
<b>AM Peak</b>	SR 174/Dobbins Pike and SR 174/Albert Gallatin Avenue	C	C	C	D	D
	Old Highway 109, Blythe, N. Water, Hatten Track Road	C	C	B	C	C
	Old Highway 109, Blythe, N. Water, Hatten Track Road(ROUNDABOUT)	B	A	C	B	B
	Hatten Track Extension, SR 109	B	B	B	--	C
<b>PM Peak</b>	SR 174/Dobbins Pike and SR 174/Albert Gallatin Ave	C	C	C	C	C

**Table 9. Level of Service for 2030 Build, Continued**

	Intersection	Intersection LOS	NB Approach LOS	SB Approach LOS	EB Approach LOS	WB Approach LOS
	Old Highway 109, Blythe, N. Water, Hatten Track Road	B	C	B	B	B
	Old Highway 109, Blythe, N. Water, Hatten Track Road (ROUNDABOUT)	A	A	B	A	A
	Hatten Track Extension, SR 109	B	A	A	--	C

### 3.6 Control of Access

The City of Gallatin Zoning Ordinance (amended October 20, 2009) establishes access management standards in Section 13.06 for driveways providing vehicular access from arterial, collector and local streets (roads in the study area are classified as arterials and collector streets). Thus, the current roadway system in this area has driveway permit restrictions. Numerous residential driveways are found along Hatten Track Road, which dead ends at a locked gate to a private property. In addition, *Gallatin on the Move 2020* outlines additional access management policies that should be applied to the City's arterial road system (including long range planning, project planning and design, right-of-way acquisition, redesign of existing arterial corridors and driveway permitting).

SR 109 in the study area also is access controlled between SR 25 and Old Highway 109. The proposed extension would require a break in the access control on SR 109 to allow access between SR 109 and the proposed extension. The City will make a request to TDOT in future planning phases for this change in access control to accommodate an at-grade intersection that meets the 2030 Build year or future interchange at the point where the selected alternative intersects SR 109. Intersections are currently located approximately 3,750 feet south and 7,000 feet north of the study area at SR 25 and Old Highway 109.

In addition, the project will be designed to provide access control along the proposed extension from SR 109 to the east. For an at-grade intersection, the access control distance will be a minimum of 100 feet east of the intersection. For an interchange, the access control distance will be likely be longer, for example, 100 feet from the end of the ramps. If an at-grade intersection is proposed now and an interchange in the future, project engineers should consider designing the project with the maximum access control limits needed for an interchange. This would ensure that no development occurs under the at-grade intersection scenario that would later be impacted by an interchange.

## 4.0 STAKEHOLDER MEETING AND FIELD REVIEW

A meeting attended by approximately 30 people was held on November 16, 2009 at 1:30 at the Gallatin Civic Center. Attendees represented the City, County, City Council, TDOT, and the planning and design consultant. Also attending were a representative of the office of State Senator Diane Black and a small number of local property owners.



The purpose of the meeting for the extension of SR 174/Albert Gallatin Avenue and Hatten Track Road was to inform stakeholders that the City has begun work on a TPR, which is the first step in development of the proposed Hatten Track Extension. The meeting was intended to assist in the identification of the project need by gathering stakeholder input and to identify project issues (e.g., land use, environmental, proposed development).

Handouts provided to meeting attendees included the meeting agenda and an aerial project area map that showed some constraints identified early in the planning process. Other materials displayed included: examples of TPRs, photographs of the study area and an aerial photo showing environmental constraints and a preliminary subdivision plat for an area along the west side of SR 109.

After a presentation of the history of the project and the project development process, attendees were asked if they felt the project is or is not needed and why. The comments are as follows:

- The project needs to be looked at in context with the area and future plans on both sides of SR 109 in the study area.
- Emergency personnel are now working with TDOT on disaster evacuation plans for the Gallatin area. This road would provide better ingress and egress in the event of an emergency.
- The road would help to keep pass-through vehicles out of the area while children are being transported to and from school.

- Gallatin has always been a pass-through city for people going to and from the north. This road would help keep traffic congestion out of downtown.

Some preliminary issues that could affect the location of the roadway were described to attendees (e.g., floodplains, wetlands, conservation easement, future greenways and the existence of the minority neighborhood from Hatten Track Road to the south. Other issues brought up by attendees included:

- The bridge over the railroad will need to remain open during construction.
- An old landfill near the end of Hatten Track Road.
- An old cemetery is in the wooded area behind the Highway Department.
- Planners should look at locating the road behind the homes on Hatten Track Road since they have deep lots. Some attendees felt that a road at this location would benefit the neighborhood—they said neighbors want the new road close by for access and because it may generate jobs as the area along the road is developed.
- Gallatin wants to avoid tying into SR 109 opposite the conservation easement property because the easement makes it very difficult from a legal and local perception standpoint to ever extend the road. A residential development is planned for the area south of the conservation easement (Twin Eagles Subdivision) and possibly extending in the future to north of the currently approved development. Would the developer set aside some land for an extension of the road across SR 109?
- What type of access will there be on the proposed road? Attendees had differing opinions of their vision for access, ranging from very limited to full access for driveways. (Attendees were told that the plan for access on the proposed extension will reflect the City's vision for future land use in the area.)

Regarding the path forward, attendees were told that wide study corridors will be developed. Alignments will be developed within these corridors following TDOT's approval of the TPR. After TDOT approves the TPR, it will be sent to the Federal Highway Administration (FHWA) for a determination of the level of NEPA document required. Based on preliminary conversations with TDOT and FHWA, it is very likely it will be either a NEPA Categorical Exclusion or Environmental Assessment. The first advertised community-wide public meeting is anticipated to be held during the NEPA phase.



## 5.0 PRELIMINARY PURPOSE AND NEED

Through coordination with local officials and stakeholders and review of previous planning work including a February 2000 APR and *Gallatin on the Move 2020*, the preliminary need for the study has been identified. The Hatten Track Extension is needed to provide an east-west connector between SR 109 and East Broadway (US 31E) on the north side of the City of Gallatin. This connector is intended to allow traffic in the north and east sections of Gallatin to access major arterial roadways without having to travel through the congested section of US 31E downtown, or traffic from southbound SR 386 and SR 109 to access the areas north and east of downtown without traveling through downtown.

### 5.1 System Linkage

Existing traffic on US 31E (SR 6/West Main Street/East Broadway) in downtown Gallatin has a 2009 AADT count of approximately 30,000 vehicles/day, which has exceeded the capacity of a five (5)-lane urban arterial. The construction of the extension of SR 174/Albert Gallatin Avenue and Hatten Track Road is anticipated to divert approximately twelve (12) percent of the traffic away from US 31E in the downtown area, which is anticipated to bring the AADT on US 31E to a level that can provide an LOS of D or better (as opposed to the current LOS of F on the most congested section). The construction of this project will provide an alternative route for motorists wishing to travel from the SR 109 Bypass to east and north of downtown and allow them to avoid the eight (8) signalized intersections and heavily congested segment of US 31E in the downtown area.

### 5.2 Legislation/Local Mandate

There is no federal or state mandate for the widening and extension of SR 174/Albert Gallatin Avenue and Hatten Track Road west to SR 109. However, the extension is included in the Nashville Area MPO's 2030 *LRTP* and in the Nashville Area MPO's *TIP* for Fiscal Years 2008-2011.

The Nashville Area MPO's 2030 *LRTP* lists the project as #5004, a five (5)-lane East-West Corridor of approximately 1.80 miles from SR 174/Albert Gallatin Avenue to SR 109, the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension that is studied in this TPR. The project description states "upgrade Albert Gallatin, Water (Dobbins to Blythe), and Hatten Track; extend Hatten Track to connect to SR 109 bypass via new interchange." This new roadway was requested by the City of Gallatin and is slated for 2016 with an estimated cost listed as \$8,086,800.

The Nashville Area MPO's *TIP* for Fiscal Years 2008-2011 lists the project under *TIP* #2008-51-032. The project description states "Extend SR 174/Albert Gallatin Avenue from SR 174/North Water Avenue intersection to new interchange onto SR 109. Roadway will address congestion occurring on SR 6 [US 31E] and provide alternative route to access SR 109 and SR 386." Funds for the 0.8-mile project are listed as a combination of local and federal funds.

The SR 174/Albert Gallatin Avenue and Hatten Track Road Extension is listed as item 22 in the Multi-Modal Transportation Plan section of *Gallatin on the Move 2020*. The Multi-Modal Transportation Plan states:

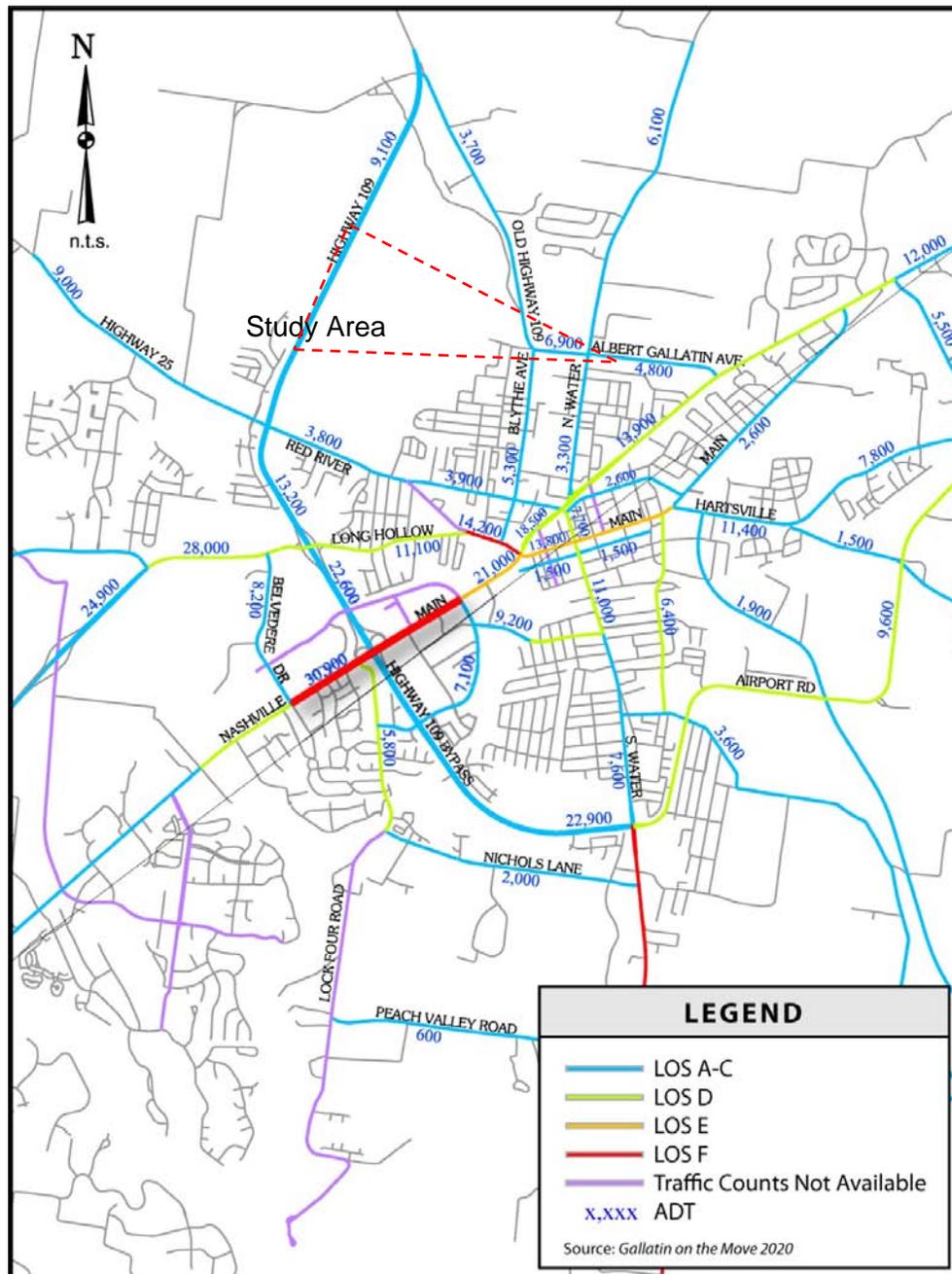
*Widen to five (5) lanes with curb and gutter between Blythe Avenue and North Water Avenue. This widening will generally follow the existing alignment with the exception of the crossing of the CSX railroad tracks. A new alignment will be provided at the CSX crossing to allow for maintenance of traffic during construction of the viaduct over the tracks. The new alignment should generally be located north of the existing alignment to provide some degree of physical separation of the residential areas south of the proposed corridor from the industrial areas north of the proposed corridor. This new bridge will be designed to accommodate future traffic growth. Create a new three (3)-lane roadway connection between Blythe Avenue and SR 109. Acquire right of way for a five (5)-lane minor arterial (including sidewalks) along the entire route between U.S. Route 31E and SR 109. Right of way should also be acquired at the intersection of SR 109 and Hatten Track Road to allow for a future interchange at this location and the possibility of Hatten Track Road being extended further to the west (towards SR-386) in the future. This project has been included in the City's Transportation Improvement Program for 2008-2011. Preliminary Engineering has begun to determine alignment. The project was included in the 2000 Major Thoroughfare Plan. From an aesthetic and access management standpoint it would be preferable to configure the roadway with a raised median and turn lanes at appropriate locations as opposed to a continuous center turn lane.*

### **5.3 Capacity/Congestion**

As stated in the *TIP*, the construction of the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension is anticipated to “address congestion occurring on SR 6 [US 31E] and provide an alternative route to access SR 109 and SR 386.” The existing traffic on US 31E (SR 6/West Main Street/East Broadway) in downtown Gallatin has a 2009 AADT count of approximately 30,000 vehicles/day, which has exceeded the capacity of a five (5)-lane urban arterial. According to the *Gallatin On The Move 2020*, this segment of US 31E currently operates at an LOS of F. The construction of the extension of SR 174/Albert Gallatin Avenue and Hatten Track Road is anticipated to divert approximately 12 percent of the traffic away from US 31E in the downtown area, which is anticipated to bring the AADT on US 31E to a level that can be accommodated by a five (5)-lane section with an LOS of D or better (as opposed to the current LOS of F on the most congested section).

Traffic desiring ingress or egress from the east and northeast sides of town will be able to bypass this congested segment of US 31E roadway to reach their destinations. Traffic coming from the north or south on SR 109 or from the south on SR 386 could use SR 109 at the proposed intersection of the new SR 174/Albert Gallatin Avenue and Hatten Track Road Extension to access US 31E (SR 6/West Main Street/East Broadway) north of downtown Gallatin, thus avoiding the congested segment of the roadway downtown. By reducing the AADT on the most heavily congested segment of US 31E, the levels of service at the signalized intersections and associated vehicular delay is anticipated to improve. Figure 12 illustrates the area traffic as well as identifies the currently congested section of US 31E in the downtown area.

Figure 12. System Traffic



Source: Gallatin on the Move 2020

#### 5.4 Social Demands/Economic Development

The land currently in agricultural use at the end of Hatten Track Road and between Old Highway 109 and new SR 109 is in the path of the City's expansion. It is slated in the future land use plan partly as an emerging business park and partly as a walkable community. Extension of Hatten Track Road westward to SR 109 will allow the area to develop as desired by the City. Currently, there is no vehicular access to this area.

## 6.0 OPTIONS

Several options were considered and evaluated as a means of addressing the transportation needs within the study area, including a No Build Option.

### 6.1 No Build Option

The No Build Option involves making no improvements to the existing roadway system other than regular maintenance. The No Build Option does not meet the purpose and need for the proposed project. It does not provide a connector between SR 386 and SR 109 in southwest Gallatin and US 31E on the north side of Gallatin as specified in the purpose and need. The No Build Option will not improve travel conditions for drivers desiring to travel between the northeast and southwest sides of the city, avoiding congested US 31E. Additionally, it will not reduce congestion on US 31E.

### 6.2 Build Corridor Options

This section contains a general description of the study corridors, which are depicted in Figure 13. Following a general description of the study corridors is a description of features of the corridors (6.2.1): the typical section (6.2.2), the intersections/interchanges (6.2.3) and the railroad crossing (6.2.4).

The area in which Build Corridor Options could be developed was limited by several factors, as described below:

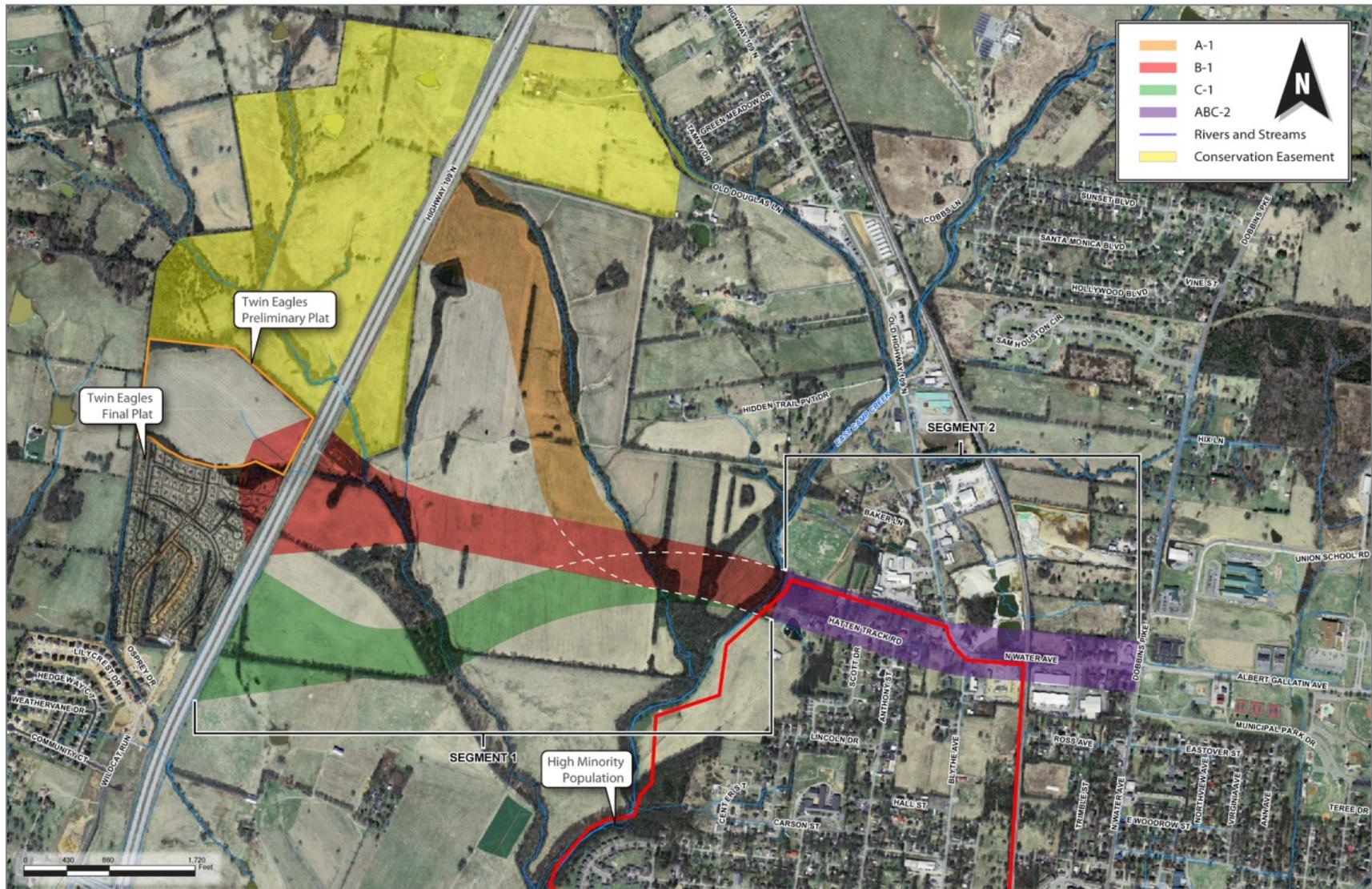
1. A major limiting factor is the conservation easement held by the Land Trust of Tennessee (Figure 13). The easement encompasses a large parcel of land along both sides of SR 109. On the proposed extension (east) side of SR 109, the smaller section of the easement is almost due west of the west end of existing Hatten Track Road. The easement extends about 1,800 feet north, also limiting the land available to connect with existing SR 109 northwest from the end of the existing Hatten Track Road. The easement document was reviewed during the planning process for this TPR. According to the December 2006 recorded easement:

*The "Grantor [property owner] has agreed to convey to the Grantee [Land Trust of Tennessee] a conservation easement in the [approximate 217-acre] Property for the purpose of assuring that, under perpetual stewardship of the Grantee, the agricultural, open space, timber, wildlife habitat, watershed protection and scenic values of the property will be conserved and maintained forever and that the uses of the Property that are inconsistent with the conservation purposes will be preserved.*

According to the document, the only way to use land from this easement for a transportation project is to condemn it. From a planning, environmental and public perception standpoint, the City does not desire to condemn the property within the easement, particularly if there is land available to make the desired improvements without impacting the land within the easement.

2. Desire for most direct connection between SR 174/Dobbins Pike and SR 109.

Figure 13. Proposed Study Corridors



3. There is an existing signalized intersection at SR 25 and SR 109 and a flashing caution light at SR 109 and Old Highway 109, which has a stop-controlled approach on Old Highway 109. It is undesirable to place another intersection too close to these intersections.

Based on the purpose and need and limiting factors, three TPR corridor options were developed: Corridors A, B and C (shown in Figure 13). These options are divided into two segments. Segment 1 is between SR 109 (the western project terminus) and East Camp Creek. Segment 2 is between East Camp Creek and SR 174/Dobbins Pike (the eastern project terminus). Aerial photographs depicting each corridor are found in Appendix B.

The Build corridor options are 500-foot wide corridors, which are described below. Each corridor widens out at its intersection with SR 109 to accommodate an intersection in the 2030 Build year. Interchanges can also be accommodated, with a future diamond interchange at Corridor B and semi-directional (3-way) T interchange for Corridors A and C (as described in Section 6.2.3).

The Gallatin City Council was shown the three preliminary TPR corridor options at their January 12, 2010 work session. These options had been developed based on input received at the November stakeholder meeting, as well as information gathered in environmental screening and review of existing planning documents. The City supported Corridor B as it is the only corridor option that would accommodate a future extension of the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension across SR 109 to the west without causing adverse impacts to the conservation easement or major displacements in the Twin Eagles Subdivision.

### **6.2.1 General Description of Study Corridors**

#### ***Corridor A***

Segment 1: The north side of Corridor A on the east side of SR 109 lies at the southern boundary of the land held as an easement by the Land Trust of Tennessee. The south side of the corridor at SR 109 is approximately 1,700 feet north of the SR 109 crossing of an unnamed stream. The corridor quickly turns to the southeast following the western bank of the unnamed stream towards the southeast where it crosses the unnamed stream and East Camp Creek and then ends at the east side of East Camp Creek west of the current west terminus of Hatten Track Road. The land in this segment is in agricultural use. Segment 1 of Corridor A would require a bridge over East Camp Creek and a box culvert at a tributary.

Segment 2: Corridor A, Segment 2, begins at the east side of East Camp Creek, runs east on new location for about 500 feet and then intersects existing Hatten Track Road. The 500-foot wide corridor is then centered on existing Hatten Track Road and North Water Avenue eastward to the eastern project terminus at SR 174/Dobbins Pike. The land use along Hatten Track Road and Blythe Avenue is residential and then along North Water Avenue and SR 109, land use is a mixture of residential, commercial and industrial. Segment 2 would require replacement of the CSX Railroad bridge. It is anticipated that the roadway will be designed on the north side of the study corridor to avoid direct impacts to the Hatten Track neighborhood.

### **Corridor B**

Segment 1: Corridor B begins on the west side of SR 109 to encompass the limits of a potential future diamond interchange along the northern portion of the Twin Eagles subdivision, which has not yet received an approved final plat. The corridor runs almost due east for 4,900 feet. The section crosses two unnamed streams before crossing East Camp Creek and ending at the east side of the creek west of the current west terminus of Hatten Track Road. The land use in this segment is agricultural. Segment 1 of Corridor B would require a bridge over East Camp Creek, a bridge over a tributary and a culvert at another tributary.

Segment 2: Corridor B, Segment 2, is the same as Corridor A, Segment 2.

### **Corridor C**

Segment 1: Corridor C begins on the east side of SR 109 across SR 109 from the southern portion of the Twin Eagles subdivision for which a plat has been approved and building construction is underway. The corridor runs almost due east for 4,900 feet, crossing two unnamed streams before crossing East Camp Creek and ending at the east side of the creek west of the current west terminus of Hatten Track Road. The land use in this segment is agricultural. Segment 1 of Corridor C would require a bridge over East Camp Creek, a bridge over a tributary and a culvert at another tributary.

Segment 2: Corridor C, Segment 2, is the same as Corridors A and B, Segment 2.

## **6.2.2 Typical Sections**

The proposed typical sections, which apply to all three study corridors, are included in the corridor concept set in Appendix B. These typical sections include an eight (8)-to ten (10)-foot wide bike lane/shoulder. West of the current east end of Hatten Track, sidewalks are included in the typical section as specified in *Gallatin on the Move 2020*. In future planning phases, connections to the proposed greenways will need to be considered. From west to east, the typical sections are described below.

### **SR 109 to Dead End of Existing Hatten Track Road (Two options)**

#### **Option 1**

- Two (2) 12-foot lanes
- 32-foot raised median with turn lanes at necessary locations
- 8-foot bike lane/shoulder (6-foot paved)
- 120-foot proposed right-of-way
- Ditch section

#### **Option 2**

- Three (3) 12-foot lanes (includes center turn lane)
- 8-foot bike lane/shoulder (6-foot paved)
- 120-foot proposed right-of-way
- Ditch section

### **West end of Existing Hatten Track Road to North Blythe Avenue, Old Highway 109**

- Three (3) 12-foot lanes (includes center turn lane)
- 10-foot paved shoulder/bike lane
- 5-foot grass strip and sidewalk on each side
- 84-foot proposed right-of-way
- Curb and gutter section

### **North Blythe Avenue to SR 174/Dobbins Pike**

- Five 12-foot lanes (includes center turn lane)
- 8-foot shoulder/bike lane
- 5-foot grass strip and sidewalk on each side
- 104-foot proposed right-of-way
- Curb and gutter section

As outlined above, from SR 109 to the dead end of existing Hatten Track Road, the City is considering two typical section options. Option 1 has one (1) travel lane in each direction separated by a raised median with turn lanes at necessary locations. Option 2 has one (1) travel lane in each direction with a center turn lane. The capacity of Option 1 is slightly higher than that of Option 2. The higher capacity of the two (2)-lane raised median section is attributed to fewer vehicular conflicts and higher travel speeds. Both options provide for adequate right-of-way for a future five (5)-lane section. *Gallatin on the Move 2020* suggests that from an aesthetic and access management standpoint, it would be preferable to configure this portion of the extension with a raised median and turn lanes at appropriate locations as opposed to a continuous center turn lane. The typical section will be selected in the next project phase.

### **6.2.3 Intersections**

All three corridors under consideration in this TPR would require intersections at: 1) SR 109; 2) Blythe Avenue/Old Highway 109/North Water Avenue/Hatten Track Road; and 3) SR 174/Dobbins Pike, SR 174/Albert Gallatin Avenue and North Water Avenue. Preliminary concepts for these intersections are described below.

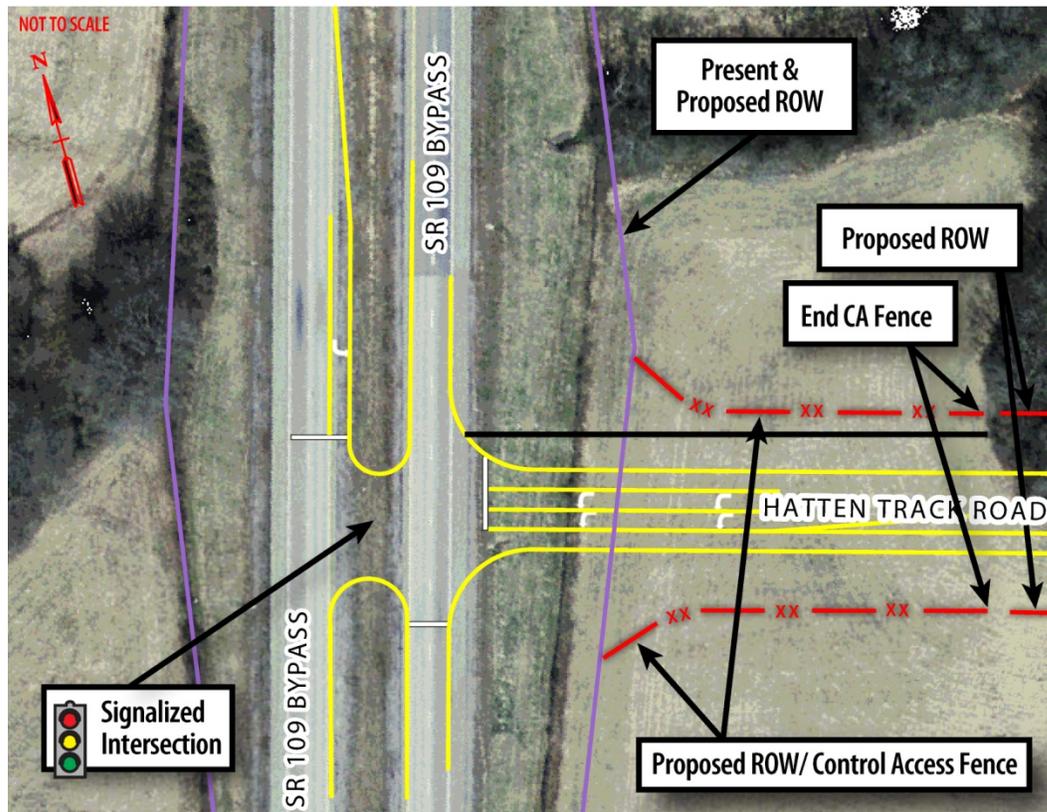
#### **SR 109**

Under all of the TPR corridors, the extension will intersect SR 109 in an area which is currently fenced by TDOT for access control. As discussed in Section 3.6, construction of the extension would require the City to coordinate with TDOT for permission to break the access control at this point. In addition, as described in Section 3.6, the west end of the proposed extension will be access controlled by fencing.

At SR 109, an at-grade signalized intersection under any of the three corridors would accommodate traffic volumes through the 2030 Build year. The intersection would add a left turn lane for southbound SR 109 traffic desiring to turn onto the extension. The proposed extension would intersect SR 109 with a four (4)-lane section accommodating an exclusive double left turn lane and right turn lane for southbound and northbound SR 109. See Figure 14.

The corridors were also set to accommodate a future grade separation at SR 109 under all three corridors as traffic volumes increase in the future. The City proposes to acquire sufficient right-of-way for the future interchange. The future interchange option will continue to be studied in the next project phase (NEPA) and may or may not be constructed as part of the initial project.

