

## TRANSPORTATION PLANNING REPORT EXECUTIVE SUMMARY

## STATE ROUTE 2 (US Highway 11) Bradley County and McMinn County

The Southeast Regional Planning Organization (RPO) recommended improvement to a portion of State Route 2 (US Highway 11) extending from State Route 308 in Charleston (Bradley County) to State Route 39 (McMinn County). An additional portion of State Route 2 (US Highway 11) from south of Anatole Lane in Cleveland (Bradley County) to State Route 308 in Charleston (Bradley County) was added to this project as a result of comments received from stakeholders. The total length of the project is 13.56 miles.

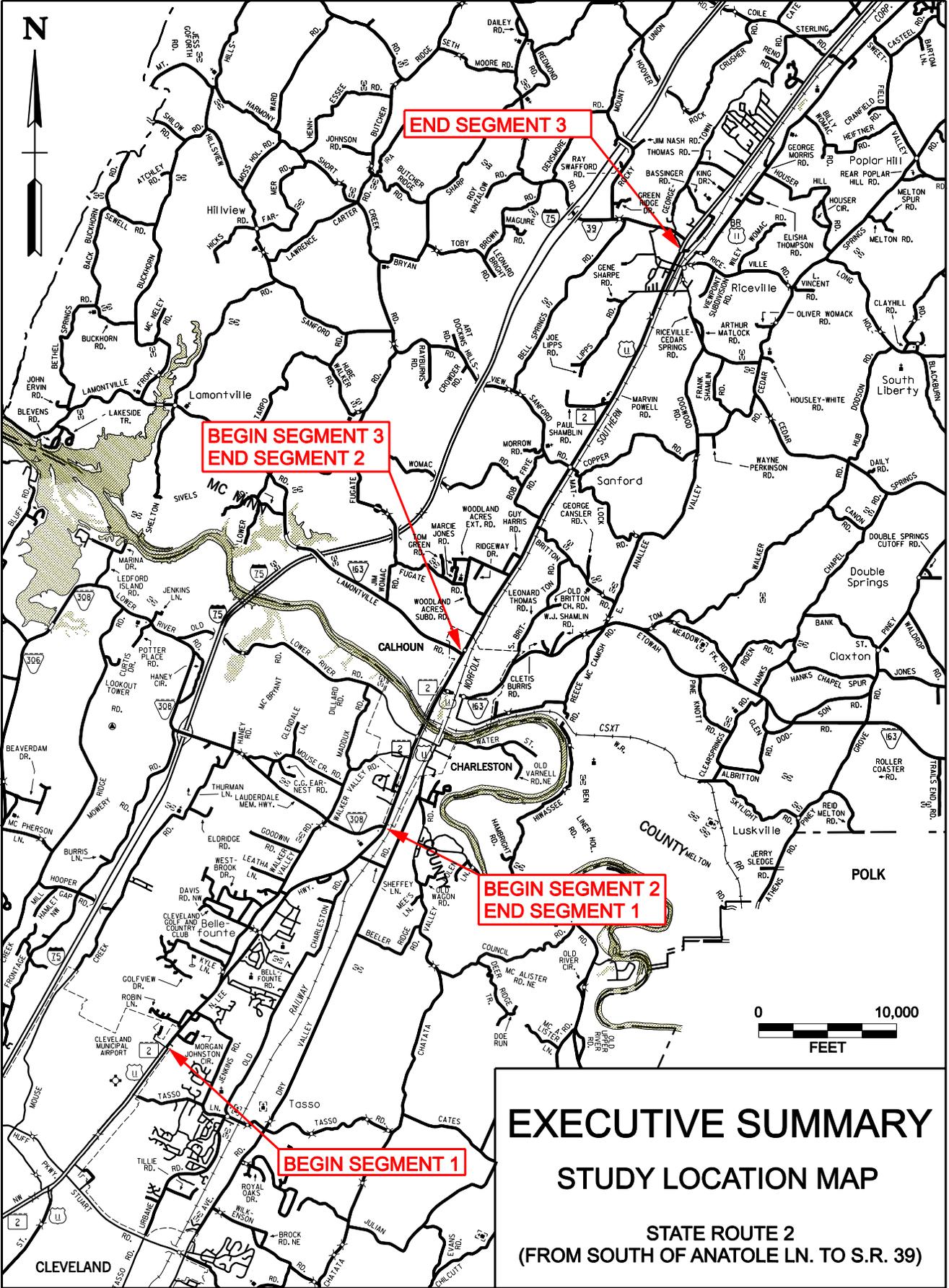
The purpose of the Transportation Planning Report (TPR) is to document the immediate and long-term needs for improvement to the portion of State Route 2 (US Highway 11) from south of Anatole Lane in Bradley County to State Route 39 in McMinn County. Specifically, the need for improving roadway infrastructure for future growth and economic development, existing operational deficiencies and safety issues, and limited mobility options along the State Route 2 corridor will be considered in this TPR. The study will also develop potential improvement options for meeting these needs.

Based upon the analyses and information included in this study, the purpose and need for improvements is to mitigate existing geometric deficiencies that impact the overall safety and crash incidence on a section of roadway, to accommodate the projected traffic and provide mobility on State Route 2 (US Highway 11) at an acceptable level of service, to increase the attractiveness of the Bradley County and McMinn County area to new employment and economic development opportunities, and to provide additional capacity and continuity to an important route in the local and regional transportation system.

To address the needs of the State Route 2 (US Highway 11) corridor, three options were developed for evaluation. Descriptions and cost estimates for these options are listed below.

- Option A (no build option) - Makes no improvements to the roadway outside of regular maintenance activities. There is no cost associated with this option.
- Option B - Spot improvements to improve safety and traffic operations.
  - Location 1 - Modify intersection skew and increase length of turn lane.  
\$248,300
  - Location 2 - Install center two-way left turn lane in the City of Charleston.  
\$2,767,000
  - Location 3 - Install center two-way left turn lane in the City of Calhoun.  
\$2,598,100
  - Location 4 - Install center two-way left turn lane in the City of Riceville.  
\$3,046,400
- Option C - Widen State Route 2 (US Highway 11) to provide consistent laneage with sections north and south of the study area. Includes 4-lane divided and 5-lane sections.
  - Segment 1 - \$20,454,000 to \$27,044,000
  - Segment 2 - \$13,853,000 to \$18,247,000
  - Segment 3 - \$26,559,000 to \$34,851,000

The total cost for Option C improvements is \$60,866,000 to \$80,142,000.



# EXECUTIVE SUMMARY

## STUDY LOCATION MAP

STATE ROUTE 2  
(FROM SOUTH OF ANATOLE LN. TO S.R. 39)

# TRANSPORTATION PLANNING REPORT

## State Route 2

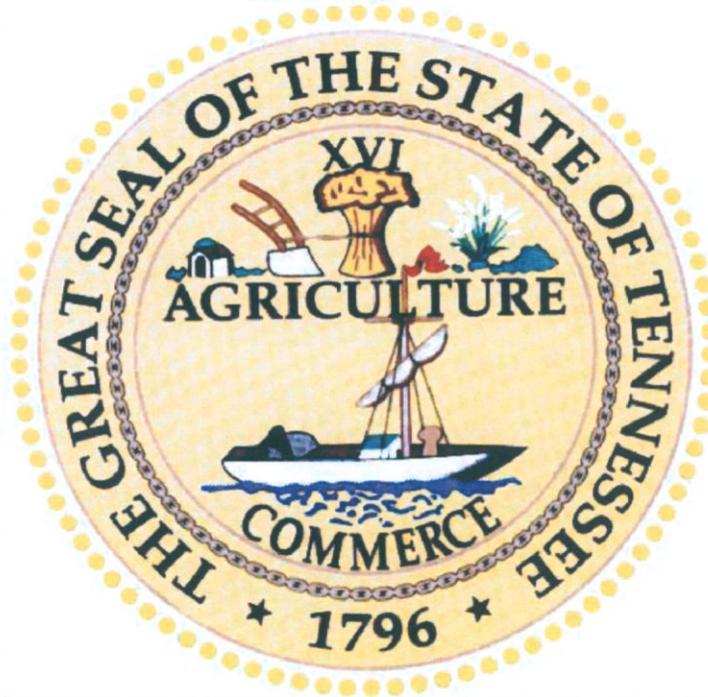
(U.S. Highway 11)

FROM SOUTH OF ANATOLE LANE (LOG MILE 14.84 BRADLEY CO.)

TO STATE ROUTE 39 (LOG MILE 7.42 McMINN CO.)

BRADLEY COUNTY AND McMINN COUNTY

PIN: 114209.00



PREPARED BY  
RAGAN-SMITH-ASSOCIATES  
For the  
TENNESSEE DEPARTMENT OF TRANSPORTATION  
PROJECT PLANNING DIVISION  
and the  
SOUTHEAST TN RURAL PLANNING ORGANIZATION

Approved by:	Signature	DATE
CHIEF OF ENVIRONMENT AND PLANNING		12-13-11
TRANSPORTATION DIRECTOR PROJECT PLANNING DIVISION		11-22-11
TRANSPORTATION MANAGER 2 PROJECT PLANNING DIVISION		11/22/11

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

## TABLE OF CONTENTS

	<u>PAGE</u>
<b>I. <u>PURPOSE OF STUDY</u></b> .....	- 1 -
<b>II. <u>HISTORY AND BACKGROUND</u></b> .....	- 2 -
A. <u>Introduction</u> .....	- 2 -
B. <u>Logical Termini</u> .....	- 2 -
<b>III. <u>EXISTING CONDITIONS</u></b> .....	- 7 -
A. <u>Description of Study Area</u> .....	- 7 -
1. <u>Study Vicinity</u> .....	- 7 -
2. <u>Major Traffic Generators</u> .....	- 7 -
3. <u>Transportation Network</u> .....	- 8 -
4. <u>Population Growth</u> .....	- 9 -
B. <u>Crash History</u> .....	- 9 -
C. <u>Roadway Geometry</u> .....	- 10 -
D. <u>Major Structures</u> .....	- 12 -
E. <u>Multi-modal Facilities</u> .....	- 12 -
F. <u>Level of Service Analysis</u> .....	- 12 -
<b>IV. <u>FIELD REVIEW</u></b> .....	- 15 -
<b>V. <u>PRELIMINARY PURPOSE AND NEED</u></b> .....	- 16 -
A. <u>Introduction</u> .....	- 16 -
B. <u>Safety</u> .....	- 16 -
C. <u>System Linkage</u> .....	- 16 -
D. <u>Capacity</u> .....	- 17 -
E. <u>Transportation Demand</u> .....	- 17 -
F. <u>Legislation</u> .....	- 17 -
G. <u>Economic Development</u> .....	- 18 -
H. <u>Modal Interrelationships</u> .....	- 18 -
I. <u>Roadway Deficiencies</u> .....	- 18 -
<b>VI. <u>OPTIONS FOR IMPROVEMENT</u></b> .....	- 19 -
A. <u>Option A - No Build</u> .....	- 19 -
B. <u>Option B - Spot Improvements</u> .....	- 19 -
C. <u>Option C - Corridor Improvement</u> .....	- 26 -
D. <u>Projected Level of Service Analysis</u> .....	- 29 -
<b>VII. <u>EARLY ENVIRONMENTAL SCREENING</u></b> .....	- 30 -
<b>VIII. <u>ASSESSMENT OF OPTIONS</u></b> .....	- 31 -
<b>IX. <u>SUMMARY</u></b> .....	- 33 -

## APPENDIX

**LIST OF FIGURES**

<b>FIGURE</b>	<b>DESCRIPTION</b>	<b>PAGE</b>
1	REGIONAL VICINITY MAP .....	- 3 -
2	STUDY LOCATION MAP .....	- 4 -
3A	TOPOGRAPHIC MAP .....	- 5 -
3B	TOPOGRAPHIC MAP .....	- 6 -
4	SPOT IMPROVEMENT ILLUSTRATION - LOCATION 1 .....	- 20 -
5	SPOT IMPROVEMENT ILLUSTRATION - LOCATION 2 .....	- 22 -
6	SPOT IMPROVEMENT ILLUSTRATION - LOCATION 3 .....	- 23 -
7	STATE ROUTE 2 (US HIGHWAY 11) TYPICAL SECTION (LOCATIONS 2, 3, AND 4) .....	- 24 -
8	SPOT IMPROVEMENT ILLUSTRATION - LOCATION 4 .....	- 25 -
9	CORRIDOR OPTION MAP .....	- 28 -

**LIST OF TABLES**

<b>TABLE</b>	<b>DESCRIPTION</b>	<b>PAGE</b>
1	MAJOR EMPLOYERS IN STUDY AREA VICINITY .....	- 7 -
2	HISTORICAL POPULATION DATA .....	- 9 -
3	CRASH RATE SUMMARY .....	- 10 -
4	SUMMARY OF EXISTING ROADWAY GEOMETRICS .....	- 11 -
5	DESCRIPTIONS OF LEVELS OF SERVICE .....	- 13 -
6	EXISTING ROADWAY CONDITIONS LEVEL OF SERVICE SUMMARY ...	- 14 -
7	IMPROVEMENT OPTION LEVEL OF SERVICE COMPARISON .....	- 29 -
8	EARLY ENVIRONMENTAL SCREENING SUMMARY .....	- 30 -

## I. PURPOSE OF STUDY

The purpose of this Transportation Planning Report (TPR) is to document the immediate and long-term needs for improvement to the portion of State Route 2 (US Highway 11) from south of Anatole Lane in Bradley County to State Route 39 in McMinn County. Specifically, the need for improving mobility and community access along the State Route 2 corridor will be considered in this TPR. The study will also address options for meeting these needs.

The TPR develops the purpose and need of the study area. These items include roadway infrastructure for future growth and economic development, existing operational deficiencies and safety issues, and limited mobility options within the general study area. This study was initiated by a request from the Southeast RPO for improvement to State Route 2 (US Highway 11). A Needs Assessment Study (#6009007) was completed by the Tennessee Department of Transportation (TDOT) Long Range Planning division in March 2010 in response to the Southeast RPO request. The Needs Assessment Study documented a preliminary purpose and need and recommended that a TPR be undertaken for State Route 2 (US Highway 11).

This TPR presents and evaluates options developed as part of the planning process. The options in this TPR are presented as conceptual corridor and spot improvements that the NEPA process can use to establish a specific improvement. Early Environmental Screening (EES) and locations of cultural significance have been presented to assist planners and engineers in identifying options that would minimize the impact to known sensitive areas. Capacity analysis and planning level cost data are also presented in the TPR.

## II. HISTORY AND BACKGROUND

### A. Introduction

State Route 2 is designated on the numbered national highway system as US Highway 11. US Highway 11 was included in the first official log of the US numbered system published in 1927 and creates a highway beginning in Rouses Point, New York and ending near New Orleans, Louisiana. The total length of the US Highway 11 corridor is 1,780 miles. Within the region, US 11 provides connections from the study area north to Knoxville, Tennessee and south to Chattanooga, Tennessee. The limits of this study are within Bradley and McMinn counties from south of Anatole Lane to State Route 39.

