DATA VISUALIZATION

PORTFOLIO

TDOT
Department of Transportation
Long Range Planning Division
Data Visualization Office

Team Members

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Table of Contents

Rural Regional Transportation Plans

The objective of this collaborative project is to create long range transportation plans for all 12 RPO's in the State. The Data Visualization office has created the report template, developed maps, produced graphics, and performed data analysis for the first four RPO plans. The remaining eight plans are scheduled for design in 2018.

Trousdale County

Goals and Objectives

Goals and Objectives for the region were developed based upon collective regional concerns. The TDOT 25-Year Long-Range Transportation Policy Plan provided a foundation to "connect people to communities, people to businesses, businesses to each other, and visitors to our state."

The regional goals were identified during the one-on-one meeting process that took place with each county. The goals listed below were the most commonly shared throughout the region. It should be noted each county had individual goals and those goals are also listed. However, the priority of the Rural Regional Transportation Plan is to address and strategize for the Dale Hollow Planning Organization's regional transportation network.

GOAL 1 ***Improve safety throughout the region***

GOAL 2 ***Provide multimodal access***

GOAL 3 ***Create economic development opportunities through various transportation initiatives***

GOAL 4 ***Address tractor trailer traffic along roads that are unable to handle the capacity***

Figure 1.1

TDOT, in conjunction with 12 Rural Planning Organizations (RPOs) across the state, is collaborating in planning efforts for the development of Rural Regional Transportation Plans. The purpose of the plans is to increase the efficiency and effectiveness of the state's rural transportation infrastructure investments and to increase the economic competitiveness of the state's rural regions.

Source: TDOT Website

Statewide Transportation Long Range Plan Goals

- Provide the latest planning data and tools
- Increase the responsibility to encompass more multimodal considerations
- Create a process that fosters a more needs-based approach including land-use and transportation

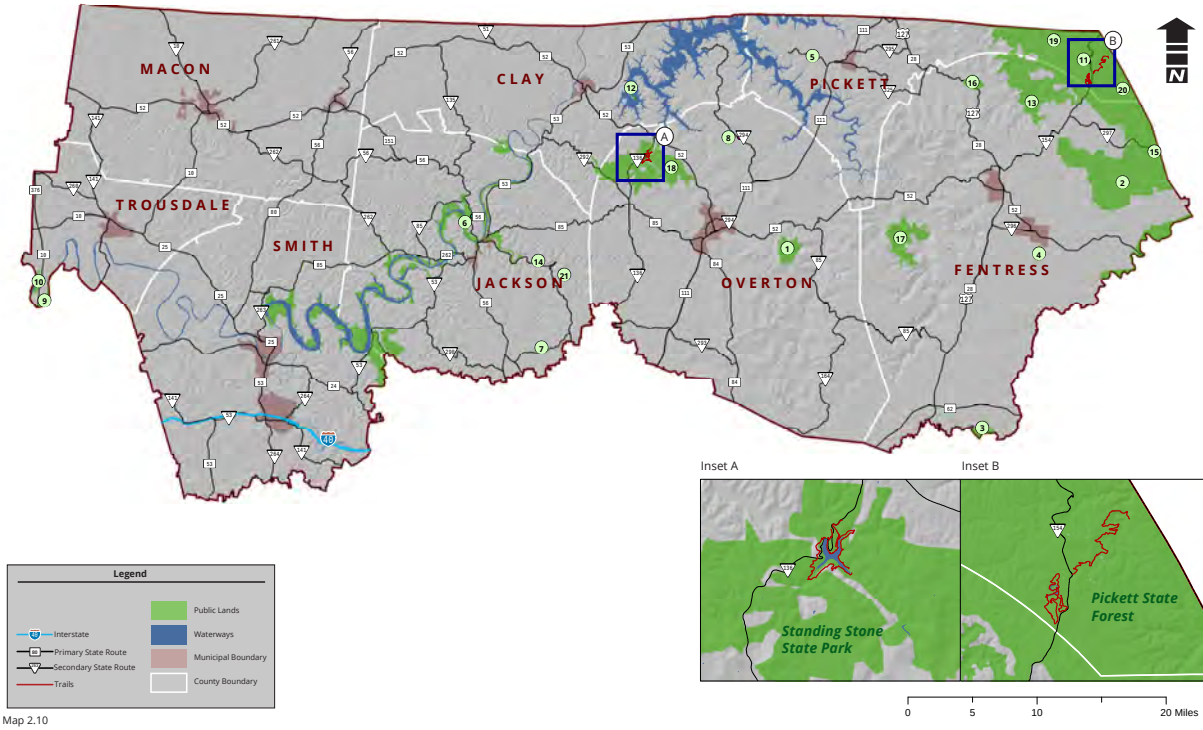
Local stakeholders provided excellent input, the kind of grassroots information not readily attainable from a map. Combine that with TDOT's outstanding analysis of each county and the region as a whole, I think the Rural Regional Transportation Plan will benefit the Dale Hollow region for years to come.