Figure 14. SR 109 and Hatten Track Road Intersection under all Corridor Options

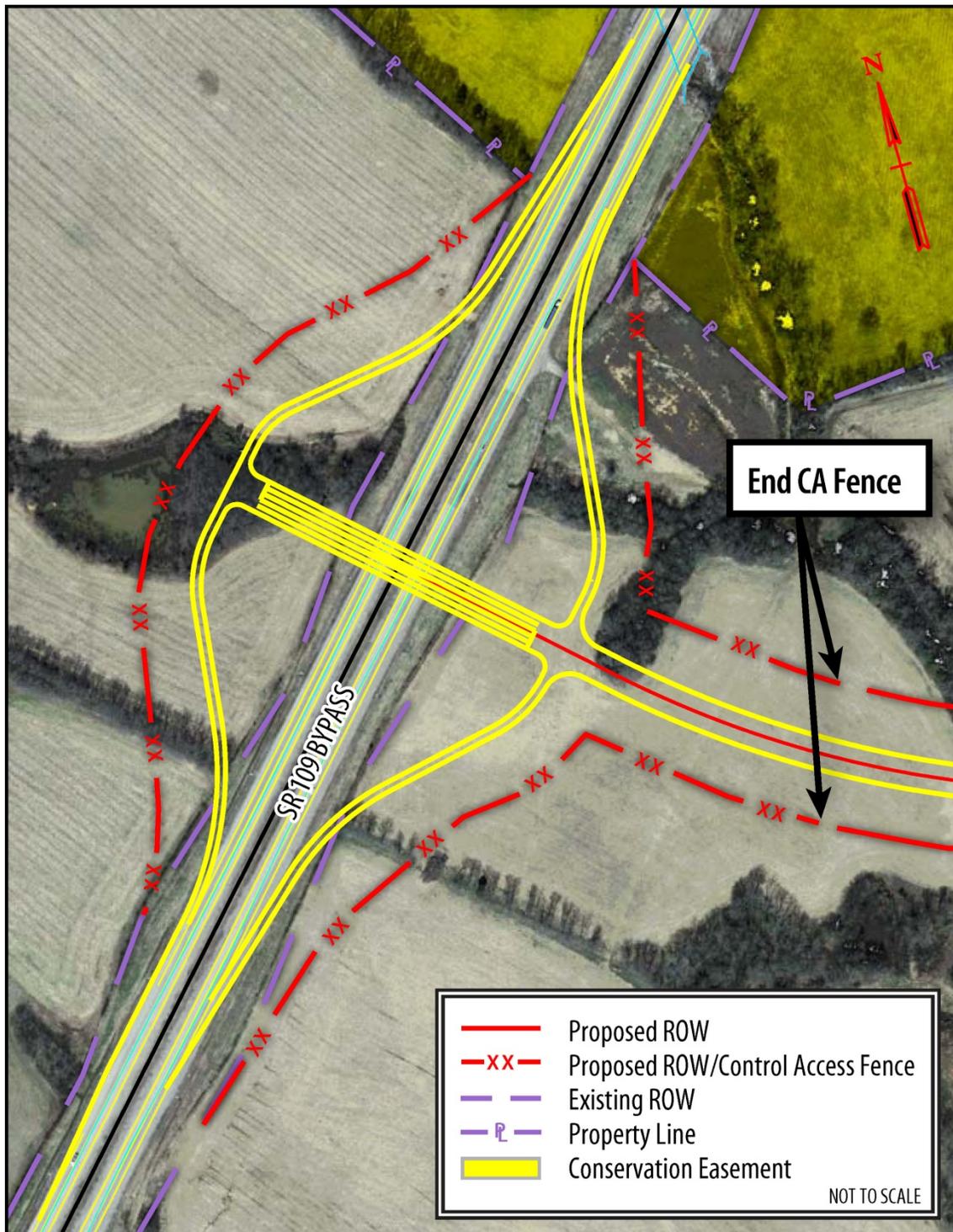


Corridor B is the only corridor that could accommodate a diamond interchange without either major displacements (as in Corridor C) or adverse impacts to the large conservation easement (as in Corridor A).

A preliminary evaluation was completed to determine if an interchange could be accommodated at the intersection of Corridor B and the extension, as this is the corridor preferred by the City, as previously discussed. An urban diamond interchange is recommended, as this would result in the lowest level of physical impacts to the Twin Eagles Subdivision when compared to other interchange types. Figure 15 depicts the interchange at Corridor B and SR 109.

Corridors A and C were set to accommodate a future grade separation at SR 109 with a semi-directional (three (3)-way) T interchange to allow for future improvements without compromising the conservation easement area or subdivision. Figures 16 and 17 depict the interchange option with Corridors A and C.

Figure 15. Urban Diamond Interchange—Corridor B-1



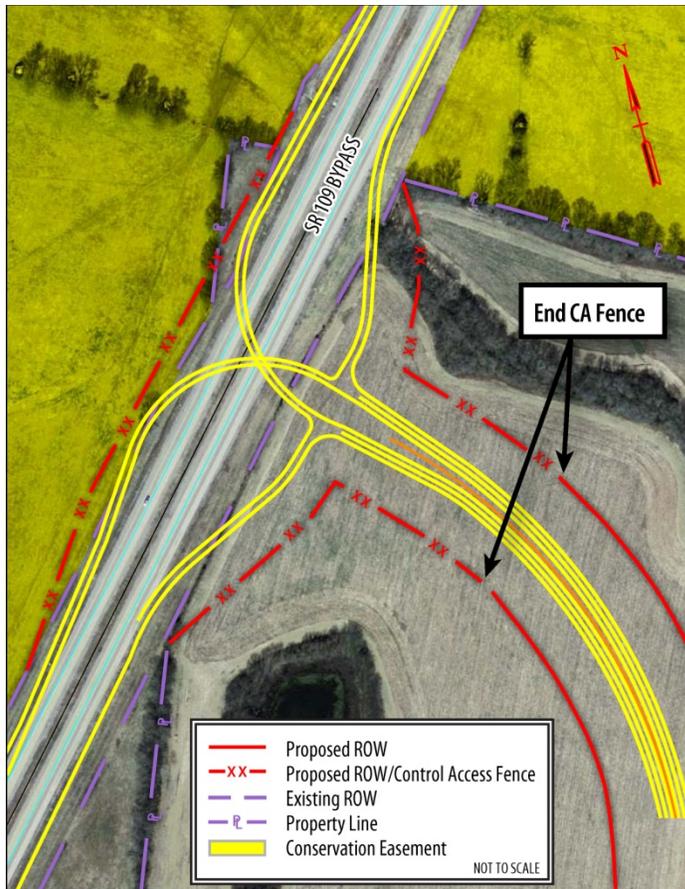


Figure 16.  
Semi-directional  
(3-way) T Interchange—  
Corridor A-1

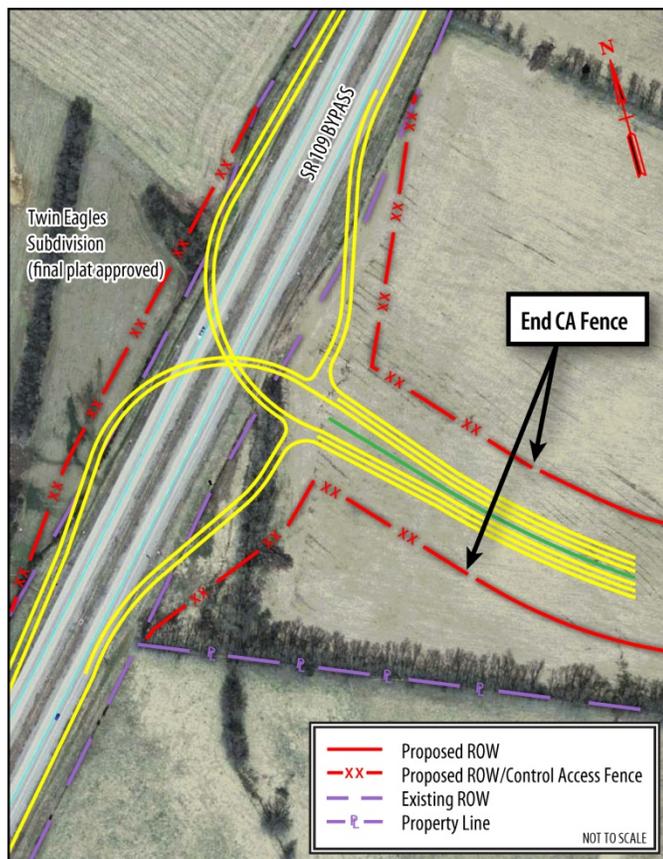
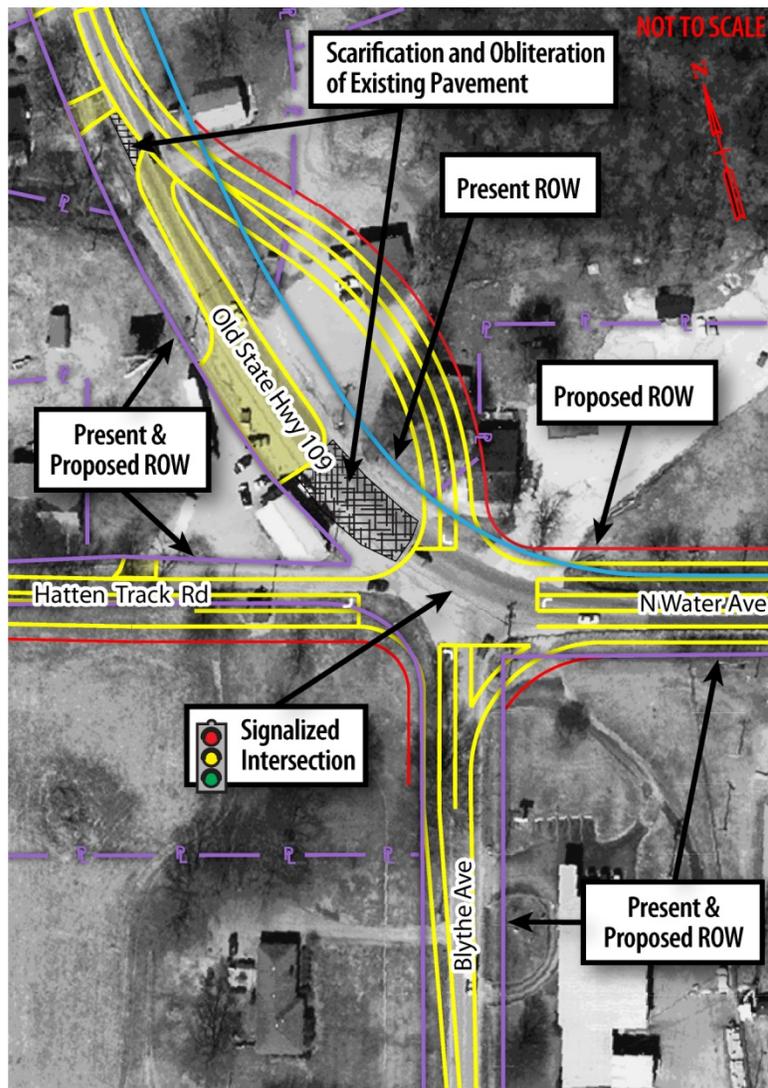


Figure 17.  
Semi-directional (3-way)  
T Interchange—  
Corridor C-1

### **Blythe Avenue/Old Highway 109/North Water Ave/Hatten Track Road Intersection**

Four roadways currently converge at this location and form a skewed intersection. Under any of the corridor options, the Old Highway 109 leg of the intersection would be realigned to the east and signalized to improve the operations and safety. Figure 18 depicts this intersection layout. An additional left and right turn lane would be added on Blythe Avenue with the right turn lane becoming the outside travel lane on North Water Avenue for the five (5)-lane section to SR 174/Dobbins Pike. From SR 174/Dobbins Pike along North Water Avenue the outside travel lane would end as a right turn only lane at Old Highway 109. Hatten Track Road would continue as a three (3)-lane section or two (2)-lane raised median section to SR 109, and a left turn lane onto Old Highway 109 would be provided at this intersection. This intersection would also be signalized.

A driveway off the extension would provide access to the business in the northwest quadrant of the intersection, as shown in Figure 18. The driveway would terminate in the parking lot. Existing Old Highway 109 between the end of the driveway and the new intersection would be scarified. Additional connections from the extension are needed to driveways northwest of the intersection.

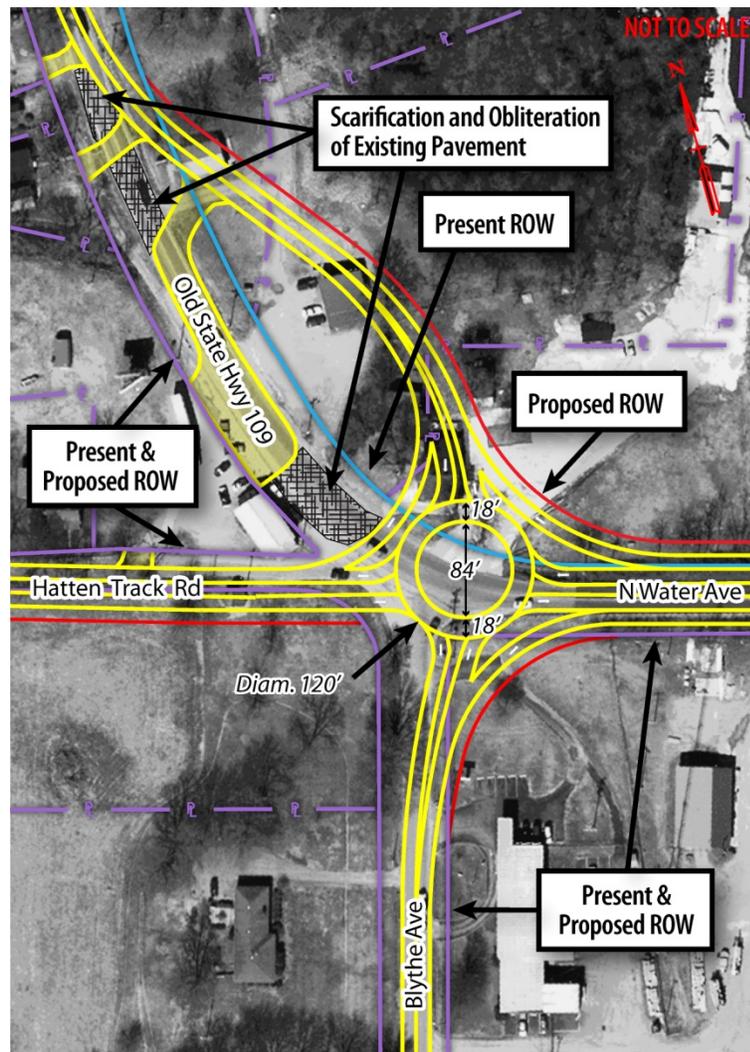


**Figure 18. Proposed Realignment Concept for Blythe Avenue/Old Highway 109/North Water Avenue/Hatten Track Road Intersection**

Another option for this intersection is construction of a roundabout, which would also require realignment of the Old Highway 109 leg of the intersection. Capacity analysis was performed for the roundabout using the SIDRA analysis software, and it was determined that the roundabout operates slightly better than the signalized intersection option under the AM (LOS B) and PM (LOS A) peak hour conditions. The 120-foot diameter single-lane roundabout would have one (1) 18-foot lane, with right turn bypass lanes from Blythe Avenue to North Water Avenue, North Water Avenue to Old Highway 109, and Old Highway 109 to Hatten Track Road. Figure 19 is a conceptual layout of the roundabout. The figure shows the intersection and roundabout at the existing intersection location. Figures 20 and 21 are artist's renderings of the general appearance of a roundabout at this location. The roundabout would require modification for a future five (5)-lane section, as would the signalized intersection, but both could be modified to accommodate this future section.

A driveway off the extension would provide access to the business in the northwest quadrant of the intersection, as shown in Figure 19. The driveway would terminate in the parking lot. Existing Old Highway 109 between the end of the driveway and the new intersection would be scarified.

**Figure 19.**  
Proposed Roundabout  
Concept for  
Blythe Avenue,  
Old Highway 109,  
North Water Avenue,  
Hatten Track Road  
Intersection.



**Figure 20. Blythe Avenue Approach to Roundabout**



**Figure 21. Hatten Track Road Approach to Roundabout**



***Intersection of SR 174/Dobbins Pike, SR 174/Albert Gallatin Avenue,  
North Water Avenue***

This existing intersection laneage would remain and be shifted slightly north on North Water Avenue to accommodate the proposed alignment shift. It would tie back into the existing legs of SR 174/Dobbins Pike to the north, North Water Avenue to the south and SR 174/Albert Gallatin Avenue to the east. Capacity analysis was performed for this intersection for the 2030 Build Condition, and it was determined that the intersection will operate at an acceptable Level of Service in both the AM (LOS C) and PM (LOS C) peak hour conditions. Realignment of SR 174/Albert Gallatin Avenue on the east would be needed for approximately 600 feet as the five (5)-lane section improvements on North Water Avenue would be primarily to the north of the existing alignment as previously stated. During the design phase, right and left turn lane storage may be extended to meet projected traffic volumes.

**6.2.4 CSX Railroad Overpass**

Currently, there is a two (2)-lane bridge on North Water Avenue over the CSX Railroad (Figures 22, 23 and 24). The existing bridge has a sufficiency rating of 49.9. It is not wide enough to carry the laneage recommended for the proposed SR 174/Albert Gallatin Avenue and Hatten Track Road Extension. The current bridge inspection report was reviewed and it was determined that replacing the existing bridge is the most viable alternative. The overall condition of the bridge and the shallow depth of the cast-in-place superstructure do not support the consideration of widening the existing structure.

**Figure 22. East Approach to Bridge**



**Figure 23. West Approach to Bridge**



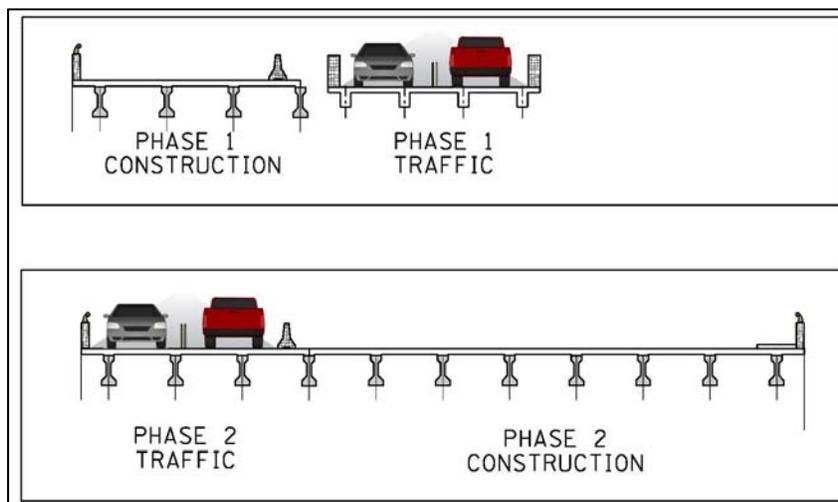
**Figure 24. Railroad Bridge, View from Tracks**



A new bridge could be constructed while maintaining traffic to lessen the impacts to the motoring public. The alignment and traffic will be shifted from the old bridge to the new bridge as phases of construction are completed. Figure 25 illustrates a scenario for staging construction, while maintaining traffic.

Additionally, after review of the CSX Bridge Crossing Criteria, it has been determined that replacing the existing bridge with a single span structure could provide several advantages. A single span bridge would provide for future track capacity for freight or commuter use, is generally more economical and can be permitted quicker by the railroad since construction activities are not adjacent to the active tracks.

**Figure 25. CSX Railroad Bridge Replacement—Suggested Construction Staging**



### 6.3 Costs

Planning level cost estimates for the corridor options have been developed and are summarized in Tables 10 through 15. Tables 10 through 12 include an at-grade signalized intersection at SR 109. Tables 13 through 15 include an interchange at SR 109. Detailed cost estimates can be found in Appendix E.

Below is a summary of the total cost estimate for each corridor. Option 1 includes a two (2)-lane, 32-foot raised median section (two (2) 12-foot lanes with a turn lane in the median as warranted) from existing SR 109 to Hatten Track Road; Option 2 includes a 3-lane section (two (2) 12-foot lanes with a 12-foot center turn lane) from existing SR 109 to Hatten Track Road. The difference in cost between the signalized intersection and roundabout option at Old Highway 109 was negligible (see Appendix E).

#### Corridor Options with At-Grade Intersection at SR 109

Corridor	Option 1	Option 2	Length/#Structures
A	\$14,377,524	\$12,475,866	1.8 miles: 1 bridge; 1 box culvert
B	\$16,748,733	\$14,071,704	1.65 miles: 2 bridges; 1 box culvert
C	\$16,250,408	\$13,772,519	1.78 miles: 2 bridges; 1 box culvert

#### Corridor Options with Interchange at SR 109

Corridor	Option 1	Option 2	Length/#Structures
A	\$20,765,916	\$18,847,606	1.8 miles: 3 bridges; 1 box culvert
B	\$22,620,058	\$19,898,111	1.65 miles: 3 bridges; 1 box culvert
C	\$22,208,762	\$19,717,905	1.78 miles: 4 bridges; 1 box culvert

For the interchange costs, a grade-separated urban diamond interchange was developed for Corridor B at SR 109. At Corridors A and C, a semi-directional (three (3)-way) T interchange was proposed due to the previously mentioned constraints of the conservation easement and Twin Eagles Subdivision. Corridor B is the only corridor that can be extended across SR 109 from the west end of the Hatten Track Extension and the City is examining this as a future, stand-alone project.

**Table 10. Cost Estimate with At-Grade Intersection, Corridor A<sup>1</sup>**

ITEM	Segment 1 Option 1**	Segment 1 Option 2***	Segment 2	Total Option 1**	Total Option 2***
Right-of-Way	\$983,400	\$983,400	\$775,000	\$1,758,400	\$1,758,400
Construction	\$6,175,943	\$4,664,771	\$3,431,776	\$9,607,719	\$8,096,548
Utilities	0	0	\$407,000	\$407,000	\$407,000
Mobilization	\$266,322	\$205,875	\$147,987	\$414,309	\$353,862
Contingency	\$644,226	\$487,065	\$398,676	\$1,042,903	\$885,741
Total Construction	\$7,086,491	\$5,357,711	\$4,385,440	\$11,471,931	\$9,743,151
Preliminary Engineering	\$708,649	\$535,771	\$438,544	\$1,147,193	\$974,315
<b>TOTAL COSTS*</b>	<b>\$8,778,540</b>	<b>\$6,876,882</b>	<b>\$5,598,984</b>	<b>\$14,377,524</b>	<b>\$12,475,866</b>

\* For estimating future project costs, a compounded inflation rate of 10 percent per year will be applied from the date of this estimate.

\*\* Option 1 includes a 2-lane, 32-foot raised median section (2@12-foot lanes with a 12-foot center turn lane as needed) from existing SR 109 to Hatten Track Road.

\*\*\* Option 2 includes a 3-lane section (2@12-foot lanes with a 12-foot center turn lane) from existing SR 109 to Hatten Track Road.

<sup>1</sup> Detailed costs are found in Appendix E.

**Table 11. Cost Estimate with At-Grade Intersection, Corridor B<sup>2</sup>**

ITEM	Segment 1 Option 1**	Segment 1 Option 2***	Segment 2	Total Option 1**	Total Option 2***
Right-of-Way	\$851,400	\$851,400	\$775,000	\$1,626,400	\$1,626,400
Construction	\$8,172,868	\$6,037,815	\$3,431,776	\$11,604,634	\$9,469,591
Utilities	0	0	\$407,000	\$407,000	\$407,000
Mobilization	\$342,392	\$265,014	\$143,770	\$486,162	\$408,784
Contingency	\$851,525	\$630,283	\$398,255	\$1,249,780	\$1,028,538
Total Construction	\$9,366,775	\$6,933,112	\$4,380,801	\$13,747,575	\$11,313,913
Preliminary Engineering	\$936,677	\$693,311	\$438,080	\$1,374,758	\$1,131,391
<b>TOTAL COSTS*</b>	<b>\$11,154,852</b>	<b>\$8,477,823</b>	<b>\$5,593,881</b>	<b>\$16,748,733</b>	<b>\$14,071,704</b>

\* For estimating future project costs, a compounded inflation rate of 10 percent per year will be applied from the date of this estimate.

\*\* Option 1 includes a 2-lane, 32-foot raised median section (2@12-foot lanes with a 12-foot center turn lane as needed) from existing SR 109 to Hatten Track Road.

\*\*\* Option 2 includes a 3-lane section (2@12-foot lanes with a 12-foot center turn lane) from existing SR 109 to Hatten Track Road.

<sup>2</sup> Detailed Costs are in Appendix E.

**Table 12. Cost Estimate with At-Grade Intersection, Corridor C<sup>3</sup>**

ITEM	Segment 1 Option 1**	Segment 1 Option 2***	Segment 2	Total Option 1**	Total Option 2***
Right-of-Way	\$969,200	\$969,200	\$775,000	\$1,744,200	\$1,744,200
Construction	\$7,680,882	\$5,706,454	\$3,431,776	\$11,112,658	\$9,138,230
Utilities	0	0	\$407,000	\$407,000	\$407,000
Mobilization	\$324,125	\$250,711	\$144,818	\$468,943	\$395,529
Contingency	\$800,501	\$595,716	\$398,359	\$1,198,860	\$994,076
Total Construction	\$8,805,508	\$6,552,881	\$4,381,954	\$13,187,462	\$10,934,835
Preliminary Engineering	\$880,551	\$655,288	\$438,195	\$1,318,746	\$1,093,484
<b>TOTAL COSTS*</b>	<b>\$10,655,259</b>	<b>\$8,177,369</b>	<b>\$5,595,149</b>	<b>\$16,250,408</b>	<b>\$13,772,519</b>

\* For estimating future project costs, a compounded inflation rate of 10 percent per year will be applied from the date of this estimate.

\*\* Option 1 includes a 2-lane, 32-foot raised median section (2@12-foot lanes with a 12-foot center turn lane as needed) from existing SR 109 to Hatten Track Road.

\*\*\* Option 2 includes a 3-lane section (2@12-foot lanes with a 12-foot center turn lane) from existing SR 109 to Hatten Track Road.

<sup>3</sup> Detailed costs are in Appendix E.

**Table 13. Cost Estimate with Interchange, Corridor A<sup>4</sup>**

ITEM	Segment 1 Option 1**	Segment 1 Option 2***	Segment 2	Total Option 1**	Total Option 2***
Right-of-Way	\$1,437,200	\$1,437,200	\$775,000	\$2,212,200	\$2,212,200
Construction	\$10,912,813	\$9,381,045	\$3,431,776	\$14,344,589	\$12,812,821
Utilities	0	0	\$407,000	\$407,000	\$407,000
Mobilization	\$442,808	\$389,197	\$139,352	\$582,060	\$528,449
Contingency	\$1,135,562	\$977,024	\$397,803	\$1,533,365	\$1,374,827
Total Construction	\$12,491,183	\$10,747,266	\$4,375,831	\$16,867,014	\$15,123,097
Preliminary Engineering	\$1,249,118	\$1,074,727	\$437,583	\$1,686,701	\$1,512,310
<b>TOTAL COSTS*</b>	<b>\$15,177,502</b>	<b>\$13,259,192</b>	<b>\$5,588,414</b>	<b>\$20,765,916</b>	<b>\$18,847,606</b>

\* For estimating future project costs, a compounded inflation rate of 10 percent per year will be applied from the date of this estimate.

\*\* Option 1 includes a 2-lane, 32-foot raised median section (2@12-foot lanes with a 12-foot center turn lane as needed) from existing SR 109 to Hatten Track Road.

\*\*\* Option 2 includes a 3-lane section (2@12-foot lanes with a 12-foot center turn lane) from existing SR 109 to Hatten Track Road.

<sup>4</sup> Detailed costs are in Appendix E.

**Table 14. Cost Estimate with Interchange, Corridor B<sup>5</sup>**

ITEM	Segment 1 Option 1**	Segment 1 Option 2***	Segment 2	Total Option 1**	Total Option 2***
Right-of-Way	\$1,335,200	\$1,335,200	\$775,000	\$2,110,200	\$2,100,200
Construction	\$12,474,790	\$10,301,319	\$3,431,776	\$15,906,566	\$13,733,095
Utilities	0	0	\$407,000	\$407,000	\$407,000
Mobilization	\$499,358	\$423,286	\$137,372	\$636,730	\$560,658
Contingency	\$1,297,415	\$1,072,461	\$397,615	\$1,695,030	\$1,470,075
Total Construction	\$14,271,563	\$11,797,066	\$4,373,763	\$18,645,326	\$16,170,829
Preliminary Engineering	\$1,427,156	\$1,179,707	\$437,376	\$1,864,533	\$1,617,083
<b>TOTAL COSTS*</b>	<b>\$17,033,919</b>	<b>\$14,311,972</b>	<b>\$5,586,139</b>	<b>\$22,260,058</b>	<b>\$19,898,111</b>

\* For estimating future project costs, a compounded inflation rate of 10 percent per year will be applied from the date of this estimate.

\*\* Option 1 includes a 2-lane, 32-foot raised median section (2@12-foot lanes with a 12-foot center turn lane as needed) from existing SR 109 to Hatten Track Road.

\*\*\* Option 2 includes a 3-lane section (2@12-foot lanes with a 12-foot center turn lane) from existing SR 109 to Hatten Track Road.

<sup>5</sup> Detailed costs are in Appendix E.

**Table 15. Cost Estimate with Interchange, Corridor C<sup>6</sup>**

ITEM	Segment 1 Option 1**	Segment 1 Option 2***	Segment 2	Total Option 1**	Total Option 2***
Right-of-Way	\$1,423,000	\$1,423,000	\$775,000	\$2,194,200	\$2,194,200
Construction	\$12,079,296	\$10,090,350	\$3,431,776	\$15,511,072	\$13,522,127
Utilities	0	0	\$407,000	\$407,000	\$407,000
Mobilization	\$485,076	\$415,462	\$137,812	\$622,888	\$553,274
Contingency	\$1,256,437	\$1,050,581	\$397,659	\$1,654,096	\$1,448,240
Total Construction	\$13,820,809	\$11,556,394	\$4,374,247	\$18,195,056	\$15,930,641
Preliminary Engineering	\$1,382,081	\$1,155,639	\$437,425	\$1,819,506	\$1,593,064
<b>TOTAL COSTS*</b>	<b>\$16,625,890</b>	<b>\$14,135,033</b>	<b>\$5,586,672</b>	<b>\$22,208,762</b>	<b>\$19,717,905</b>

\* For estimating future project costs, a compounded inflation rate of 10 percent per year will be applied from the date of this estimate.

\*\* Option 1 includes a 2-lane, 32-foot raised median section (2@12-foot lanes with a 12-foot center turn lane as needed) from existing SR 109 to Hatten Track Road.

\*\*\* Option 2 includes a 3-lane section (2@12-foot lanes with a 12-foot center turn lane) from existing SR 109 to Hatten Track Road.

<sup>6</sup> Detailed costs are in Appendix E.

## 7.0 POTENTIAL ENVIRONMENTAL IMPACTS

The environmental screening presented in this TPR is a combination of information that was provided by the TDOT Early Environmental Screening (EES) reports, and additional information and GIS mapping that were researched in support of this TPR. Environmental screening maps produced in support of the analysis in this report are found in Appendix C. A full copy of the TDOT EES reports, also prepared in support of this TPR, can be found in Appendix D.

### 7.1 Wetlands and Floodplains

The United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps were reviewed to identify known wetlands in the project area. Wetlands data for the Gallatin USGS Quadrangle map, which encompasses the project area, have been digitized by the USFWS. A digitized version of the NWI data created by the Tennessee Wildlife Resources Agency (TWRA) and made available on the Tennessee Spatial Data Server was used for the mapping of wetlands in the project area. Multiple small wetlands are present along both sides of East Camp Creek but are very scattered. The relationship of the wetlands present in the project area to the study corridors is displayed in Appendix C, Map C-1.

The TDOT EES Report showed that 6.84 acres of wetlands are within 4,000 feet of Corridor A-1, and 4.72 acres of wetlands are within 4,000 feet of both Corridor B-1 and Corridor C-1.

According to Federal Emergency Management Association (FEMA) Flood Insurance Rate Maps (FIRM) numbers 47165C0312E, 47165C0313E and 47165C0314E, the project area is bisected by the 100-year floodplain. Areas along East Camp Creek fall within this zone. FIRMs depicting the 100-year floodplains within the project area were digitized and are included in Appendix C, Map C-2. All three corridors cross the floodplain.

Three streams cross the project area, but none of them are listed on the Tennessee Department of Environment and Conservation's (TDEC) 303(d) list (see Appendix C, Map C-2). The 303(d) list is considered a priority for water quality improvement efforts. The three streams include the blue-line East Camp Creek (TN05130201041\_1000), an unnamed tributary to East Camp Creek (TN05130201041\_0999) and an additional unnamed tributary to East Camp Creek. All three corridors cross East Camp Creek and one or more of its tributaries.