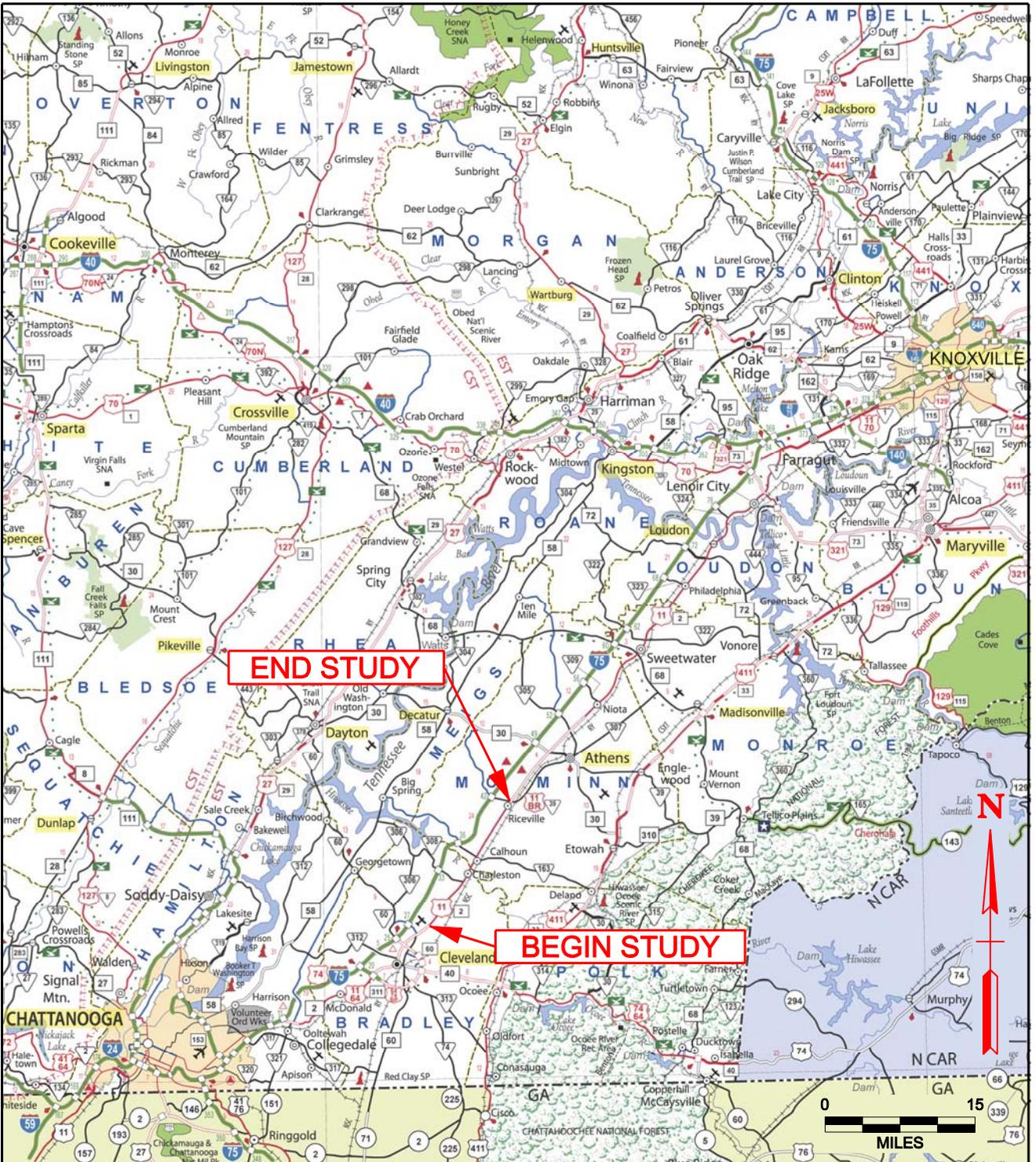
The study location is shown at a regional level in Figure 1. Figure 2 shows the immediate vicinity of the study area. Maps depicting the topography of the study area are shown in Figures 3A and 3B.

### B. Logical Termini

The Needs Assessment Study divided the study corridor into two (2) Sections of Independent Utility (SIU) based upon logical termini or significant breaks in traffic conditions. An additional SIU was added to the study area based upon discussion at the Stakeholder Field Review in February 2011.

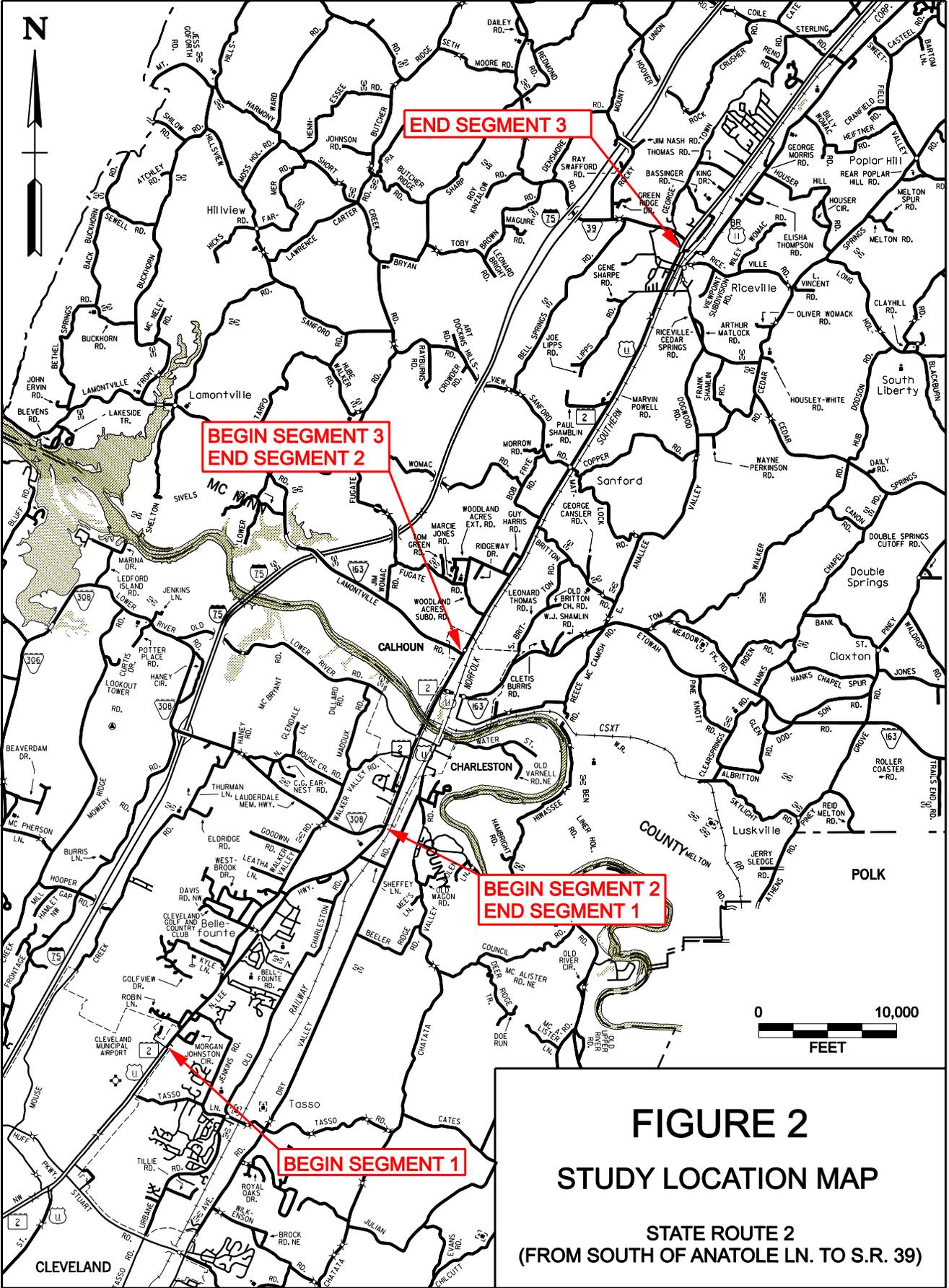
The logical termini and SIU's considered in the study area are described below.

- Segment 1 - Begins south of Anatole Lane in Cleveland and ends at State Route 308 in Charleston (4.56 miles)
- Segment 2 - Begins at State Route 308 in Charleston and ends at State Route 163 (west) in Calhoun (2.65 miles)
- Segment 3 - Begins at State Route 163 (west) in Calhoun and ends at State Route 39 in Riceville (6.35 miles)



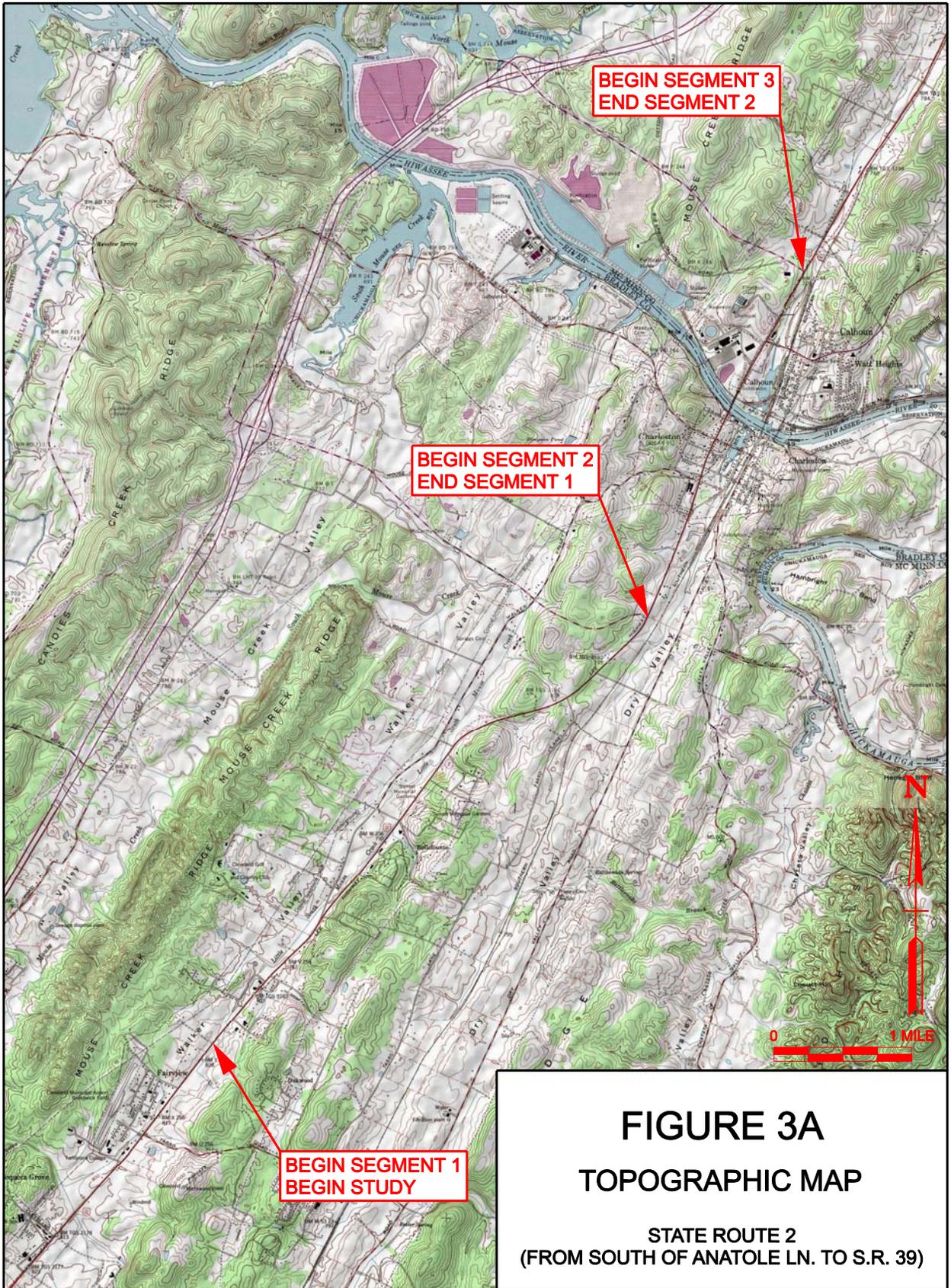
**BRADLEY COUNTY  
& MCMINN COUNTY**

**FIGURE 1**  
**REGIONAL VICINITY MAP**  
 STATE ROUTE 2  
 (FROM SOUTH OF ANATOLE LN. TO S.R. 39)



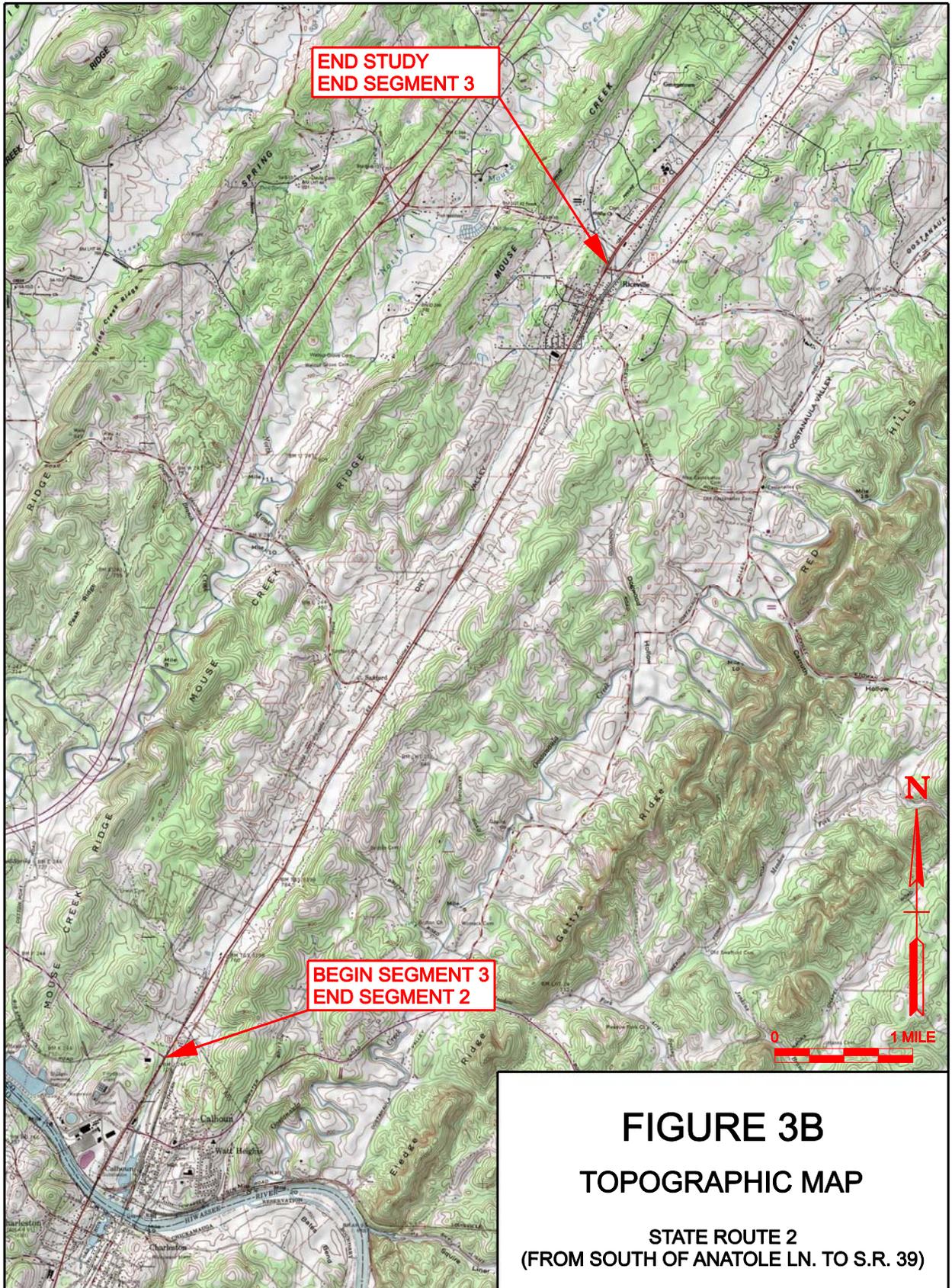
**FIGURE 2**  
**STUDY LOCATION MAP**

**STATE ROUTE 2**  
**(FROM SOUTH OF ANATOLE LN. TO S.R. 39)**



**FIGURE 3A**  
**TOPOGRAPHIC MAP**

STATE ROUTE 2  
 (FROM SOUTH OF ANATOLE LN. TO S.R. 39)



### III. EXISTING CONDITIONS

#### A. Description of Study Area

##### 1. Study Vicinity

As shown in Figure 1, the study area for the State Route 2 (US Highway 11) TPR is located between the cities of Cleveland in Bradley County and Athens in McMinn County. The study location is approximately 37 miles northeast of Chattanooga and 65 miles southwest of Knoxville.