### 7.2 Threatened and Endangered Species

The TDEC Division of Natural Areas maintains records of rare, threatened and endangered species located throughout the state. The Division's files were examined in an attempt to identify threatened and endangered species recorded in the general vicinity of the project. No federally listed, threatened or endangered species are known to exist in the general project area. In addition, none were identified in TDOT's EES Report as being within 4,000 feet of the project area.

### **7.3 Hazardous Materials**

Project planners reviewed Environmental Protection Agency (EPA) records, contacted the TDEC Division of Remediation records and requested an Environmental Data Resources, Inc. report to check for the presence of any hazardous materials sites in the proposed project area. Databases checked included the Resource Conservation and Recovery Act (RCRAInfo) database, the Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) database (Superfund) and the Enforcement and Compliance History Online (ECHO) database.

The locations of the identified facilities are depicted in Appendix C, Map C-3. The BP gas station, located at 885 Highway 109 North, is the only site located within any of the 500-foot wide project corridors (located at the eastern end of Corridor ABC-2). On January 26, 2010, a file review at the TDEC Nashville Environmental Field office was completed that showed no Notice of Violations (NOV) for the BP gas station. On the same day, the TDEC Central Office was also queried about the site. File reviews showed that there was not any evidence of environmental contamination or known fuel spills at the site.

Just north of Corridor ABC-2 is the Sumner County Highway Department. Five (5) Underground Storage Tanks (UST) are located on the site. Two (2) are currently being used and three (3) are permanently out of service. The two (2) that are currently being used consist of a 15,000-gallon diesel tank and a 20,000-gallon gasoline tank. There are no violations noted with these USTs. The three (3) tanks that are out of service consist of a 10,000-gallon gasoline tank, a 10,000-gallon diesel tank and a 2,500-gallon gasoline tank (historic USTs).

Noted in Appendix C, Map C-3, is a stakeholder identified landfill, located within Corridor ABC-2. This is a site that a contractor has used for dumping construction materials. This site will need further investigation in future phases of project development.

## **8.0 POTENTIAL CULTURAL IMPACTS**

### **8.1 Historic Resources**

A review of State Historic Preservation Office (SHPO) records at the Tennessee Historical Commission (THC) was conducted on December 16, 2009, to check for the presence of historic resources within the project area. The records check revealed that there are no properties listed on the National Register of Historic Places (NRHP) within the project study area.

A review of the THC United States Geological Survey (USGS) quadrangle survey maps indicated that there are approximately five (5) properties in Sumner County included in the Tennessee Historic Sites Survey within the study area, but none were deemed eligible for the NRHP by the surveyor. Sumner County survey #532 on Gallatin Quad 313 NW (1955) reveals a circa 1910 house located at 438 Hatten Track Road in the study area. Additional survey work would be needed in future project phases to determine whether the APE contains resources that are eligible for the NRHP.

### **8.2 Community Resources**

While there are no schools located within any of the proposed TPR corridors, the Union Elementary Year Round School (516 W. Carson Street), Joe Shafer Middle School (240 SR 174/Albert Gallatin Avenue), and Benny C. Bills Elementary School (1030 Union School Road) are all located in the vicinity of the project. School buses regularly utilize the corridor from 6:30 to 8:00 a.m. and from 2:30 to 4:00 p.m., therefore, coordination with the Sumner County School District should be undertaken in future planning phases.

On Hatten Track Road, between Old Highway 109 and Scott Drive, eight (8) buses traverse the area per day. At the intersection of SR 174/Dobbins Pike and SR 174/Albert Gallatin Avenue, 32 different buses pass through the intersection per day. There are no bus stops at this intersection. Appendix C, Map C-4 shows the Sumner County bus stops in the area. Bus runs/stops could be for any grade, elementary only, middle school only or elementary and middle school. A turn-around location is shown at the intersection of Old Highway 109 and Blythe Avenue. Turn-around locations may or may not include a bus stop with children.

No churches are located within the project area. The Sudanese Presbyterian Church is located just north of the project area at 1115 Old Highway 109.

### **8.3 Environmental Justice**

U.S. Census Data was reviewed for the project area to determine whether the proposed project would have disproportionately high and adverse human health or environmental effects on minority and/or low-income populations. Early screening has revealed that the neighborhood, bordered on the north by properties on the north side of Hatten Track Road, is a high minority neighborhood that must be considered in future project planning pursuant to the Environmental Justice Executive Order (EO 12898).

### **Minority Populations**

Appendix C, Map C-5 illustrates the minority population in the project area by Census Block for the 2000 US Census. The average percentage of minority populations for the City of Gallatin in 2000 was 21.7 percent. The county-wide minority population for Sumner County was 8.5 percent. The City of Gallatin average is comparable to the statewide average of 19.8 percent, but the Sumner County average is considerably lower than the statewide average. Of the eleven (11) census blocks encompassing the project area, six (6) have minority populations higher than the City of Gallatin as a whole.

These six (6) Census Blocks are highlighted in Appendix C, Map C-5. The percentage of the population that identified themselves as a minority in these six (6) Census Blocks ranges from 30 to 86.67 percent. Portions of all six (6) of these Census Blocks lie within Corridor ABC-2. Over half of Segment 2 in Corridors A, B and C, specifically on Hatten Track Road between Old Highway 109 and the west end of Segment 2, is part of a relatively large high percentage minority neighborhood. The six (6) Census Blocks that are crossed by Corridor ABC-2 are all in Census Tract 208. Those that have a minority population higher than that of Gallatin as a whole are identified as follows:

- Block Group 1, Block 1018 – 66.83 percent (or 399 of 597 persons)
- Block Group 1, Block 1022 – 78.21 percent (or 61 of 78 persons)
- Block Group 1, Block 1023 – 73.81 percent (or 31 of 42 persons)
- Block Group 1, Block 1024 – 86.67 percent (or 13 of 15 persons)
- Block Group 1, Block 1025 – 50 percent (or 1 of 2 persons)
- Block Group 2, Block 1026 – 30 percent (or 15 of 50 persons)

### **Low Income Populations**

Appendix C, Map C-6, shows the percentage of the population living below poverty in the project area by Census Block Group. The project area is encompassed by two (2) Census Block Groups. US Census data on poverty status is only provided for the portion of the population for which poverty status can be determined. Thus, the percent living below poverty level is calculated using the population for which status can be determined rather than the total population of the Block Group in 2000.

The percent of the population living below poverty in 2000 (based on 1999 income) within the City of Gallatin averages 14.4 percent. This is higher than the County and statewide averages of 8.1 and 13.5 percent respectively. The percent of the population below poverty in the Census Block Group in the eastern portion of the project area is considerably higher than the City, County and statewide averages, with 22.9 percent of the population in the Block Group living below poverty. This Block Group is Census Tract 208, Block Group 1 and is crossed by Corridor ABC-2 (as highlighted in Appendix C, Map C-6).

## 9.0 ASSESSMENT OF OPTIONS

TDOT has adopted seven guiding principles against which all transportation projects are to be evaluated. These guiding principles address concerns for system management, mobility, economic growth, safety, community, environmental stewardship, and fiscal responsibility. These guiding principles are discussed in the following paragraphs as they relate to the options for the proposed extension of SR 174/Albert Gallatin Avenue and Hatten Track Road.

### **Guiding Principle 1:**

#### **Preserve and Manage the Existing Transportation System**

When the construction of SR 386 (Vietnam Veterans Boulevard) was completed, SR 386 became a major asset to the City of Gallatin, acting as a corridor to accommodate both local and through traffic and providing access to Gallatin's downtown commercial core, via SR 174/Long Hollow Pike and US 31E. Over time, the section of US 31E downtown has become congested. The function of the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension will be to provide an east-west connector between SR 109 and US 31E/SR6/East Broadway on the north side of the City, alleviating some traffic on US 31E and providing better travel times for through traffic as it can avoid the most congested area of US 31E. The proposed improvements and new connection with SR 109 would result in preserving the existing transportation system in the City of Gallatin and is anticipated to result in decreased congestion and better travel times.

SR 109, SR 174 and US 31E are critical travel corridors for the City of Gallatin. US 31E is not only a key commercial corridor for area residents and truck traffic, but it also connects Gallatin to the towns of Bethpage and Westmoreland in Tennessee and Scottsville in Kentucky to the north and Nashville to the south. SR 174 connects Gallatin to Oak Grove in Tennessee and Scottsville, Kentucky to the north, and SR 109 connects Gallatin to Portland to the north. The options presented as Corridors A, B and C, which involve construction of a roadway partly on new location, can help extend the life of these important routes by diverting some regional traffic or lessening the future growth of traffic on these roads as indicated under the Build scenario. In addition, the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension would alleviate some congestion along US 31E, allowing travelers to use the SR 109 Bypass and the new extension to get to the east and north sides of town. The option to create a roundabout at the intersection of Hatten Track Road, Blythe Avenue, Old Highway 109, and North Water Avenue can also help to preserve the life of the intersection by better directing the flow of traffic at the intersection in the proposed project area, and ensuring that the intersection continues to function at an adequate LOS in the future.

### **Guiding Principle 2:**

#### **Move a Growing, Diverse, and Active Population**

As discussed in Section 3.1 of this report, the City of Gallatin grew by 56.1 percent between 1990 and 2008 and Sumner County grew by 50.5 percent, figures higher than the State of Tennessee as a whole (27.4 percent). The options presented in this report are intended to provide improved traffic conditions to support the area's growing population and increasing amounts of externally generated traffic, as well as support the recommended future land use for the area, which is outlined in *Gallatin on the Move 2020*.

As described in the *TIP*, the proposed extension will redirect some through traffic away from existing US 31E, potentially reducing congestion in the future and creating a safer and more hospitable environment for local traffic, pedestrians and bicyclists. The proposed extension, by removing some through traffic, will support a diverse and active population by offering all citizens a safer regional roadway environment. The proposed improvements will consider all users and will improve multi-modal accessibility in the area through the inclusion of bike lanes and sidewalks and through the recognition of future connections to greenways in project planning.

**Guiding Principle 3:**

**Support the State's Economy**

The SR 174/Albert Gallatin Avenue and Hatten Track Road Extension would provide a local connection between residents and retail and service destinations in and around Gallatin. Both SR 109 and US 31E are regional movers of goods and services. The project is anticipated to provide better access to the "Hatten Track" neighborhood. It would open up land west of East Camp Creek for development as specified in the City's future land use plan, supporting the vision of the City of Gallatin to promote the area as an emerging business park, walkable mixed-use community and neighborhood center.

The options discussed in this report will create access to properties along the proposed extension, making it easier for some residents and customers to access homes, businesses and services in the area. The additional infrastructure provided by the proposed project extension will better accommodate existing traffic, as well as make the project area more attractive for potential developers and employers.

**Guiding Principle 4:**

**Maximize Safety and Security**

The proposed project will create opportunities for the separation of through and local traffic, alleviating traffic congestion in the downtown area, especially on US 31E. The road extension will also eliminate the need for some semi tractor-trailers and other large trucks to travel through the City, reducing the potential for crashes with local traffic, which turns and stops frequently.

The proposed project is anticipated to improve pedestrian safety and mobility. The installation of sidewalks and bike lanes will result in a safe, attractive and welcoming pedestrian environment for those traveling through the corridor, as well as for children who will be walking to and from the schools within the area.

**Guiding Principle 5:**

**Build Partnerships for Livable Communities**

Coordination with local leaders and interested agencies to identify their concerns and objectives for the proposed project was conducted throughout the planning process. Meetings were held with City of Gallatin officials and staff; the City Council; and stakeholders (see Section 4.0 Stakeholder Meeting and Field Review). Due to the fact that the "Hatten Track" neighborhood is an area with a high percentage of minority residents, the project must consider the Environmental Justice Executive Order 12898 if federal funds will be used for the project. During the TPR development process, additional coordination was undertaken with the neighborhood Councilman and local residents through a meeting at the Mayor's office. The existence of the conservation easement on the Merryman property within the study area required coordination with the

Land Trust for Tennessee. That property will be avoided by the project to preserve the intent of the easement.

Conversations with local officials and stakeholders revealed a desire for a road extension that serves the needs of through traffic on a regional scale, as well as local traffic. Emergency personnel expressed that the road extension would provide better ingress and egress to the area in the event of an emergency. Safety of roadways and access to hospitals and emergency personnel are critical components of a livable community. Development of a project within one of the corridors in this TPR is anticipated to result in better travel conditions for both pedestrians and motorists.

In keeping with TDOT's Public Involvement Process, the provisions of NEPA and Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) and the provisions of the Tennessee Environmental Streamlining Agreement (TESA), if warranted, this project will be coordinated with the public and additional governmental agencies, beginning in the next project phase (NEPA).

**Guiding Principle 6:**

**Promote Stewardship of the Environment**

Potential adverse environmental impacts identified during the environmental screening phase or coordination with local government and stakeholders have been carefully considered in the development of the corridors included in this study. Detailed technical environmental studies are needed to fully address the impacts of each option considered in this report. Sections 7.0 and 8.0 of this report outline potential environmental and cultural impacts based on preliminary environmental screening only.

Should federal funding be obtained for the project, a NEPA document will be prepared in future phases of the project. The NEPA document will assess the project's impacts on the natural, social and built environment, and all efforts will be made to avoid adverse impacts during design development. If impacts cannot be avoided, they will be minimized and mitigated. Early and continuous coordination will continue to take place with the appropriate federal, state and local agencies and the public. This coordination will assist with the identification of important resources early in the planning process and will help ensure the proposed project promotes stewardship of the environment.

**Guiding Principle 7:**

**Promote Financial Responsibility**

The cost estimates shown in Tables 10 through 15, pages 40 through 45 of this report, are offered for comparison purposes and will fluctuate with inflation and any unexpected conditions. It is TDOT's goal to follow a comprehensive transportation planning process, promote coordination among public and private operators of transportation systems and support efforts to provide stable funding for the public component of the transportation system. This entails exercising financial responsibility in the development and implementation of roadway projects and minimizing cost to taxpayers.

## 10.0 SUMMARY

This TPR involves the study of the SR 174/Albert Gallatin Avenue and Hatten Track Road Extension between SR 109 and SR 174/Dobbins Pike in Gallatin, a distance of approximately 1.8 miles.

Through coordination with local officials and stakeholders and review of previous planning work, including a February 2000 TDOT APR and *Gallatin on the Move 2020*, the preliminary need for the study has been identified. The project is needed to provide an east-west connector between SR 109 and US 31E on the north side of the City of Gallatin. This connector is intended to allow traffic in the north and east sections of Gallatin to access major arterial roadways without having to travel through the congested section of US 31E downtown, or traffic from southbound SR 109 to access the areas north of downtown without traveling through downtown. In summary, the project is needed to:

- Promote system linkage;
- Meet intent of legislation/local mandate;
- Address capacity/congestion issues; and
- Meet social/economic development demands.

Three 500-foot wide TPR corridor options were developed: Corridors A, B and C. These options are divided into two segments. Segment 1 is between SR 109 (the western project terminus) and East Camp Creek. There are three distinct corridors in Segment 1: A-1, B-1 and C-1. Segment 2 is between East Camp Creek and SR 174/Dobbins Pike (the eastern project terminus). All three options share a common corridor in this area (ABC-2). Costs for the Corridors are:

### Corridor Options with At-Grade Intersection at SR 109

Corridor	Option 1	Option 2
A	\$14,377,524	\$12,475,866
B	\$16,748,733	\$14,071,704
C	\$16,250,408	\$13,772,519

### Corridor Options with Interchange at SR 109

Corridor	Option 1	Option 2
A	\$20,765,916	\$18,847,606
B	\$22,620,058	\$19,898,111
C	\$22,208,762	\$19,717,905

Environmental screening revealed that:

- All of the corridors cross streams and they all have the potential to have impacts to wetlands and floodplains.
- No federally-listed species are anticipated to be found in the project area.
- A BP gas station with USTs is within Corridor ABC-2 but there are no reported violations at this site.
- A construction materials dump site is at the west end of Hatten Track Road.

- No NRHP-listed resources are in the project's Area of Potential Effect.
- There are a number of school bus stops in the project area and numerous buses traverse the area.
- The "Hatten Track" neighborhood, which is bounded on the north by Hatten Track Road, has a high minority population percentage. The six Census Blocks that are crossed by Corridor ABC-2 have average percentages of minority populations that range from 30.0 to 86.67 percent, much higher than the average percentage of minority populations for the City of Gallatin, which was 21.7 percent in 2000.

If federal funding is utilized for this proposed project, a NEPA document will be undertaken. The NEPA document will fully address the impacts to the social, built and natural environment. Environmental Justice will be one issue that must be carefully considered and addressed during development of the project.

In addition, the NEPA process will lead to the selection of an alternative. Although a detailed environmental study is needed to fully address the impacts of each option considered in this report, preliminary research was done to provide a basis for future environmental work. Public involvement will also be undertaken in the NEPA phase.

# **Appendix A: Stakeholder Meeting Summary**

**STAKEHOLDER MEETING SUMMARY**  
**ALBERT GALLATIN ROAD / HATTEN TRACK ROAD EXTENSION,**  
**GALLATIN, TENNESSEE**  
**PIN: 111041.00**

MEETING DATE: November 16, 2009, 1:30 P.M.  
Gallatin Civic Center

PARTICIPANTS: See attached sign-in sheet

SUBJECT: Albert Gallatin Avenue/Hatten Track Road Extension  
Transportation Planning Report, Stakeholders Meeting

The purpose of the meeting for the Albert Gallatin Avenue/Hatten Track Road Extension was to inform stakeholders that the City has begun work on a Transportation Planning Report (TPR), which is the first step in development of the project. The meeting was intended to assist in the identification of the project need by gathering stakeholder input and to identify project issues (e.g., safety, environmental, proposed development in project area).

Handouts provided to meeting attendees included the meeting agenda and an aerial project area map that showed some constraints identified early in the planning process. Other materials displayed included: examples of TPRs, photographs and an aerial photo of the project area showing environmental constraints and a preliminary subdivision plat for an area along the west side of State Route (SR) 109.

The meeting discussion is summarized below.

**Welcome & Introductions** - The meeting began with Mayor Jo Ann Graves introducing the three local elected officials that were in attendance (A representative of Senator Diane Black's office arrived later in the meeting). She then introduced Gresham, Smith & Partners (GS&P) as the consultant undertaking project planning in consultation with the City. She stated that any project-related questions should be directed to GS&P.

**Project Background & Need** – Margaret Slater of GS&P began the meeting by stating that the stakeholders meeting is the first step in the TPR process. She then outlined the agenda for the meeting and stated that she hoped by the end of the meeting, everyone would be informed of the project process and have any opportunity to provide input or ask questions.

Bill Moore of GS&P began by giving a brief history of the project, which began in 1999 when the Nashville Area Metropolitan Planning Organization (MPO) requested that TDOT prepare an advanced planning report for the extension of Albert Gallatin Avenue. He said that the City of Gallatin has secured \$8.5 million in Federal aid dollars, with the City committed to providing 20 percent of project funding. Therefore, the City must comply with Federal (TDOT) planning requirements for this project. He said that the purpose of the stakeholder meeting is to establish a purpose and need for the project, and not to determine an alignment at this point. Instead, wide study corridors are to be developed. Two issues that Bill brought up to support the need for this project are to relieve traffic on Nashville Pike and to provide better access to the Hatten Track area.

Bill Moore explained that this TPR is the initial step towards construction of the project, but that there were several more steps that must be completed before the road can be built. The TPR is

the beginning, then the NEPA document will be developed (which will study the corridors), and then the project must be designed.

Margaret Slater then asked attendees if they felt the project is or is not needed and whether they had anything to add to what Bill had said about project need. The comments are as follows:

- The project needs to be looked at in context with the area and future plans on both sides of SR 109 in the study area.
- Emergency personnel are now working with TDOT on evacuation plans of the area. This road would provide better ingress and egress to the area in the event of an emergency.
- The road would help to keep pass through vehicles out of the downtown area while children are being transported to and from school.
- Gallatin has always been a pass-through city for people going to and from the north. This road would help keep traffic congestion out of downtown.
- The bridge over the railroad will need to remain open during construction.

**Project Process** – Mark Holloran with GS&P began by saying that this may seem like a long process but all the steps are in place to insure a well planned, environmentally friendly project. The project process can be broken down into the following five phases:

1. The planning phase, which the City is conducting at present.
2. Environmental studies that will fully identify issues and develop solutions.
3. Development of a design that will implement solutions identified in the environmental document and develop right-of-way plans.
4. Right-of-way acquisition, which at this point in the process, the areas to be acquired have not been identified. This step must also be coordinated with utilities, the railroad and TDOT.
5. Construction letting and roadway construction when the project will be advertised, bids received, and a contractor selected. After that construction can begin.

Mark went into further detail concerning the TPR. He explained that during the preparation of the TPR a project purpose and need will be developed, environmental issues will be identified on a preliminary screening level, and multiple transportation options to fulfill the need will be examined. GS&P will look at existing and future land uses and traffic projections, environmental issues, and local agency concerns. Mark discussed an approximate timeframe from now until the road will be open, as follows:

- 4 Months – Transportation Planning Report;
- 4-6 Months – National Environmental Policy Act (NEPA)--If only minor impacts are addressed and a Categorical Exclusion can be prepared or;
- 18-24 Months – If a NEPA Environmental Assessment is required;
- 5-7 Months - Design/Right-of-Way plans;
- 18-24 Months - Prepare Construction Plans/Right-of-Way Acquisition;
- 4-6 Months – Advertise for Construction, take bids, and award contract; and
- 24 Months – Construction

A best case scenario for the process is five years, though it could be as many as seven to eight years until the project is completed. Mark summarized the timeframe he presented by adding that this will be a long process.

**Project Issues** – Margaret Slater stated that in order to devise study corridors into which alignments can later be developed, potential constraints within the project area need to be identified. Lindsay Smith with GS&P then outlined the potential issues that have already been identified for this project through preliminary environmental screening, which are:

- East Camp Creek and its 100-year floodplain bisect the study area.
- Possible wetlands are scattered in the area (field confirmation will be conducted later).
- Multiple land uses exist within the area – rural, residential, industrial, and commercial.
- Need to coordinate with Sumner County School District concerning the four schools within the area—buses traverse the area and there are numerous bus stops.
- The City’s minority population is 22 percent - the neighborhood to the south of Hatten Track Road exceeds 65 percent. This means that pursuant to the federal Executive Order on Environmental Justice, special attention must be paid to project development to avoid “disproportionally high and adverse impacts” to the neighborhood.
- A greenway is planned (Gallatin Greenway Master Plan) along East Camp Creek and includes a Hatten Track Trail spur, but there are no implementation plans in the near future for either trail.
- The conservation easement on the 218-acre Merryman Farm along both sides of SR 109 in the study area was granted to the Land Trust for Tennessee in December 2006. The only way to build a road through the property is for the City to condemn the portion needed for the roadway. There appears to be no provision within the trust documentation for a land swap, but GS&P representatives stated that they were not lawyers and were simply presenting their interpretation of the easement document.

Other issues brought up by attendees included:

- An old landfill is near the end of Hatten Track Road.
- An old cemetery is located in the wooded area behind the Highway Department.
- Planners should look at locating the road behind the homes on Hatten Track Road since they have deep lots. Some attendees felt that a road at this location would benefit the neighborhood—they said neighbors want the new road close by for access and because it may generate jobs as the area along the road is developed.
- Want to avoid tying into the conservation easement property because the road could never be extended.
- There is a residential development master planned for the area south of the conservation easement (Twin Eagles Subdivision). Would the developer set aside some land for an extension of the road across SR 109?
- What type of access will there be on the proposed road? Attendees had differing opinions of their vision for access, ranging from very limited to full access for driveways. (GS&P stated that the plan will reflect the City’s vision for future land use in the area.)

**Roadway Concepts** – Mark Holloran began by saying that the Albert Gallatin Road/Hatten Track Road extension is an approved project in the City’s *Gallatin on the Move 2020* plan. The bridge over the railroad must be raised to address current clearance requirements. The plan will allow the bridge to remain open during construction to maintain traffic. The new road will likely be five-lanes from Water Street to Old SR 109, then three lanes to SR 109, which will include two through lanes and one center turn lane. However, GS&P will reevaluate this typical section during the TPR process. GS&P will be also looking at bike lanes and future greenway connections during the study.

**Path Forward** – Margaret stated that after TDOT approves the TPR in the first quarter of 2010, the TPR will be sent to the FHWA. FHWA will review the document and inform TDOT and the City of the level of NEPA document required—either a Categorical Exclusion or Environmental Assessment. If social and environmental impacts identified in the TPR appear to be relatively minor and the City has a clearly preferred corridor with minimal impacts, they may want to send correspondence to TDOT Local Programs, along with the TPR, informing them that they support development of an alignment within a specific corridor. Again, the Categorical Exclusion takes substantially less time to complete than the Environmental Assessment.

Regarding future involvement of stakeholders and the public, Margaret stated that there will likely be no more meetings regarding this project in the TPR process. TDOT representatives stated that the City may want to have a briefing for the Councilman and neighborhood which is bounded on the north by Hatten Track Road. It was agreed that the City would talk with the Councilman of that area to determine what he would like to do. Margaret said that she had thought that the first advertised public meeting would be after the TPR is approved and early in the NEPA process.

Margaret stated that if anyone thinks of anything later that they want to add or have any questions, they can call her. She provided both business cards and her phone number. After the Mayor was asked if she had anything to add, the meeting concluded and attendees were invited to go on a field review of the project site. All attendees were familiar with the project area and declined the invitation.

This represents our understanding of the items discussed at the stakeholders meeting. If you have any questions or comments concerning any of the information contained herein, please contact Margaret Slater at GS&P at 770-8467 or at [Margaret\\_slater@gspnet.com](mailto:Margaret_slater@gspnet.com).

Prepared by: GS&P: Sandy Layne-Sclafani, PE, CPESC, and Margaret Slater, AICP

**SIGN IN SHEET FOR STAKEHOLDER MEETING**  
 Albert Gallatin Ave. / Hattentrack Extension  
 Gallatin, Sumner County, TN

Date/Time: November 16, 2009  
 Location: Gallatin Civic Center  
 Purpose: Stakeholder Meeting

Name	Organization/Affiliation	Contact Information: e-mail
Margaret Slater	Gresham Smith & Parkers	margaret - slater @ gspnet . com
Bill Moor	GSP	Bill_Moor@GSPNET.COM
MARK HOLLORAN	GS&P	MARK_HOLLORAN@GSPNET.COM
Diane Regensburg	GS&P	DIANE.REGENBURG@GSPNET.COM
Liz Smith	TDOT	Conceptual & NEPA Planning
Sandy Layne-Sclafani	GS&P	sandy_layne_sclafani@gspnet.com
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Lindsay Smith	GS&P	lindsay-smith@gspnet.com
BRANDON DAKS	TDOT	BRANDON.DAKS@TN.GOV
BILL HART	TDOT	Bill.Hart@TN.Gov
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TOM ALLEN	GALLATIN CODES/PLANNING	TOM.ALLEN@GALLATIN-TN.GOV
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KEN WEIDNER	Sumner EMA	KWEIDNER@SUMNEREMA.ORG
ANTHONY HOLT	SUMNER COUNTY EXECUTIVE	aholt@SUMNERTN.ORG
Bill Kemp	Sumner Co. Clerk	
Bill Draper	Gallatin Dept of Electricity	wdraper@gallatinelectric.com
Ray S. Dwelle	Agent for Ray Bowles <sup>HQ's</sup> <sub>Realty</sub>	rdwelle@hardaway.net
E. Ray Bowles	E. Ray Bowles	118-A Public Square / Nat. Bank Bldg.
Clay Walker	Gallatin Economic Dev. Agency	clay.walker@gallatin-tn.gov
DALE BENNETT	VICEMAYOR	GEDSINCA@BELLSouth.NET
Judy Hardin	Sumner County Hwy.	JHARDIN@SUMNERCOHWY.COM
John Graves	Mayor Gallatin	john.graves@gallatin-tn.gov
Jimmy Overton	Gallatin City Council	over509@bellsouth.net
Bill HART	TDOT	Bill.Hart@TN.Gov
Jim Svoboda	Gallatin Codes/Planning	jm.svoboda@gallatin-tn.gov
Rebecca Schusler	Senator Diane Black	sen.diane.black@capital.tn.gov
DAVID KELLOGG	Gallatin Public Utilities	dkellogg@gallatinutilities.com
DAVID F BROWN	City of Gallatin	

# **Appendix B: Typical Sections and Corridor Plan Sheets**

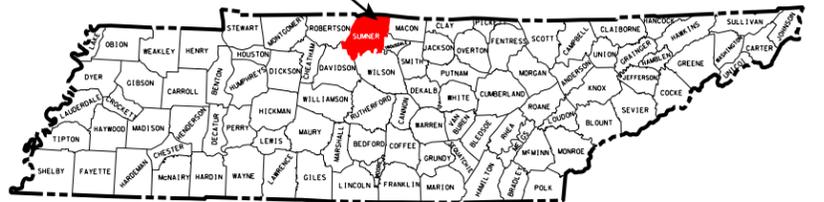
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 Corridor Layouts ..... 3-9  
 Corridors on USGS Map ... 10

STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION  
 BUREAU OF ENGINEERING

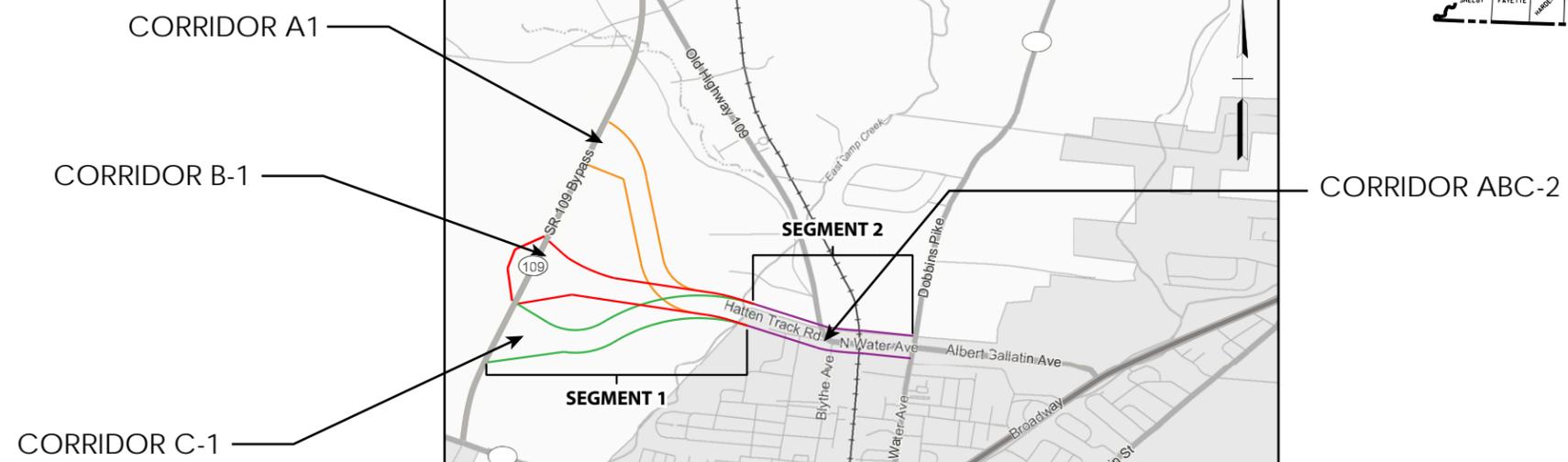
TENN.	YEAR	SHEET NO.
	2010	1
FED. AID PROJ. NO.		
STATE PROJ. NO.		

**ALBERT GALLATIN AVENUE/HATTEN TRACK ROAD EXTENSION  
 FROM SR 109 TO SR 174 (DOBBINS PIKE)  
 GALLATIN, SUMNER COUNTY  
 PIN# 111041.00**

PROJECT LOCATION



STATE HIGHWAYS NO. 174 AND NO. 109



Not to Scale

**SPECIAL NOTES**

PROPOSALS MAY BE REJECTED BY THE COMMISSIONER IF ANY OF THE UNIT PRICES CONTAINED THEREIN ARE OBVIOUSLY UNBALANCED, EITHER EXCESSIVE OR BELOW THE REASONABLE COST ANALYSIS VALUE.