##### 2. Major Traffic Generators

There are several industrial, manufacturing, and distribution centers within the general study vicinity that generate traffic as employees travel to and from work. Table 1 below shows the major employers in the study vicinity, including the cities of Charleston and Calhoun.

<b>TABLE 1</b>		
<b>MAJOR EMPLOYERS IN STUDY VICINITY</b>		
<b>Employer</b>	<b># of Employees in 2009</b>	<b>Approximate Distance from Study Area</b>
Abitibowater Inc.	700	0.0 mi.
Arch Chemicals Inc.	265	2.1 mi.
Exel Inc.	340	4.0 mi.
Olin Corporation	280	2.1 mi.

*Source: Bradley County Chamber of Commerce*

In addition to the employer information presented above, there are two new employers that will begin operations near the study area before 2014.

- Wacker Chemie AG - Wacker Chemie AG broke ground on April 8, 2011 for a new fully integrated polysilicon production facility in Charleston, Tennessee. The Wacker Chemie AG facility is expected to be complete by the end of 2013 and will create 650 new jobs. The Wacker Chemie AG site is located approximately three (3) miles from the TPR study area.
- Amazon - The online retailer Amazon has identified two locations for new distribution centers, one site each in Hamilton and Bradley counties. The new fulfillment centers are in the planning stage but construction may begin as soon as the fall of 2011. Approximately 1,400 new jobs in Hamilton and Bradley counties will be created by

these fulfillment centers. The Amazon fulfillment center in Bradley County will be located within four (4) miles of the TPR study area.

As shown above, several large traffic generators are currently located, under construction, or planned within four (4) miles of the TPR study area. It is reasonable to expect that there is a regional contribution to traffic from these facilities with some portion of truck and/or employee trips using State Route 2 (US Highway 11) for travel.

### 3. Transportation Network

The business and manufacturing sectors in the cities of Charleston and Calhoun make use of highway, water, rail, and air facilities for freight movement, business trips, and commuting. Major modes and facilities for the transport of people or freight in the general vicinity of the TPR study area include:

- Highway - In addition to State Route 2 (US Highway 11), Interstate 75 and US Highways 64, 74, and 411 are located within Bradley and McMinn counties and provide routes for travel in all directions.
- Water - The Hiwassee River, a major tributary of the Tennessee River, is a navigable waterway within the TPR study area. Additionally, the Tennessee River is located sixteen (16) miles from the TPR study area and is a major navigable waterway in the region. The Tennessee Valley Authority maintains appropriate channel depths for commercial river traffic on the Tennessee River and Hiwassee River. The Hiwassee River in the TPR study area may require special permitting as part of any improvements to river crossings on State Route 2 (US Highway 11) or impacts to flood plains.
- Rail - The TPR study area is served directly by the Norfolk Southern Railroad. There are two Norfolk Southern railroad spurs passing under State Route 2 (US Highway 11) on the north and south banks of the Hiwassee River. Additionally, the CSX Transportation railroad's Etowah Terminal is located approximately thirteen (13) miles from the TPR study area. The Norfolk Southern railroad facilities in the TPR study area may require special permitting as part of any improvements State Route 2 (US Highway 11).
- Air - The Hardwick Field Airport near Cleveland, Tennessee is located less than one (1) mile from the southern study limit and includes one paved runway that has a length of 3,300 feet. The McMinn County Airport near Athens, Tennessee is located approximately seven (7) miles east of northern study limit and includes one paved runway that

has a length of 6,450 feet. Additionally, Lovell Field Airport in Chattanooga and McGhee Tyson Airport in Knoxville are both within a ninety (90) minute drive of the study area.

4. Population Growth

Growth in the business and manufacturing sectors have caused Bradley County and McMinn County to experience population growth during the period from 1990 to 2010. This growth in commercial industry results in the continuing development of residential and retail areas. Population growth data for Bradley County, McMinn County, and the State of Tennessee is shown below in Table 2.

<b>TABLE 2</b>			
<b>HISTORICAL POPULATION DATA</b>			
<b>Year</b>	<b>Population</b>		
	<b>Bradley County</b>	<b>McMinn County</b>	<b>Tennessee</b>
1990 (census)	73,712	42,383	4,877,185
2000 (census)	87,965	49,015	5,689,283
2010 (census)	98,963	52,266	6,346,105
% change 1990 - 2010	+34.3	+23.3	+30.1%
<i>Source: U.S. Census Bureau</i>			

B. Crash History

Crash rate data for State Route 2 (US Highway 11) in the TPR study area was reviewed to gauge the relative safety in comparison to other similar roadway facilities in the state. The combination of crash frequency (crashes per year) and vehicle exposure (traffic volumes or miles traveled) results in a crash rate. Crash rates are expressed as "crashes per Million Vehicle Miles Traveled" (MVMT) for roadway segments and as "crashes per Million Entering Vehicles" (MEV) for intersection locations.

State Route 2 (US Highway 11) from south of Anatole Lane in Bradley County to State Route 39 in McMinn County is divided into three segments for the analysis of crash data. The limits of these segments are described below.

- Segment 1 - Begins south of Anatole Lane in Cleveland and ends at State Route 308 in Charleston (4.56 miles)
- Segment 2 - Begins at State Route 308 in Charleston and ends at State Route 163 (west) in Calhoun (2.65 miles)

- Segment 3 - Begins at State Route 163 (west) in Calhoun and ends at State Route 39 in Riceville (6.35 miles)

Table 3 summarizes the actual crash rates and statewide average crash rates for State Route 2 (US Highway 11) from Anatole Lane in Bradley County to State Route 39 in McMinn County.

<b>TABLE 3</b>			
<b>CRASH RATE SUMMARY</b>			
<b>Location (Segment)</b>	<b>Actual Rate</b>	<b>Statewide Rate (SW)</b>	<b>Ratio of Actual/SW Rate</b>
Anatole Lane to State Route 308	1.522	1.657	0.92
State Route 308 to State Route 163 (west)	2.095	1.657	1.26
State Route 163 (west) to State Route 39	1.687	1.657	1.02
<i>Source: TDOT Safety Planning Section</i>			

As shown in table 3, portions of State Route 2 in the study area are below, nearly equal to, and slightly higher than the statewide average crash rate. Specific locations within each segment of the study area may experience additional safety concerns.

### C. Roadway Geometry

The subject roadway through the TPR study area, State Route 2 (US Highway 11), is classified as an rural minor arterial. State Route 308, Old Lower River Road, State Route 163, County Road 50, County Road 725 (Riceville Cedar Springs Road), and State Route 39 are intersecting roads within the study limits that are shown as collectors on the rural functional classification system.

State Route 2 (US Highway 11) is a primary north-south corridor that serves as a parallel route to Interstate 75 in the study area. State Route 2 (US Highway 11) is generally a two (2) lane highway throughout the TPR study area. Left turn lanes are provided at major intersections and within the cities of Charleston and Calhoun to serve existing traffic on State Route 2 (US Highway 11).

A summary of the existing roadway geometrics is shown in Table 4.

TABLE 4										
SUMMARY OF EXISTING ROADWAY GEOMETRICS										
Segment	Roadway	Length	ROW Width	Total # of Lanes	Avg. Lane Width	Avg. Shoulder Width	Median Type	Bicycle Facilities	Sidewalk	Terrain
1	State Route 2 (US Highway 11) from south of Anatole Lane to State Route 308	4.56 mi.	varies 60'-150'	2	12 feet	2 feet	None	None	None	Rolling
2	State Route 2 (US Highway 11) from State Route 308 to State Route 163	2.65 mi.	varies 60'-100'	3	12 feet	2 feet <sup>(1)</sup>	TWLTL <sup>(2)</sup>	None	Yes <sup>(3)</sup>	Rolling
3	State Route 2 (US Highway 11) from State Route 163 to State Route 39	6.35 mi.	varies 50'-100'	2	12 feet	3 feet	None	None	None	Rolling

*Source: TDOT TRIMS Database*

<sup>(1)</sup> Curb with a two (2) foot shoulder is present for 0.92 miles in the City of Charleston

<sup>(2)</sup> Two-Way Left Turn Lane (TWLTL) is present for 1.07 miles in the Cities of Charleston and Calhoun

<sup>(3)</sup> Sidewalk is present for 0.921 miles in the City of Charleston

#### D. Major Structures

There are three major structures within the study area that might be impacted as a result of improvements to the existing roadway. Additionally, there are twenty-one (21) culverts along State Route 2 (US Highway 11) within the study limits. The location and other information about each major structure is shown below.

- Hiwassee River and Norfolk Southern Railroad Bridge - State Route 2 (US Highway 11) crosses the Hiwassee River and two Norfolk Southern Railroad spurs on a steel structure with a length of 926.8 feet and a width of 68.9 feet. This bridge is located at the Bradley County and McMinn County boundary near the midpoint of the study. The TDOT structure database indicates that the current bridge was completed in 1995 and has a sufficiency rating of 50.9.
- Robinson Branch - State Route 2 (US Highway 11) crosses the Robinson Branch on a concrete box bridge with a length of 19.2 feet at a location 1.1 miles north of the Bradley County and McMinn County boundary. The TDOT structure database indicates that the current bridge was completed in 1920 and has a sufficiency rating of 82.7.
- Dry Valley Creek - State Route 2 (US Highway 11) crosses the Dry Valley Creek on a concrete box bridge with a length of 13.6 feet at a location 6.41 miles north of the Bradley County and McMinn County boundary. The TDOT TRIMS structure database indicates that the current bridge was completed in 2005 and has a sufficiency rating of 84.7.

#### E. Multi-modal Facilities

Public transportation in the study area is provided by the Southeast Tennessee Human Resource Agency (STHRA). Transportation is available to all residents of the nine (9) county area that STHRA serves in Southeast Tennessee. The public transportation program allows access to facilities, shopping, and doctors through public transportation services. Funds for the public transportation services are provided by the Tennessee Department of Transportation (TDOT) and fares.

Sidewalks are present in the study area from the intersection of State Route 2 (US Highway 11) and Market Street in the City of Charleston north to the bridge over the Hiwassee River at the Bradley/McMinn County boundary. State Route 2 (US Highway 11) is not shown on the Tennessee Bicycle Map for Region 2 as an existing or proposed state bicycle route. A draft concept plan for the City of Charleston's Greenway Plan was reviewed for locations or projects that may require coordination. The current draft concept plan for the City of Charleston's Greenway Plan (dated May 31, 2011) does not include any greenway, sidewalk, or bicycle facility improvements to State Route 2 (US Highway 11). There are no other greenway, bicycle, or pedestrian facility plans for the study area.

F. Level of Service Analysis

A “Level of Service” (LOS) index was used to gauge the operational performance at each intersection/roadway segment. The LOS is a qualitative measure that describes traffic conditions related to speed and travel time, freedom to maneuver, traffic interruptions, etc. There are six levels ranging from “A” to “F” with “F” being the worst. Each level represents a range of operating conditions. Table 5 shows traffic flow conditions and approximate driver comfort level at each level of service.

<b>TABLE 5</b>	
<b>DESCRIPTIONS OF LEVELS OF SERVICE</b>	
<b>LOS</b>	<b>Traffic Flow Conditions</b>
A	Free flow operations. Vehicles are almost completely unimpeded in their ability to maneuver with the traffic stream. The general level of physical and psychological comfort provided to the driver is high.
B	Reasonable free flow operations. The ability to maneuver within the traffic stream is only slightly restricted and the general level of physical and psychological comfort provided to the driver is still high.
C	Flow with speeds at or near free flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more vigilance on the part of the driver. The driver notices an increase in tension.
D	Speeds decline with increasing traffic. Freedom to maneuver within the traffic stream is more noticeably limited. The driver experiences reduced physical and psychological comfort levels.
E	At lower boundary, the facility is at capacity. Operations are volatile because there are virtually no gaps in the traffic stream. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort.
F	Breakdowns in traffic flow. The number of vehicles entering the highway section exceeds the capacity or ability of the highway to accommodate that number of vehicles. There is little room to maneuver. The driver experiences poor levels of physical and psychological comfort.
<i>Source: TDOT Project Planning Division</i>	

Capacity analysis was performed to determine the peak hour levels of service in the study area for the existing roadway network. To determine the future levels of service, assuming no change in geometry or laneage, capacity analysis was also performed using traffic volumes for the study base year and design year, 2015 and 2035, respectively. Traffic projections for the years 2015 and 2035 were provided by TDOT Project Planning Division.

Table 6 below shows the results of the existing and future level of service analysis for the existing roadway conditions.

TABLE 6			
EXISTING ROADWAY CONDITIONS LEVEL OF SERVICE SUMMARY			
Location	Level of Service (Volume to Capacity Ratio, v/c)		
	2010	2015	2035
State Route 2 (US Highway 11) from south of Anatole Lane to State Route 308	D (0.39)	E (0.49)	E (0.68)
State Route 2 (US Highway 11) from State Route 308 to State Route 163	C (0.27)	C (0.30)	D (0.35)
State Route 2 (US Highway 11) from State Route 163 to State Route 39	C (0.17)	C (0.22)	C (0.26)

As shown in the table above, analysis indicates that the 2015 base year level of service is on State Route 2 (US Highway 11) is “D” south of State Route 308 and “C” north of State Route 308. Traffic is able to move at or near the free flow speed but speeds decline as traffic increases and maneuvering within the traffic stream for lane changes and other actions requires more vigilance on the part of the driver and may be limited due to other traffic on the highway.

The 2035 future year level of service on State Route 2 (US Highway 11) deteriorates to “E” south of State Route 308 and “D” between State Route 308 and State Route 163. The segment from State Route 163 to State Route 39 (US Highway 11BR) will continue to operate at level of service “C”.

It is important to recognize that while the base year and future year levels of service indicate the possibility of some limited maneuverability, the volume to capacity ratios (v/c) throughout the study are significantly less than 1.00, which indicates that the capacity of the roadway is not exceeded.

The v/c ratio represents how closely a roadway is operating to its capacity. A v/c ratio in excess of 1.00 indicates that more vehicles are trying to use a roadway than the roadway can accommodate. Alternatively, level of service results represent a range of operating conditions. On State Route 2 (US Highway 11) the levels of service “D” and “E” are indicative of the traveling conditions, or quality of traffic flow, though the study area. Since the v/c ratio is less than 1.00, all vehicles trying to use the roadway can be accommodated. However, the level of service indicates that traffic conditions will be characterized by decreased speed and fewer gaps suitable for turning movements.

#### **IV. FIELD REVIEW**

A stakeholder field review for the study was held on February 3, 2011 to discuss purpose and need issues and to discuss improvement options that would satisfy the needs in the area. Representatives from the City of Calhoun, City of Charleston, McMinn County, the Southeast Tennessee Rural Planning Organization (RPO), TDOT Region 2, and TDOT Project Planning Division attended the field review. A stakeholder field review attendee list is attached in the appendix of this report.

The stakeholder field review provided the opportunity to identify issues and concerns, gather information, and collaborate on possible improvement options. The meeting included an introduction and overview of the study area and TPR process as well as discussions of other tasks such as the National Environmental Policy Act (NEPA) study and public hearings. A review of the programming and funding mechanisms through TDOT and the Southeast RPO was also included in the study overview. Meeting attendees were encouraged to comment on the purpose and need for the study, identify issues and constraints in the area, and to suggest possible improvement options.

Based upon the discussions with local stakeholders present at the meeting, the increase in traffic from new industry and development in the general vicinity is the primary concern for safety, operational, and economic reasons. The need to accommodate ingress/egress to future development is also related to the operational and economic interests in the vicinity. Additionally, State Route 2 (US Highway 11) is a parallel route to Interstate 75 between Chattanooga and Knoxville. Incidents and fog conditions cause interstate traffic to divert to State Route 2 (US Highway 11) and results in poor traffic conditions on the existing roadway.