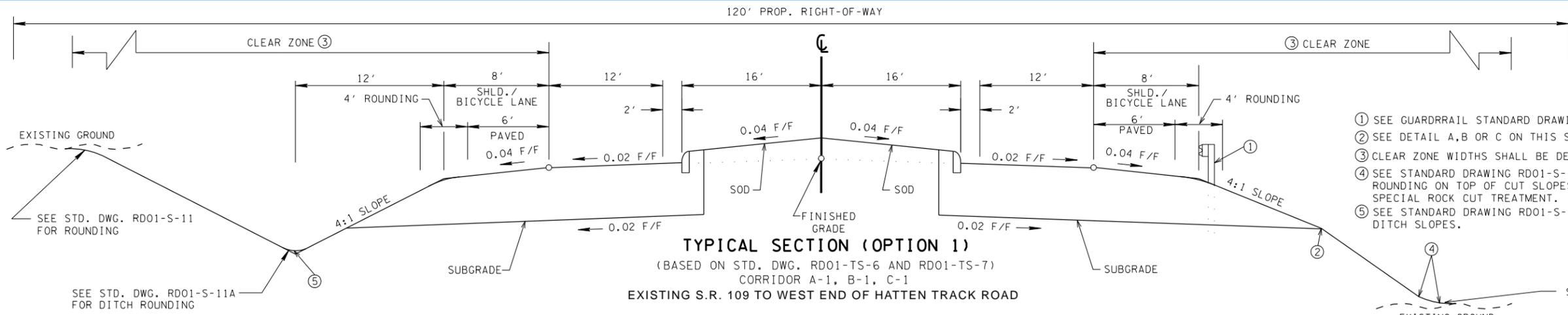
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TDOT C.E. MANAGER 1 OR  
 TDOT TRANSPORTATION MANAGER 1 \_\_\_\_\_  
 TDOT ROAD SP. SV. 2 \_\_\_\_\_  
 DESIGNED BY \_\_\_\_\_  
 DESIGNER \_\_\_\_\_ CHECKED BY \_\_\_\_\_  
 P.E. NO. \_\_\_\_\_  
 PIN NO. \_\_\_\_\_

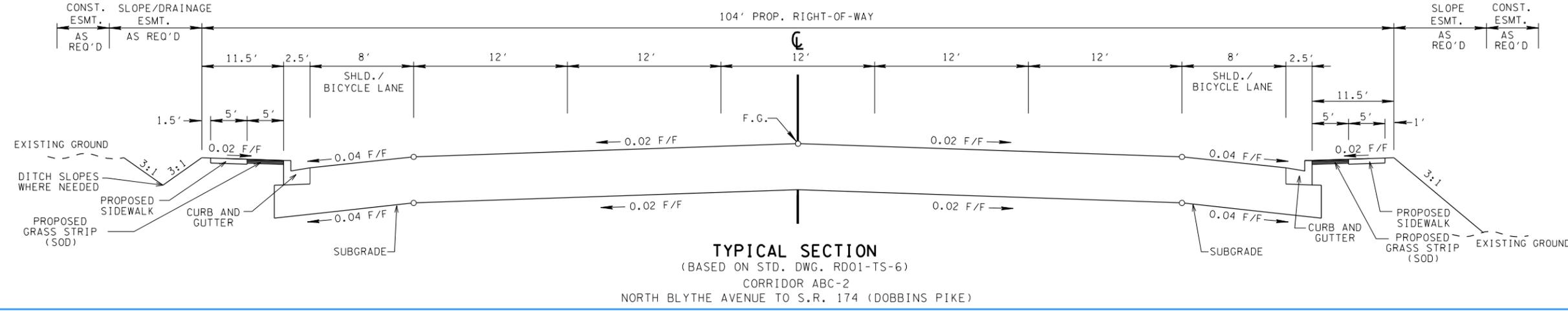
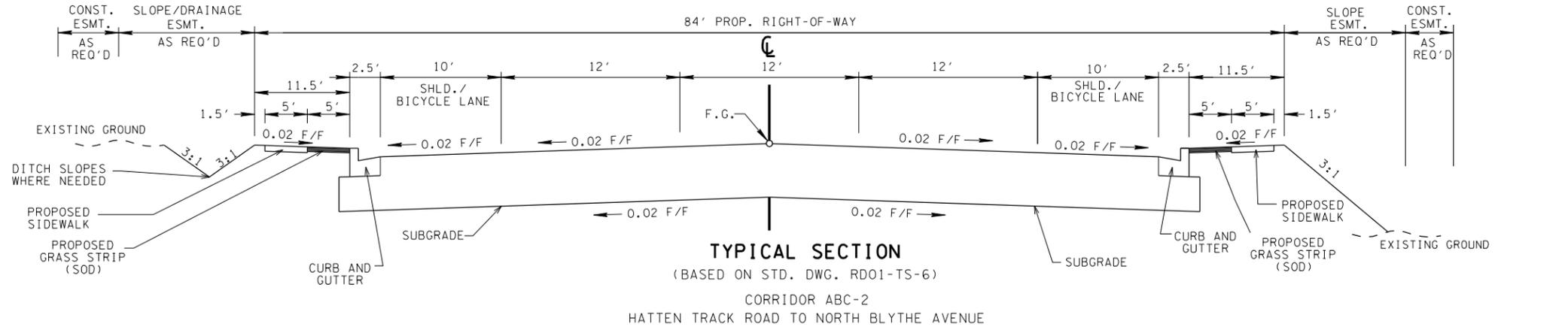
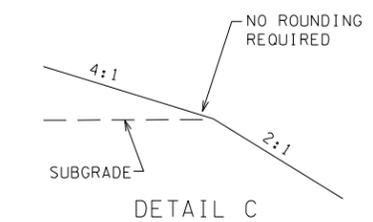
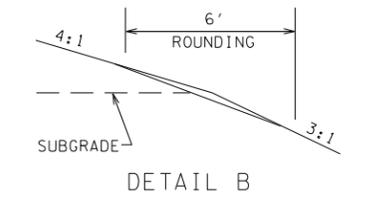
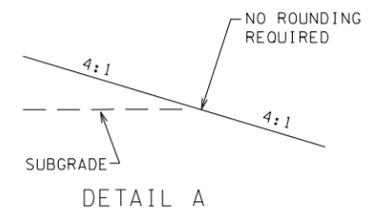
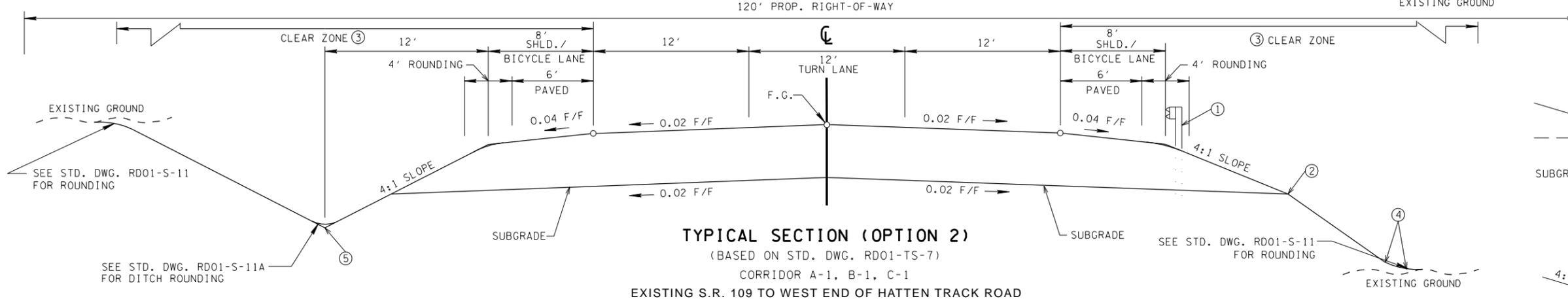
APPROVED: \_\_\_\_\_  
 CHIEF ENGINEER  
 DATE: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_  
 COMMISSIONER

U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 APPROVED: \_\_\_\_\_  
 DIVISION ADMINISTRATOR DATE

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2010		2



- ① SEE GUARDRAIL STANDARD DRAWINGS FOR TYPICAL GUARDRAIL PLACEMENT.
- ② SEE DETAIL A,B OR C ON THIS SHEET FOR ROUNDING.
- ③ CLEAR ZONE WIDTHS SHALL BE DETERMINED FROM STANDARD DRAWING RD01-S-12.
- ④ SEE STANDARD DRAWING RD01-S-11 FOR FILL AND CUT SLOPE TABLES, ROUNDING ON TOP OF CUT SLOPES AND TOE OF FILL SLOPES, AND SPECIAL ROCK CUT TREATMENT.
- ⑤ SEE STANDARD DRAWING RD01-S-11A FOR ROUNDING OF ROADSIDE DITCH SLOPES.



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TPR	2010		3



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TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2010		4



STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION

### CORRIDOR A-1

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Present ROW

BEGIN  
CORRIDOR B-1

Conservation  
Easement

Present ROW

CORRIDOR B-1

CORRIDOR B-1

MATCH LINE STA. 119+00 (SEE SHEET 7)

500'

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2010		6



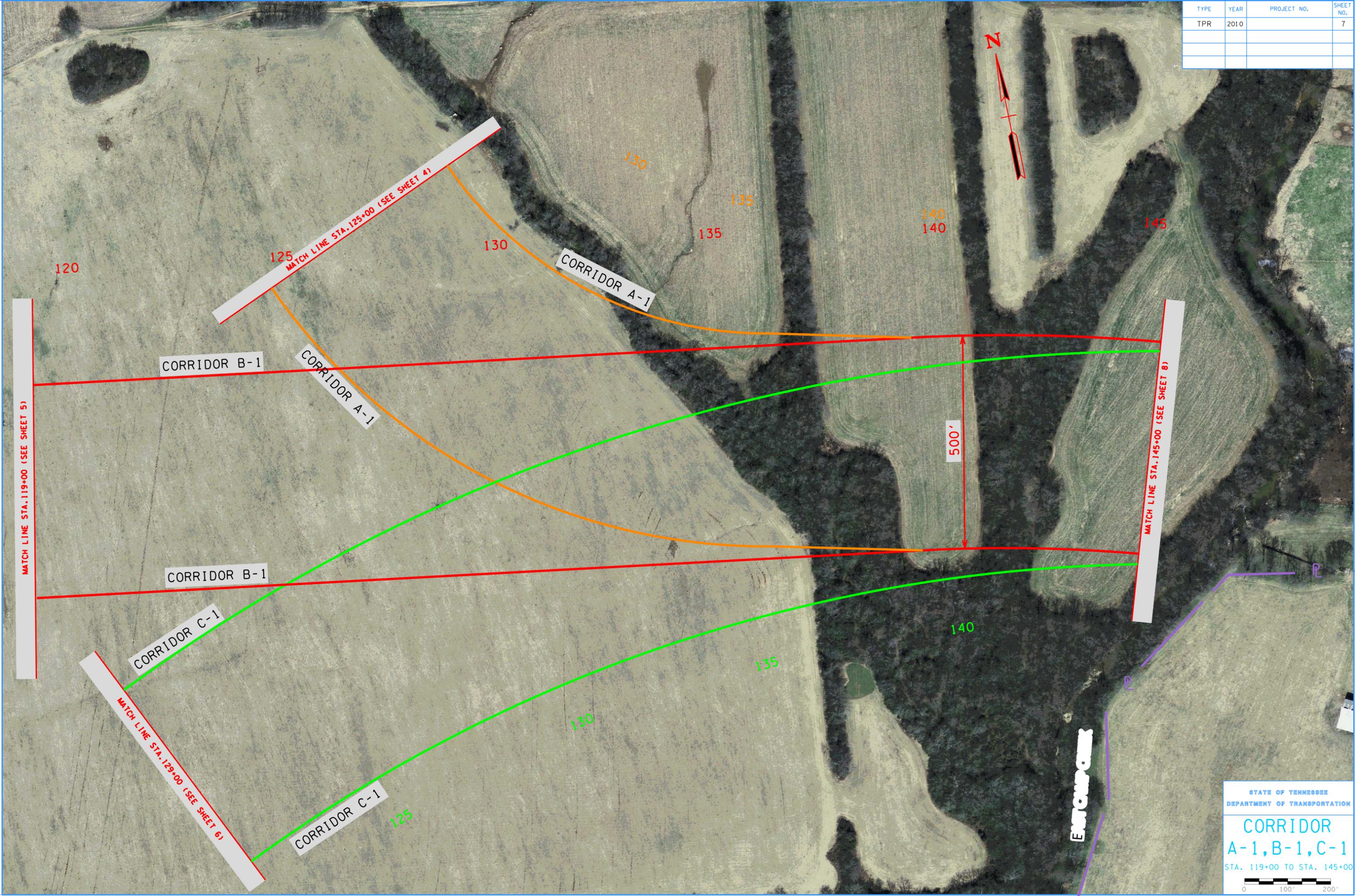
3/29/2010 9:32:08 AM  
 P:\2750\1\TPRCor-C01.sht

STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION

### CORRIDOR C-1

STA. 129+00 TO E.O.P.

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2010		7



3/26/2010 10:40:24 AM  
 P:\2750\1\TPRCorr-B102.sht

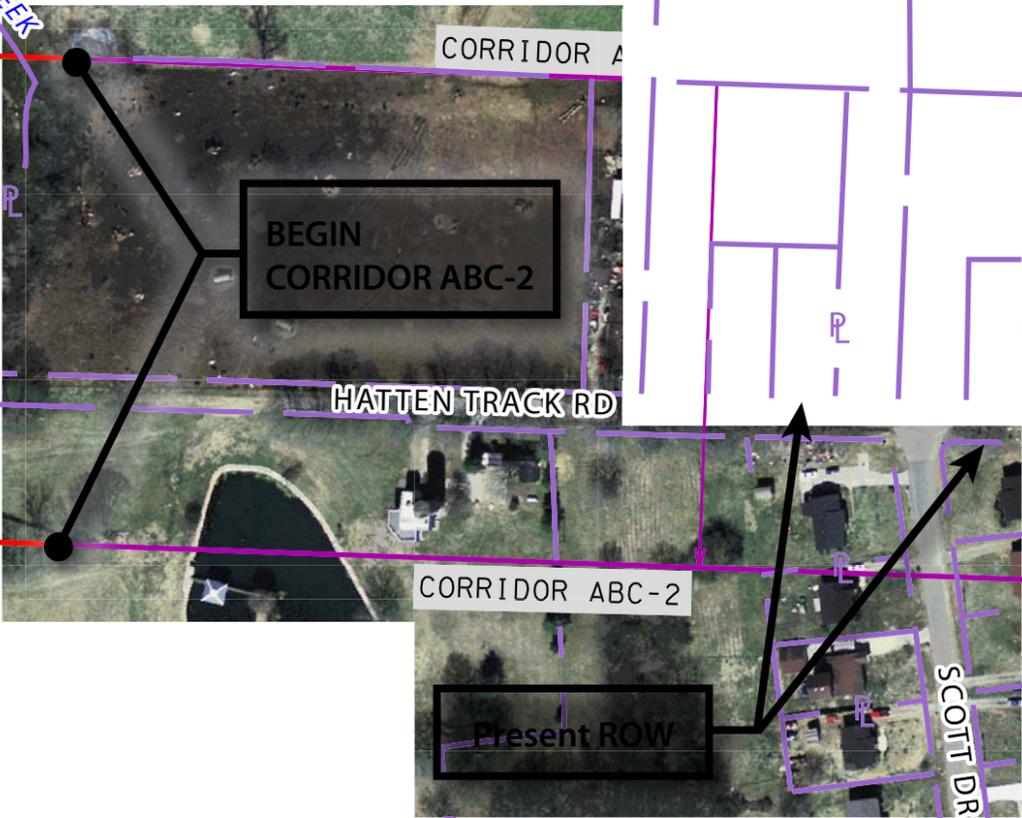
STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION

**CORRIDOR  
 A-1, B-1, C-1**

STA. 119+00 TO STA. 145+00

0 100' 200'

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2010		8



MATCH LINE STA. 145+00 (SEE SHEET 7)

MATCH LINE STA. 171+00 (SEE SHEET 9)

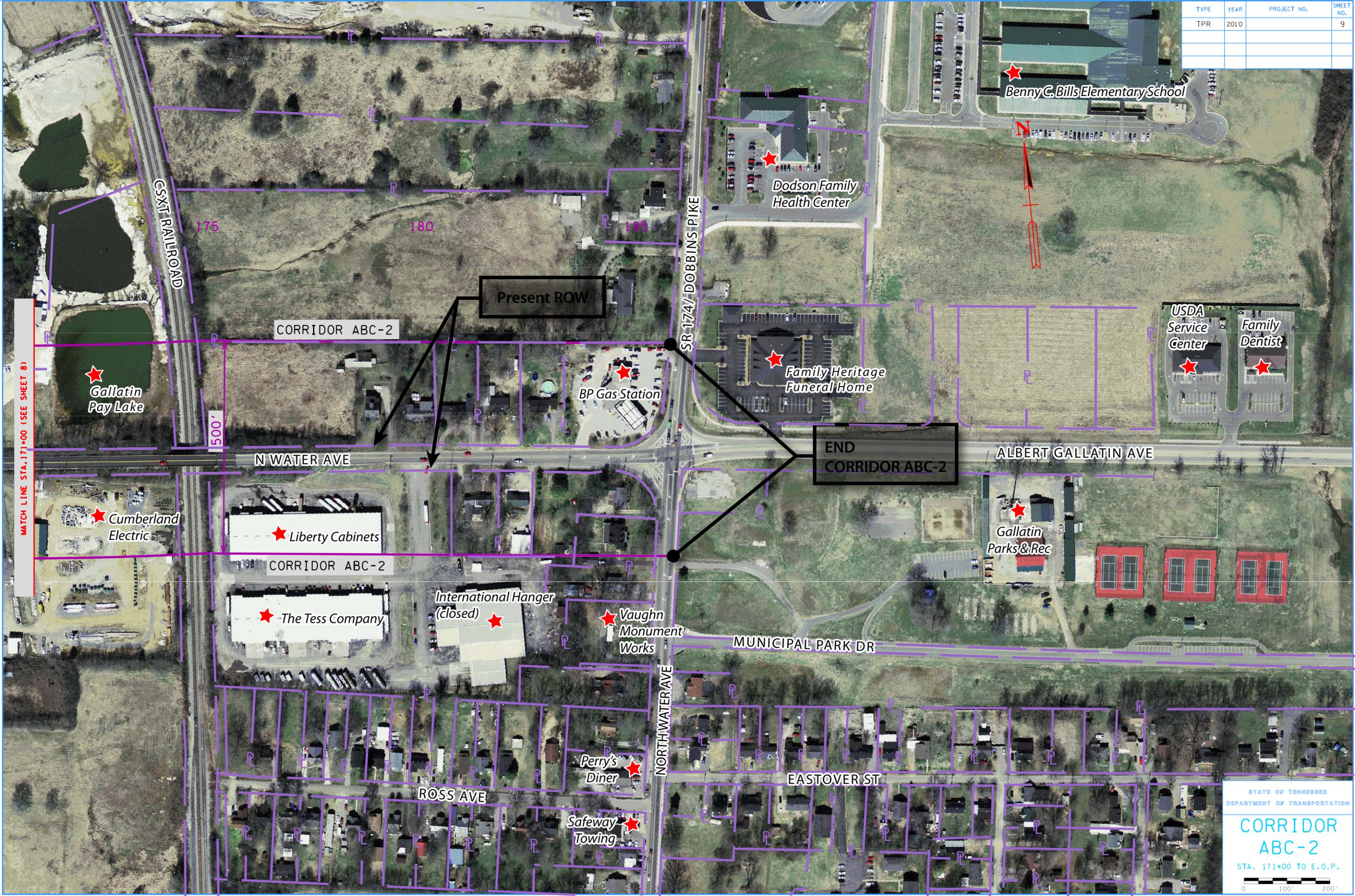
STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION

**CORRIDOR ABC-2**

STA. 145+00 TO STA. 171+00



TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2010		9



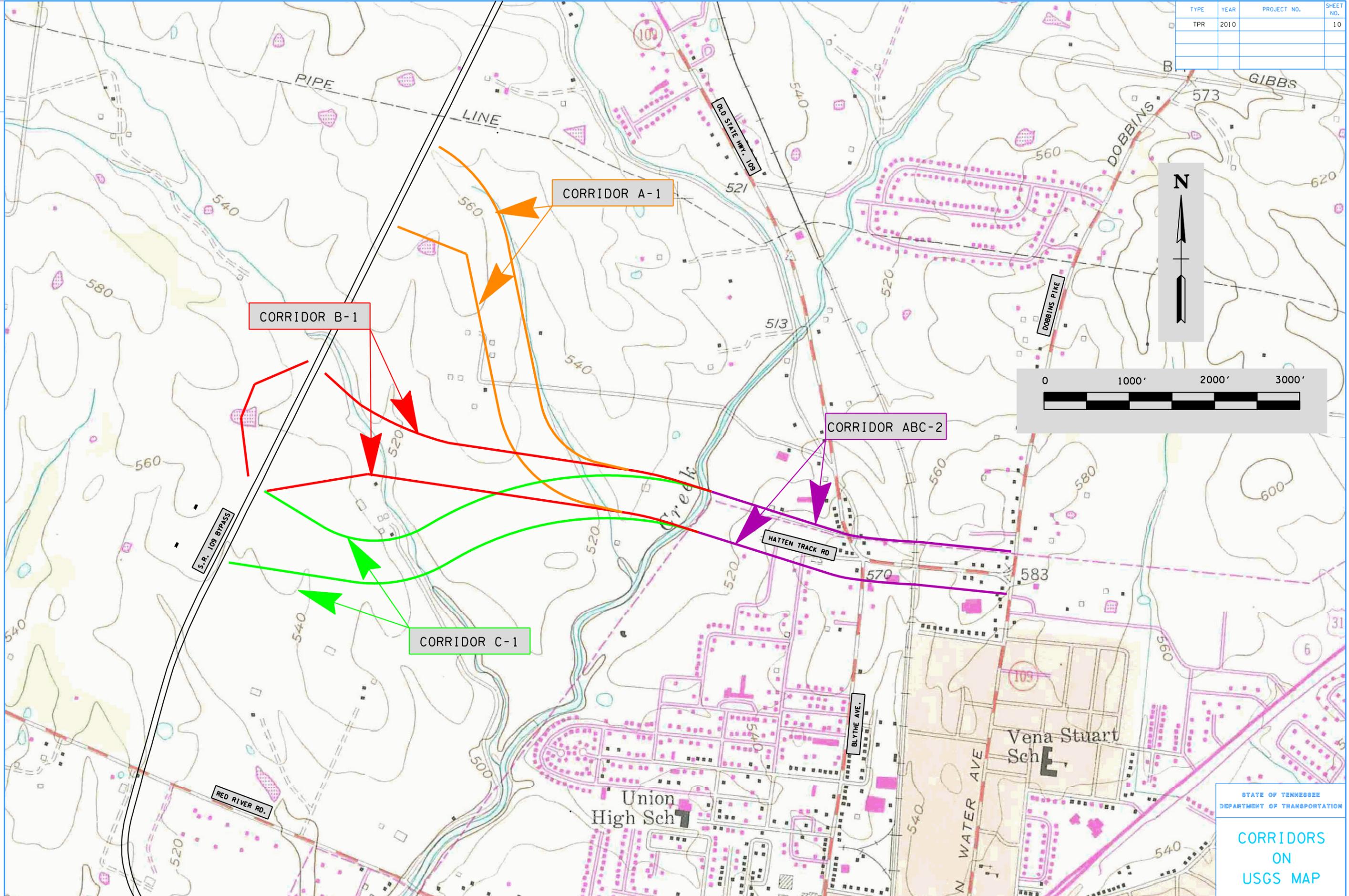
MATCH LINE STA. 171+00 (SEE SHEET 8)

Present ROW

CORRIDOR ABC-2

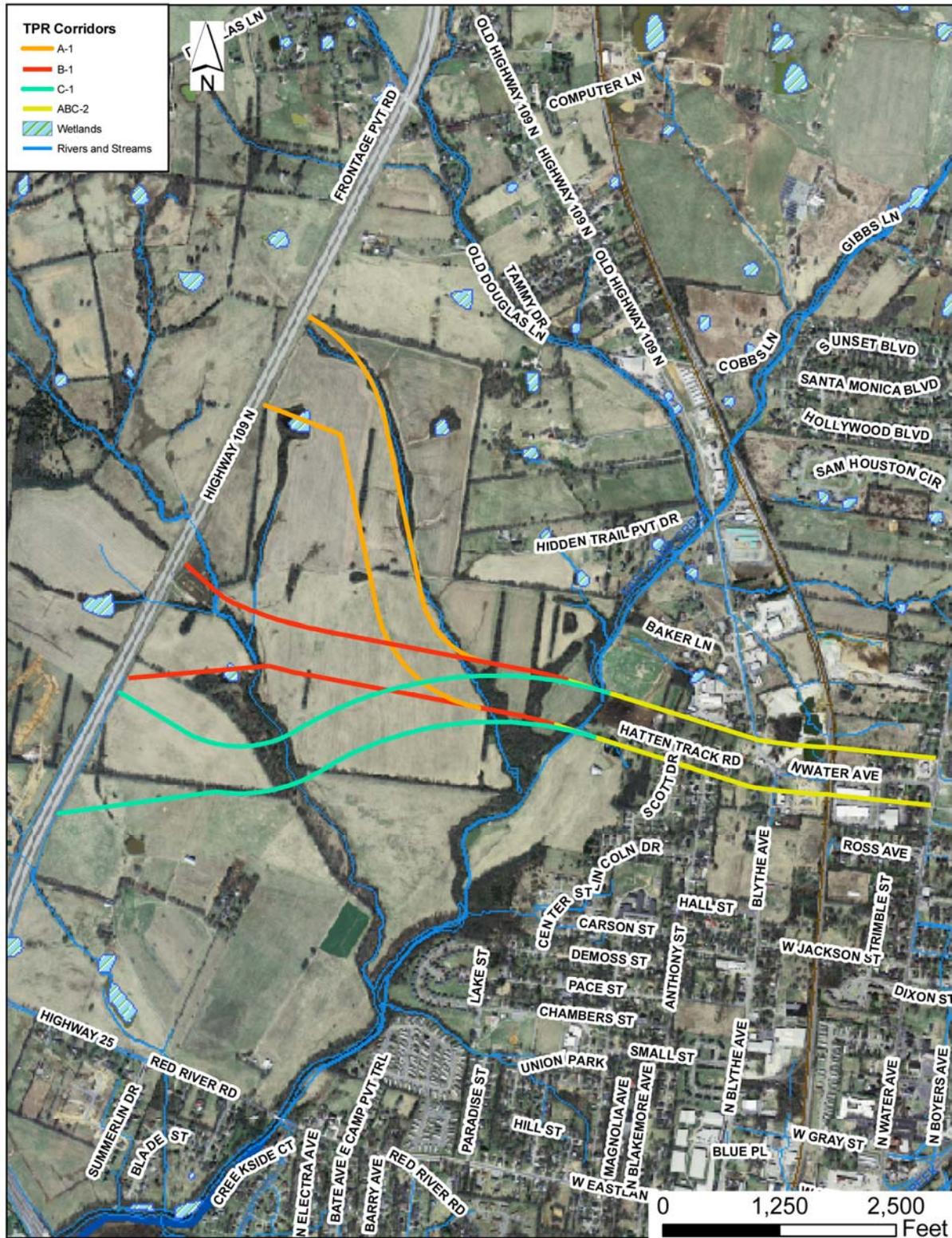
END  
CORRIDOR ABC-2

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2010		10



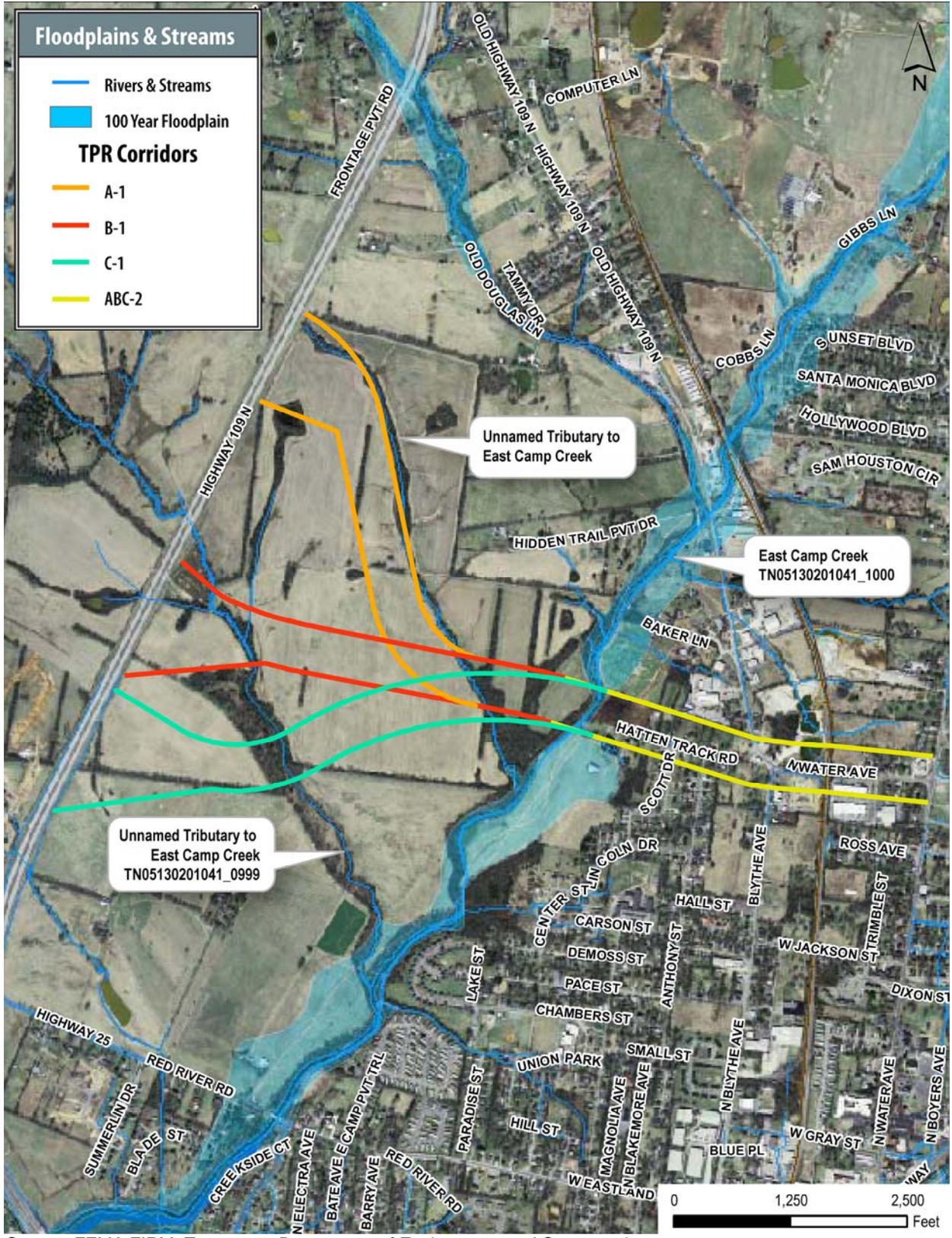
\*\*\*\*\*SYTIME\*\*\*\*\*  
\*\*\*\*\*DGN/SPC\*\*\*\*\*

# **Appendix C: Environmental Screening Maps**



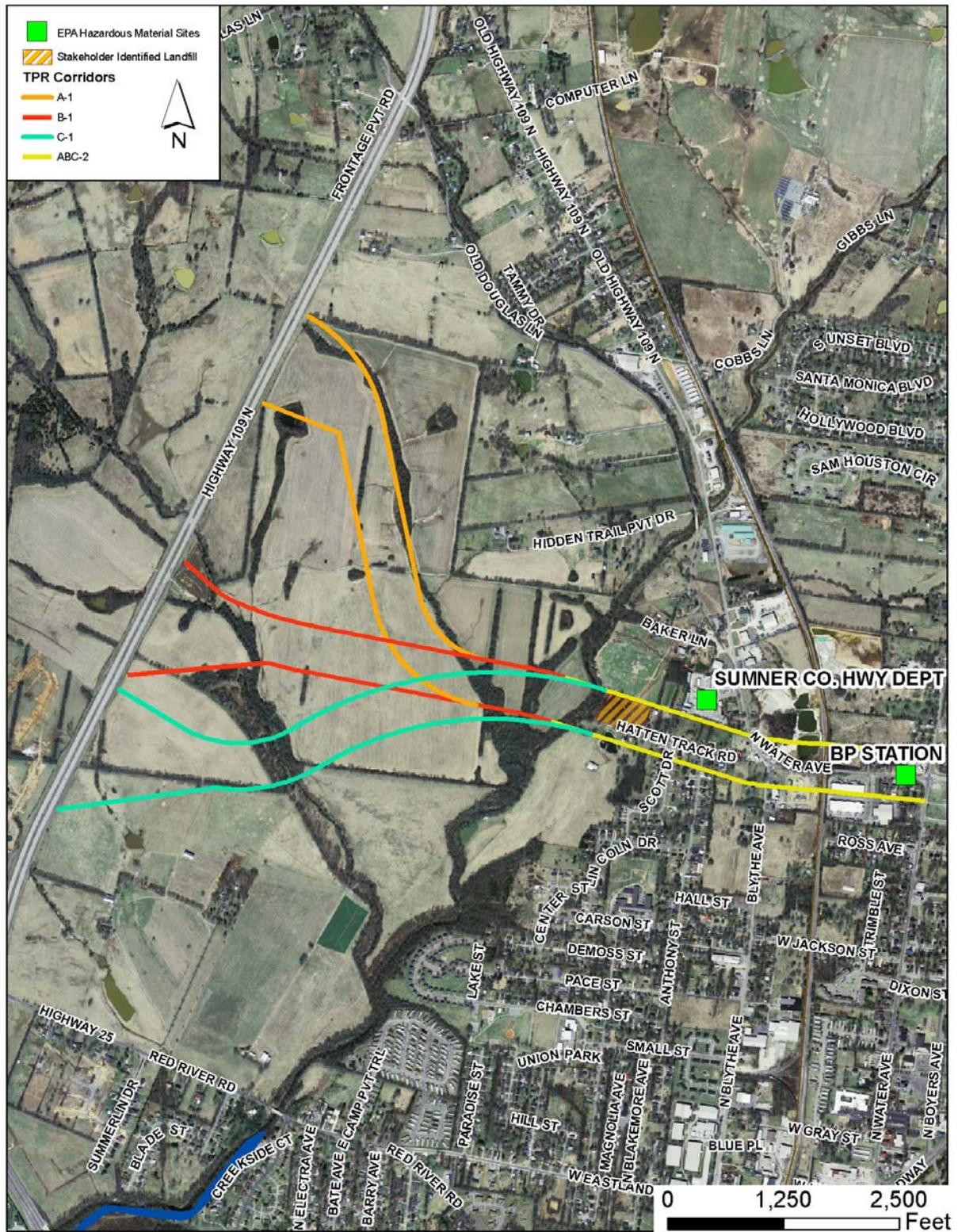
Sources: USFWS National Wetland Inventory

### C-1: Wetlands



Source: FEMA FIRM, Tennessee Department of Environment and Conservation

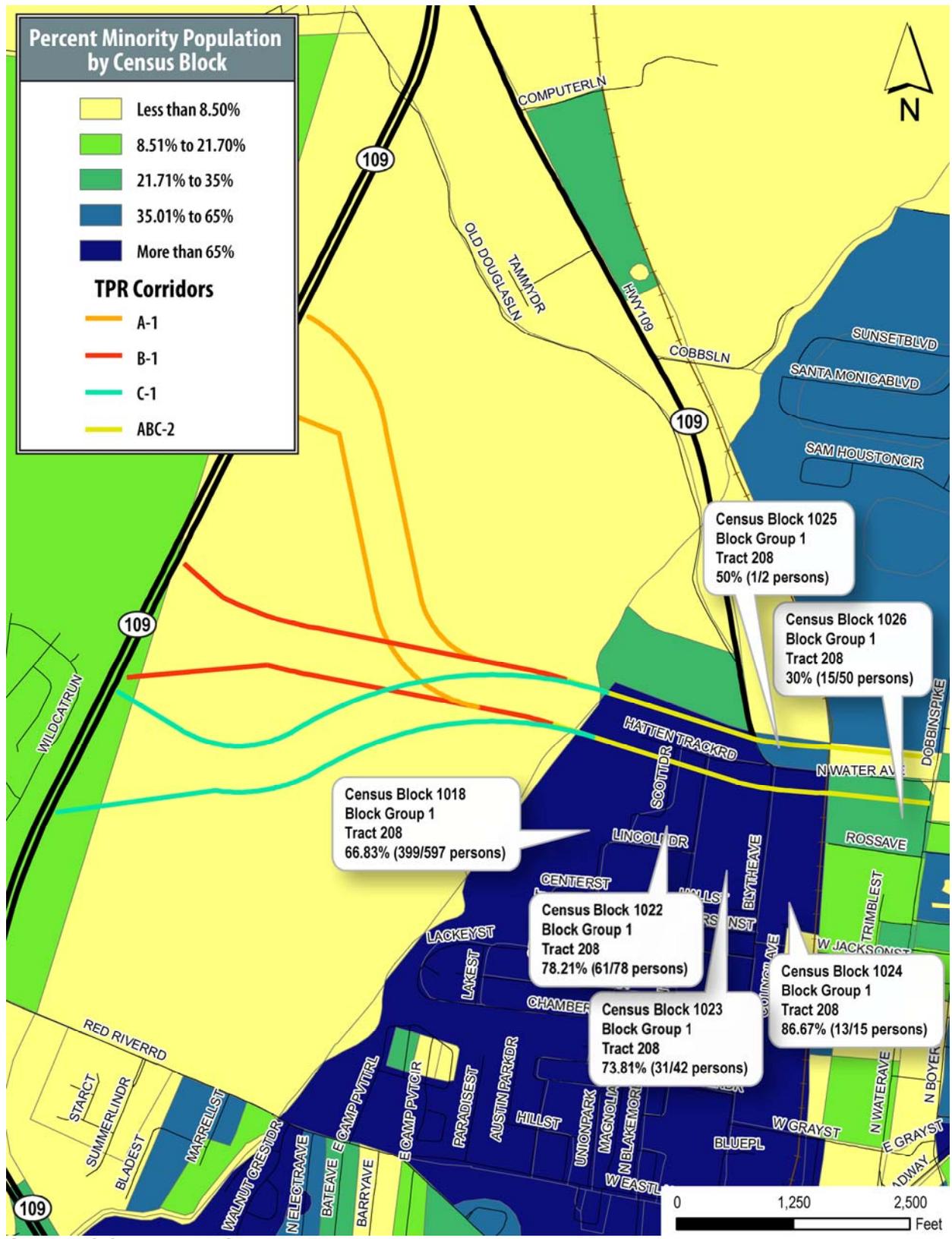
**C-2: Floodplains and Streams**



Source: EPA records and Environmental Data Resources, Inc report

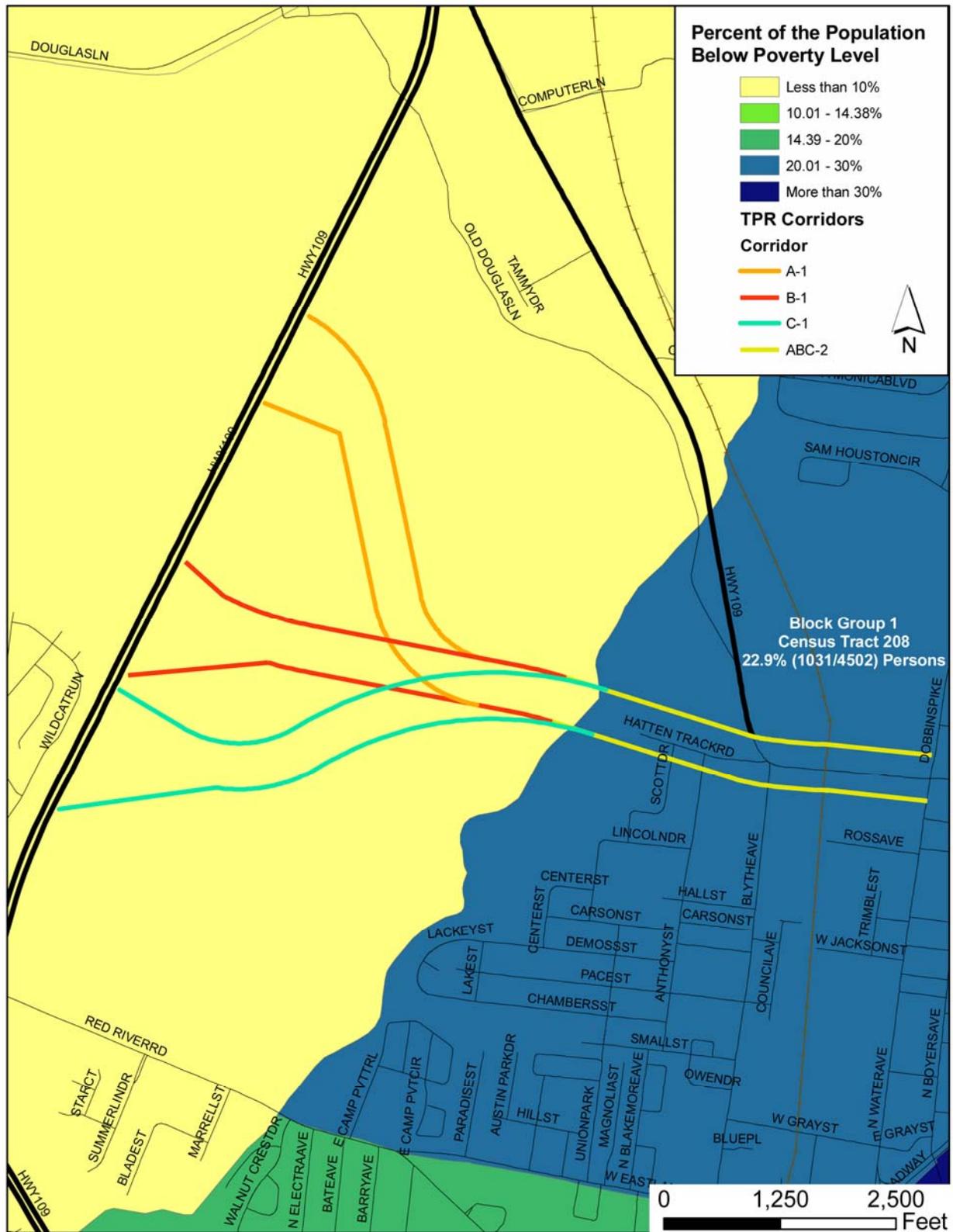
### C-3: Potential Hazardous Materials Sites





Source: US Census 2000, Summary File 1

**C-5: Percent Minority Population in the Study Area**



Source: US Census 2000, Summary File 3

**C-6: Percent of the Population Below Poverty Level**

# **Appendix D: TDOT Early Environmental Screening Report**



**Features with Moderate Impact** **0**

**Features with Substantial Impact** **1**

Large Wetland Impacts

**Community Impacts Present:**

**Institutions:**

**Populations:**

No population present

Minority populations 24%

Linguistically isolated populations

Populations below poverty - State average- 13%

**EES Project Impact:** **Complete**

## Impacts Evaluated Within 1,000 Ft of Study Area

### CEMETERY SITES & CEMETERY PROPERTIES

**Impact**

**Project Impact  
(Environmental, Time,  
Cost, Design, and  
Maintenance)**

**None** - No impact on the project as there are no known cemetery sites within or abutting the project study area or corridor. It is anticipated that a 'normal' effort to complete this environmental review as part of NEPA.

### INSTITUTIONS & SENSITIVE COMMUNITY POPULATIONS

**Sensitive Populations Project Impact:** **Present** **Not Present**

**Institutions:**

Hospital	<input type="checkbox"/>	<input checked="" type="checkbox"/>
School	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Church	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Public Building	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Populations:**

No population present	<input checked="" type="checkbox"/>	<input type="checkbox"/>
65 and older populations	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Disability populations	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Households without a vehicle	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Minority populations 24%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Linguistically isolated populations	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Populations below poverty - State average - 13%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Populations below poverty - State average - 27%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## BAT

### Impact

<b>Project Impact (Environment, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> – No project impact is anticipated. There is no occurrence of Indiana or gray bats within 4 miles of the proposed project study area or corridor.
--	---

## RAILROADS

### Impact

<b>Project Impact (Environment, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>Low</b> – Minimal impact on the project is anticipated as there are railroads within or abutting the project study area or corridor. Impacts to the railroad can be avoided, and the proposed project will be greater than 200 feet from the railroad. There is the remote possibility of minor involvement on railroad property to accommodate drainage, but there will be no grade crossing.
--	---

## Impacts Evaluated Within 2,000 Ft of Study Area

## NATIONAL REGISTER SITES

### Impact

<b>Project Impact (Environmental, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> – No project impact is anticipated as there are no National Register listed properties abutting or within the project study area or corridor.
--	---

## SUPERFUND SITES

### Impact

<b>Project Impact (Environment, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> – No project impact is anticipated as there are no known contaminated land tracts abutting or within the project study area or corridor.
--	--

## PYRITIC ROCK

### Impact

<b>Project Impact (Environment, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> – No project impact is anticipated. Pyritic rock is not known to occur in the study area/corridor or project does not involve excavation. Limestone (symbolized as dark green) and dolomite (symbolized as light green) are present.
--	--

## TWRA LAKES & OTHER PUBLIC LANDS

### Impact

<b>Project Impact (Environment, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>Low</b> – Minimal impact on the project is anticipated as a park abuts the project study area.
--	---

## Impacts Evaluated Within 4,000 Ft of Study Area

## TERRESTRIAL SPECIES

### Impact

<b>Project Impact (Environment, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> - No impact to the project is anticipated. There is no known occurrence of a rare, state, or federally-protected terrestrial species within the proposed transportation study area or corridor.
--	---

## TDEC CONSERVATION SITES & TDEC SCENIC WATERWAYS

### Impact

<b>Project Impact (Environment, Time, Cost, Design, Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> – No project impact is expected as there are no scenic waterways or TDEC Conservation Sites within project study area or corridor.
--	--

## LARGE WETLAND IMPACTS

### Impact

<b>Project Impact (Environment, Time, Cost, Design, Maintenance)</b>	<input checked="" type="checkbox"/> <b>Substantial</b> – Regions 1, 2, and 3: A substantial impact to the project is probable as there is greater than 2 acres of wetlands within the project study area or corridor. Compensatory mitigation will be required. Design effort will be needed to avoid and minimize impacts to wetlands to the maximum extent practicable. If a floodplain is crossed by the project, floodplain culverts may be necessary.
--	--

## TENNESSEE NATURAL AREAS PROGRAM

### Impact

<b>Project Impact (Environment, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> – No impact on the project is anticipated as the project study area or corridor does not include a Natural Area.
--	--

---

## WILDLIFE MANAGEMENT AREAS

### Impact

<b>Project Impact (Environment, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> – No project impact is anticipated as a WMA does not abut nor is located within the project study area or corridor.
--	---

## Impacts Evaluated Within 10,000 Ft of Study Area

## AQUATIC SPECIES

### Impact

<b>Project Impact (Environment, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> - No impact to the project is anticipated. There is no known occurrence of a rare, state, or federally-protected aquatic species within the project study area or corridor.
--	---

## CAVES

### Impact

<b>Project Impact (Environment, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> – No project impact is anticipated as there are no caves in the project study area or corridor.
--	---

# Corridor A - 1,000 Ft

## EES Report

PIN 111041.00  
1,000 Foot Corridor

Option: 111041\_83AV01  
Version Date: January 15, 2010  
Created by: JONATHAN ROGERS

---

### Cemetery Sites & Cemetery Properties

Cemeteries	None were found
Cemetery Property	None were found

### Institutions & Sensitive Community Populations

Institutions	None were found
--------------	-----------------

#### Populations:

No population present	Present
65 & older populations	None were found
Disability populations	None were found
Households without a vehicle	None were found
Minority populations 24%	Present
Linguistically isolated populations	Present
Populations below poverty-State average-13%	Present
Populations below poverty-State average-27%	None were found

Bat	None were found
-----	-----------------

Railroads	Present
-----------	---------

# Corridor B - 1,000 Ft

## EES Report

PIN 111041.00  
1,000 Foot Corridor

Option: 111041\_83AV01  
Version Date: January 15, 2010  
Created by: JONATHAN ROGERS

---

### Cemetery Sites & Cemetery Properties

Cemeteries	None were found
Cemetery Property	None were found

### Institutions & Sensitive Community Populations

Institutions	None were found
--------------	-----------------

#### Populations:

No population present	Present
65 & older populations	None were found
Disability populations	None were found
Households without a vehicle	None were found
Minority populations 24%	Present
Linguistically isolated populations	Present
Populations below poverty-State average-13%	Present
Populations below poverty-State average-27%	None were found

Bat	None were found
-----	-----------------

Railroads	Present
-----------	---------

# Corridor C - 1,000 Ft

## EES Report

PIN 111041.00  
1,000 Foot Corridor

Option: 111041\_83AV01  
Version Date: January 15, 2010  
Created by: JONATHAN ROGERS

---

### Cemetery Sites & Cemetery Properties

Cemeteries	None were found
Cemetery Property	None were found

### Institutions & Sensitive Community Populations

Institutions	None were found
--------------	-----------------

#### Populations:

No population present	Present
65 & older populations	None were found
Disability populations	None were found
Households without a vehicle	None were found
Minority populations 24%	Present
Linguistically isolated populations	Present
Populations below poverty-State average-13%	Present
Populations below poverty-State average-27%	None were found

Bat	None were found
-----	-----------------

Railroads	Present
-----------	---------

# Corridor A - 2,000 Ft

## EES Report

PIN 111041.00  
2,000 Foot Corridor

Option: 111041\_83AV01  
Version Date: January 15, 2010  
Created by: JONATHAN ROGERS

---

National Register Sites	None were found
Superfund Sites	None were found
Pyritic Rock	None were found
TWRA Lakes & Other Public Lands	
TWRA Lakes	None were found
Other Public Lands	<u>Total</u> = 1
City Park, Little League Park	

# Corridor B - 2,000 Ft

## EES Report

PIN 111041.00  
2,000 Foot Corridor

Option: 111041\_83AV01  
Version Date: January 15, 2010  
Created by: JONATHAN ROGERS

---

National Register Sites	None were found
Superfund Sites	None were found
Pyritic Rock	None were found
TWRA Lakes & Other Public Lands	
TWRA Lakes	None were found
Other Public Lands	<u>Total</u> = 1
City Park, Little League Park	

# Corridor C - 2,000 Ft

## EES Report

PIN 111041.00  
2,000 Foot Corridor

Option: 111041\_83AV01  
Version Date: January 15, 2010  
Created by: JONATHAN ROGERS

---

National Register Sites	None were found
Superfund Sites	None were found
Pyritic Rock	None were found
TWRA Lakes & Other Public Lands	
TWRA Lakes	None were found
Other Public Lands	<u>Total</u> = 1
City Park, Little League Park	

# Corridor A - 4,000 Ft

## EES Report

PIN 111041.00  
4,000 Foot Corridor

Option: 111041\_83AV01  
Version Date: January 15, 2010  
Created by: JONATHAN ROGERS

---

Terrestrial Species None were found

### TDEC Conservation Sites & TDEC Scenic Waterways

TDEC Conservation Sites None were found

TDEC Scenic Waterways None were found

### Large Wetland Impacts

Total Acreage= 6.84

PEM1C	0.53	acres
PEM1Fx	0.13	acres
POWFh	0.31	acres
POWFh	0.98	acres
POWFh	0.10	acres
POWHh	0.72	acres
POWHh	0.20	acres
POWHh	0.32	acres
POWHh	0.61	acres
POWHh	0.20	acres
POWHh	0.39	acres
POWHh	0.70	acres
POWHx	0.32	acres
POWHx	0.29	acres
POWHx	0.12	acres
POWHx	0.17	acres
POWHx	0.52	acres
POWHx	0.11	acres
POWHx	0.12	acres

Tennessee Natural Areas Program None were found

Wildlife Management Areas None were found

# Corridor B - 4,000 Ft

## EES Report

PIN 111041.00  
4,000 Foot Corridor

Option: 111041\_83AV01  
Version Date: January 15, 2010  
Created by: JONATHAN ROGERS

---

Terrestrial Species None were found

### TDEC Conservation Sites & TDEC Scenic Waterways

TDEC Conservation Sites None were found

TDEC Scenic Waterways None were found

### Large Wetland Impacts

**Total Acreage= 4.72**

PEM1C	0.53	acres
PEM1Fx	0.13	acres
POWHh	1.14	acres
POWHh	0.20	acres
POWHh	0.72	acres
POWHh	0.32	acres
POWHx	0.34	acres
POWHx	0.19	acres
POWHx	0.11	acres
POWHx	0.17	acres
POWHx	0.12	acres
POWHx	0.12	acres
POWHx	0.29	acres
POWHx	0.32	acres

Tennessee Natural Areas Program None were found

Wildlife Management Areas None were found

# Corridor C - 4,000 Ft

## EES Report

PIN 111041.00  
4,000 Foot Corridor

Option: 111041\_83AV01  
Version Date: January 15, 2010  
Created by: JONATHAN ROGERS

---

Terrestrial Species None were found

### TDEC Conservation Sites & TDEC Scenic Waterways

TDEC Conservation Sites None were found

TDEC Scenic Waterways None were found

### Large Wetland Impacts

Total Acreage= 4.72

PEM1C	0.53	acres
PEM1Fx	0.13	acres
POWHh	1.14	acres
POWHh	0.20	acres
POWHh	0.72	acres
POWHh	0.32	acres
POWHx	0.34	acres
POWHx	0.19	acres
POWHx	0.11	acres
POWHx	0.17	acres
POWHx	0.12	acres
POWHx	0.12	acres
POWHx	0.29	acres
POWHx	0.32	acres

Tennessee Natural Areas Program None were found

Wildlife Management Areas None were found

# Corridor A - 10,000 Ft

## EES Report

PIN 111041.00

Option: 111041\_83AV01

10,000 Foot Corridor

Version Date: January 15, 2010

Created by: JONATHAN ROGERS

---

*Aquatic Species*

None were found

*Caves*

None were found

# Corridor B - 10,000 Ft

## EES Report

PIN 111041.00

Option: 111041\_83AV01

10,000 Foot Corridor

Version Date: January 15, 2010

Created by: JONATHAN ROGERS

---

*Aquatic Species*

None were found

*Caves*

None were found

# Corridor C - 10,000 Ft

## EES Report

PIN 111041.00

Option: 111041\_83AV01

10,000 Foot Corridor

Version Date: January 15, 2010

Created by: JONATHAN ROGERS

---

*Aquatic Species*

None were found

*Caves*

None were found

# **Appendix E: Preliminary Cost Estimates**

AT-GRADE INTERSECTION

Route: Corridor A - Segment 1 and 2  
 Description: Proposed Hatten Track Extension from Existing SR 109  
 Bypass to SR 174 (Dobbins Pike) - Includes 3 signalized intersections  
 (Hatten Track at SR 109 Bypass, Blythe Avenue, and SR 174)  
 County: Sumner  
 Length: 1.11 Miles - Segment 1/0.69 Miles - Segment 2  
 Date: 5/18/2010

	UNIT	QUANT. - SEG. 1	QUANT. - SEG. 2	UNIT COST	SEG. 1 TOTAL **(OPTION 1)	SEG. 1 TOTAL *** (OPTION 2)	SEG. 2 TOTAL	TOTAL (w/ OPTION 1)	TOTAL (w/ OPTION 2)
<b>RIGHT-OF-WAY COST</b>									
LAND	AC	16.2	3.2	\$60,000	\$ 972,000	\$ 972,000	\$ 192,000	\$ 1,164,000	\$ 1,164,000
COMMERCIAL	EACH	0	3	\$150,000	\$ -	\$ -	\$ 450,000	\$ 450,000	\$ 450,000
RESIDENTIAL	EACH	0	0	\$80,000	\$ -	\$ -	\$ -	\$ -	\$ -
TRACTS (INCIDENTALS)	EACH	3	35	\$3,800	\$ 11,400	\$ 11,400	\$ 133,000	\$ 144,400	\$ 144,400
				<b>SUBTOTAL</b>	<b>\$ 983,400</b>	<b>\$ 983,400</b>	<b>\$ 775,000</b>	<b>\$ 1,758,400</b>	<b>\$ 1,758,400</b>
<b>CONSTRUCTION COST</b>									
CLEAR AND GRUBBING					\$ 100,750	\$ 100,750	\$ 63,000	\$ 163,750	\$ 163,750
EARTHWORK					\$ 497,250	\$ 438,750	\$ 200,250	\$ 697,500	\$ 639,000
PAVEMENT REMOVAL					\$ -	\$ -	\$ 22,250	\$ 22,250	\$ 22,250
DRAINAGE (INCLUDING EROSION CONTROL)					\$ 348,648	\$ 150,200	\$ 184,177	\$ 532,825	\$ 334,377
STRUCTURES					\$ 2,983,500	\$ 2,065,500	\$ -	\$ 2,983,500	\$ 2,065,500
RAILROAD CROSSING OR SEPARATION					\$ -	\$ -	\$ 816,000	\$ 816,000	\$ 816,000
PAVING (INCLUDING CURB, GUTTER AND SIDEWALK)					\$ 1,147,022	\$ 1,062,901	\$ 1,170,299	\$ 2,317,321	\$ 2,233,200
RETAINING WALLS					\$ -	\$ -	\$ 90,000	\$ 90,000	\$ 90,000
MAINTENANCE OF TRAFFIC					\$ 26,490	\$ 26,490	\$ 100,113	\$ 126,603	\$ 126,603
TOPSOIL					\$ 14,930	\$ 10,313	\$ 6,394	\$ 21,324	\$ 16,706
SEEDING					\$ 7,800	\$ 7,800	\$ 4,885	\$ 12,685	\$ 12,685
SODDING					\$ 65,419	\$ 15,044	\$ 19,468	\$ 84,887	\$ 34,512
SIGNING					\$ 21,578	\$ 21,578	\$ 28,770	\$ 50,348	\$ 50,348
LIGHTING					\$ -	\$ -	\$ -	\$ -	\$ -
SIGNALIZATION					\$ 130,000	\$ 130,000	\$ 260,000	\$ 390,000	\$ 390,000
FENCE					\$ -	\$ -	\$ -	\$ -	\$ -
GUARDRAIL					\$ 22,948	\$ 22,948	\$ 14,498	\$ 37,446	\$ 37,446
RIP RAP OR SLOPE PROTECTION					\$ 4,050	\$ 4,050	\$ 4,050	\$ 8,100	\$ 8,100
OTHER CONST. ITEMS (15%)					\$ 805,558	\$ 608,448	\$ 447,623	\$ 1,253,181	\$ 1,056,071
				<b>SUBTOTAL</b>	<b>\$ 6,175,943</b>	<b>\$ 4,664,771</b>	<b>\$ 3,431,776</b>	<b>\$ 9,607,719</b>	<b>\$ 8,096,548</b>
<b>UTILITY COST</b>									
OVERHEAD ELECTRIC	MI.	0	0.6	\$100,000	\$ -	\$ -	\$ 60,000	\$ 60,000	\$ 60,000
TELEPHONE	MI.	0	0.6	\$75,000	\$ -	\$ -	\$ 45,000	\$ 45,000	\$ 45,000
WATER	MI.	0	0.6	\$350,000	\$ -	\$ -	\$ 210,000	\$ 210,000	\$ 210,000
SEWER	MI.	0	0.2	\$165,000	\$ -	\$ -	\$ 33,000	\$ 33,000	\$ 33,000
CABLE	MI.	0	0.6	\$30,000	\$ -	\$ -	\$ 18,000	\$ 18,000	\$ 18,000
GAS	MI.	0	0.2	\$205,000	\$ -	\$ -	\$ 41,000	\$ 41,000	\$ 41,000
				<b>SUBTOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>
<b>MOBILIZATION</b>									
BASED ON SP 717, CALCULATED FOR CONST. COST AND DIVIDED INTO SEGMENTS 1 AND 2.				<b>SUBTOTAL</b>	<b>\$ 266,322</b>	<b>\$ 205,875</b>	<b>\$ 147,987</b>	<b>\$ 414,309</b>	<b>\$ 353,862</b>
<b>CONTINGENCY (10% OF CONSTRUCTION COST AND UTILITIES)</b>					<b>\$ 644,226</b>	<b>\$ 487,065</b>	<b>\$ 398,676</b>	<b>\$ 1,042,903</b>	<b>\$ 885,741</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$ 7,086,491</b>	<b>\$ 5,357,711</b>	<b>\$ 4,385,440</b>	<b>\$ 11,471,931</b>	<b>\$ 9,743,151</b>
<b>PRELIMINARY ENGINEERING (10% OF TOTAL CONSTRUCTION COST)</b>					<b>\$ 708,649</b>	<b>\$ 535,771</b>	<b>\$ 438,544</b>	<b>\$ 1,147,193</b>	<b>\$ 974,315</b>
<b>TOTAL COST*</b>					<b>\$ 8,778,540</b>	<b>\$ 6,876,882</b>	<b>\$ 5,598,984</b>	<b>\$ 14,377,524</b>	<b>\$ 12,475,866</b>

\* For estimating future project costs, a compounded inflation rate of 10% per year will be applied from the date of this estimate.  
 \*\* Option 1 includes a 2-lane, 32' raised median section (2-12' lanes with a 12' turn lane as needed) from Existing S.R. 109 to Hatten Track Road.  
 \*\*\* Option 2 includes a 3-lane section (2-12'-lanes, and a 12' center turn lane) from Existing S.R. 109 to Hatten Track Road.