Local stakeholder suggestions for the roadway improvement focused primarily on increased mobility to and from the future industry and development that will be located in the general vicinity. Specifically, the ability to accommodate heavy vehicles such as dump trucks and log trucks was discussed as a need within the study area. Local stakeholders also expressed operational concerns in the study area. The operational discussion focused on the need for turn lanes and left turn protection at the existing traffic signal at the intersection of State Route 2 (US Highway 11) and State Route 163 (east) and the need for additional traffic signals at busy intersections on State Route 2 (US Highway 11) with State Route 308 and State Route 163 (west).

## V. PRELIMINARY PURPOSE AND NEED

### A. Introduction

The preliminary purpose and need for this study has been identified by the TDOT Long Range Planning Division and through coordination and discussions with local officials, Southeast RPO staff, stakeholders, and TDOT staff. The evaluation of the purpose and need for this study includes the following items.

- Safety
- System Linkage
- Capacity
- Economic Development

Descriptions of these issues and the specific needs or goals for this study are included below.

### B. Safety

As shown previously in Table 3, the crash rates on State Route 2 (US Highway 11) in the TPR study area are comparable to the average crash rate on rural minor arterial highways statewide. Within the study limits for the period from 2006 to 2008, there were twenty-nine (29) non-incapacitating injury crashes, two (2) incapacitating injury crashes, and one (1) fatal crash.

A component of safety needs for a highway is based upon the geometry in the study area. Geometric deficiencies such as narrow lanes, shoulder width, sharp horizontal curvature, and steep grades impact the overall safety and crash incidence on a section of roadway. As shown previously in Table 4, the geometry of State Route 2 (US Highway 11) in the TPR study area consists of lane widths of twelve (12) feet and shoulder widths of three (3) feet or less. Based upon current TDOT design standards, the lane width is acceptable but the shoulder width does not meet minimum design criteria.

### C. System Linkage

State Route 2 (US Highway 11) is an important route in Bradley County and McMinn County and in the regional transportation system. It is a primary route from the city of Cleveland to the City of Athens and carries a large portion of the truck and employee traffic coming to major employers in the cities of Charleston and Calhoun. Additionally, residential development continues to increase in the area and has added local trip traffic to this highway. The need to serve through traffic and local traffic will add congestion in the future and result in a degradation of level of service on State Route 2 (US Highway 11). Improvements will be needed to provide mobility

through the study area and access to adjacent property for trucks, employees, and/or residents.

In a regional context, State Route 2 (US Highway 11) is an important part of the transportation network because it parallels Interstate 75 between the cities of Chattanooga and Knoxville and provides mobility across major waterways such as the Hiwassee River. As shown on Figure 2, State Route 2 (US Highway 11) crosses the Hiwassee River approximately three (3) miles southeast of Interstate 75. The nearest crossing of the Hiwassee River is seven (7) or more miles away to the northwest and southeast of State Route 2 (US Highway 11) and Interstate 75. The crossing of the Hiwassee River within the study area provides an important alternate route to Interstate 75 and a connection between Bradley County and McMinn County. Additionally, major employers such as AbitibiBowater Inc. are located within the area and use the mobility provided by State Route 2 (US Highway 11) for employee and material transportation.

D. Capacity

Traffic volumes on State Route 2 (US Highway 11) are expected to increase approximately twenty-nine (29) percent during the period from 2010 to 2035. With a 2010 Annual Average Daily Traffic (AADT) varying from 10,301 south of Charleston to 4,569 north of Calhoun, State Route 2 (US Highway 11) in the study area is generally operating at levels of service C/D. However, the AADT south of Charleston is expected to increase to 11,500 in 2015 and to 16,100 in the design year 2035. North of Calhoun, the AADT is expected to increase to 4,800 in 2015 and to 5,760 in the design year 2035. This growth will result in the degradation of levels of service on State Route 2 (US Highway 11) to LOS C/D/E in 2015 and 2035. Improvements are needed to accommodate the projected traffic on State Route 2 (US Highway 11) and to provide mobility in the study area at an acceptable level of service.

E. Transportation Demand

There are no plans for improvement to State Route 2 (US Highway 11) in the study area shown in to State Transportation Improvement Plan (STIP) or Long-Range Transportation Plan (LRTP). Traffic forecasts were developed for this study using a historic growth trend rate for State Route 2 (US Highway 11).

F. Legislation

There is no federal, state, or local government mandate for improvement of State Route 2. The Southeast RPO listed this location on its requested studies list. After evaluation of the corridor segments based upon capacity, safety, and access, the Long Range Planning Division recommended the segment of State Route 2 (US

Highway 11) covered in this document be selected for a Transportation Planning Report.

G. Economic Development

Safe and efficient access to the regional transportation network is necessary for new employment and development projects to remain economically viable. With unemployment rates of 9.1 percent and 11.6 percent during April 2011 in Bradley and McMinn Counties, respectively, the ability to attract new development to the area will provide opportunities for the local labor force. Improving mobility throughout the study area will make northern Bradley County and southern McMinn County attractive to new employment and economic development opportunities which will increase revenues at the local and state level and promote an economically stable business community.

H. Modal Interrelationships

State Route 2 (US Highway 11) is not shown on the Tennessee Bicycle Map for Region 2 as an existing or proposed state bicycle route. Locally, the current draft concept plan for the City of Charleston's Greenway Plan (dated May 31, 2011) does not include any greenway, sidewalk, or bicycle facility improvements to State Route 2 (US Highway 11). There are no other greenway, bicycle, or pedestrian facility plans for the study area. The TDOT Long Range Transportation Plan does recommend that all new construction and reconstruction roadway projects include design features appropriate for pedestrian and bicycle use. Providing sidewalks and shoulder widths of four (4) feet (minimum) will improve the ability of pedestrians and bicycles to use the roadway.

The Norfolk Southern Railroad and Hiwassee River in the study area provide rail and port facilities that attract employers to the area. Improvement to roadway facilities will make the service to ports and rail facilities more efficient and attractive to employers in the study area.

I. Roadway Deficiencies

State Route 2 (US Highway 11) includes shoulder widths that are three (3) feet or less throughout the study area. Based upon current TDOT design standards, the minimum graded shoulder width for State Route 2 (US Highway 11) is ten (10) feet. Improving State Route 2 (US Highway 11) in the study area will mitigate deficiencies related to the existing shoulder width.

## VI. OPTIONS FOR IMPROVEMENT

### A. Option A - No Build

The No Build Option assumes no modifications or improvements will be made over the planning horizon to add capacity. Routine maintenance related activities as well as scheduled resurfacing, signing, and possible safety improvements may occur. This option, however, does not support the stated purpose and need for providing a transportation facility to correct geometric deficiencies, provide safer operations for commuters, and accommodate the efficient movement of people and freight.

### B. Option B - Spot Improvements

Spot improvements can be implemented to address locations with safety, capacity, or other issues. It is important to note that the spot improvement options are not exclusive of one another. For example, multiple improvement options could be selected and implemented together as part of an overall improvement strategy for the study area or they can be implemented individually to address issues at specific locations or to reduce the costs and impacts of prolonged or extensive construction activity in the study area.

Based on the traffic data, crash history, and other information available for State Route 2 (US Highway 11), and after a review of the existing roadway conditions, the following spot improvements are presented from south to north.

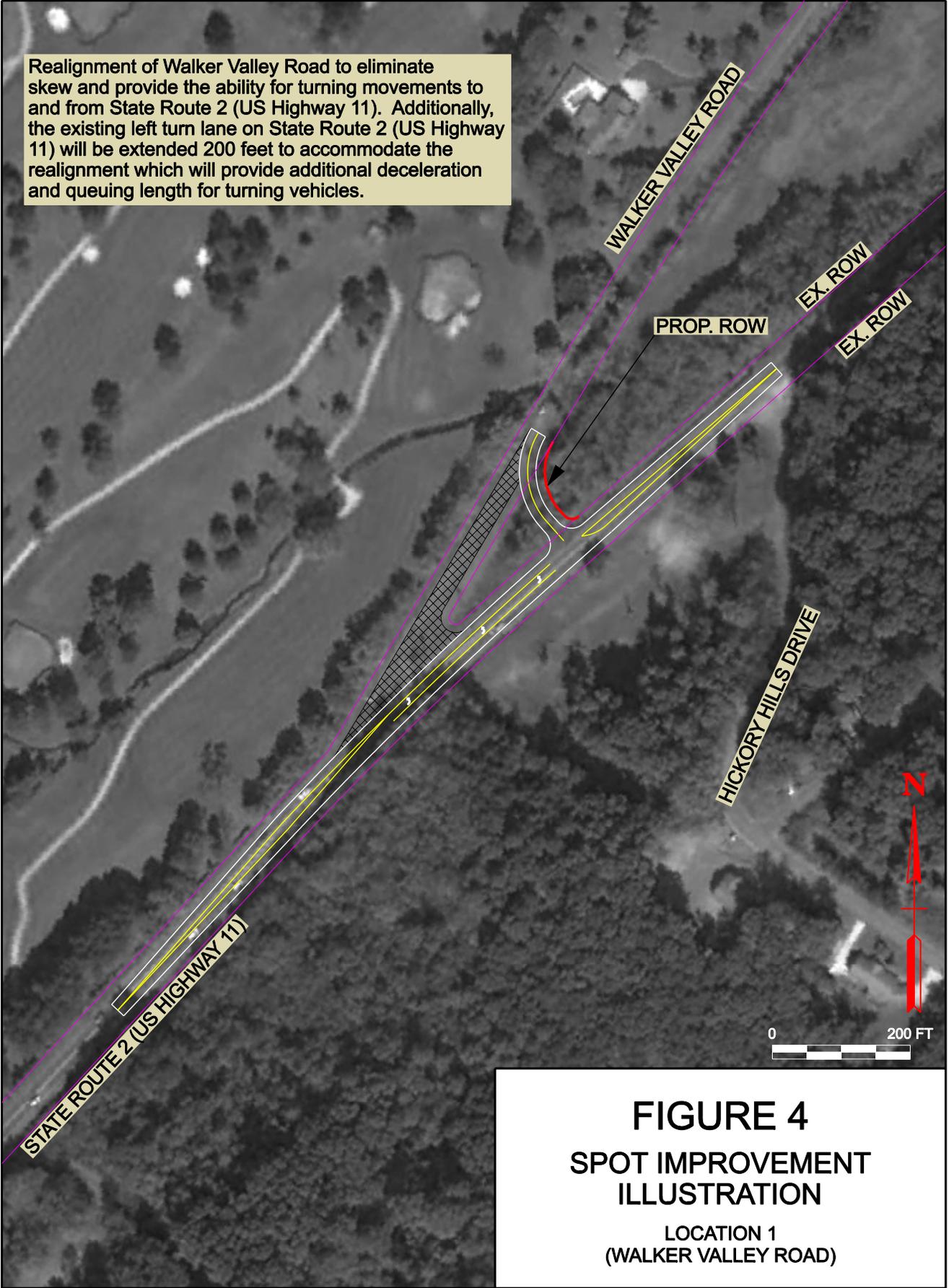
#### ***Location 1 - Walker Valley Road***

The intersection of State Route 2 (US Highway 11) at Walker Valley Road has a high degree of skew that results in awkward sight lines and insufficient turning radii for some movements. During the period from 2006 to 2008, this intersection experienced nine (9) crashes (eight (8) property damage, one (1) incapacitating injury), which is highest crash total for the intersections located in the study area.

The spot improvement option at this location includes the acquisition of right-of-way and realignment of Walker Valley Road to eliminate skew and provide the ability for turning movements to and from State Route 2 (US Highway 11). Additionally, the existing left turn lane on State Route 2 (US Highway 11) will be extended 200 feet to accommodate the realignment which will provide additional deceleration and queuing length for turning vehicles.

The estimated cost for this spot improvement is \$248,300 (P.E. - \$18,100, R.O.W. - \$16,000, Utilities - \$15,000, Construction - \$199,200). An illustration of this spot improvement is shown on Figure 4.

Realignment of Walker Valley Road to eliminate skew and provide the ability for turning movements to and from State Route 2 (US Highway 11). Additionally, the existing left turn lane on State Route 2 (US Highway 11) will be extended 200 feet to accommodate the realignment which will provide additional deceleration and queuing length for turning vehicles.



**FIGURE 4**  
**SPOT IMPROVEMENT**  
**ILLUSTRATION**

LOCATION 1  
(WALKER VALLEY ROAD)

### ***Location 2 - State Route 308 to Market Street***

The spot improvement option through this area includes the addition of a center two-way left turn lane on State Route 2 (US Highway 11) from State Route 308 (L.M. 19.40) to Market Street (L.M. 20.17) within the existing right-of-way, a distance of approximately 4,100 feet. The addition of the three (3) lane section as shown in Figure 7 will allow turning vehicles to decelerate and queue outside of the travel lanes, improving safety and traffic flow in this segment. Additionally, the improvement to a three (3) lane section will adjoin the existing three (3) lane section north of Market Street and provide a continuous center two-way left turn lane throughout the limits of the City of Charleston.

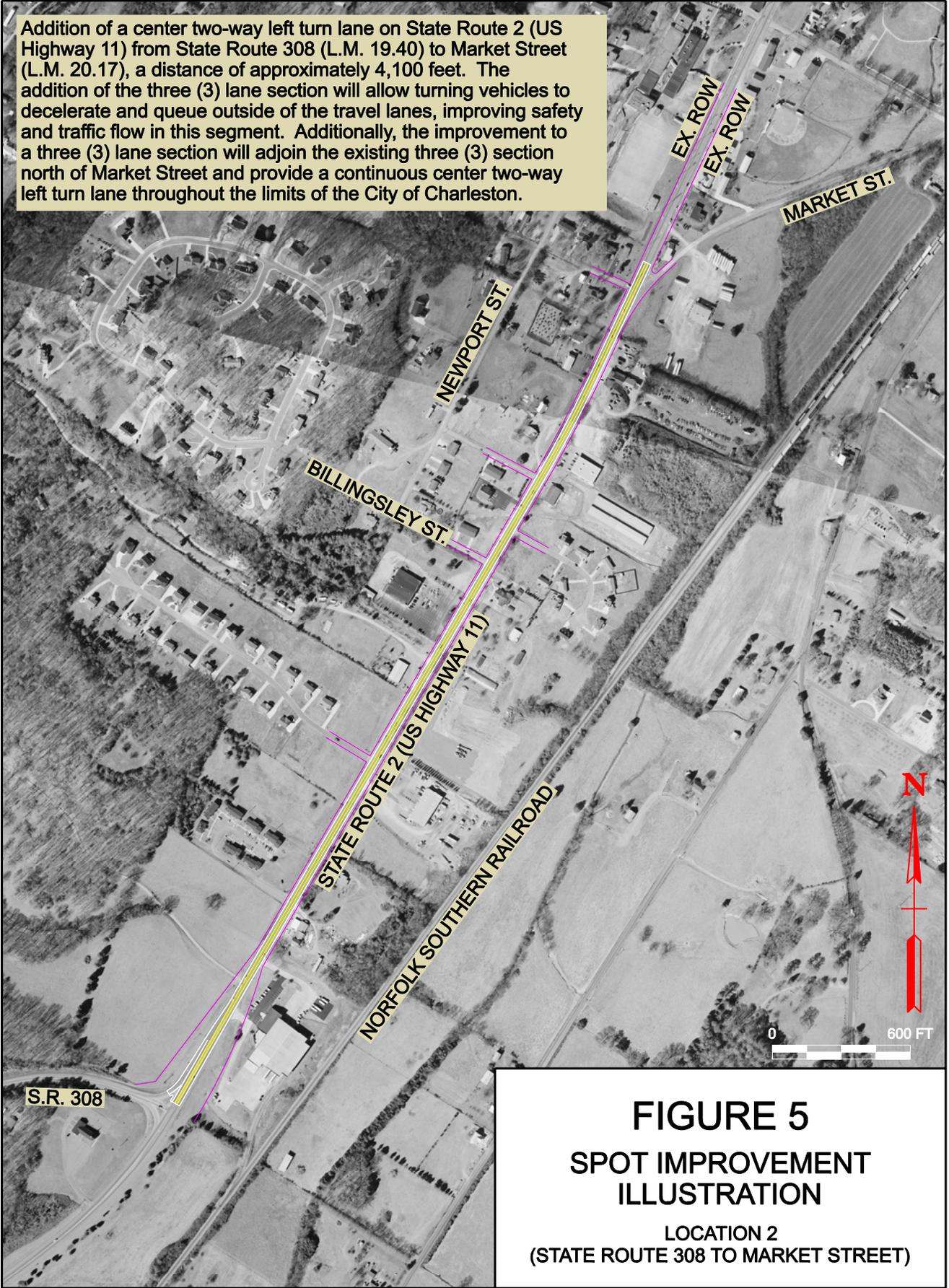
The estimated cost for this spot improvement is \$2,767,000 (P.E. - 218,900, R.O.W. - \$0, Utilities - \$140,000, Construction - \$2,408,100). An illustration of this spot improvement is shown on Figure 5.