AT-GRADE INTERSECTION

Route: Corridor B - Segment 1 and 2  
 Description: Proposed Hatten Track Extension from Existing SR 109  
 Bypass to SR 174 (Dobbins Pike) - Includes 3 signalized intersections  
 (Hatten Track at SR 109 Bypass, Blythe Avenue and SR 174)  
 County: Sumner  
 Length: 0.96 Miles - Segment 1/0.69 Miles - Segment 2  
 Date: 5/18/2010

	UNIT	QUANT. - SEG. 1	QUANT. - SEG. 2	UNIT COST	SEG. 1 TOTAL **(OPTION 1)	SEG. 1 TOTAL *** (OPTION 2)	SEG. 2 TOTAL	TOTAL (w/ OPTION 1)	TOTAL (w/ OPTION 2)
<b>RIGHT-OF-WAY COST</b>									
LAND	AC	14	3.2	\$60,000	\$ 840,000	\$ 840,000	\$ 192,000	\$ 1,032,000	\$ 1,032,000
COMMERCIAL	EACH	0	3	\$150,000	\$ -	\$ -	\$ 450,000	\$ 450,000	\$ 450,000
RESIDENTIAL	EACH	0	0	\$80,000	\$ -	\$ -	\$ -	\$ -	\$ -
TRACTS (INCIDENTALS)	EACH	3	35	\$3,800	\$ 11,400	\$ 11,400	\$ 133,000	\$ 144,400	\$ 144,400
				<b>SUBTOTAL</b>	<b>\$ 851,400</b>	<b>\$ 851,400</b>	<b>\$ 775,000</b>	<b>\$ 1,626,400</b>	<b>\$ 1,626,400</b>
<b>CONSTRUCTION COST</b>									
CLEAR AND GRUBBING					\$ 87,500	\$ 87,500	\$ 63,000	\$ 150,500	\$ 150,500
EARTHWORK					\$ 430,277	\$ 379,575	\$ 200,250	\$ 630,527	\$ 579,825
PAVEMENT REMOVAL					\$ -	\$ -	\$ 22,250	\$ 22,250	\$ 22,250
DRAINAGE (INCLUDING EROSION CONTROL)					\$ 338,565	\$ 172,090	\$ 184,177	\$ 522,742	\$ 356,267
STRUCTURES					\$ 4,972,500	\$ 3,442,500	\$ -	\$ 4,972,500	\$ 3,442,500
RAILROAD CROSSING OR SEPARATION					\$ -	\$ -	\$ 816,000	\$ 816,000	\$ 816,000
PAVING (INCLUDING CURB, GUTTER AND SIDEWALK)					\$ 988,367	\$ 915,181	\$ 1,170,299	\$ 2,158,666	\$ 2,085,480
RETAINING WALLS					\$ -	\$ -	\$ 90,000	\$ 90,000	\$ 90,000
MAINTENANCE OF TRAFFIC					\$ 25,900	\$ 25,900	\$ 100,113	\$ 126,013	\$ 126,013
TOPSOIL					\$ 12,873	\$ 8,869	\$ 6,394	\$ 19,267	\$ 15,263
SEEDING					\$ 6,718	\$ 6,718	\$ 4,885	\$ 11,603	\$ 11,603
SODDING					\$ 45,130	\$ 12,938	\$ 19,468	\$ 64,598	\$ 32,406
SIGNING					\$ 18,908	\$ 18,908	\$ 28,770	\$ 47,678	\$ 47,678
LIGHTING					\$ -	\$ -	\$ -	\$ -	\$ -
SIGNALIZATION					\$ 130,000	\$ 130,000	\$ 260,000	\$ 390,000	\$ 390,000
FENCE					\$ -	\$ -	\$ -	\$ -	\$ -
GUARDRAIL					\$ 45,371	\$ 45,371	\$ 14,498	\$ 59,869	\$ 59,869
RIP RAP OR SLOPE PROTECTION					\$ 4,725	\$ 4,725	\$ 4,050	\$ 8,775	\$ 8,775
OTHER CONST. ITEMS (15%)					\$ 1,066,025	\$ 787,541	\$ 447,623	\$ 1,513,648	\$ 1,235,164
				<b>SUBTOTAL</b>	<b>\$ 8,172,858</b>	<b>\$ 6,037,815</b>	<b>\$ 3,431,776</b>	<b>\$ 11,604,634</b>	<b>\$ 9,469,591</b>
<b>UTILITY COST</b>									
OVERHEAD ELECTRIC	MI.	0	0.6	\$100,000	\$ -	\$ -	\$ 60,000	\$ 60,000	\$ 60,000
TELEPHONE	MI.	0	0.6	\$75,000	\$ -	\$ -	\$ 45,000	\$ 45,000	\$ 45,000
WATER	MI.	0	0.6	\$350,000	\$ -	\$ -	\$ 210,000	\$ 210,000	\$ 210,000
SEWER	MI.	0	0.2	\$165,000	\$ -	\$ -	\$ 33,000	\$ 33,000	\$ 33,000
CABLE	MI.	0	0.6	\$30,000	\$ -	\$ -	\$ 18,000	\$ 18,000	\$ 18,000
GAS	MI.	0	0.2	\$205,000	\$ -	\$ -	\$ 41,000	\$ 41,000	\$ 41,000
				<b>SUBTOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>
<b>MOBILIZATION</b>									
BASED ON SP 717, CALCULATED FOR CONST COST AND DIVIDED INTO SEGMENTS 1 AND 2.				<b>SUBTOTAL</b>	<b>\$ 342,392</b>	<b>\$ 265,014</b>	<b>\$ 143,770</b>	<b>\$ 486,162</b>	<b>\$ 408,784</b>
<b>CONTINGENCY (10% OF CONSTRUCTION COST AND UTILITIES)</b>					<b>\$ 851,525</b>	<b>\$ 630,283</b>	<b>\$ 398,255</b>	<b>\$ 1,249,780</b>	<b>\$ 1,028,538</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$ 9,366,775</b>	<b>\$ 6,933,112</b>	<b>\$ 4,380,801</b>	<b>\$ 13,747,575</b>	<b>\$ 11,313,913</b>
<b>PRELIMINARY ENGINEERING (10% OF TOTAL CONSTRUCTION COST)</b>					<b>\$ 936,677</b>	<b>\$ 693,311</b>	<b>\$ 438,080</b>	<b>\$ 1,374,758</b>	<b>\$ 1,131,391</b>
<b>TOTAL COST*</b>					<b>\$ 11,154,852</b>	<b>\$ 8,477,823</b>	<b>\$ 5,593,881</b>	<b>\$ 16,748,733</b>	<b>\$ 14,071,704</b>

\* For estimating future project costs, a compounded inflation rate of 10% per year will be applied from the date of this estimate.  
 \*\* Option 1 includes a 2-lane, 32' raised median section (2-12' lanes with a 12' turn lane as needed) from Existing S.R. 109 to Hatten Track Road.  
 \*\*\* Option 2 includes a 3-lane section (2-12'-lanes, and a 12' center turn lane) from Existing S.R. 109 to Hatten Track Road.

AT-GRADE INTERSECTION

Route: **Corridor C - Segment 1 and 2**  
 Description: **Proposed Hatten Track Extension from Existing SR 109**  
**Bypass to SR 174 (Dobbins Pike) - Includes 3 signalized intersections**  
**(Hatten Track at SR 109 Bypass, Blythe Avenue and SR 174)**  
 County: **Sumner**  
 Length: **1.09 Miles - Segment 1/0.69 Miles - Segment 2**  
 Date: **5/18/2010**

	UNIT	QUANT. - SEG. 1	QUANT. - SEG. 2	UNIT COST	SEG. 1 TOTAL **(OPTION 1)	SEG. 1 TOTAL *** (OPTION 2)	SEG. 2 TOTAL	TOTAL (w/ OPTION 1)	TOTAL (w/ OPTION 2)
<b>RIGHT-OF-WAY COST</b>									
LAND	AC	15.9	3.2	\$60,000	\$ 954,000	\$ 954,000	\$ 192,000	\$ 1,146,000	\$ 1,146,000
COMMERCIAL	EACH	0	3	\$150,000	\$ -	\$ -	\$ 450,000	\$ 450,000	\$ 450,000
RESIDENTIAL	EACH	0	0	\$80,000	\$ -	\$ -	\$ -	\$ -	\$ -
TRACTS (INCIDENTALS)	EACH	4	35	\$3,800	\$ 15,200	\$ 15,200	\$ 133,000	\$ 148,200	\$ 148,200
				<b>SUBTOTAL</b>	<b>\$ 969,200</b>	<b>\$ 969,200</b>	<b>\$ 775,000</b>	<b>\$ 1,744,200</b>	<b>\$ 1,744,200</b>
<b>CONSTRUCTION COST</b>									
CLEAR AND GRUBBING					\$ 99,000	\$ 99,000	\$ 63,000	\$ 162,000	\$ 162,000
EARTHWORK					\$ 488,381	\$ 430,830	\$ 200,250	\$ 688,631	\$ 631,080
PAVEMENT REMOVAL					\$ -	\$ -	\$ 22,250	\$ 22,250	\$ 22,250
DRAINAGE (INCLUDING EROSION CONTROL)					\$ 345,033	\$ 149,087	\$ 184,177	\$ 529,210	\$ 333,264
STRUCTURES					\$ 4,309,500	\$ 2,983,500	\$ -	\$ 4,309,500	\$ 2,983,500
RAILROAD CROSSING OR SEPARATION					\$ -	\$ -	\$ 816,000	\$ 816,000	\$ 816,000
PAVING (INCLUDING CURB, GUTTER AND SIDEWALK)					\$ 1,122,535	\$ 1,039,238	\$ 1,170,299	\$ 2,292,834	\$ 2,209,537
RETAINING WALLS					\$ -	\$ -	\$ 90,000	\$ 90,000	\$ 90,000
MAINTENANCE OF TRAFFIC					\$ 26,578	\$ 26,578	\$ 100,113	\$ 126,690	\$ 126,690
TOPSOIL					\$ 14,608	\$ 10,065	\$ 6,394	\$ 21,001	\$ 16,459
SEEDING					\$ 7,695	\$ 7,695	\$ 4,885	\$ 12,580	\$ 12,580
SODDING					\$ 64,248	\$ 14,691	\$ 19,468	\$ 83,716	\$ 34,159
SIGNING					\$ 21,355	\$ 21,355	\$ 28,770	\$ 50,125	\$ 50,125
LIGHTING					\$ -	\$ -	\$ -	\$ -	\$ -
SIGNALIZATION					\$ 130,000	\$ 130,000	\$ 260,000	\$ 390,000	\$ 390,000
FENCE					\$ -	\$ -	\$ -	\$ -	\$ -
GUARDRAIL					\$ 45,371	\$ 45,371	\$ 14,498	\$ 59,869	\$ 59,869
RIP RAP OR SLOPE PROTECTION					\$ 4,725	\$ 4,725	\$ 4,050	\$ 8,775	\$ 8,775
OTHER CONST. ITEMS (15%)					\$ 1,001,854	\$ 744,320	\$ 447,623	\$ 1,449,477	\$ 1,191,943
				<b>SUBTOTAL</b>	<b>\$ 7,680,882</b>	<b>\$ 5,706,454</b>	<b>\$ 3,431,776</b>	<b>\$ 11,112,658</b>	<b>\$ 9,138,230</b>
<b>UTILITY COST</b>									
OVERHEAD ELECTRIC	MI.	0	0.6	\$100,000	\$ -	\$ -	\$ 60,000	\$ 60,000	\$ 60,000
TELEPHONE	MI.	0	0.6	\$75,000	\$ -	\$ -	\$ 45,000	\$ 45,000	\$ 45,000
WATER	MI.	0	0.6	\$350,000	\$ -	\$ -	\$ 210,000	\$ 210,000	\$ 210,000
SEWER	MI.	0	0.2	\$165,000	\$ -	\$ -	\$ 33,000	\$ 33,000	\$ 33,000
CABLE	MI.	0	0.6	\$30,000	\$ -	\$ -	\$ 18,000	\$ 18,000	\$ 18,000
GAS	MI.	0	0.2	\$205,000	\$ -	\$ -	\$ 41,000	\$ 41,000	\$ 41,000
				<b>SUBTOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>
<b>MOBILIZATION</b>									
BASED ON SP 717, CALCULATED FOR CONST COST AND DIVIDED INTO SEGMENTS 1 AND 2.				<b>SUBTOTAL</b>	<b>\$ 324,125</b>	<b>\$ 250,711</b>	<b>\$ 144,818</b>	<b>\$ 468,943</b>	<b>\$ 395,529</b>
<b>CONTINGENCY (10% OF CONSTRUCTION COST AND UTILITIES)</b>					<b>\$ 800,501</b>	<b>\$ 595,716</b>	<b>\$ 398,359</b>	<b>\$ 1,198,860</b>	<b>\$ 994,076</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$ 8,805,508</b>	<b>\$ 6,552,881</b>	<b>\$ 4,381,954</b>	<b>\$ 13,187,462</b>	<b>\$ 10,934,835</b>
<b>PRELIMINARY ENGINEERING (10% OF TOTAL CONSTRUCTION COST)</b>					<b>\$ 880,551</b>	<b>\$ 655,288</b>	<b>\$ 438,195</b>	<b>\$ 1,318,746</b>	<b>\$ 1,093,484</b>
<b>TOTAL COST*</b>					<b>\$ 10,655,259</b>	<b>\$ 8,177,369</b>	<b>\$ 5,595,149</b>	<b>\$ 16,250,408</b>	<b>\$ 13,772,519</b>

\* For estimating future project costs, a compounded inflation rate of 10% per year will be applied from the date of this estimate.  
 \*\* Option 1 includes a 2-lane, 32' raised median section (2-12' lanes with a 12' turn lane as needed) from Existing S.R. 109 to Hatten Track Road.  
 \*\*\* Option 2 includes a 3-lane section (2-12'-lanes, and a 12' center turn lane) from Existing S.R. 109 to Hatten Track Road.

**AT-GRADE INTERSECTION**

**Summary of Detailed Cost Estimates**

**Corridor A Segment 1 (OPTION 1)**

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5850	AC	20.15	\$5,000.00	\$100,750
			<b>SUBTOTAL</b>	<b>\$100,750</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL	CY	110500	\$4.50	\$497,250
			<b>SUBTOTAL</b>	<b>\$497,250</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6" RCBC	LF	105	\$1,000.00	\$105,000
CATCH BASINS	EACH	8	\$2,200.00	\$17,600
DRAINAGE PIPE	LF	2926	\$48.00	\$140,448
SILT FENCE	LF	8200	\$1.40	\$11,480
SILT FENCE WITH BACKING	LF	4000	\$3.40	\$13,600
SEDIMENT FILTER TUBES	LF	3000	\$3.30	\$9,900
SEDIMENT REMOVAL	CY	550	\$4.40	\$2,420
CATCH BASIN PROTECTION	EACH	8	\$500.00	\$4,000
CHECK DAMS	EACH	40	\$325.00	\$13,000
SEDIMENT FILTER BAGS	EACH	8	\$900.00	\$7,200
EROSION CONTROL BLANKET	SY	12000	\$2.00	\$24,000
			<b>SUBTOTAL</b>	<b>\$348,648</b>
<b>STRUCTURES</b>				
450'x78' BRIDGE OVER EAST CAMP CREEK	SF	35100	\$85.00	\$2,983,500
			<b>SUBTOTAL</b>	<b>\$2,983,500</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1348	\$70.00	\$94,367
2" ASPHALT BASE BINDER (307-02.08)	TON	2297	\$58.50	\$134,380
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	4091	\$52.50	\$214,783
3" ASPHALT AGGREGATE BASE (307-02.02/.03)	TON	2743	\$58.00	\$159,094
10" MINERAL AGGREGATE BASE (303-01)	TON	21115	\$12.50	\$263,933
TACK COAT	TON	5	\$460.00	\$2,452
PRIME COAT	TON	152	\$302.00	\$45,934
UNDERDRAIN	LF	14300	\$5.00	\$71,500
CURB AND GUTTER	CY	988	\$162.50	\$160,580
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$1,147,022</b>
<b>RETAINING WALLS</b>				
NONE	SF	0	\$45.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$15,000.00	\$15,000
TRAFFIC CONTROL SIGNAGE	SF	90	\$8.50	\$765
PORTABLE BARRIER RAIL	LF	100	\$22.00	\$2,200
FLEXIBLE DRUMS	EACH	50	\$30.00	\$1,500
WARNING LIGHTS	EACH	50	\$22.00	\$1,100
ARROW BOARD	EACH	1	\$900.00	\$900
CHANGEABLE MESSAGE SIGN UNIT	EACH	1	\$4,400.00	\$4,400
TEMPORARY STRIPING	LF	500	\$1.25	\$625
			<b>SUBTOTAL</b>	<b>\$26,490</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	5429	\$2.75	\$14,930
			<b>SUBTOTAL</b>	<b>\$14,930</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	360	\$21.00	\$7,560
WATER	M.G.	30	\$8.00	\$240
			<b>SUBTOTAL</b>	<b>\$7,800</b>
<b>SODDING</b>				
SODDING	SY	26150	\$2.50	\$65,375
WATER	M.G.	5.5	\$8.00	\$44
			<b>SUBTOTAL</b>	<b>\$65,419</b>
<b>SIGNING</b>				
SIGNS	SF	135	\$11.50	\$1,553
STRIPING	LM	4.5	\$4,450.00	\$20,025
			<b>SUBTOTAL</b>	<b>\$21,578</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	1	\$130,000.00	\$130,000
			<b>SUBTOTAL</b>	<b>\$130,000</b>
<b>FENCE</b>				
NONE	LF	0	\$15.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	200	\$10.50	\$2,100
END TERMINALS	EACH	8	\$1,850.00	\$14,800
GUARDRAIL AT BRIDGE ENDS	LF	108	\$56.00	\$6,048
			<b>SUBTOTAL</b>	<b>\$22,948</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	150	\$27.00	\$4,050
			<b>SUBTOTAL</b>	<b>\$4,050</b>

AT-GRADE INTERSECTION

Summary of Detailed Cost Estimates

Corridor A Segment 1 (OPTION 2)

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5850	AC	20.15	\$5,000.00	\$100,750
			<b>SUBTOTAL</b>	<b>\$100,750</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL	CY	97500	\$4.50	\$438,750
			<b>SUBTOTAL</b>	<b>\$438,750</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6" RCBC	LF	85	\$1,000.00	\$85,000
SILT FENCE	LF	8200	\$1.40	\$11,480
SILT FENCE WITH BACKING	LF	4000	\$3.40	\$13,600
SEDIMENT REMOVAL	CY	550	\$4.40	\$2,420
CHECK DAMS	EACH	20	\$325.00	\$6,500
SEDIMENT FILTER BAGS	EACH	8	\$900.00	\$7,200
EROSION CONTROL BLANKET	SY	12000	\$2.00	\$24,000
			<b>SUBTOTAL</b>	<b>\$150,200</b>
<b>STRUCTURES</b>				
450x54' BRIDGE OVER EAST CAMP CREEK	SF	24300	\$85.00	\$2,065,500
			<b>SUBTOTAL</b>	<b>\$2,065,500</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1555	\$70.00	\$108,850
2" ASPHALT BASE BINDER (307-02.08)	TON	2650	\$58.50	\$155,025
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	4720	\$52.50	\$247,800
3" ASPHALT AGGREGATE BASE (307-02.02/03)	TON	3165	\$58.00	\$183,570
10" MINERAL AGGREGATE BASE (303-01)	TON	20560	\$12.50	\$257,000
TACK COAT	TON	6	\$460.00	\$2,806
PRIME COAT	TON	175	\$302.00	\$52,850
UNDERDRAIN	LF	11000	\$5.00	\$55,000
CURB AND GUTTER	CY	0	\$162.50	\$0
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$1,062,901</b>
<b>RETAINING WALLS</b>				
NONE	SF	0	\$45.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$15,000.00	\$15,000
TRAFFIC CONTROL SIGNAGE	SF	90	\$8.50	\$765
PORTABLE BARRIER RAIL	LF	100	\$22.00	\$2,200
FLEXIBLE DRUMS	EACH	50	\$30.00	\$1,500
WARNING LIGHTS	EACH	50	\$22.00	\$1,100
ARROW BOARD	EACH	1	\$900.00	\$900
CHANGEABLE MESSAGE SIGN UNIT	EACH	1	\$4,400.00	\$4,400
TEMPORARY STRIPING	LF	500	\$1.25	\$625
			<b>SUBTOTAL</b>	<b>\$26,490</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	3750	\$2.75	\$10,313
			<b>SUBTOTAL</b>	<b>\$10,313</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	360	\$21.00	\$7,560
WATER	M.G.	30	\$8.00	\$240
			<b>SUBTOTAL</b>	<b>\$7,800</b>
<b>SODDING</b>				
SODDING	SY	6000	\$2.50	\$15,000
WATER	M.G.	5.5	\$8.00	\$44
			<b>SUBTOTAL</b>	<b>\$15,044</b>
<b>SIGNING</b>				
SIGNS	SF	135	\$11.50	\$1,553
STRIPING	LM	4.5	\$4,450.00	\$20,025
			<b>SUBTOTAL</b>	<b>\$21,578</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	1	\$130,000.00	\$130,000
			<b>SUBTOTAL</b>	<b>\$130,000</b>
<b>FENCE</b>				
NONE	LF	0	\$15.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	200	\$10.50	\$2,100
END TERMINALS	EACH	8	\$1,850.00	\$14,800
GUARDRAIL AT BRIDGE ENDS	LF	108	\$56.00	\$6,048
			<b>SUBTOTAL</b>	<b>\$22,948</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	150	\$27.00	\$4,050
			<b>SUBTOTAL</b>	<b>\$4,050</b>

**AT-GRADE INTERSECTION**

**Summary of Detailed Cost Estimates**

**Corridor B Segment 1 (OPTION 1)**

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5070	AC	17.5	\$5,000.00	\$87,500
			<b>SUBTOTAL</b>	<b>\$87,500</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL	CY	95617	\$4.50	\$430,277
			<b>SUBTOTAL</b>	<b>\$430,277</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6" RCBC	LF	105	\$1,000.00	\$105,000
EXTEND 48" RCP	LF	150	\$150.00	\$22,500
CATCH BASINS	EACH	6	\$2,200.00	\$13,200
DRAINAGE PIPE	LF	2536	\$48.00	\$121,728
SILT FENCE	LF	7050	\$1.40	\$9,870
SILT FENCE WITH BACKING	LF	3450	\$3.40	\$11,730
SEDIMENT FILTER TUBES	LF	2590	\$3.30	\$8,547
SEDIMENT REMOVAL	CY	475	\$4.40	\$2,090
CATCH BASIN PROTECTION	EACH	6	\$500.00	\$3,000
CHECK DAMS	EACH	40	\$325.00	\$13,000
SEDIMENT FILTER BAGS	EACH	8	\$900.00	\$7,200
EROSION CONTROL BLANKET	SY	10350	\$2.00	\$20,700
			<b>SUBTOTAL</b>	<b>\$338,565</b>
<b>STRUCTURES</b>				
300'x78' BRIDGE OVER EAST CAMP CREEK TRIBUTARY	SF	23400	\$85.00	\$1,989,000
450'x78' BRIDGE OVER EAST CAMP CREEK	SF	35100	\$85.00	\$2,983,500
			<b>SUBTOTAL</b>	<b>\$4,972,500</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1170	\$70.00	\$81,900
2" ASPHALT BASE BINDER (307-02.08)	TON	1976	\$58.50	\$115,596
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	3519	\$52.50	\$184,753
3" ASPHALT AGGREGATE BASE (307-02.02/.03)	TON	2362	\$58.00	\$137,002
10" MINERAL AGGREGATE BASE (303-01)	TON	18164	\$12.50	\$227,045
TACK COAT	TON	5	\$460.00	\$2,153
PRIME COAT	TON	130	\$302.00	\$39,260
UNDERDRAIN	LF	12298	\$5.00	\$61,490
CURB AND GUTTER	CY	856	\$162.50	\$139,169
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$988,367</b>
<b>RETAINING WALLS</b>				
NONE	SF	0	\$45.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$15,000.00	\$15,000
TRAFFIC CONTROL SIGNAGE	SF	90	\$8.50	\$765
PORTABLE BARRIER RAIL	LF	85	\$22.00	\$1,870
FLEXIBLE DRUMS	EACH	45	\$30.00	\$1,350
WARNING LIGHTS	EACH	45	\$22.00	\$990
ARROW BOARD	EACH	1	\$900.00	\$900
CHANGEABLE MESSAGE SIGN UNIT	EACH	1	\$4,400.00	\$4,400
TEMPORARY STRIPING	LF	500	\$1.25	\$625
			<b>SUBTOTAL</b>	<b>\$25,900</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	4681	\$2.75	\$12,873
			<b>SUBTOTAL</b>	<b>\$12,873</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	310	\$21.00	\$6,510
WATER	M.G.	26	\$8.00	\$208
			<b>SUBTOTAL</b>	<b>\$6,718</b>
<b>SODDING</b>				
SODDING	SY	18037	\$2.50	\$45,092
WATER	M.G.	4.75	\$8.00	\$38
			<b>SUBTOTAL</b>	<b>\$45,130</b>
<b>SIGNING</b>				
SIGNS	SF	135	\$11.50	\$1,553
STRIPING	LM	3.9	\$4,450.00	\$17,355
			<b>SUBTOTAL</b>	<b>\$18,908</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	1	\$130,000.00	\$130,000
			<b>SUBTOTAL</b>	<b>\$130,000</b>
<b>FENCE</b>				
NONE	LF	0	\$15.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	350	\$10.50	\$3,675
END TERMINALS	EACH	16	\$1,850.00	\$29,600
GUARDRAIL AT BRIDGE ENDS	LF	216	\$56.00	\$12,096
			<b>SUBTOTAL</b>	<b>\$45,371</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	175	\$27.00	\$4,725
			<b>SUBTOTAL</b>	<b>\$4,725</b>

AT-GRADE INTERSECTION

Summary of Detailed Cost Estimates

Corridor B Segment 1 (OPTION 2)

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5070	AC	17.5	\$5,000.00	\$87,500
			<b>SUBTOTAL</b>	<b>\$87,500</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL	CY	84350	\$4.50	\$379,575
			<b>SUBTOTAL</b>	<b>\$379,575</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6" RCBC	LF	85	\$1,000.00	\$85,000
EXTEND 48" RCP	LF	150	\$150.00	\$22,500
SILT FENCE	LF	7050	\$1.40	\$9,870
SILT FENCE WITH BACKING	LF	3450	\$3.40	\$11,730
SEDIMENT REMOVAL	CY	475	\$4.40	\$2,090
CATCH BASIN PROTECTION	EACH	0	\$500.00	\$0
CHECK DAMS	EACH	40	\$325.00	\$13,000
SEDIMENT FILTER BAGS	EACH	8	\$900.00	\$7,200
EROSION CONTROL BLANKET	SY	10350	\$2.00	\$20,700
			<b>SUBTOTAL</b>	<b>\$172,090</b>
<b>STRUCTURES</b>				
300'x54' BRIDGE OVER EAST CAMP CREEK TRIBUTARY	SF	16200	\$85.00	\$1,377,000
450'x54' BRIDGE OVER EAST CAMP CREEK	SF	24300	\$85.00	\$2,065,500
			<b>SUBTOTAL</b>	<b>\$3,442,500</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1350	\$70.00	\$94,500
2" ASPHALT BASE BINDER (307-02.08)	TON	2280	\$58.50	\$133,380
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	4060	\$52.50	\$213,150
3" ASPHALT AGGREGATE BASE (307-02.02/03)	TON	2725	\$58.00	\$158,050
10" MINERAL AGGREGATE BASE (303-01)	TON	17685	\$12.50	\$221,063
TACK COAT	TON	5	\$460.00	\$2,438
PRIME COAT	TON	150	\$302.00	\$45,300
UNDERDRAIN	LF	9460	\$5.00	\$47,300
CURB AND GUTTER	CY	0	\$162.50	\$0
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$915,181</b>
<b>RETAINING WALLS</b>				
NONE	SF	0	\$45.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$15,000.00	\$15,000
TRAFFIC CONTROL SIGNAGE	SF	90	\$8.50	\$765
PORTABLE BARRIER RAIL	LF	85	\$22.00	\$1,870
FLEXIBLE DRUMS	EACH	45	\$30.00	\$1,350
WARNING LIGHTS	EACH	45	\$22.00	\$990
ARROW BOARD	EACH	1	\$900.00	\$900
CHANGEABLE MESSAGE SIGN UNIT	EACH	1	\$4,400.00	\$4,400
TEMPORARY STRIPING	LF	500	\$1.25	\$625
			<b>SUBTOTAL</b>	<b>\$25,900</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	3225	\$2.75	\$8,869
			<b>SUBTOTAL</b>	<b>\$8,869</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	310	\$21.00	\$6,510
WATER	M.G.	26	\$8.00	\$208
			<b>SUBTOTAL</b>	<b>\$6,718</b>
<b>SODDING</b>				
SODDING	SY	5160	\$2.50	\$12,900
WATER	M.G.	4.75	\$8.00	\$38
			<b>SUBTOTAL</b>	<b>\$12,938</b>
<b>SIGNING</b>				
SIGNS	SF	135	\$11.50	\$1,553
STRIPING	LM	3.9	\$4,450.00	\$17,355
			<b>SUBTOTAL</b>	<b>\$18,908</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	1	\$130,000.00	\$130,000
			<b>SUBTOTAL</b>	<b>\$130,000</b>
<b>FENCE</b>				
NONE	LF	0	\$15.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	350	\$10.50	\$3,675
END TERMINALS	EACH	16	\$1,850.00	\$29,600
GUARDRAIL AT BRIDGE ENDS	LF	216	\$56.00	\$12,096
			<b>SUBTOTAL</b>	<b>\$45,371</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	175	\$27.00	\$4,725
			<b>SUBTOTAL</b>	<b>\$4,725</b>

AT-GRADE INTERSECTION

Summary of Detailed Cost Estimates

Corridor C Segment 1 (OPTION 1)

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5755'	AC	19.8	\$5,000.00	\$99,000
			<b>SUBTOTAL</b>	<b>\$99,000</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL	CY	108529	\$4.50	\$488,381
			<b>SUBTOTAL</b>	<b>\$488,381</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6" RCBC	LF	105	\$1,000.00	\$105,000
CATCH BASINS	EACH	8	\$2,200.00	\$17,600
DRAINAGE PIPE	LF	2878	\$48.00	\$138,144
SILT FENCE	LF	8000	\$1.40	\$11,200
SILT FENCE WITH BACKING	LF	3915	\$3.40	\$13,311
SEDIMENT FILTER TUBES	LF	2940	\$3.30	\$9,702
SEDIMENT REMOVAL	CY	540	\$4.40	\$2,376
CATCH BASIN PROTECTION	EACH	8	\$500.00	\$4,000
CHECK DAMS	EACH	40	\$325.00	\$13,000
SEDIMENT FILTER BAGS	EACH	8	\$900.00	\$7,200
EROSION CONTROL BLANKET	SY	11750	\$2.00	\$23,500
			<b>SUBTOTAL</b>	<b>\$345,033</b>
<b>STRUCTURES</b>				
200'x78' BRIDGE OVER EAST CAMP CREEK TRIBUTARY	SF	15600	\$85.00	\$1,326,000
450'x78' BRIDGE OVER EAST CAMP CREEK	SF	35100	\$85.00	\$2,983,500
			<b>SUBTOTAL</b>	<b>\$4,309,500</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1331	\$70.00	\$93,184
2" ASPHALT BASE BINDER (307-02.08)	TON	2245	\$58.50	\$131,338
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	3995	\$52.50	\$209,732
3" ASPHALT AGGREGATE BASE (307-02.02/.03)	TON	2683	\$58.00	\$155,626
10" MINERAL AGGREGATE BASE (303-01)	TON	20618	\$12.50	\$257,725
TACK COAT	TON	5	\$460.00	\$2,392
PRIME COAT	TON	148	\$302.00	\$44,756
UNDERDRAIN	LF	13962	\$5.00	\$69,810
CURB AND GUTTER	CY	972	\$162.50	\$157,972
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$1,122,535</b>
<b>RETAINING WALLS</b>				
NONE	SF	0	\$45.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$15,000.00	\$15,000
TRAFFIC CONTROL SIGNAGE	SF	90	\$8.50	\$765
PORTABLE BARRIER RAIL	LF	100	\$22.00	\$2,200
FLEXIBLE DRUMS	EACH	50	\$30.00	\$1,500
WARNING LIGHTS	EACH	50	\$22.00	\$1,100
ARROW BOARD	EACH	1	\$900.00	\$900
CHANGEABLE MESSAGE SIGN UNIT	EACH	1	\$4,400.00	\$4,400
TEMPORARY STRIPING	LF	570	\$1.25	\$713
			<b>SUBTOTAL</b>	<b>\$26,578</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	5312	\$2.75	\$14,608
			<b>SUBTOTAL</b>	<b>\$14,608</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	355	\$21.00	\$7,455
WATER	M.G.	30	\$8.00	\$240
			<b>SUBTOTAL</b>	<b>\$7,695</b>
<b>SODDING</b>				
SODDING	SY	25683	\$2.50	\$64,207
WATER	M.G.	5.1	\$8.00	\$41
			<b>SUBTOTAL</b>	<b>\$64,248</b>
<b>SIGNING</b>				
SIGNS	SF	135	\$11.50	\$1,553
STRIPING	LM	4.45	\$4,450.00	\$19,803
			<b>SUBTOTAL</b>	<b>\$21,355</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	1	\$130,000.00	\$130,000
			<b>SUBTOTAL</b>	<b>\$130,000</b>
<b>FENCE</b>				
NONE	LF	0	\$15.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	350	\$10.50	\$3,675
END TERMINALS	EACH	16	\$1,850.00	\$29,600
GUARDRAIL AT BRIDGE ENDS	LF	216	\$56.00	\$12,096
			<b>SUBTOTAL</b>	<b>\$45,371</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	175	\$27.00	\$4,725
			<b>SUBTOTAL</b>	<b>\$4,725</b>

AT-GRADE INTERSECTION

Summary of Detailed Cost Estimates

Corridor C Segment 1 (OPTION 2)