### ***Location 3 - Abitibowater Plant Entrance to State Route 163***

The spot improvement option through this area includes the addition of a center two-way left turn lane on State Route 2 (US Highway 11) from the Abitibowater Plant Entrance (L.M. 0.33) to State Route 163 (L.M. 1.07) within the existing right-of-way, a distance of approximately 4,000 feet. Existing traffic signals at the Abitibowater Plant Entrance and State Route 163 (L.M. 0.52) will be upgraded and a new traffic signal will be installed at the intersection of State Route 2 (US Highway 11) at State Route 163 (L.M. 1.07). The addition of the three (3) lane section as shown in Figure 7 will allow turning vehicles to decelerate and queue outside of the travel lanes, improving safety and traffic flow in this segment. Additionally, the improvement to a three (3) lane section will provide left turn lanes at existing traffic signals on State Route 2 (US Highway 11) and improve traffic flow by allowing more efficient signal phasing and timing. This improvement would provide a continuous two-way left turn lane throughout the limits of the City of Calhoun.

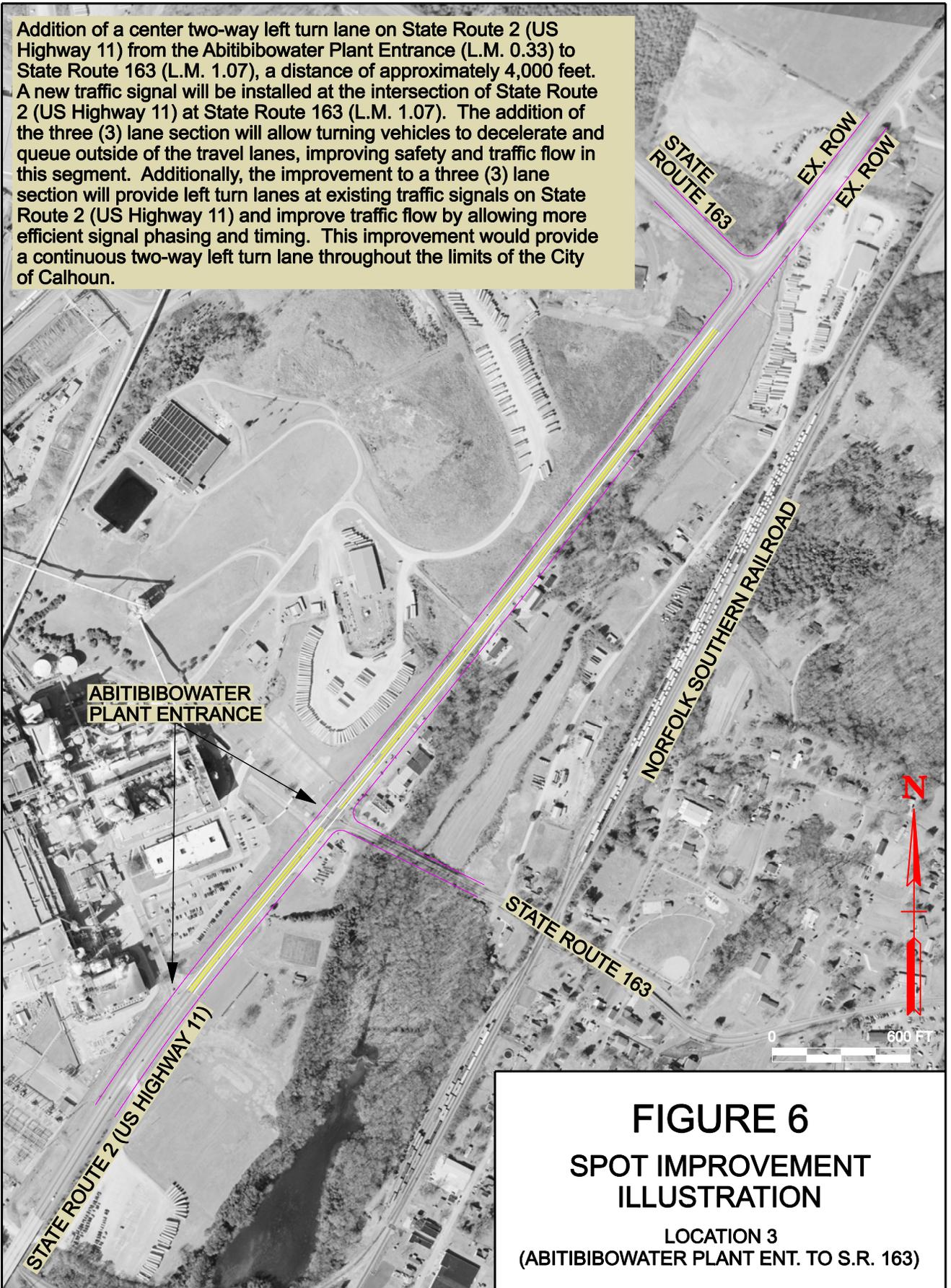
The estimated cost for this spot improvement is \$2,598,100 (P.E. - \$209,000, R.O.W. - \$0, Utilities - \$90,000, Construction - \$2,299,100). An illustration of this spot improvement is shown on Figure 6.

Addition of a center two-way left turn lane on State Route 2 (US Highway 11) from State Route 308 (L.M. 19.40) to Market Street (L.M. 20.17), a distance of approximately 4,100 feet. The addition of the three (3) lane section will allow turning vehicles to decelerate and queue outside of the travel lanes, improving safety and traffic flow in this segment. Additionally, the improvement to a three (3) lane section will adjoin the existing three (3) section north of Market Street and provide a continuous center two-way left turn lane throughout the limits of the City of Charleston.



**FIGURE 5**  
**SPOT IMPROVEMENT**  
**ILLUSTRATION**  
LOCATION 2  
(STATE ROUTE 308 TO MARKET STREET)

Addition of a center two-way left turn lane on State Route 2 (US Highway 11) from the Abitibowater Plant Entrance (L.M. 0.33) to State Route 163 (L.M. 1.07), a distance of approximately 4,000 feet. A new traffic signal will be installed at the intersection of State Route 2 (US Highway 11) at State Route 163 (L.M. 1.07). The addition of the three (3) lane section will allow turning vehicles to decelerate and queue outside of the travel lanes, improving safety and traffic flow in this segment. Additionally, the improvement to a three (3) lane section will provide left turn lanes at existing traffic signals on State Route 2 (US Highway 11) and improve traffic flow by allowing more efficient signal phasing and timing. This improvement would provide a continuous two-way left turn lane throughout the limits of the City of Calhoun.



**FIGURE 6**  
**SPOT IMPROVEMENT**  
**ILLUSTRATION**  
LOCATION 3  
(ABITIBOWATER PLANT ENT. TO S.R. 163)

**Location 4 - Dry Valley Creek to State Route 39**

The spot improvement option through this area includes the addition of a center two-way left turn lane on State Route 2 (US Highway 11) from north of Dry Valley Creek (L.M. 6.41) to State Route 39 (L.M. 7.42), a distance of approximately 5,300 feet. The addition of the three (3) lane section as shown in Figure 7 would allow turning vehicles to decelerate and queue outside of the travel lanes, improving safety and traffic flow in this segment. Additionally, the improvement to a three (3) lane section would function as a transitional segment from the four (4) lane divided section north of Riceville to the two (2) lane section south of Riceville.

The estimated cost for this spot improvement is \$3,046,400 (P.E. - 245,500, R.O.W. - \$0, Utilities - \$100,000, Construction - \$2,700,900). An illustration of this spot improvement is shown on Figure 8.

**Priority of Spot Improvements**

These improvements include the addition of turn lanes and geometric improvements. These four (4) spot improvements encompass 2.8 miles of the 13.56-mile long corridor. A prioritized listing and a cost for each improvement is below.

Location 1 - Walker Valley Road

Approximately 1,400 feet, Estimated Cost: \$248,300

Location 3 - Abitibowater Plant Entrance to State Route 163

Approximately 4,000 feet, Estimated Cost: \$2,598,100

Location 2 - State Route 308 to Market Street

Approximately 4,100 feet, Estimated Cost: \$2,767,000

Location 4 - Dry Valley Creek to State Route 39

Approximately 5,300 feet, Estimated Cost: \$3,046,400

**TOTAL FOR FOUR SPOT IMPROVEMENTS: \$8,659,800**

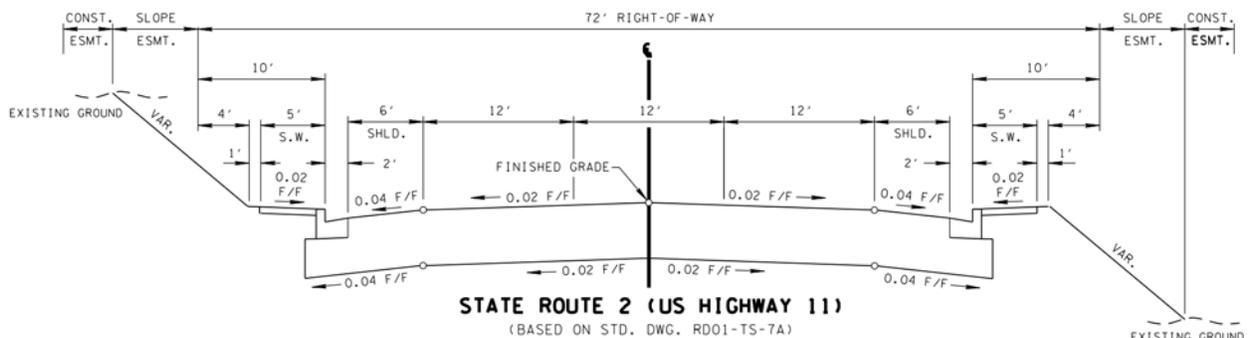
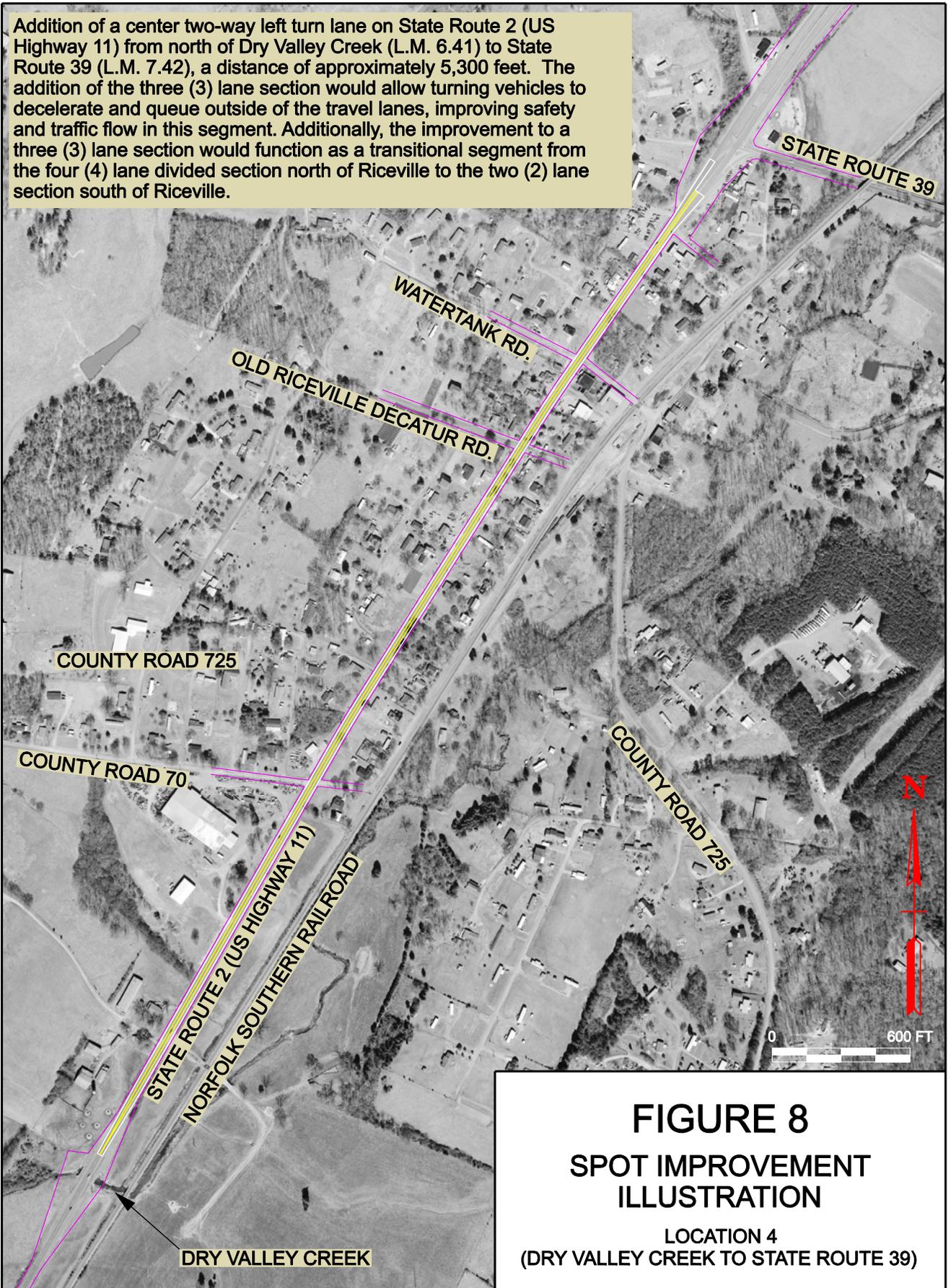


Figure 7 - State Route 2 (US Highway 11) Typical Section(Locations 2, 3, and 4)

Addition of a center two-way left turn lane on State Route 2 (US Highway 11) from north of Dry Valley Creek (L.M. 6.41) to State Route 39 (L.M. 7.42), a distance of approximately 5,300 feet. The addition of the three (3) lane section would allow turning vehicles to decelerate and queue outside of the travel lanes, improving safety and traffic flow in this segment. Additionally, the improvement to a three (3) lane section would function as a transitional segment from the four (4) lane divided section north of Riceville to the two (2) lane section south of Riceville.



**FIGURE 8**  
**SPOT IMPROVEMENT**  
**ILLUSTRATION**  
LOCATION 4  
(DRY VALLEY CREEK TO STATE ROUTE 39)

C. Option C - Corridor Improvement

Typically, multiple corridor options are evaluated during the planning process for roadway improvements. However, this study limits the evaluation of improvement options to a 2,000 foot corridor generally following the existing alignment of State Route 2 (US Highway 11). Preliminary investigations into the feasibility of alternate corridors revealed that a new alignment for State Route 2 (US Highway 11) was not feasible for the following reasons.