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5755'	AC	19.8	\$5,000.00	\$99,000
			<b>SUBTOTAL</b>	<b>\$99,000</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL	CY	95740	\$4.50	\$430,830
			<b>SUBTOTAL</b>	<b>\$430,830</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6' RCBC	LF	85	\$1,000.00	\$85,000
SILT FENCE	LF	8000	\$1.40	\$11,200
SILT FENCE WITH BACKING	LF	3915	\$3.40	\$13,311
SEDIMENT REMOVAL	CY	540	\$4.40	\$2,376
CATCH BASIN PROTECTION	EACH	0	\$500.00	\$0
CHECK DAMS	EACH	20	\$325.00	\$6,500
SEDIMENT FILTER BAGS	EACH	8	\$900.00	\$7,200
EROSION CONTROL BLANKET	SY	11750	\$2.00	\$23,500
			<b>SUBTOTAL</b>	<b>\$149,087</b>
<b>STRUCTURES</b>				
200'x54' BRIDGE OVER EAST CAMP CREEK TRIBUTARY	SF	10800	\$85.00	\$918,000
450'x54' BRIDGE OVER EAST CAMP CREEK	SF	24300	\$85.00	\$2,065,500
			<b>SUBTOTAL</b>	<b>\$2,983,500</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1535	\$70.00	\$107,450
2" ASPHALT BASE BINDER (307-02.08)	TON	2590	\$58.50	\$151,515
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	4610	\$52.50	\$242,025
3" ASPHALT AGGREGATE BASE (307-02.02/03)	TON	3095	\$58.00	\$179,510
10" MINERAL AGGREGATE BASE (303-01)	TON	20075	\$12.50	\$250,938
TACK COAT	TON	6	\$460.00	\$2,760
PRIME COAT	TON	170	\$302.00	\$51,340
UNDERDRAIN	LF	10740	\$5.00	\$53,700
CURB AND GUTTER	CY	0	\$162.50	\$0
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$1,039,238</b>
<b>RETAINING WALLS</b>				
NONE	SF	0	\$45.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$15,000.00	\$15,000
TRAFFIC CONTROL SIGNAGE	SF	90	\$8.50	\$765
PORTABLE BARRIER RAIL	LF	100	\$22.00	\$2,200
FLEXIBLE DRUMS	EACH	50	\$30.00	\$1,500
WARNING LIGHTS	EACH	50	\$22.00	\$1,100
ARROW BOARD	EACH	1	\$900.00	\$900
CHANGEABLE MESSAGE SIGN UNIT	EACH	1	\$4,400.00	\$4,400
TEMPORARY STRIPING	LF	570	\$1.25	\$713
			<b>SUBTOTAL</b>	<b>\$26,578</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	3660	\$2.75	\$10,065
			<b>SUBTOTAL</b>	<b>\$10,065</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	355	\$21.00	\$7,455
WATER	M.G.	30	\$8.00	\$240
			<b>SUBTOTAL</b>	<b>\$7,695</b>
<b>SODDING</b>				
SODDING	SY	5860	\$2.50	\$14,650
WATER	M.G.	5.1	\$8.00	\$41
			<b>SUBTOTAL</b>	<b>\$14,691</b>
<b>SIGNING</b>				
SIGNS	SF	135	\$11.50	\$1,553
STRIPING	LM	4.45	\$4,450.00	\$19,803
			<b>SUBTOTAL</b>	<b>\$21,355</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	1	\$130,000.00	\$130,000
			<b>SUBTOTAL</b>	<b>\$130,000</b>
<b>FENCE</b>				
NONE	LF	0	\$15.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	350	\$10.50	\$3,675
END TERMINALS	EACH	16	\$1,850.00	\$29,600
GUARDRAIL AT BRIDGE ENDS	LF	216	\$56.00	\$12,096
			<b>SUBTOTAL</b>	<b>\$45,371</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	175	\$27.00	\$4,725
			<b>SUBTOTAL</b>	<b>\$4,725</b>

**AT-GRADE INTERSECTION**

**Summary of Detailed Cost Estimates**

**Corridor A, B and C Segment 2**

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 3650'	AC	12.6	\$5,000.00	\$63,000
			<b>SUBTOTAL</b>	<b>\$63,000</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL	CY	44500	\$4.50	\$200,250
			<b>SUBTOTAL</b>	<b>\$200,250</b>
<b>PAVEMENT REMOVAL</b>				
PAVEMENT REMOVAL	CY	4450	\$5.00	\$22,250
			<b>SUBTOTAL</b>	<b>\$22,250</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
PIPES	LF	2400	\$51.50	\$123,600
ENDWALLS	EACH	5	\$900.00	\$4,500
CATCHBASINS	EACH	8	\$2,050.00	\$16,400
SILT FENCE	LF	7000	\$1.40	\$9,800
SILT FENCE WITH BACKING	LF	1000	\$3.40	\$3,400
SEDIMENT REMOVAL	CY	455	\$4.40	\$2,002
CATCH BASIN PROTECTION	EACH	8	\$500.00	\$4,000
CHECK DAMS	EACH	15	\$325.00	\$4,875
SEDIMENT FILTER BAGS	EACH	4	\$900.00	\$3,600
EROSION CONTROL BLANKET	SY	6000	\$2.00	\$12,000
			<b>SUBTOTAL</b>	<b>\$184,177</b>
<b>STRUCTURES</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
RAILROAD CROSSING	SF	9600	\$85.00	\$816,000
			<b>SUBTOTAL</b>	<b>\$816,000</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1264	\$70.00	\$88,480
2" ASPHALT BASE BINDER (307-02.08)	TON	2745	\$58.50	\$160,583
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	4890	\$52.50	\$256,725
3" ASPHALT AGGREGATE BASE (307-02.02/.03)	TON	3280	\$58.00	\$190,240
10" MINERAL AGGREGATE BASE (303-01)	TON	16700	\$12.50	\$208,750
TACK COAT	TON	6.4	\$460.00	\$2,944
PRIME COAT	TON	145	\$302.00	\$43,790
UNDERDRAIN	LF	6820	\$5.00	\$34,100
CURB AND GUTTER	CY	575	\$162.50	\$93,438
SIDEWALK	SF	36500	\$2.50	\$91,250
			<b>SUBTOTAL</b>	<b>\$1,170,299</b>
<b>RETAINING WALLS</b>				
MISC. WALLS TO HOLD BACK FILL SLOPE	SF	2000	\$45.00	\$90,000
			<b>SUBTOTAL</b>	<b>\$90,000</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$45,000.00	\$45,000
TRAFFIC CONTROL SIGNAGE	SF	225	\$8.50	\$1,913
PORTABLE BARRIER RAIL	LF	750	\$22.00	\$16,500
FLEXIBLE DRUMS	EACH	100	\$30.00	\$3,000
WARNING LIGHTS	EACH	100	\$22.00	\$2,200
ARROW BOARD	EACH	3	\$900.00	\$2,700
CHANGEABLE MESSAGE SIGN UNIT	EACH	2	\$4,400.00	\$8,800
TEMPORARY STRIPING	LF	16000	\$1.25	\$20,000
			<b>SUBTOTAL</b>	<b>\$100,113</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	2325	\$2.75	\$6,394
			<b>SUBTOTAL</b>	<b>\$6,394</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	225	\$21.00	\$4,725
WATER	M.G.	20	\$8.00	\$160
			<b>SUBTOTAL</b>	<b>\$4,885</b>
<b>SODDING</b>				
SODDING	SY	7776	\$2.50	\$19,440
WATER	M.G.	3.5	\$8.00	\$28
			<b>SUBTOTAL</b>	<b>\$19,468</b>
<b>SIGNING</b>				
SIGNS	SF	180	\$11.50	\$2,070
STRIPING	LM	6	\$4,450.00	\$26,700
			<b>SUBTOTAL</b>	<b>\$28,770</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND BLYTHE AVENUE	LS	1	\$130,000.00	\$130,000
HATTEN TRACK EXTENSION AND SR 174	LS	1	\$130,000.00	\$130,000
			<b>SUBTOTAL</b>	<b>\$260,000</b>
<b>FENCE</b>				
NONE	LF	0	\$15.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	100	\$10.50	\$1,050
END TERMINALS	EACH	4	\$1,850.00	\$7,400
GUARDRAIL AT BRIDGE ENDS	LF	108	\$56.00	\$6,048
			<b>SUBTOTAL</b>	<b>\$14,498</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	150	\$27.00	\$4,050
			<b>SUBTOTAL</b>	<b>\$4,050</b>

\*Note: Roundabout option at Blythe Avenue would not include signal cost; however, the roundabout option would require approximately 0.64 acre of additional right-of-way estimated at \$38,400, additional signing approximately \$7000, and additional paving approx \$45,000.

INTERCHANGE COST ESTIMATES

Route: Corridor A - Segment 1 and 2  
 Description: Proposed Hatten Track Extension from Existing SR 109  
 Bypass to SR 174 (Dobbins Pike) -  
 Includes a Directional Interchange at SR 109 Bypass (3-way) and  
 Signalized Intersections at Blythe Avenue, and SR 174  
 County: Sumner  
 Length: 1.11 Miles - Segment 1/0.69 Miles - Segment 2  
 Date: 5/18/2010

	UNIT	QUANT. - SEG. 1	QUANT. - SEG. 2	UNIT COST	SEG. 1 TOTAL **(OPTION 1)	SEG. 1 TOTAL *** (OPTION 2)	SEG. 2 TOTAL	TOTAL (w/ OPTION 1)	TOTAL (w/ OPTION 2)
<b>RIGHT-OF-WAY COST</b>									
LAND	AC	23.7	3.2	\$60,000	\$ 1,422,000	\$ 1,422,000	\$ 192,000	\$ 1,614,000	\$ 1,614,000
COMMERCIAL	EACH	0	3	\$150,000	\$ -	\$ -	\$ 450,000	\$ 450,000	\$ 450,000
RESIDENTIAL	EACH	0	0	\$80,000	\$ -	\$ -	\$ -	\$ -	\$ -
TRACTS (INCIDENTALS)	EACH	4	35	\$3,800	\$ 15,200	\$ 15,200	\$ 133,000	\$ 148,200	\$ 148,200
				<b>SUBTOTAL</b>	<b>\$ 1,437,200</b>	<b>\$ 1,437,200</b>	<b>\$ 775,000</b>	<b>\$ 2,212,200</b>	<b>\$ 2,212,200</b>
<b>CONSTRUCTION COST</b>									
CLEAR AND GRUBBING				\$ 153,200	\$ 153,200	\$ 153,200	\$ 63,000	\$ 216,200	\$ 216,200
EARTHWORK				\$ 677,250	\$ 618,750	\$ 618,750	\$ 200,250	\$ 877,500	\$ 819,000
PAVEMENT REMOVAL				\$ -	\$ -	\$ -	\$ 22,250	\$ 22,250	\$ 22,250
DRAINAGE (INCLUDING EROSION CONTROL)				\$ 669,357	\$ 465,332	\$ 465,332	\$ 184,177	\$ 853,534	\$ 649,509
STRUCTURES				\$ 4,865,400	\$ 3,947,400	\$ 3,947,400	\$ -	\$ 4,865,400	\$ 3,947,400
RAILROAD CROSSING OR SEPARATION				\$ -	\$ -	\$ -	\$ 816,000	\$ 816,000	\$ 816,000
PAVING (INCLUDING CURB, GUTTER AND SIDEWALK)				\$ 2,342,213	\$ 2,245,758	\$ 2,245,758	\$ 1,170,299	\$ 3,512,512	\$ 3,416,057
RETAINING WALLS				\$ 396,000	\$ 396,000	\$ 396,000	\$ 90,000	\$ 486,000	\$ 486,000
MAINTENANCE OF TRAFFIC				\$ 101,025	\$ 101,025	\$ 101,025	\$ 100,113	\$ 201,138	\$ 201,138
TOPSOIL				\$ 35,280	\$ 30,663	\$ 30,663	\$ 6,394	\$ 41,674	\$ 37,056
SEEDING				\$ 20,880	\$ 20,880	\$ 20,880	\$ 4,885	\$ 25,765	\$ 25,765
SODDING				\$ 65,419	\$ 15,044	\$ 15,044	\$ 19,468	\$ 84,887	\$ 34,512
SIGNING				\$ 40,114	\$ 40,114	\$ 40,114	\$ 28,770	\$ 68,884	\$ 68,884
LIGHTING				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SIGNALIZATION				\$ -	\$ -	\$ -	\$ 260,000	\$ 260,000	\$ 260,000
FENCE				\$ 45,000	\$ 45,000	\$ 45,000	\$ -	\$ 45,000	\$ 45,000
GUARDRAIL				\$ 65,440	\$ 65,440	\$ 65,440	\$ 14,498	\$ 79,938	\$ 79,938
RIP RAP OR SLOPE PROTECTION				\$ 12,825	\$ 12,825	\$ 12,825	\$ 4,050	\$ 16,875	\$ 16,875
OTHER CONST. ITEMS (15%)				\$ 1,423,410	\$ 1,223,615	\$ 1,223,615	\$ 447,623	\$ 1,871,033	\$ 1,671,237
				<b>SUBTOTAL</b>	<b>\$ 10,912,813</b>	<b>\$ 9,381,045</b>	<b>\$ 3,431,776</b>	<b>\$ 14,344,589</b>	<b>\$ 12,812,821</b>
<b>UTILITY COST</b>									
OVERHEAD ELECTRIC	MI.	0	0.6	\$100,000	\$ -	\$ -	\$ 60,000	\$ 60,000	\$ 60,000
TELEPHONE	MI.	0	0.6	\$75,000	\$ -	\$ -	\$ 45,000	\$ 45,000	\$ 45,000
WATER	MI.	0	0.6	\$350,000	\$ -	\$ -	\$ 210,000	\$ 210,000	\$ 210,000
SEWER	MI.	0	0.2	\$165,000	\$ -	\$ -	\$ 33,000	\$ 33,000	\$ 33,000
CABLE	MI.	0	0.6	\$30,000	\$ -	\$ -	\$ 18,000	\$ 18,000	\$ 18,000
GAS	MI.	0	0.2	\$205,000	\$ -	\$ -	\$ 41,000	\$ 41,000	\$ 41,000
				<b>SUBTOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>
<b>MOBILIZATION</b>									
BASED ON SP 717, CALCULATED FOR CONST COST AND DIVIDED INTO SEGMENTS 1 AND 2.				<b>SUBTOTAL</b>	<b>\$ 442,808</b>	<b>\$ 389,197</b>	<b>\$ 139,252</b>	<b>\$ 582,060</b>	<b>\$ 528,449</b>
<b>CONTINGENCY (10% OF CONSTRUCTION COST AND UTILITIES)</b>					<b>\$ 1,135,562</b>	<b>\$ 977,024</b>	<b>\$ 397,803</b>	<b>\$ 1,533,365</b>	<b>\$ 1,374,827</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$ 12,491,183</b>	<b>\$ 10,747,266</b>	<b>\$ 4,375,831</b>	<b>\$ 16,867,014</b>	<b>\$ 15,123,097</b>
<b>PRELIMINARY ENGINEERING (10% OF TOTAL CONSTRUCTION COST)</b>					<b>\$ 1,249,118</b>	<b>\$ 1,074,727</b>	<b>\$ 437,583</b>	<b>\$ 1,686,701</b>	<b>\$ 1,512,310</b>
<b>TOTAL COST*</b>					<b>\$ 15,177,502</b>	<b>\$ 13,259,192</b>	<b>\$ 5,588,414</b>	<b>\$ 20,765,916</b>	<b>\$ 18,847,606</b>

\* For estimating future project costs, a compounded inflation rate of 10% per year will be applied from the date of this estimate.  
 \*\* Option 1 includes a 2-lane, 32' raised median section (2-12' lanes with a 12' turn lane as needed) from Existing S.R. 109 to Hatten Track Road.  
 \*\*\* Option 2 includes a 3-lane section (2-12'-lanes, and a 12' center turn lane) from Existing S.R. 109 to Hatten Track Road.

INTERCHANGE COST ESTIMATES

Route: **Corridor B - Segment 1 and 2**  
 Description: **Proposed Hatten Track Extension from Existing SR 109  
 Bypass to SR 174 (Dobbins Pike)  
 Includes an Urban Diamond Interchange at SR 109 Bypass and  
 Signalized Intersections at Blythe Avenue, and SR 174**  
 County: **Sumner**  
 Length: **0.96 Miles - Segment 1/0.69 Miles - Segment 2**  
 Date: **5/18/2010**

	UNIT	QUANT. - SEG. 1	QUANT. - SEG. 2	UNIT COST	SEG. 1 TOTAL **(OPTION 1)	SEG. 1 TOTAL *** (OPTION 2)	SEG. 2 TOTAL	TOTAL (w/ OPTION 1)	TOTAL (w/ OPTION 2)
<b>RIGHT-OF-WAY COST</b>									
LAND	AC	22	3.2	\$60,000	\$ 1,320,000	\$ 1,320,000	\$ 192,000	\$ 1,512,000	\$ 1,512,000
COMMERCIAL	EACH	0	3	\$150,000	\$ -	\$ -	\$ 450,000	\$ 450,000	\$ 450,000
RESIDENTIAL	EACH	0	0	\$80,000	\$ -	\$ -	\$ -	\$ -	\$ -
TRACTS (INCIDENTALS)	EACH	4	35	\$3,800	\$ 15,200	\$ 15,200	\$ 133,000	\$ 148,200	\$ 148,200
				<b>SUBTOTAL</b>	<b>\$ 1,335,200</b>	<b>\$ 1,335,200</b>	<b>\$ 775,000</b>	<b>\$ 2,110,200</b>	<b>\$ 2,110,200</b>
<b>CONSTRUCTION COST</b>									
CLEAR AND GRUBBING				\$ 147,500	\$ 147,500	\$ 147,500	\$ 63,000	\$ 210,500	\$ 210,500
EARTHWORK				\$ 632,777	\$ 582,075	\$ 582,075	\$ 200,250	\$ 833,027	\$ 782,325
PAVEMENT REMOVAL				\$ -	\$ -	\$ -	\$ 22,250	\$ 22,250	\$ 22,250
DRAINAGE (INCLUDING EROSION CONTROL)				\$ 464,668	\$ 293,540	\$ 293,540	\$ 184,177	\$ 648,845	\$ 477,717
STRUCTURES				\$ 7,060,950	\$ 5,530,950	\$ 5,530,950	\$ -	\$ 7,060,950	\$ 5,530,950
RAILROAD CROSSING OR SEPARATION				\$ -	\$ -	\$ -	\$ 816,000	\$ 816,000	\$ 816,000
PAVING (INCLUDING CURB, GUTTER AND SIDEWALK)				\$ 2,183,955	\$ 2,092,006	\$ 2,092,006	\$ 1,170,299	\$ 3,354,254	\$ 3,262,305
RETAINING WALLS				\$ -	\$ -	\$ -	\$ 90,000	\$ 90,000	\$ 90,000
MAINTENANCE OF TRAFFIC				\$ 100,765	\$ 90,765	\$ 90,765	\$ 100,113	\$ 200,878	\$ 190,878
TOPSOIL				\$ 33,223	\$ 29,219	\$ 29,219	\$ 6,394	\$ 39,617	\$ 35,613
SEEDING				\$ 19,798	\$ 19,798	\$ 19,798	\$ 4,885	\$ 24,683	\$ 24,683
SODDING				\$ 45,130	\$ 12,938	\$ 12,938	\$ 19,468	\$ 64,598	\$ 32,406
SIGNING				\$ 40,114	\$ 40,114	\$ 40,114	\$ 28,770	\$ 68,884	\$ 68,884
LIGHTING				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SIGNALIZATION				\$ -	\$ -	\$ -	\$ 260,000	\$ 260,000	\$ 260,000
FENCE				\$ 40,500	\$ 40,500	\$ 40,500	\$ -	\$ 40,500	\$ 40,500
GUARDRAIL				\$ 65,440	\$ 65,440	\$ 65,440	\$ 14,498	\$ 79,938	\$ 79,938
RIP RAP OR SLOPE PROTECTION				\$ 12,825	\$ 12,825	\$ 12,825	\$ 4,050	\$ 16,875	\$ 16,875
OTHER CONST. ITEMS (15%)				\$ 1,627,147	\$ 1,343,650	\$ 1,343,650	\$ 447,623	\$ 2,074,770	\$ 1,791,273
				<b>SUBTOTAL</b>	<b>\$ 12,474,790</b>	<b>\$ 10,301,319</b>	<b>\$ 3,431,776</b>	<b>\$ 15,906,566</b>	<b>\$ 13,733,095</b>
<b>UTILITY COST</b>									
OVERHEAD ELECTRIC	MI.	0	0.6	\$100,000	\$ -	\$ -	\$ 60,000	\$ 60,000	\$ 60,000
TELEPHONE	MI.	0	0.6	\$75,000	\$ -	\$ -	\$ 45,000	\$ 45,000	\$ 45,000
WATER	MI.	0	0.6	\$350,000	\$ -	\$ -	\$ 210,000	\$ 210,000	\$ 210,000
SEWER	MI.	0	0.2	\$165,000	\$ -	\$ -	\$ 33,000	\$ 33,000	\$ 33,000
CABLE	MI.	0	0.6	\$30,000	\$ -	\$ -	\$ 18,000	\$ 18,000	\$ 18,000
GAS	MI.	0	0.2	\$205,000	\$ -	\$ -	\$ 41,000	\$ 41,000	\$ 41,000
				<b>SUBTOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>
<b>MOBILIZATION</b>									
BASED ON SP 717, CALCULATED FOR CONST COST AND DIVIDED INTO SEGMENTS 1 AND 2.				<b>SUBTOTAL</b>	<b>\$ 499,358</b>	<b>\$ 423,286</b>	<b>\$ 137,372</b>	<b>\$ 636,730</b>	<b>\$ 560,658</b>
<b>CONTINGENCY (10% OF CONSTRUCTION COST AND UTILITIES)</b>					<b>\$ 1,297,415</b>	<b>\$ 1,072,461</b>	<b>\$ 397,615</b>	<b>\$ 1,695,030</b>	<b>\$ 1,470,075</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$ 14,271,563</b>	<b>\$ 11,797,066</b>	<b>\$ 4,373,763</b>	<b>\$ 18,645,326</b>	<b>\$ 16,170,829</b>
<b>PRELIMINARY ENGINEERING (10% OF TOTAL CONSTRUCTION COST)</b>					<b>\$ 1,427,156</b>	<b>\$ 1,179,707</b>	<b>\$ 437,376</b>	<b>\$ 1,864,533</b>	<b>\$ 1,617,083</b>
<b>TOTAL COST*</b>					<b>\$ 17,033,919</b>	<b>\$ 14,311,972</b>	<b>\$ 5,586,139</b>	<b>\$ 22,620,058</b>	<b>\$ 19,898,111</b>

\* For estimating future project costs, a compounded inflation rate of 10% per year will be applied from the date of this estimate.  
 \*\* Option 1 includes a 2-lane, 32' raised median section (2-12' lanes with a 12' turn lane as needed) from Existing S.R. 109 to Hatten Track Road.  
 \*\*\* Option 2 includes a 3-lane section (2-12'-lanes, and a 12' center turn lane) from Existing S.R. 109 to Hatten Track Road.

**INTERCHANGE COST ESTIMATES**

Route:	Corridor C - Segment 1 and 2
Description:	Proposed Hatten Track Extension from Existing SR 109 Bypass to SR 174 (Dobbins Pike) Includes a Directional Interchange at SR 109 Bypass (3-way) and Signalized Intersections at Blythe Avenue, and SR 174
County:	Sumner
Length:	1.09 Miles - Segment 1/0.69 Miles - Segment 2
Date:	5/18/2010

	UNIT	QUANT. - SEG. 1	QUANT. - SEG. 2	UNIT COST	SEG. 1 TOTAL **(OPTION 1)	SEG. 1 TOTAL *** (OPTION 2)	SEG. 2 TOTAL	TOTAL (w/ OPTION 1)	TOTAL (w/ OPTION 2)
<b>RIGHT-OF-WAY COST</b>									
LAND IMPROVEMENTS AND DAMAGES	AC	23.4	3.2	\$60,000	\$ 1,404,000	\$ 1,404,000	\$ 192,000	\$ 1,596,000	\$ 1,596,000
COMMERCIAL	EACH	0	3	\$150,000	\$ -	\$ -	\$ 450,000	\$ 450,000	\$ 450,000
RESIDENTIAL	EACH	0	0	\$80,000	\$ -	\$ -	\$ -	\$ -	\$ -
TRACTS (INCIDENTALS)	EACH	5	35	\$3,800	\$ 19,000	\$ 19,000	\$ 133,000	\$ 148,200	\$ 148,200
				<b>SUBTOTAL</b>	<b>\$ 1,423,000</b>	<b>\$ 1,423,000</b>	<b>\$ 775,000</b>	<b>\$ 2,194,200</b>	<b>\$ 2,194,200</b>
<b>CONSTRUCTION COST</b>									
CLEAR AND GRUBBING				\$ 153,200	\$ 153,200	\$ 153,200	\$ 63,000	\$ 216,200	\$ 216,200
EARTHWORK				\$ 668,381	\$ 610,830	\$ 610,830	\$ 200,250	\$ 868,631	\$ 811,080
PAVEMENT REMOVAL				\$ -	\$ -	\$ -	\$ 22,250	\$ 22,250	\$ 22,250
DRAINAGE (INCLUDING EROSION CONTROL)				\$ 391,286	\$ 196,263	\$ 196,263	\$ 184,177	\$ 575,463	\$ 380,440
STRUCTURES				\$ 6,191,400	\$ 4,865,400	\$ 4,865,400	\$ -	\$ 6,191,400	\$ 4,865,400
RAILROAD CROSSING OR SEPARATION				\$ -	\$ -	\$ -	\$ 816,000	\$ 816,000	\$ 816,000
PAVING (INCLUDING CURB, GUTTER AND SIDEWALK)				\$ 2,319,085	\$ 2,222,241	\$ 2,222,241	\$ 1,170,299	\$ 3,489,384	\$ 3,392,540
RETAINING WALLS				\$ 396,000	\$ 396,000	\$ 396,000	\$ 90,000	\$ 486,000	\$ 486,000
MAINTENANCE OF TRAFFIC				\$ 101,025	\$ 101,025	\$ 101,025	\$ 100,113	\$ 201,138	\$ 201,138
TOPSOIL				\$ 34,958	\$ 30,415	\$ 30,415	\$ 6,394	\$ 41,352	\$ 36,809
SEEDING				\$ 20,775	\$ 20,775	\$ 20,775	\$ 4,885	\$ 25,660	\$ 25,660
SODDING				\$ 64,248	\$ 14,691	\$ 14,691	\$ 19,468	\$ 83,716	\$ 34,159
SIGNING				\$ 40,114	\$ 40,114	\$ 40,114	\$ 28,770	\$ 68,884	\$ 68,884
LIGHTING				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SIGNALIZATION				\$ -	\$ -	\$ -	\$ 260,000	\$ 260,000	\$ 260,000
FENCE				\$ 45,000	\$ 45,000	\$ 45,000	\$ -	\$ 45,000	\$ 45,000
GUARDRAIL				\$ 65,440	\$ 65,440	\$ 65,440	\$ 14,498	\$ 79,938	\$ 79,938
RIP RAP OR SLOPE PROTECTION				\$ 12,825	\$ 12,825	\$ 12,825	\$ 4,050	\$ 16,875	\$ 16,875
OTHER CONST. ITEMS (15%)				\$ 1,575,560	\$ 1,316,133	\$ 1,316,133	\$ 447,623	\$ 2,023,183	\$ 1,763,756
				<b>SUBTOTAL</b>	<b>\$ 12,079,296</b>	<b>\$ 10,090,350</b>	<b>\$ 3,431,776</b>	<b>\$ 15,511,072</b>	<b>\$ 13,522,127</b>
<b>UTILITY COST</b>									
OVERHEAD ELECTRIC	MI.	0	0.6	\$100,000	\$ -	\$ -	\$ 60,000	\$ 60,000	\$ 60,000
TELEPHONE	MI.	0	0.6	\$75,000	\$ -	\$ -	\$ 45,000	\$ 45,000	\$ 45,000
WATER	MI.	0	0.6	\$350,000	\$ -	\$ -	\$ 210,000	\$ 210,000	\$ 210,000
SEWER	MI.	0	0.2	\$165,000	\$ -	\$ -	\$ 33,000	\$ 33,000	\$ 33,000
CABLE	MI.	0	0.6	\$30,000	\$ -	\$ -	\$ 18,000	\$ 18,000	\$ 18,000
GAS	MI.	0	0.2	\$205,000	\$ -	\$ -	\$ 41,000	\$ 41,000	\$ 41,000
				<b>SUBTOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>	<b>\$ 407,000</b>
<b>MOBILIZATION</b>									
BASED ON SP 717, CALCULATED FOR TOTAL COST AND DIVIDED INTO SEGMENTS 1 AND 2.				<b>SUBTOTAL</b>	<b>\$ 485,076</b>	<b>\$ 415,462</b>	<b>\$ 137,812</b>	<b>\$ 622,888</b>	<b>\$ 553,274</b>
<b>CONTINGENCY (10% OF CONSTRUCTION COST AND UTILITIES)</b>					<b>\$ 1,256,437</b>	<b>\$ 1,050,581</b>	<b>\$ 397,659</b>	<b>\$ 1,654,096</b>	<b>\$ 1,448,240</b>
<b>TOTAL CONSTRUCTION COST</b>					<b>\$ 13,820,809</b>	<b>\$ 11,556,394</b>	<b>\$ 4,374,247</b>	<b>\$ 18,195,056</b>	<b>\$ 15,930,641</b>
<b>PRELIMINARY ENGINEERING (10% OF TOTAL CONSTRUCTION COST)</b>					<b>\$ 1,382,081</b>	<b>\$ 1,155,639</b>	<b>\$ 437,425</b>	<b>\$ 1,819,506</b>	<b>\$ 1,593,064</b>
<b>TOTAL COST*</b>					<b>\$ 16,625,890</b>	<b>\$ 14,135,033</b>	<b>\$ 5,586,672</b>	<b>\$ 22,208,762</b>	<b>\$ 19,717,905</b>

\* For estimating future project costs, a compounded inflation rate of 10% per year will be applied from the date of this estimate.  
 \*\* Option 1 includes a 2-lane, 32' raised median section (2-12' lanes with a 12' turn lane as needed) from Existing S.R. 109 to Hatten Track Road.  
 \*\*\* Option 2 includes a 3-lane section (2-12'-lanes, and a 12' center turn lane) from Existing S.R. 109 to Hatten Track Road.