- Providing additional capacity for existing and future employers in the cities of Calhoun and Charleston is not achieved by creating a new alignment. The existing and future land use plans for Bradley County and McMinn County include major trip generators along the existing State Route 2 (US Highway 11) corridor. Existing traffic may not be able to divert to a new alignment due to the origin or destination of their trip at one of the major employers, shippers, or receivers in the cities of Charleston or Calhoun.
- The Hiwassee River crosses the study area in an east-west direction and would require a bridge for any new alignment. Because the Hiwassee River is a TVA-maintained navigable waterway, the cost of a new structure over the Hiwassee River will be significant. Additionally, the Norfolk Southern Railroad and CSX Railroad have tracks in many areas along the banks of the Hiwassee River. The ability to construct a new structure may be further inhibited by railroad clearance and rail traffic requirements.
- The Norfolk Southern Railroad mainline generally parallels State Route 2 (US Highway 11) from the city of Calhoun to the northern study boundary. The parallel routes of the railroad and State Route 2 (US Highway 11) have created an artery for transportation at the northern end of the study area. Establishing a new alignment for State Route 2 (US Highway 11) in this area would require costly grade-separated crossings of the railroad or would impact land uses in the area by creating land-locked tracts between the railroad and the new alignment of State Route 2 (US Highway 11).

The goal of creating additional capacity for existing and future employers along State Route 2 (US Highway 11) is an important economic development consideration. Additionally, new structures over the Hiwassee River and/or impacts to land uses in Bradley County and McMinn County make a new alignment option undesirable from an environmental perspective and difficult to program from an economic perspective.

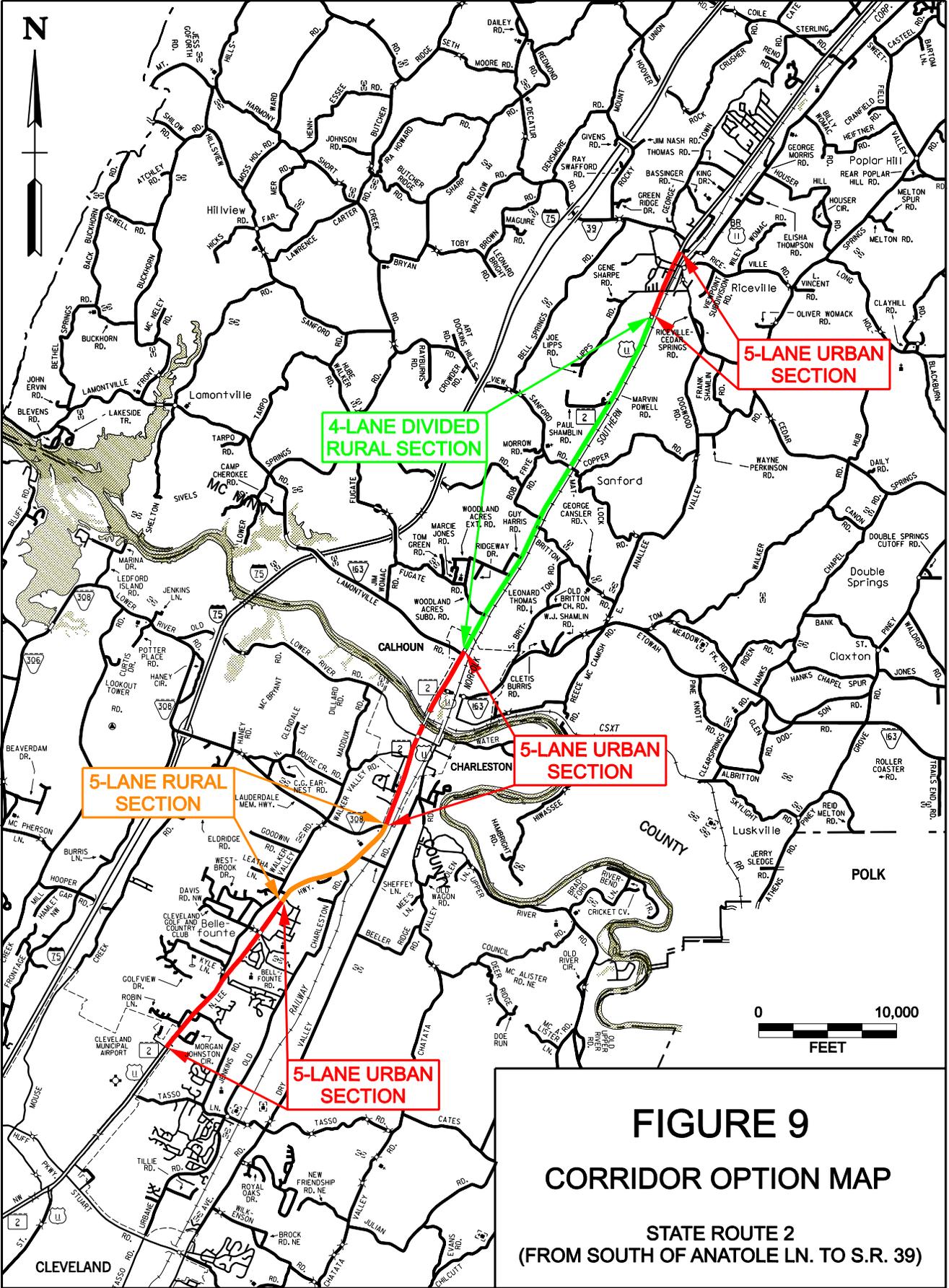
As shown previously by the level of service summary in Table 6, a portion of the existing two (2) lane section of State Route 2 (US Highway 11) will be characterized by undesirable levels of service and have reduced capacity to accommodate additional traffic. The corridor improvement proposal involves upgrading the existing two (2) lane and three (3) lane sections of State Route 2 (US Highway 11) to an improved four (4) lane divided or five (5) lane section. While some portions of State

Route 2 (US Highway 11) will operate at an acceptable level of service with a two (2) lane section, a four (4) lane divided section or five (5) lane section is consistent with the adjacent sections north and south of the study area and will provide system linkage and continuity of capacity along the State Route 2 (US Highway 11) corridor.

The estimated costs for the corridor improvement options are shown below.

- Segment 1 - Begins south of Anatole Lane in Cleveland and ends at State Route 308 in Charleston (4.56 miles)  
\$20,454,000 to \$27,044,000
- Segment 2 - Begins at State Route 308 in Charleston and ends at State Route 163 (west) in Calhoun (2.65 miles)  
\$13,853,000 to \$18,247,000
- Segment 3 - Begins at State Route 163 (west) in Calhoun and ends at State Route 39 in Riceville (6.35 miles)  
\$26,559,000 to \$34,851,000

The location and optional cross-sections for the State Route 2 (US Highway 11) corridor improvement are shown on Figure 9.



**FIGURE 9**  
**CORRIDOR OPTION MAP**  
 STATE ROUTE 2  
 (FROM SOUTH OF ANATOLE LN. TO S.R. 39)

D. Projected Level of Service Analysis

The future levels of service were determined by performing a capacity analysis on the existing study area (no build option) and the improvement options described in this TPR. As discussed previously, the results of a capacity analysis are expressed in the form of a level of service (LOS). The LOS is a qualitative measure that describes traffic conditions related to speed and travel time, freedom to maneuver, traffic interruptions, etc. The traffic flow conditions and approximate driver comfort level at each level of service were previously shown in Table 5.

The spot improvements in Option “B” were developed to address locations with specific safety, capacity, operational, and/or other issues. Because these spot improvements are small scale projects that address specific locations, the capacity analysis for the segments of State Route 2 (US Highway 11) does not include a process to reliably determine the impacts of the spot improvements. Therefore, capacity analysis for the spot improvement option on State Route 2 (US Highway 11) has not been conducted. Table 7 below shows a comparison of the capacity analysis and level of service results for the study area.

<b>TABLE 7</b>				
<b>IMPROVEMENT OPTION LEVEL OF SERVICE COMPARISON</b>				
<b>Location</b>	<b>Year</b>	<b>Level of Service</b>		
		<b>Option “A”</b>	<b>Option “B”</b>	<b>Option “C”</b>
State Route 2 (US Highway 11) from south of Anatole Lane to State Route 308	2010	D	-	-
	2015	E	-	A
	2035	E	-	A
State Route 2 (US Highway 11) from State Route 308 to State Route 163	2010	C	-	-
	2015	C	-	A
	2035	D	-	A
State Route 2 (US Highway 11) from State Route 163 to State Route 39	2010	C	-	-
	2015	C	-	A
	2035	C	-	A

**VII. EARLY ENVIRONMENTAL SCREENING**

The Tennessee Department of Transportation (TDOT) has introduced an early environmental screening (EES) process for the TPR process. By screening the latest available Geographic Information Systems (GIS) environmental data during the early planning stages, TDOT and the public will be better prepared to anticipate potential environmental issues and mitigation requirements. This screening process involves using GIS to assess environmental data as it relates to the study’s Area of Potential Effect (APE). Specifically, the GIS environmental data provided by TDOT staff for this TPR includes the following layers and potential impacts summarized in Table 8.

<b>TABLE 8</b>		
<b>EARLY ENVIRONMENTAL SCREENING SUMMARY</b>		
<b>Layer</b>	<b>Potential Impact</b>	<b>Notes</b>
Cemetery Sites and Cemetery Properties	No Impact	
Institutions and Sensitive Community Populations	Present	13% of population within study area live below the state poverty level
Bat	No Impact	
Railroads	Low Impact	Railroads within and abutting study area, minor involvement expected
National Register Sites	No Impact	
Superfund Sites	No Impact	
Pyritic Rock	No Impact	
TWRA Lakes and Other Public Lands	No Impact	
Terrestrial Species	No Impact	
TDEC Conservation Sites and TDEC Scenic Waterways	No Impact	
Large Wetland Areas	Substantial Impact	Greater than 2 acres of wetlands present within study area. Avoidance and mitigation will be required.
Tennessee Natural Areas Program	No Impact	
Wildlife Management Areas	No Impact	
Aquatic Species	No Impact	
Caves	No Impact	

## VIII. ASSESSMENT OF OPTIONS

The Tennessee Department of Transportation 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 improvement on State Route 2 (US Highway 11) in Bradley County and McMinn County.

### ***Guiding Principle 1 - Preserve and Manage the Existing Transportation System***

The improvement options presented in this TPR will preserve the existing transportation system by integrating access for future employers and improvements to address safety and capacity into the existing roadway network. The spot improvements presented in this TPR will address locations with safety, capacity, and/or other issues while the corridor improvement option will provide compliance with modern design standards and increase the capacity of the entire State Route 2 (US Highway 11) corridor in the study area. TDOT's goal of managing the existing transportation system is satisfied by improving access to local employment and residential destinations from the existing State Route 2 (US Highway 11) corridor in addition to the improvements to the safety and capacity related features of the roadway.

### ***Guiding Principle 2 - Move a Growing, Diverse, and Active Population***

Access to employers and residential areas located along State Route 2 (US Highway 11) will be improved with the options presented in this TPR. As shown in Table 2 of this study, population growth has occurred in Bradley County and McMinn County during the past twenty (20) years. Providing improved connections such as State Route 2 (US Highway 11) between major employment areas such as Cleveland, Charleston, Calhoun, and Athens enable further development of business and employment centers, residential areas, and the movement of people.

### ***Guiding Principle 3 - Support the State's Economy***

A significant economic resource in the study area is the industrial developments located in the cities of Charleston and Calhoun. Improving the existing transportation system around major employers in industrial development areas will attract other employers and suppliers to the area. The options presented in this TPR will improve the State Route 2 (US Highway 11) corridor and provide opportunities for new business to be established on many properties in northern Bradley County and southern McMinn County.

### ***Guiding Principle 4 - Maximize Safety and Security***

The evaluation of the improvement options in this TPR as they relate to safety and security is particularly relevant given the important link that State Route 2 (US Highway 11) provides within the region. As an alternate route for Interstate 75, State Route 2 (US Highway 11) is

significant because it must accommodate additional traffic when incidents or conditions on Interstate 75 cause closings or restricted traffic flows. Between the cities of Cleveland and Athens, improvements to State Route 2 (US Highway 11) will provide a more secure and reliable alternate route for Interstate 75, particularly in crossing the Hiwassee River, in the event of incidents or conditions that require a partial or full interstate closure.

***Guiding Principle 5 - Build Partnerships for Livable Communities***

This study was initiated in response to requests by local officials involved in the Southeast Regional Planning Organization (RPO). A stakeholder meeting was conducted with local officials and stakeholders with many discussions and comments related to the need for improved access to future development locations and increased capacity for the mobility of residents and employees. As this study moves into the NEPA phase where one or more of the improvement options will be selected for implementation, coordination with local officials and public meetings will be held to receive input from the community into the option selection process.

***Guiding Principle 6 - Promote Stewardship of the Environment***

To determine a roadway improvement's potential benefit or harm to the environment, NEPA requires an assessment of environmental impacts and an evaluation of options to avoid any identified adverse impacts to the environment. A preliminary environmental review for this study has indicated that the use of the existing roadway alignment will result in relatively minor environmental impacts to previously undisturbed areas.

***Guiding Principle 7 - Emphasize Financial Responsibility***

This study was recommended by the Southeast Tennessee Regional Planning Organization (RPO) and any future funding would be allocated through the State Transportation Improvement Program (STIP). Cost estimates have been prepared for the improvement options in the TPR based upon currently available data and have been included in this report for future planning purposes. It is TDOT's goal to follow a comprehensive transportation planning process that incorporates the recommendations of local officials and technical staff, promotes coordination among transportation system operators, and supports efforts to provide stable funding for the public component of the transportation system. The initial recommendation for this study from the local RPO indicates that the benefits of an investment in this corridor are recognized at the local level by the officials and staff responsible for the management of local governments and agencies.

## IX. SUMMARY

State Route 2 (US Highway 11) provides a regional connection between the cities of Chattanooga and Knoxville and provides a parallel alternate route for Interstate 75. In the study area, the opportunity for increased development and industry along the State Route 2 (US Highway 11) corridor has resulted in a need for additional capacity on the roadway system. Traffic volumes are projected to increase to 12,000 annual average daily traffic (AADT) in 2015 and 17,520 AADT in 2035. Levels of service on State Route 2 (US Highway 11) will be E in 2015 and E in 2035.

The improvements to State Route 2 (US Highway 11) are needed to address the following needs:

- To mitigate existing geometric deficiencies that impact the overall safety and crash incidence on a section of roadway.
- To accommodate the projected traffic and provide mobility on State Route 2 (US Highway 11) at an acceptable level of service.
- To increase the attractiveness of the Bradley County and McMinn County area to new employment and economic development opportunities.
- To provide additional capacity and continuity to an important route in the local and regional transportation system.

Three options were presented for evaluation in this TPR.

- Option A (no build) does not provide for the mobility and capacity needs of the future. Improved access to State Route 2 (US Highway 11) and more efficient access to future development is not provided as part of this option.
- Option B provides spot improvements that will be effective at improving safety and traffic operations at specific locations but will not significantly increase the service life of the entire State Route 2 (US Highway 11) corridor for the twenty (20) year planning horizon in this TPR. These improvements include the following locations:
  - Location 1 - Walker Valley Road (\$248,300)
  - Location 2 - State Route 308 to Market Street (\$2,767,000)
  - Location 3 - Abitibowater Plant Entrance to State Route 163 (\$2,598,100)
  - Location 4 - Dry Valley Creek to State Route 39 (\$3,046,400)
- Option C consists of improvements to State Route 2 (US Highway 11) that include widening from two (2) lanes to four (4) lane divided or five (5) lane roadway sections. These improvements are consistent with the adjacent sections north and south of the study area and will provide system linkage and continuity of capacity along the State Route 2 (US Highway 11) corridor. The total cost of the Option C improvements will be between \$60,866,000 and \$80,142,000.