INTERCHANGE COST ESTIMATES

Summary of Detailed Cost Estimates

Corridor A Segment 1 (OPTION 1)

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5850' + 10.5 Acres Interchange	AC	30.64	\$5,000.00	\$153,200
			<b>SUBTOTAL</b>	<b>\$153,200</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL MAINLINE, 9' INTERCHANGE	CY	150500	\$4.50	\$677,250
			<b>SUBTOTAL</b>	<b>\$677,250</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6" RCBC	LF	380	\$1,000.00	\$380,000
CATCH BASINS	EACH	8	\$2,200.00	\$17,600
DRAINAGE PIPE	LF	2926	\$48.00	\$140,448
SILT FENCE	LF	10490	\$1.40	\$14,686
SILT FENCE WITH BACKING	LF	5690	\$3.40	\$19,346
SEDIMENT FILTER TUBES	LF	4690	\$3.30	\$15,477
SEDIMENT REMOVAL	CY	1000	\$4.40	\$4,400
CATCH BASIN PROTECTION	EACH	8	\$500.00	\$4,000
CHECK DAMS	EACH	60	\$325.00	\$19,500
SEDIMENT FILTER BAGS	EACH	11	\$900.00	\$9,900
EROSION CONTROL BLANKET	SY	22000	\$2.00	\$44,000
			<b>SUBTOTAL</b>	<b>\$669,357</b>
<b>STRUCTURES</b>				
275'X36' BRIDGE OVER SR 109 BYPASS	SF	9900	\$85.00	\$841,500
340'X36' BRIDGE OVER SR 109 BYPASS	SF	12240	\$85.00	\$1,040,400
450'X78' BRIDGE OVER EAST CAMP CREEK	SF	35100	\$85.00	\$2,983,500
			<b>SUBTOTAL</b>	<b>\$4,865,400</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1684	\$70.00	\$117,880
2" ASPHALT BASE BINDER (307-02.08)	TON	2870	\$58.50	\$167,895
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	5111	\$52.50	\$268,328
3" ASPHALT AGGREGATE BASE (307-02.02/.03)	TON	3427	\$58.00	\$198,766
10" MINERAL AGGREGATE BASE (303-01)	TON	31180	\$12.50	\$389,750
10" RAMP CONCRETE (501-01.03)	SY	14500	\$45.00	\$616,950
4" PERMEABLE BASE RAMPS (313-03)	SY	14500	\$20.00	\$274,200
TACK COAT	TON	7	\$460.00	\$3,220
PRIME COAT	TON	181	\$302.00	\$54,662
UNDERDRAIN	LF	15500	\$5.00	\$77,500
CURB AND GUTTER	CY	1065	\$162.50	\$173,063
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$2,342,213</b>
<b>RETAINING WALLS</b>				
AT INTERCHANGE	SF	8800	\$45.00	\$396,000
			<b>SUBTOTAL</b>	<b>\$396,000</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$25,000.00	\$25,000
TRAFFIC CONTROL SIGNAGE	SF	330	\$8.50	\$2,805
PORTABLE BARRIER RAIL	LF	2085	\$22.00	\$45,870
FLEXIBLE DRUMS	EACH	250	\$30.00	\$7,500
WARNING LIGHTS	EACH	250	\$22.00	\$5,500
ARROW BOARD	EACH	2	\$900.00	\$1,800
CHANGEABLE MESSAGE SIGN UNIT	EACH	2	\$4,400.00	\$8,800
TEMPORARY STRIPING	LF	3000	\$1.25	\$3,750
			<b>SUBTOTAL</b>	<b>\$101,025</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	12829	\$2.75	\$35,280
			<b>SUBTOTAL</b>	<b>\$35,280</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	960	\$21.00	\$20,160
WATER	M.G.	90	\$8.00	\$720
			<b>SUBTOTAL</b>	<b>\$20,880</b>
<b>SODDING</b>				
SODDING	SY	26150	\$2.50	\$65,375
WATER	M.G.	5.5	\$8.00	\$44
			<b>SUBTOTAL</b>	<b>\$65,419</b>
<b>SIGNING</b>				
SIGNS	SF	1000	\$11.50	\$11,500
STRIPING	LM	6.43	\$4,450.00	\$28,614
			<b>SUBTOTAL</b>	<b>\$40,114</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	0	\$130,000.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>FENCE</b>				
AT INTERCHANGE	LF	3000	\$15.00	\$45,000
			<b>SUBTOTAL</b>	<b>\$45,000</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	1600	\$10.50	\$16,800
END TERMINALS	EACH	16	\$1,850.00	\$29,600
GUARDRAIL AT BRIDGE ENDS	LF	340	\$56.00	\$19,040
			<b>SUBTOTAL</b>	<b>\$65,440</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	475	\$27.00	\$12,825
			<b>SUBTOTAL</b>	<b>\$12,825</b>

**INTERCHANGE COST ESTIMATES**

**Summary of Detailed Cost Estimates**

**Corridor A Segment 1 (OPTION 2)**

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5850' + 10.5 Acres Interchange	AC	30.64	\$5,000.00	\$153,200
			<b>SUBTOTAL</b>	<b>\$153,200</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL, 9' FILL INTERCHANGE	CY	137500	\$4.50	\$618,750
			<b>SUBTOTAL</b>	<b>\$618,750</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6" RCBC	LF	360	\$1,000.00	\$360,000
SILT FENCE	LF	10490	\$1.40	\$14,686
SILT FENCE WITH BACKING	LF	5690	\$3.40	\$19,346
SEDIMENT REMOVAL	CY	1000	\$4.40	\$4,400
CHECK DAMS	EACH	40	\$325.00	\$13,000
SEDIMENT FILTER BAGS	EACH	11	\$900.00	\$9,900
EROSION CONTROL BLANKET	SY	22000	\$2.00	\$44,000
			<b>SUBTOTAL</b>	<b>\$465,332</b>
<b>STRUCTURES</b>				
275'X36' BRIDGE OVER SR 109 BYPASS	SF	9900	\$85.00	\$841,500
340'X36' BRIDGE OVER SR 109 BYPASS	SF	12240	\$85.00	\$1,040,400
450'x54' BRIDGE OVER EAST CAMP CREEK	SF	24300	\$85.00	\$2,065,500
			<b>SUBTOTAL</b>	<b>\$3,947,400</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
AT INTERCHANGE	SF	8800	\$85.00	\$748,000
			<b>SUBTOTAL</b>	<b>\$748,000</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1891	\$70.00	\$132,370
2" ASPHALT BASE BINDER (307-02.08)	TON	3223	\$58.50	\$188,546
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	5740	\$52.50	\$301,350
3" ASPHALT AGGREGATE BASE (307-02.02/.03)	TON	3849	\$58.00	\$223,242
10" MINERAL AGGREGATE BASE (303-01)	TON	30625	\$12.50	\$382,813
10" RAMP CONCRETE (501-01.03)	SY	14500	\$45.00	\$616,950
4" PERMEABLE BASE RAMPS (313-03)	SY	14500	\$20.00	\$274,200
TACK COAT	TON	8	\$460.00	\$3,680
PRIME COAT	TON	204	\$302.00	\$61,608
UNDERDRAIN	LF	12200	\$5.00	\$61,000
CURB AND GUTTER	CY	0	\$162.50	\$0
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$2,245,758</b>
<b>RETAINING WALLS</b>				
AT INTERCHANGE	SF	8800	\$45.00	\$396,000
			<b>SUBTOTAL</b>	<b>\$396,000</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$25,000.00	\$25,000
TRAFFIC CONTROL SIGNAGE	SF	330	\$8.50	\$2,805
PORTABLE BARRIER RAIL	LF	2085	\$22.00	\$45,870
FLEXIBLE DRUMS	EACH	250	\$30.00	\$7,500
WARNING LIGHTS	EACH	250	\$22.00	\$5,500
ARROW BOARD	EACH	2	\$900.00	\$1,800
CHANGEABLE MESSAGE SIGN UNIT	EACH	2	\$4,400.00	\$8,800
TEMPORARY STRIPING	LF	3000	\$1.25	\$3,750
			<b>SUBTOTAL</b>	<b>\$101,025</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	11150	\$2.75	\$30,663
			<b>SUBTOTAL</b>	<b>\$30,663</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	960	\$21.00	\$20,160
WATER	M.G.	90	\$8.00	\$720
			<b>SUBTOTAL</b>	<b>\$20,880</b>
<b>SODDING</b>				
SODDING	SY	6000	\$2.50	\$15,000
WATER	M.G.	5.5	\$8.00	\$44
			<b>SUBTOTAL</b>	<b>\$15,044</b>
<b>SIGNING</b>				
SIGNS	SF	1000	\$11.50	\$11,500
STRIPING	LM	6.43	\$4,450.00	\$28,614
			<b>SUBTOTAL</b>	<b>\$40,114</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	0	\$130,000.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>FENCE</b>				
AT INTERCHANGE	LF	3000	\$15.00	\$45,000
			<b>SUBTOTAL</b>	<b>\$45,000</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	1600	\$10.50	\$16,800
END TERMINALS	EACH	16	\$1,850.00	\$29,600
GUARDRAIL AT BRIDGE ENDS	LF	340	\$56.00	\$19,040
			<b>SUBTOTAL</b>	<b>\$65,440</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	475	\$27.00	\$12,825
			<b>SUBTOTAL</b>	<b>\$12,825</b>

INTERCHANGE COST ESTIMATES

Summary of Detailed Cost Estimates

Corridor B Segment 1 (OPTION 1)

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5070' + 12 Acres Interchange Area	AC	29.5	\$5,000.00	\$147,500
			<b>SUBTOTAL</b>	<b>\$147,500</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL MAINLINE, 9' INTERCHANGE	CY	140617	\$4.50	\$632,777
			<b>SUBTOTAL</b>	<b>\$632,777</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6" RCBC	LF	105	\$1,000.00	\$105,000
EXTEND 48" RCP	LF	650	\$150.00	\$97,500
CATCH BASINS	EACH	6	\$2,200.00	\$13,200
DRAINAGE PIPE	LF	2536	\$48.00	\$121,728
SILT FENCE	LF	14200	\$1.40	\$19,880
SILT FENCE WITH BACKING	LF	4900	\$3.40	\$16,660
SEDIMENT FILTER TUBES	LF	4000	\$3.30	\$13,200
SEDIMENT REMOVAL	CY	1000	\$4.40	\$4,400
CATCH BASIN PROTECTION	EACH	6	\$500.00	\$3,000
CHECK DAMS	EACH	60	\$325.00	\$19,500
SEDIMENT FILTER BAGS	EACH	11	\$900.00	\$9,900
EROSION CONTROL BLANKET	SY	20350	\$2.00	\$40,700
			<b>SUBTOTAL</b>	<b>\$464,668</b>
<b>STRUCTURES</b>				
270'X91' BRIDGE OVER SR 109 BYPASS	SF	24570	\$85.00	\$2,088,450
300'X78' BRIDGE OVER EAST CAMP CREEK TRIBUTARY	SF	23400	\$85.00	\$1,989,000
450'X78' BRIDGE OVER EAST CAMP CREEK	SF	35100	\$85.00	\$2,983,500
			<b>SUBTOTAL</b>	<b>\$7,060,950</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1506	\$70.00	\$105,420
2" ASPHALT BASE BINDER (307-02.08)	TON	2549	\$58.50	\$149,117
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	4539	\$52.50	\$238,298
3" ASPHALT AGGREGATE BASE (307-02.02/03)	TON	3046	\$58.00	\$176,668
10" MINERAL AGGREGATE BASE (303-01)	TON	28237	\$12.50	\$352,963
10" RAMP CONCRETE (501-01.03)	SY	13710	\$45.00	\$616,950
4" PERMEABLE BASE RAMPS (313-03)	SY	13710	\$20.00	\$274,200
TACK COAT	TON	7	\$460.00	\$3,220
PRIME COAT	TON	159	\$302.00	\$48,018
UNDERDRAIN	LF	13498	\$5.00	\$67,490
CURB AND GUTTER	CY	933	\$162.50	\$151,613
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$2,183,955</b>
<b>RETAINING WALLS</b>				
NONE	SF	0	\$45.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$25,000.00	\$25,000
TRAFFIC CONTROL SIGNAGE	SF	330	\$8.50	\$2,805
PORTABLE BARRIER RAIL	LF	2085	\$22.00	\$45,870
FLEXIBLE DRUMS	EACH	245	\$30.00	\$7,350
WARNING LIGHTS	EACH	245	\$22.00	\$5,390
ARROW BOARD	EACH	2	\$900.00	\$1,800
CHANGEABLE MESSAGE SIGN UNIT	EACH	2	\$4,400.00	\$8,800
TEMPORARY STRIPING	LF	3000	\$1.25	\$3,750
			<b>SUBTOTAL</b>	<b>\$100,765</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	12081	\$2.75	\$33,223
			<b>SUBTOTAL</b>	<b>\$33,223</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	910	\$21.00	\$19,110
WATER	M.G.	86	\$8.00	\$688
			<b>SUBTOTAL</b>	<b>\$19,798</b>
<b>SODDING</b>				
SODDING	SY	18037	\$2.50	\$45,092
WATER	M.G.	4.75	\$8.00	\$38
			<b>SUBTOTAL</b>	<b>\$45,130</b>
<b>SIGNING</b>				
SIGNS	SF	1000	\$11.50	\$11,500
STRIPING	LM	6.43	\$4,450.00	\$28,614
			<b>SUBTOTAL</b>	<b>\$40,114</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	0	\$130,000.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>FENCE</b>				
AT INTERCHANGE	LF	2700	\$15.00	\$40,500
			<b>SUBTOTAL</b>	<b>\$40,500</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	1600	\$10.50	\$16,800
END TERMINALS	EACH	16	\$1,850.00	\$29,600
GUARDRAIL AT BRIDGE ENDS	LF	340	\$56.00	\$19,040
			<b>SUBTOTAL</b>	<b>\$65,440</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	475	\$27.00	\$12,825
			<b>SUBTOTAL</b>	<b>\$12,825</b>

INTERCHANGE COST ESTIMATES

Summary of Detailed Cost Estimates

Corridor B Segment 1 (OPTION 2)

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5070' + 12 Acres Interchange Area	AC	29.5	\$5,000.00	\$147,500
			<b>SUBTOTAL</b>	<b>\$147,500</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL MAINLINE, 9' INTERCHANGE	CY	129350	\$4.50	\$582,075
			<b>SUBTOTAL</b>	<b>\$582,075</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6" RCBC	LF	85	\$1,000.00	\$85,000
EXTEND 48" RCP	LF	650	\$150.00	\$97,500
SILT FENCE	LF	14200	\$1.40	\$19,880
SILT FENCE WITH BACKING	LF	4900	\$3.40	\$16,660
SEDIMENT REMOVAL	CY	1000	\$4.40	\$4,400
CATCH BASIN PROTECTION	EACH	0	\$500.00	\$0
CHECK DAMS	EACH	60	\$325.00	\$19,500
SEDIMENT FILTER BAGS	EACH	11	\$900.00	\$9,900
EROSION CONTROL BLANKET	SY	20350	\$2.00	\$40,700
			<b>SUBTOTAL</b>	<b>\$293,540</b>
<b>STRUCTURES</b>				
270'x91' BRIDGE OVER SR 109 BYPASS	SF	24570	\$85.00	\$2,088,450
300'x54' BRIDGE OVER EAST CAMP CREEK TRIBUTARY	SF	16200	\$85.00	\$1,377,000
450'x54' BRIDGE OVER EAST CAMP CREEK	SF	24300	\$85.00	\$2,065,500
			<b>SUBTOTAL</b>	<b>\$5,530,950</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1686	\$70.00	\$118,020
2" ASPHALT BASE BINDER (307-02.08)	TON	2853	\$58.50	\$166,901
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	5080	\$52.50	\$266,700
3" ASPHALT AGGREGATE BASE (307-02.02/.03)	TON	3409	\$58.00	\$197,722
10" MINERAL AGGREGATE BASE (303-01)	TON	27758	\$12.50	\$346,975
10" RAMP CONCRETE (501-01.03)	SY	13710	\$45.00	\$616,950
4" PERMEABLE BASE RAMPS (313-03)	SY	13710	\$20.00	\$274,200
TACK COAT	TON	7	\$460.00	\$3,220
PRIME COAT	TON	159	\$302.00	\$48,018
UNDERDRAIN	LF	10660	\$5.00	\$53,300
CURB AND GUTTER	CY	0	\$162.50	\$0
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$2,092,006</b>
<b>RETAINING WALLS</b>				
NONE	SF	0	\$45.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$15,000.00	\$15,000
TRAFFIC CONTROL SIGNAGE	SF	330	\$8.50	\$2,805
PORTABLE BARRIER RAIL	LF	2085	\$22.00	\$45,870
FLEXIBLE DRUMS	EACH	245	\$30.00	\$7,350
WARNING LIGHTS	EACH	245	\$22.00	\$5,390
ARROW BOARD	EACH	2	\$900.00	\$1,800
CHANGEABLE MESSAGE SIGN UNIT	EACH	2	\$4,400.00	\$8,800
TEMPORARY STRIPING	LF	3000	\$1.25	\$3,750
			<b>SUBTOTAL</b>	<b>\$90,765</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	10625	\$2.75	\$29,219
			<b>SUBTOTAL</b>	<b>\$29,219</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	910	\$21.00	\$19,110
WATER	M.G.	86	\$8.00	\$688
			<b>SUBTOTAL</b>	<b>\$19,798</b>
<b>SODDING</b>				
SODDING	SY	5160	\$2.50	\$12,900
WATER	M.G.	4.75	\$8.00	\$38
			<b>SUBTOTAL</b>	<b>\$12,938</b>
<b>SIGNING</b>				
SIGNS	SF	1000	\$11.50	\$11,500
STRIPING	LM	6.43	\$4,450.00	\$28,614
			<b>SUBTOTAL</b>	<b>\$40,114</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	0	\$130,000.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>FENCE</b>				
AT INTERCHANGE	LF	2700	\$15.00	\$40,500
			<b>SUBTOTAL</b>	<b>\$40,500</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	1600	\$10.50	\$16,800
END TERMINALS	EACH	16	\$1,850.00	\$29,600
GUARDRAIL AT BRIDGE ENDS	LF	340	\$56.00	\$19,040
			<b>SUBTOTAL</b>	<b>\$65,440</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	475	\$27.00	\$12,825
			<b>SUBTOTAL</b>	<b>\$12,825</b>

INTERCHANGE COST ESTIMATES

Summary of Detailed Cost Estimates

Corridor C Segment 1 (OPTION 1)

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5850' + 10.85 Acres Interchange	AC	30.64	\$5,000.00	\$153,200
			<b>SUBTOTAL</b>	<b>\$153,200</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL, 9' FILL INTERCHANGE	CY	148529	\$4.50	\$668,381
			<b>SUBTOTAL</b>	<b>\$668,381</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8'x6' RCBC	LF	105	\$1,000.00	\$105,000
CATCH BASINS	EACH	8	\$2,200.00	\$17,600
DRAINAGE PIPE	LF	2878	\$48.00	\$138,144
SILT FENCE	LF	10290	\$1.40	\$14,406
SILT FENCE WITH BACKING	LF	5605	\$3.40	\$19,057
SEDIMENT FILTER TUBES	LF	4630	\$3.30	\$15,279
SEDIMENT REMOVAL	CY	1000	\$4.40	\$4,400
CATCH BASIN PROTECTION	EACH	8	\$500.00	\$4,000
CHECK DAMS	EACH	60	\$325.00	\$19,500
SEDIMENT FILTER BAGS	EACH	11	\$900.00	\$9,900
EROSION CONTROL BLANKET	SY	22000	\$2.00	\$44,000
			<b>SUBTOTAL</b>	<b>\$391,286</b>
<b>STRUCTURES</b>				
275'X36' BRIDGE OVER SR 109 BYPASS	SF	9900	\$85.00	\$841,500
340'X36' BRIDGE OVER SR 109 BYPASS	SF	12240	\$85.00	\$1,040,400
200'X78' BRIDGE OVER EAST CAMP CREEK TRIBUTARY	SF	15600	\$85.00	\$1,326,000
450'X78' BRIDGE OVER EAST CAMP CREEK	SF	35100	\$85.00	\$2,983,500
			<b>SUBTOTAL</b>	<b>\$6,191,400</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1667	\$70.00	\$116,704
2" ASPHALT BASE BINDER (307-02.08)	TON	2818	\$58.50	\$164,859
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	5015	\$52.50	\$263,282
3" ASPHALT AGGREGATE BASE (307-02.02/03)	TON	3367	\$58.00	\$195,298
10" MINERAL AGGREGATE BASE (303-01)	TON	30691	\$12.50	\$383,638
10" RAMP CONCRETE (501-01.03)	SY	14500	\$45.00	\$616,950
4" PERMEABLE BASE RAMPS (313-03)	SY	14500	\$20.00	\$274,200
TACK COAT	TON	7	\$460.00	\$3,220
PRIME COAT	TON	181	\$302.00	\$54,662
UNDERDRAIN	LF	15162	\$5.00	\$75,810
CURB AND GUTTER	CY	1049	\$162.50	\$170,463
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$2,319,085</b>
<b>RETAINING WALLS</b>				
AT INTERCHANGE	SF	8800	\$45.00	\$396,000
			<b>SUBTOTAL</b>	<b>\$396,000</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$25,000.00	\$25,000
TRAFFIC CONTROL SIGNAGE	SF	330	\$8.50	\$2,805
PORTABLE BARRIER RAIL	LF	2085	\$22.00	\$45,870
FLEXIBLE DRUMS	EACH	250	\$30.00	\$7,500
WARNING LIGHTS	EACH	250	\$22.00	\$5,500
ARROW BOARD	EACH	2	\$900.00	\$1,800
CHANGEABLE MESSAGE SIGN UNIT	EACH	2	\$4,400.00	\$8,800
TEMPORARY STRIPING	LF	3000	\$1.25	\$3,750
			<b>SUBTOTAL</b>	<b>\$101,025</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	12712	\$2.75	\$34,958
			<b>SUBTOTAL</b>	<b>\$34,958</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	955	\$21.00	\$20,055
WATER	M.G.	90	\$8.00	\$720
			<b>SUBTOTAL</b>	<b>\$20,775</b>
<b>SODDING</b>				
SODDING	SY	25683	\$2.50	\$64,207
WATER	M.G.	5.1	\$8.00	\$41
			<b>SUBTOTAL</b>	<b>\$64,248</b>
<b>SIGNING</b>				
SIGNS	SF	1000	\$11.50	\$11,500
STRIPING	LM	6.43	\$4,450.00	\$28,614
			<b>SUBTOTAL</b>	<b>\$40,114</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	0	\$130,000.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>FENCE</b>				
AT INTERCHANGE	LF	3000	\$15.00	\$45,000
			<b>SUBTOTAL</b>	<b>\$45,000</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	1600	\$10.50	\$16,800
END TERMINALS	EACH	16	\$1,850.00	\$29,600
GUARDRAIL AT BRIDGE ENDS	LF	340	\$56.00	\$19,040
			<b>SUBTOTAL</b>	<b>\$65,440</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	475	\$27.00	\$12,825
			<b>SUBTOTAL</b>	<b>\$12,825</b>

INTERCHANGE COST ESTIMATES

Summary of Detailed Cost Estimates

Corridor C Segment 1 (OPTION 2)

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 5850' + 10.85 Acres Interchange	AC	30.64	\$5,000.00	\$153,200
			<b>SUBTOTAL</b>	<b>\$153,200</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL, 9' FILL INTERCHANGE	CY	135740	\$4.50	\$610,830
			<b>SUBTOTAL</b>	<b>\$610,830</b>
<b>PAVEMENT REMOVAL</b>				
NONE	CY	0	\$5.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
8"x6" RCBC	LF	85	\$1,000.00	\$85,000
SILT FENCE	LF	10290	\$1.40	\$14,406
SILT FENCE WITH BACKING	LF	5605	\$3.40	\$19,057
SEDIMENT REMOVAL	CY	1000	\$4.40	\$4,400
CATCH BASIN PROTECTION	EACH	0	\$500.00	\$0
CHECK DAMS	EACH	60	\$325.00	\$19,500
SEDIMENT FILTER BAGS	EACH	11	\$900.00	\$9,900
EROSION CONTROL BLANKET	SY	22000	\$2.00	\$44,000
			<b>SUBTOTAL</b>	<b>\$196,263</b>
<b>STRUCTURES</b>				
275'X36' BRIDGE OVER SR 109 BYPASS	SF	9900	\$85.00	\$841,500
340'X36' BRIDGE OVER SR 109 BYPASS	SF	12240	\$85.00	\$1,040,400
200'x54' BRIDGE OVER EAST CAMP CREEK TRIBUTARY	SF	10800	\$85.00	\$918,000
450'x54' BRIDGE OVER EAST CAMP CREEK	SF	24300	\$85.00	\$2,065,500
			<b>SUBTOTAL</b>	<b>\$4,865,400</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1871	\$70.00	\$130,970
2" ASPHALT BASE BINDER (307-02.08)	TON	3163	\$58.50	\$185,036
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	5630	\$52.50	\$295,575
3" ASPHALT AGGREGATE BASE (307-02.02/.03)	TON	3779	\$58.00	\$219,182
10" MINERAL AGGREGATE BASE (303-01)	TON	30148	\$12.50	\$376,850
10" RAMP CONCRETE (501-01.03)	SY	14500	\$45.00	\$616,950
4" PERMEABLE BASE RAMPS (313-03)	SY	14500	\$20.00	\$274,200
TACK COAT	TON	8	\$460.00	\$3,680
PRIME COAT	TON	199	\$302.00	\$60,098
UNDERDRAIN	LF	11940	\$5.00	\$59,700
CURB AND GUTTER	CY	0	\$162.50	\$0
SIDEWALK	SF	0	\$2.50	\$0
			<b>SUBTOTAL</b>	<b>\$2,222,241</b>
<b>RETAINING WALLS</b>				
AT INTERCHANGE	SF	8800	\$45.00	\$396,000
			<b>SUBTOTAL</b>	<b>\$396,000</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$25,000.00	\$25,000
TRAFFIC CONTROL SIGNAGE	SF	330	\$8.50	\$2,805
PORTABLE BARRIER RAIL	LF	2085	\$22.00	\$45,870
FLEXIBLE DRUMS	EACH	250	\$30.00	\$7,500
WARNING LIGHTS	EACH	250	\$22.00	\$5,500
ARROW BOARD	EACH	2	\$900.00	\$1,800
CHANGEABLE MESSAGE SIGN UNIT	EACH	2	\$4,400.00	\$8,800
TEMPORARY STRIPING	LF	3000	\$1.25	\$3,750
			<b>SUBTOTAL</b>	<b>\$101,025</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	11060	\$2.75	\$30,415
			<b>SUBTOTAL</b>	<b>\$30,415</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	955	\$21.00	\$20,055
WATER	M.G.	90	\$8.00	\$720
			<b>SUBTOTAL</b>	<b>\$20,775</b>
<b>SODDING</b>				
SODDING	SY	5860	\$2.50	\$14,650
WATER	M.G.	5.1	\$8.00	\$41
			<b>SUBTOTAL</b>	<b>\$14,691</b>
<b>SIGNING</b>				
SIGNS	SF	1000	\$11.50	\$11,500
STRIPING	LM	6.43	\$4,450.00	\$28,614
			<b>SUBTOTAL</b>	<b>\$40,114</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
HATTEN TRACK EXTENSION AND SR 109 BYPASS	LS	0	\$130,000.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>FENCE</b>				
AT INTERCHANGE	LF	3000	\$15.00	\$45,000
			<b>SUBTOTAL</b>	<b>\$45,000</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	1600	\$10.50	\$16,800
END TERMINALS	EACH	16	\$1,850.00	\$29,600
GUARDRAIL AT BRIDGE ENDS	LF	340	\$56.00	\$19,040
			<b>SUBTOTAL</b>	<b>\$65,440</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	475	\$27.00	\$12,825
			<b>SUBTOTAL</b>	<b>\$12,825</b>

**INTERCHANGE COST ESTIMATES**

**Summary of Detailed Cost Estimates**

**Corridor A, B and C Segment 2**

	UNIT	QUANTITY	UNIT COST	TOTAL
<b>CLEAR AND GRUBBING</b>				
150' x 3650'	AC	12.6	\$5,000.00	\$63,000
			<b>SUBTOTAL</b>	<b>\$63,000</b>
<b>EARTHWORK</b>				
AVERAGE OF 3' FILL	CY	44500	\$4.50	\$200,250
			<b>SUBTOTAL</b>	<b>\$200,250</b>
<b>PAVEMENT REMOVAL</b>				
PAVEMENT REMOVAL	CY	4450	\$5.00	\$22,250
			<b>SUBTOTAL</b>	<b>\$22,250</b>
<b>DRAINAGE (INCLUDING EROSION CONTROL)</b>				
PIPES	LF	2400	\$51.50	\$123,600
ENDWALLS	EACH	5	\$900.00	\$4,500
CATCHBASINS	EACH	8	\$2,050.00	\$16,400
SILT FENCE	LF	7000	\$1.40	\$9,800
SILT FENCE WITH BACKING	LF	1000	\$3.40	\$3,400
SEDIMENT REMOVAL	CY	455	\$4.40	\$2,002
CATCH BASIN PROTECTION	EACH	8	\$500.00	\$4,000
CHECK DAMS	EACH	15	\$325.00	\$4,875
SEDIMENT FILTER BAGS	EACH	4	\$900.00	\$3,600
EROSION CONTROL BLANKET	SY	6000	\$2.00	\$12,000
			<b>SUBTOTAL</b>	<b>\$184,177</b>
<b>STRUCTURES</b>				
NONE	SF	0	\$85.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>RAILROAD CROSSING OR SEPARATION</b>				
RAILROAD CROSSING	SF	9600	\$85.00	\$816,000
			<b>SUBTOTAL</b>	<b>\$816,000</b>
<b>PAVING (INCLUDES CURB, GUTTER &amp; SIDEWALK)</b>				
1.25" ASPHALTIC CONCRETE SURFACE (411-02.10)	TON	1264	\$70.00	\$88,480
2" ASPHALT BASE BINDER (307-02.08)	TON	2745	\$58.50	\$160,583
3.5" ASPHALT AGGREGATE BASE BINDER (307-02.01)	TON	4890	\$52.50	\$256,725
3" ASPHALT AGGREGATE BASE (307-02.02/.03)	TON	3280	\$58.00	\$190,240
10" MINERAL AGGREGATE BASE (303-01)	TON	16700	\$12.50	\$208,750
TACK COAT	TON	6.4	\$460.00	\$2,944
PRIME COAT	TON	145	\$302.00	\$43,790
UNDERDRAIN	LF	6820	\$5.00	\$34,100
CURB AND GUTTER	CY	575	\$162.50	\$93,438
SIDEWALK	SF	36500	\$2.50	\$91,250
			<b>SUBTOTAL</b>	<b>\$1,170,299</b>
<b>RETAINING WALLS</b>				
MISC. WALLS TO HOLD BACK FILL SLOPE	SF	2000	\$45.00	\$90,000
			<b>SUBTOTAL</b>	<b>\$90,000</b>
<b>MAINTENANCE OF TRAFFIC</b>				
TRAFFIC CONTROL	LS	1	\$45,000.00	\$45,000
TRAFFIC CONTROL SIGNAGE	SF	225	\$8.50	\$1,913
PORTABLE BARRIER RAIL	LF	750	\$22.00	\$16,500
FLEXIBLE DRUMS	EACH	100	\$30.00	\$3,000
WARNING LIGHTS	EACH	100	\$22.00	\$2,200
ARROW BOARD	EACH	3	\$900.00	\$2,700
CHANGEABLE MESSAGE SIGN UNIT	EACH	2	\$4,400.00	\$8,800
TEMPORARY STRIPING	LF	16000	\$1.25	\$20,000
			<b>SUBTOTAL</b>	<b>\$100,113</b>
<b>TOPSOIL</b>				
TOPSOIL	CY	2325	\$2.75	\$6,394
			<b>SUBTOTAL</b>	<b>\$6,394</b>
<b>SEEDING</b>				
SEEDING WITH MULCH	UNIT	225	\$21.00	\$4,725
WATER	M.G.	20	\$8.00	\$160
			<b>SUBTOTAL</b>	<b>\$4,885</b>
<b>SODDING</b>				
SODDING	SY	7776	\$2.50	\$19,440
WATER	M.G.	3.5	\$8.00	\$28
			<b>SUBTOTAL</b>	<b>\$19,468</b>
<b>SIGNING</b>				
SIGNS	SF	180	\$11.50	\$2,070
STRIPING	LM	6	\$4,450.00	\$26,700
			<b>SUBTOTAL</b>	<b>\$28,770</b>
<b>LIGHTING</b>				
NONE	LS	0	\$0.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>SIGNALIZATION</b>				
*HATTEN TRACK EXTENSION AND BLYTHE AVENUE	LS	1	\$130,000.00	\$130,000
HATTEN TRACK EXTENSION AND SR 174	LS	1	\$130,000.00	\$130,000
			<b>SUBTOTAL</b>	<b>\$260,000</b>
<b>FENCE</b>				
NONE	LF	0	\$15.00	\$0
			<b>SUBTOTAL</b>	<b>\$0</b>
<b>GUARDRAIL</b>				
GUARDRAIL	LF	100	\$10.50	\$1,050
END TERMINALS	EACH	4	\$1,850.00	\$7,400
GUARDRAIL AT BRIDGE ENDS	LF	108	\$56.00	\$6,048
			<b>SUBTOTAL</b>	<b>\$14,498</b>
<b>RIP RAP OR SLOPE PROTECTION</b>				
RIP RAP	TON	150	\$27.00	\$4,050
			<b>SUBTOTAL</b>	<b>\$4,050</b>

\*Note: Roundabout option at Blythe Avenue would not include signal cost; however, the roundabout option would require approximately 0.64 acre of additional right-of-way estimated at \$38,400, additional signing approximately \$7000, and additional paving approx \$45,000.