**APPENDIX**

- A. COST ESTIMATE SPREADSHEETS**
- B. EARLY ENVIRONMENTAL SCREENING**
- C. STAKEHOLDER MEETING ATTENDEE LIST**
- D. AERIAL MAPPING**

**APPENDIX A**

**COST ESTIMATE SPREADSHEETS**

Route:	STATE ROUTE 2 (US HIGHWAY 11)
Description:	SPOT IMPROVEMENT
	LOCATION 1
County:	BRADLEY
Length:	INTERSECTION
Date:	8/5/2011

RIGHT-OF-WAY	\$	16,000
UTILITIES	\$	15,000
CLEAR AND GRUBBING	\$	0
EARTHWORK	\$	25,000
OBSTRUCTION/PAVEMENT REMOVAL	\$	0
DRAINAGE	\$	10,000
STRUCTURES	\$	0
RAILROAD CROSSING OR SEPARATION	\$	0
PAVING	\$	90,000
RETAINING WALLS	\$	0
MAINTENANCE OF TRAFFIC	\$	10,000
TOPSOIL	\$	2,500
SEEDING	\$	1,000
SODDING	\$	5,000
PAVEMENT MARKINGS	\$	5,000
SIGNING	\$	1,500
LIGHTING	\$	0
SIGNALIZATION	\$	0
FENCE	\$	0
GUARDRAIL	\$	0
RIP RAP OR SLOPE PROTECTION	\$	0
OTHER CONST. ITEMS (15%)	\$	22,500
MOBILIZATION	\$	8,600
CONSTRUCTION COST	\$	181,100
10% ENG. & CONT.	\$	18,100
TOTAL CONSTRUCTION COST	\$	199,200
10% PRELIMINARY ENGINEERING	\$	18,100
TOTAL COST *	\$	248,300

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

Route:	STATE ROUTE 2 (US HIGHWAY 11)
Description:	SPOT IMPROVEMENT
	LOCATION 2
County:	BRADLEY
Length:	0.77 miles
Date:	8/5/2011

RIGHT-OF-WAY	\$	0
UTILITIES	\$	140,000
CLEAR AND GRUBBING	\$	0
EARTHWORK	\$	115,000
OBSTRUCTION/PAVEMENT REMOVAL	\$	0
DRAINAGE	\$	500,000
STRUCTURES	\$	0
RAILROAD CROSSING OR SEPARATION	\$	0
PAVING	\$	1,100,000
RETAINING WALLS	\$	0
MAINTENANCE OF TRAFFIC	\$	20,000
TOPSOIL	\$	10,000
SEEDING	\$	7,500
SODDING	\$	25,000
PAVEMENT MARKINGS	\$	30,000
SIGNING	\$	10,000
LIGHTING	\$	0
SIGNALIZATION	\$	0
FENCE	\$	0
GUARDRAIL	\$	0
RIP RAP OR SLOPE PROTECTION	\$	0
OTHER CONST. ITEMS (15%)	\$	272,600
MOBILIZATION	\$	99,100
CONSTRUCTION COST	\$	2,189,200
10% ENG. & CONT.	\$	218,900
TOTAL CONSTRUCTION COST	\$	2,408,100
10% PRELIMINARY ENGINEERING	\$	218,900
TOTAL COST *	\$	2,767,000

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

Route:	STATE ROUTE 2 (US HIGHWAY 11)
Description:	SPOT IMPROVEMENT
	LOCATION 3
County:	MCMINN
Length:	0.75 miles
Date:	8/5/2011

RIGHT-OF-WAY	\$	0
UTILITIES	\$	90,000
CLEAR AND GRUBBING	\$	0
EARTHWORK	\$	120,000
OBSTRUCTION/PAVEMENT REMOVAL	\$	0
DRAINAGE	\$	500,000
STRUCTURES	\$	0
RAILROAD CROSSING OR SEPARATION	\$	0
PAVING	\$	1,000,000
RETAINING WALLS	\$	0
MAINTENANCE OF TRAFFIC	\$	25,000
TOPSOIL	\$	12,000
SEEDING	\$	5,000
SODDING	\$	30,000
PAVEMENT MARKINGS	\$	32,000
SIGNING	\$	11,000
LIGHTING	\$	0
SIGNALIZATION	\$	0
FENCE	\$	0
GUARDRAIL	\$	0
RIP RAP OR SLOPE PROTECTION	\$	0
OTHER CONST. ITEMS (15%)	\$	260,300
MOBILIZATION	\$	94,800
CONSTRUCTION COST	\$	2,090,100
10% ENG. & CONT.	\$	209,000
TOTAL CONSTRUCTION COST	\$	2,299,100
10% PRELIMINARY ENGINEERING	\$	209,000
TOTAL COST *	\$	2,598,100

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

Route:	STATE ROUTE 2 (US HIGHWAY 11)
Description:	SPOT IMPROVEMENT
	LOCATION 4
County:	MCMINN
Length:	INTERSECTION
Date:	8/5/2011

RIGHT-OF-WAY	\$	0
UTILITIES	\$	100,000
CLEAR AND GRUBBING	\$	0
EARTHWORK	\$	120,000
OBSTRUCTION/PAVEMENT REMOVAL	\$	0
DRAINAGE	\$	575,000
STRUCTURES	\$	0
RAILROAD CROSSING OR SEPARATION	\$	0
PAVING	\$	1,250,000
RETAINING WALLS	\$	0
MAINTENANCE OF TRAFFIC	\$	20,000
TOPSOIL	\$	8,000
SEEDING	\$	6,000
SODDING	\$	20,000
PAVEMENT MARKINGS	\$	30,000
SIGNING	\$	10,000
LIGHTING	\$	0
SIGNALIZATION	\$	0
FENCE	\$	0
GUARDRAIL	\$	0
RIP RAP OR SLOPE PROTECTION	\$	0
OTHER CONST. ITEMS (15%)	\$	305,900
MOBILIZATION	\$	110,500
CONSTRUCTION COST	\$	2,455,400
10% ENG. & CONT.	\$	245,500
TOTAL CONSTRUCTION COST	\$	2,700,900
10% PRELIMINARY ENGINEERING	\$	245,500
TOTAL COST *	\$	3,046,400

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

## SUMMARY OF DETAILED COST ESTIMATES

**Route:** State Route 2 (US Highway 11)  
**Location:** Bradley County and McMinn County  
**Section Length:** 4.56 miles  
**Description:** Segment 1 - Urban section from south of Anatole Lane (L.M. 14.84) to Cleveland Urban Growth Boundary (L.M. 17.608), Rural section from Cleveland Urban Growth Boundary to State Route 308 (L.M. 19.40)  
**Date:** August 5, 2011

Item Description	Unit	Quantity	Low Unit Cost	High Unit Cost	Low Total	High Total
<b>Right-of-Way</b>						
Commercial	Acre	1.38	\$ 80,000		\$ 110,000	
Residential	Acre	12.4	\$ 40,000		\$ 496,000	
Tracts	Each	96	\$ 4,000		\$ 384,000	
<b>Total Right-of-Way Cost</b>					<b>\$ 990,000</b>	
<b>Utilities</b>						
Overhead Line Relocation	Pole	80	\$ 3,000		\$ 240,000	
Miscellaneous Adjustments	L.M.	4.56	\$ 100,000		\$ 456,000	
<b>Total Utility Cost</b>					<b>\$ 696,000</b>	
<b>Construction</b>						
5-Lane Urban Section	L.M.	2.768	\$ 3,230,000	\$ 4,370,000	\$ 8,941,000	\$ 12,096,000
5-Lane Rural Section	L.M.	1.792	\$ 2,190,000	\$ 2,962,000	\$ 3,924,000	\$ 5,308,000
<b>Construction Cost</b>					<b>\$ 12,865,000</b>	<b>\$ 17,404,000</b>
Mobilization					\$ 530,000	\$ 689,000
Erosion Control (3.5% of Construction Cost)					\$ 450,000	\$ 609,000
Other Construction Items (15% of Construction Cost)					\$ 1,930,000	\$ 2,611,000
Engineering & Contingency (10% of Construction Cost)					\$ 1,287,000	\$ 1,740,000
<b>Total Construction Cost</b>					<b>\$ 17,062,000</b>	<b>\$ 23,053,000</b>
Preliminary Engineering (10% of Total Construction Cost)					\$ 1,706,000	\$ 2,305,000
<b>TOTAL PROJECT COST <sup>(1)</sup></b>					<b>\$ 20,454,000</b>	<b>\$ 27,044,000</b>

<sup>(1)</sup> For estimating future project cost, a compounded inflation rate of 10% per year will be applied from the date of this estimate.

**SUMMARY OF DETAILED COST ESTIMATES**

**Route:** State Route 2 (US Highway 11)  
**Location:** Bradley County and McMinn County  
**Section Length:** 2.65 miles  
**Description:** Segment 2 - Urban section from State Route 308 (L.M. 19.40) in Bradley County to State Route 163 (L.M. 1.07) in McMinn County  
**Date:** August 5, 2011

Item Description	Unit	Quantity	Low Unit Cost	High Unit Cost	Low Total	High Total
<b>Right-of-Way</b>						
Commercial	Acre	1.69	\$ 100,000		\$ 169,000	
Residential	Acre	5.07	\$ 50,000		\$ 254,000	
Tracts	Each	110	\$ 4,000		\$ 440,000	
<b>Total Right-of-Way Cost</b>					<b>\$ 863,000</b>	
<b>Utilities</b>						
Overhead Line Relocation	Pole	50	\$ 3,000		\$ 150,000	
Miscellaneous Adjustments	L.M.	2.65	\$ 125,000		\$ 331,000	
<b>Total Utility Cost</b>					<b>\$ 481,000</b>	
<b>Construction</b>						
5-Lane Urban Section	L.M.	2.65	\$ 3,230,000	\$ 4,370,000	\$ 8,560,000	\$ 11,581,000
<b>Construction Cost</b>					<b>\$ 8,560,000</b>	<b>\$ 11,581,000</b>
Mobilization					\$ 372,000	\$ 485,000
Erosion Control (3.5% of Construction Cost)					\$ 300,000	\$ 405,000
Other Construction Items (15% of Construction Cost)					\$ 1,284,000	\$ 1,737,000
Engineering & Contingency (10% of Construction Cost)					\$ 856,000	\$ 1,158,000
<b>Total Construction Cost</b>					<b>\$ 11,372,000</b>	<b>\$ 15,366,000</b>
Preliminary Engineering (10% of Total Construction Cost)					\$ 1,137,000	\$ 1,537,000
<b>TOTAL PROJECT COST <sup>(1)</sup></b>					<b>\$ 13,853,000</b>	<b>\$ 18,247,000</b>

<sup>(1)</sup> For estimating future project cost, a compounded inflation rate of 10% per year will be applied from the date of this estimate.

## SUMMARY OF DETAILED COST ESTIMATES

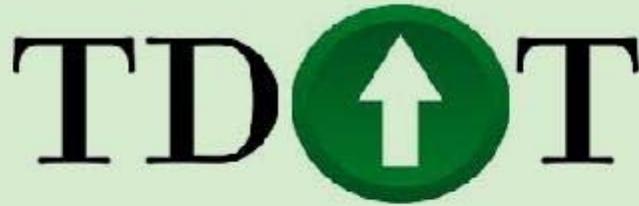
**Route:** State Route 2 (US Highway 11)  
**Location:** Bradley County and McMinn County  
**Section Length:** 6.35 miles  
**Description:** Segment 3 - Divided section from State Route 163 (L.M. 1.07) to Dry Valley Creek (L.M. 6.41), Urban section from Dry Valley Creek to State Route 39 (L.M. 7.42)  
**Date:** August 5, 2011

Item Description	Unit	Quantity	Low Unit Cost	High Unit Cost	Low Total	High Total
<b>Right-of-Way</b>						
Commercial	Acre	3.44	\$ 60,000		\$ 206,000	
Residential	Acre	65.29	\$ 30,000		\$ 1,959,000	
Tracts	Each	100	\$ 4,000		\$ 400,000	
<b>Total Right-of-Way Cost</b>					<b>\$ 2,565,000</b>	
<b>Utilities</b>						
Overhead Line Relocation	Pole	110	\$ 3,000		\$ 330,000	
Miscellaneous Adjustments	L.M.	1.01	\$ 75,000		\$ 76,000	
<b>Total Utility Cost</b>					<b>\$ 406,000</b>	
<b>Construction</b>						
4-Lane Divided Section	L.M.	5.34	\$ 2,420,000	\$ 3,275,000	\$ 12,923,000	\$ 17,489,000
5-Lane Urban Section	L.M.	1.01	\$ 3,230,000	\$ 4,370,000	\$ 3,262,000	\$ 4,414,000
<b>Construction Cost</b>					<b>\$ 16,185,000</b>	<b>\$ 21,903,000</b>
Mobilization					\$ 646,000	\$ 837,000
Erosion Control (3.5% of Construction Cost)					\$ 566,000	\$ 767,000
Other Construction Items (15% of Construction Cost)					\$ 2,428,000	\$ 3,285,000
Engineering & Contingency (10% of Construction Cost)					\$ 1,619,000	\$ 2,190,000
<b>Total Construction Cost</b>					<b>\$ 21,444,000</b>	<b>\$ 28,982,000</b>
Preliminary Engineering (10% of Total Construction Cost)					\$ 2,144,000	\$ 2,898,000
<b>TOTAL PROJECT COST <sup>(1)</sup></b>					<b>\$ 26,559,000</b>	<b>\$ 34,851,000</b>

<sup>(1)</sup> For estimating future project cost, a compounded inflation rate of 10% per year will be applied from the date of this estimate.

## **APPENDIX B**

# **EARLY ENVIRONMENTAL SCREENING**



**Tennessee Department of Transportation**  
**EARLY ENVIRONMENTAL SCREENING PROCESS (EES)**  
**PROJECT SCORING**

**Project Score Factors**

	Total Impacts Evaluated	Total Impacts to Evaluate	EES Evaluation
<b>Project Impact Areas:</b>	<b>15</b>	<b>15</b>	<b>Complete</b>
<b>Date of Evaluation:</b>	March 22, 2011		
<b>Evaluation done by:</b>	Glenda Tyus		
	Transportation Planner 4		
<b>County:</b>	Bradley and McMinn Counties		
<b>Route:</b>	SR-2 (US-11) to SR-39		
<b>PIN:</b>	114209.00		
<b>Termini:</b>	SR-2 (US-11) from Anatole Lane in Cleveland to SR-39		

<b>Impact Ranking of Features Evaluated:</b>	<b>Total by Rank</b>
--	----------------------

<b>Features with No Impact</b>	<b>12</b>
--------------------------------	-----------

- Cemetery Sites & Cemetery Properties
- National Register Sites
- Bat
- Terrestrial Species
- Aquatic Species
- TDEC Conservation Sites & TDEC Scenic Waterways
- Superfund Sites
- Caves
- Pyritic Rock
- Tennessee Natural Areas Program
- Wildlife Management Areas
- TWRA Lakes & Other Public Lands

<b>Features with Low Impact</b>	<b>1</b>
---------------------------------	----------

Railroads

**Features with Moderate Impact** 0

**Features with Substantial Impact** 1

Large Wetland Impacts

**Community Impacts Present:**

**Institutions:**

**Populations:**

No population present

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

<b>Project Impact (Environmental, Time, Cost, Design, and Maintenance)</b>	<input checked="" type="checkbox"/> <b>None</b> - 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

	Present	Not Present
<b>Institutions:</b>		
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"/>
<b>Populations:</b>		
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 type="checkbox"/>	<input checked="" 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"/>



## 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>None</b> – No impact on the project is anticipated as there area no parks located within or abutting the project study area or corridor.
--	---

# 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.
--	---

**APPENDIX C**

**STAKEHOLDER MEETING  
ATTENDEE LIST**

# TPR Stakeholder Field Review - Sign-In Sheet

Location: Bradley and McMinn County  
 Roadway: State Route 2  
 Section: From State Route 308 to State Route 39  
 Date of Field Review: February 3, 2011

NAME	ORGANIZATION	TITLE	PHONE #	EMAIL ADDRESS
BRANDON BAXTER	RAGAN-SMITH	PROJECT ENGINEER	615-244-8591	bbraxt@cagan-smith.com
GARY CHAPMAN	TDOT	Reg. Surv. Supv.	423-510-1144	gary.chapman@tn.gov
MIKE GILBERT	TDOT	ROADWAY SPEC II	741-0772	michael.gilbert@tn.gov
Glenda Tyus	TDOT	TRANSPLANNER 4	445-1816	Glenda.Tyus@tn.gov
GENA GILLIAM	TDOT	TRANS. PLANNER 4	615-253-7692	GENA.GILLIAM@TN.GOV
JOE GRIFFAN	RAEAN SMITH	SR. V.P.	415-244-8571	J5nifin@raean-smith.com
Tyler King	TDOT	Trans Mgr. I	615-253-2781	Tyler.King@tn.gov
Faye Parks	Calhoun City	MAYOR	423-336-2967	Maryofayef@calhoun.net
John Parks	"	COMMISSIONER	423-336-2967	
ST Johnston	CITY OF CHATTANOOGA	STREET DEPT	423-257-9212	Shere@Beesours.net
Russ Commichaud	handowner		336-8225	russ@vmodwindsping.com
Landon Castleberry	TDOT TRAFFIC	OPS. SPEC. II	423-510-1180	LANDON.T.CASTLEBERRY@TN.GOV
Alan Wolfe	TDOT	Reg 2 Traffic Eng	423-510-1039	Alan.Wolfe@tn.gov
Randall May	McMinn Co. Highway Comm.	Highway Comm.	745-1820	



**APPENDIX D**

**AERIAL MAPPING**

Index Of Sheets

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTIONS
3-10	CORRIDOR LAYOUTS

STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION  
BUREAU OF ENGINEERING

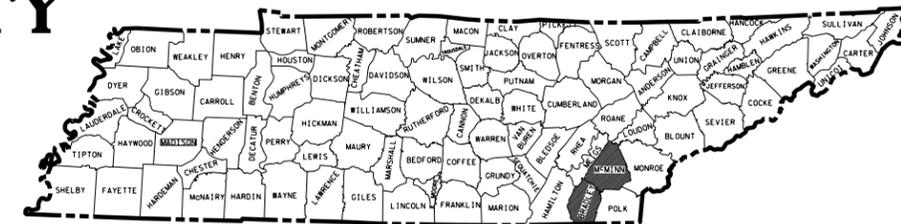
TENN.	YEAR	SHEET NO.
	2011	1
FED. AID PROJ. NO.		
STATE PROJ. NO.		

**BRADLEY & McMINN COUNTY**

STATE ROUTE 2 (US HIGHWAY 11)  
FROM SOUTH OF ANATOLE LANE TO STATE ROUTE 39

**TRANSPORTATION PLANNING REPORT**

STATE HIGHWAY NO. 2 F.A.H.S. NO. 11



PROJECT LOCATION



BEGIN CORRIDOR



END CORRIDOR

**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.

THIS PROJECT TO BE CONSTRUCTED UNDER THE STANDARD SPECIFICATIONS OF THE TENNESSEE DEPARTMENT OF TRANSPORTATION DATED MARCH 1, 2006 AND ADDITIONAL SPECIFICATIONS AND SPECIAL PROVISIONS CONTAINED IN THE PLANS AND IN THE PROPOSAL CONTRACT.

TDOT C.E. MANAGER 1 OR  
TDOT DESIGN MANAGER 1 \_\_\_\_\_

DESIGNED BY \_\_\_\_\_ CHECKED BY \_\_\_\_\_  
DESIGNER \_\_\_\_\_

P.E. NO. \_\_\_\_\_

PIN NO. 114209.00

SCALE: 1" = 1 MILE

APPROVED: *Paul D. Degges*  
PAUL D. DEGGES, CHIEF ENGINEER

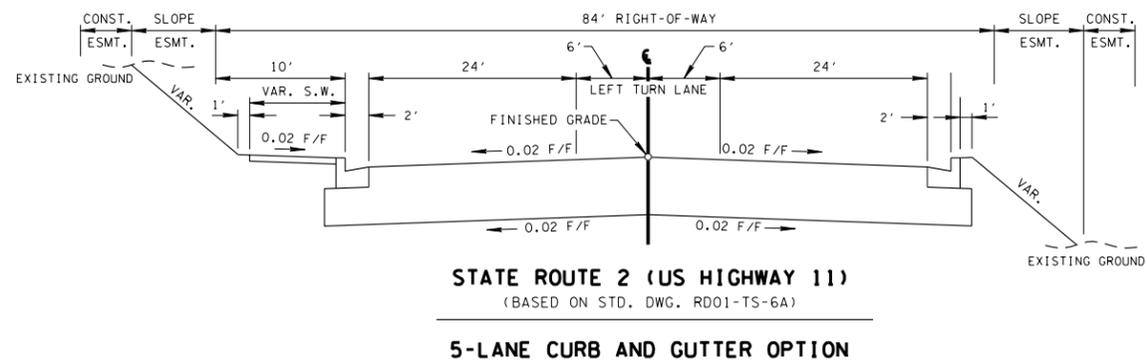
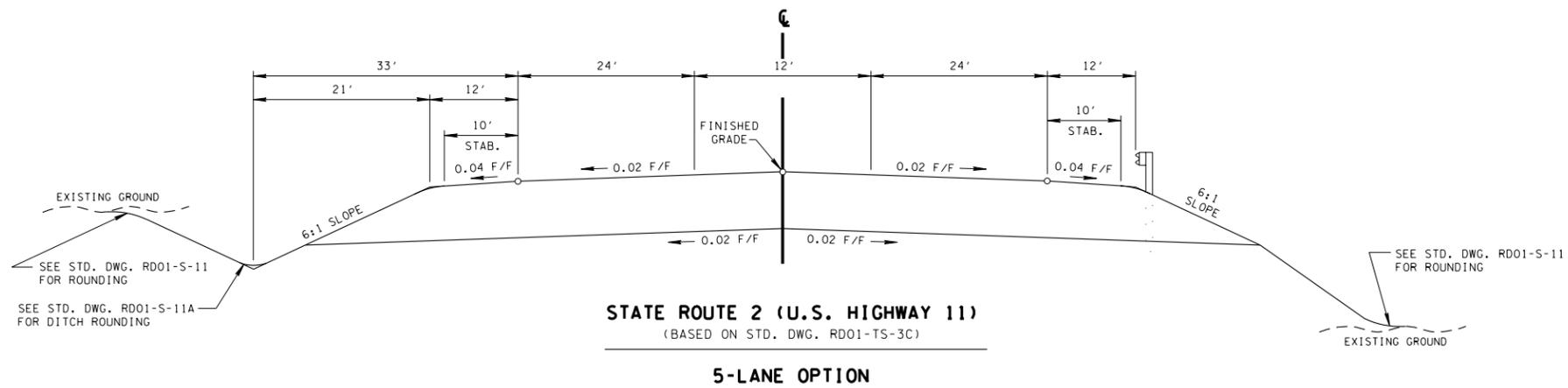
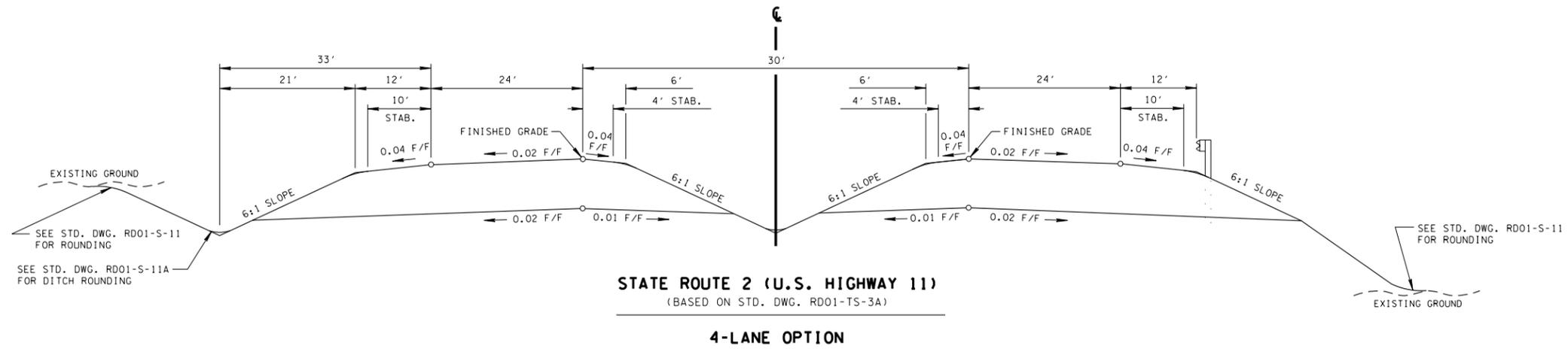
DATE: \_\_\_\_\_

APPROVED: *John Schroer*  
JOHN SCHROER, COMMISSIONER

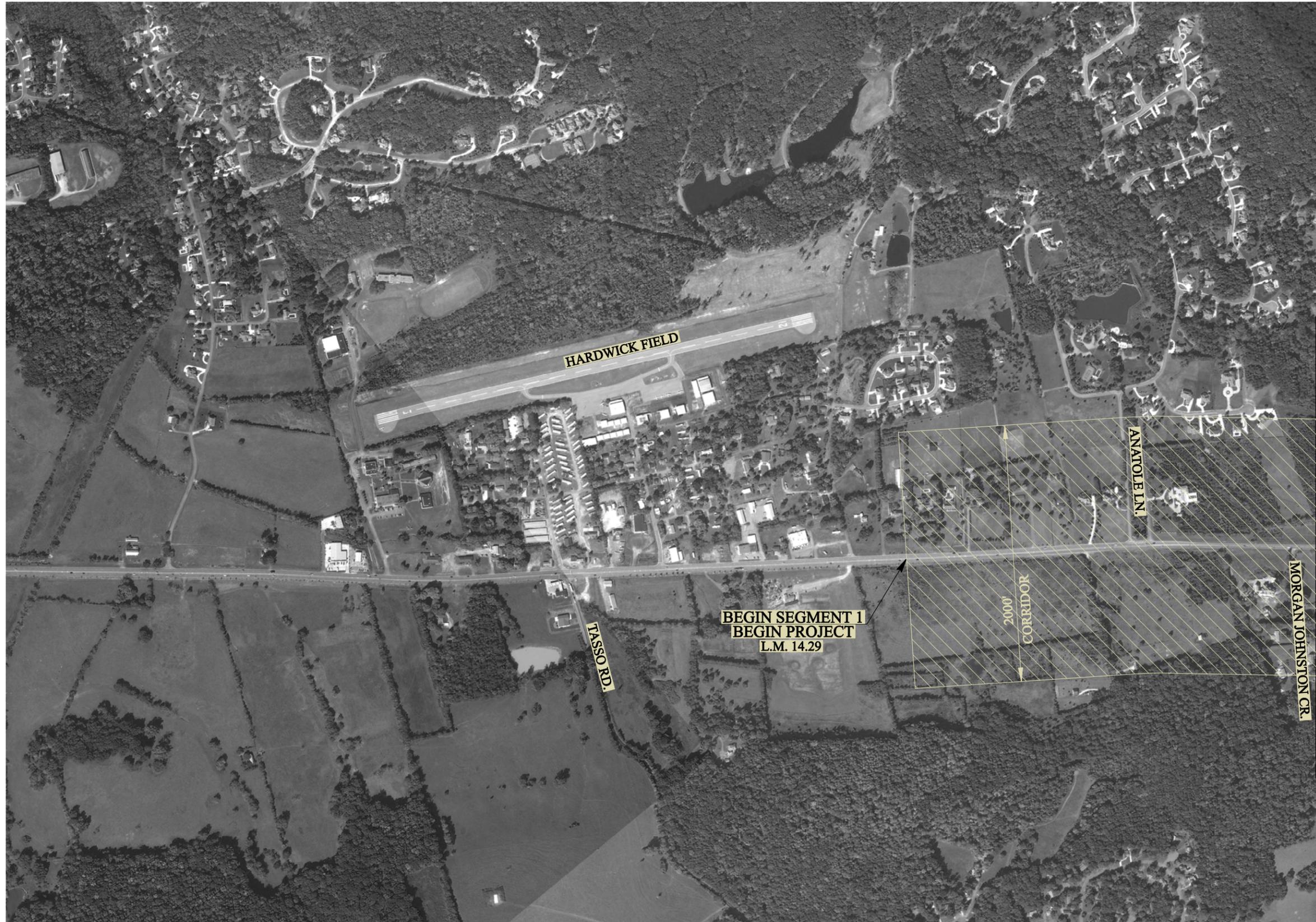
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: \_\_\_\_\_  
DIVISION ADMINISTRATOR DATE

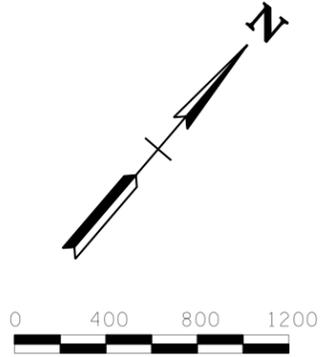
TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2011		2



TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2011		3



MATCH LINE SEE SHEET NO. 4

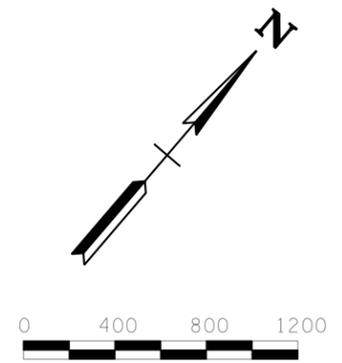


TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2011		4



MATCH LINE SEE SHEET NO. 3

MATCH LINE SEE SHEET NO. 5

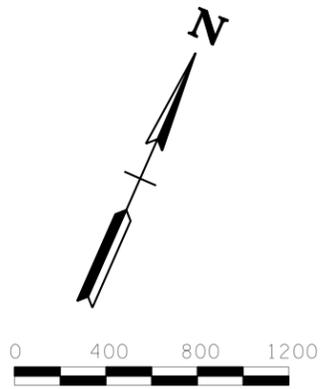


TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2011		5



MATCH LINE SEE SHEET NO. 4

MATCH LINE SEE SHEET NO. 6



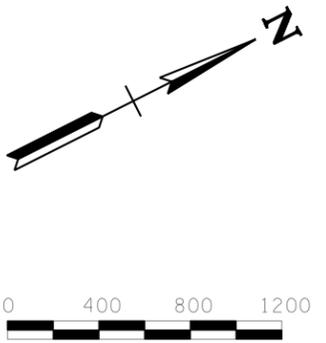
STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION  
**CORRIDOR  
 LAYOUT**

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2011		6



MATCH LINE SEE SHEET NO. 5

MATCH LINE SEE SHEET NO. 7



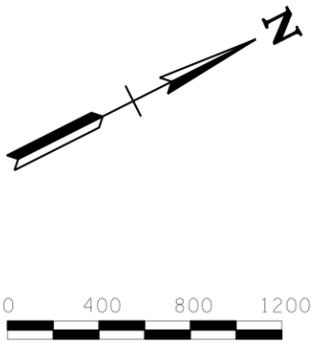
STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION  
**CORRIDOR  
 LAYOUT**

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2011		7



MATCH LINE SEE SHEET NO. 6

MATCH LINE SEE SHEET NO. 8



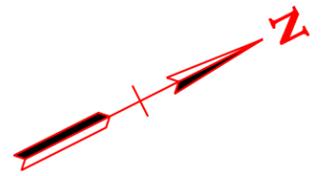
STATE OF TENNESSEE  
 DEPARTMENT OF TRANSPORTATION  
**CORRIDOR  
 LAYOUT**

TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2011		8



MATCH LINE SEE SHEET NO. 9

MATCH LINE SEE SHEET NO. 7

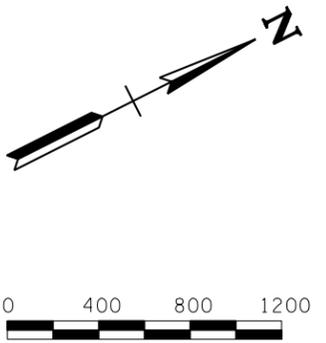


TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2011		9



MATCH LINE SEE SHEET NO. 8

MATCH LINE SEE SHEET NO. 10



TYPE	YEAR	PROJECT NO.	SHEET NO.
TPR	2011		10

MATCH LINE SEE SHEET NO. 9