» ***Dale Hollow RPO Chair Michael Nesbitt***

Trousdale County

Dale Hollow Rural Planning Organization
TN TDOT Department of Transportation

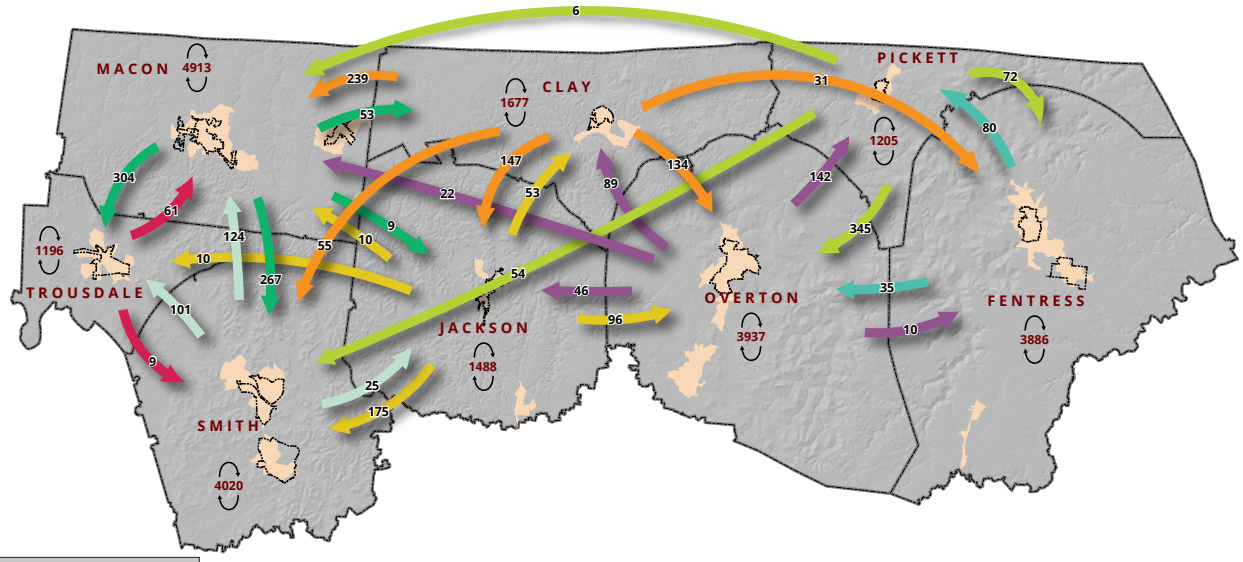
Dale Hollow Public Lands & Trails



Map 2.10

Introduction & Overview
Demographic & Land Use Trends
Regional Transportation System
Goals & Objectives
Recommendations
References & Appendix

Commuting Patterns and Activity Centers



Legend
- Clay
- Fentress
- Jackson
- Macon
- Pickett
- Overton
- Smith
- Trousdale
- 4020 In-County Commute
- Activity Centers
- Municipal Boundary
- County Boundary

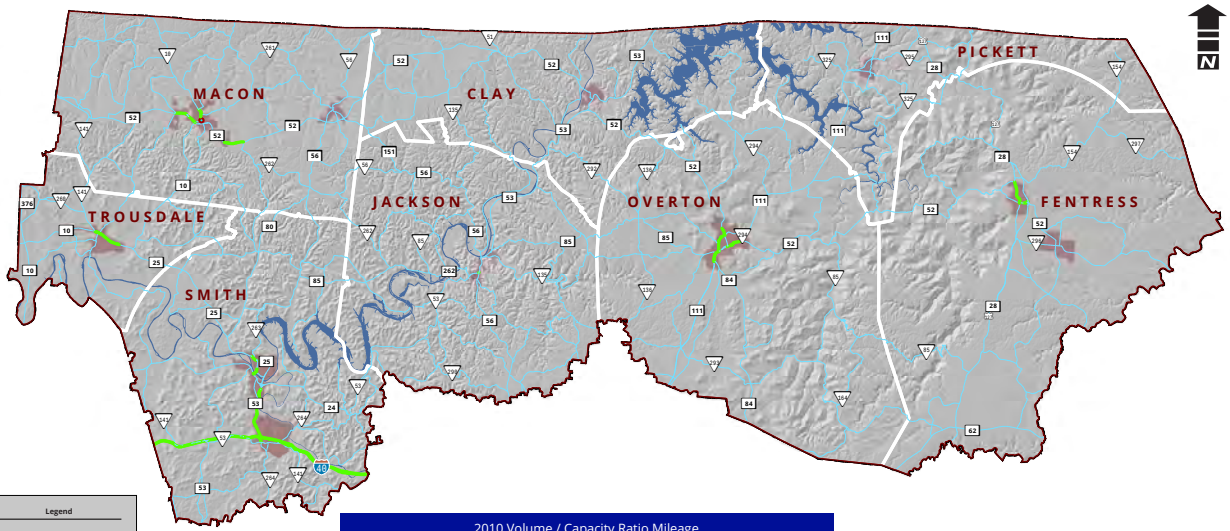
Arrows and numbers show the number of the origin county's working population that travels to another county for work. The number of workers that live and work in the same county are represented by the cyclical arrow symbol

0 5 10 20 Miles

Map 3.17

Dale Hollow Rural Planning Organization
TN TDOT Department of Transportation

Dale Hollow Volume / Capacity Ratio - 2010



Legend
- Volume/Capacity Ratio
- 0.00 - 0.24
- 0.25 - 0.49
- 0.50 - 0.74
- 0.75 - 0.99
- 1.00 +
- Primary State Route
- Secondary State Route
- Local Routes (No Data)
- Municipal Boundary

Map 3.13

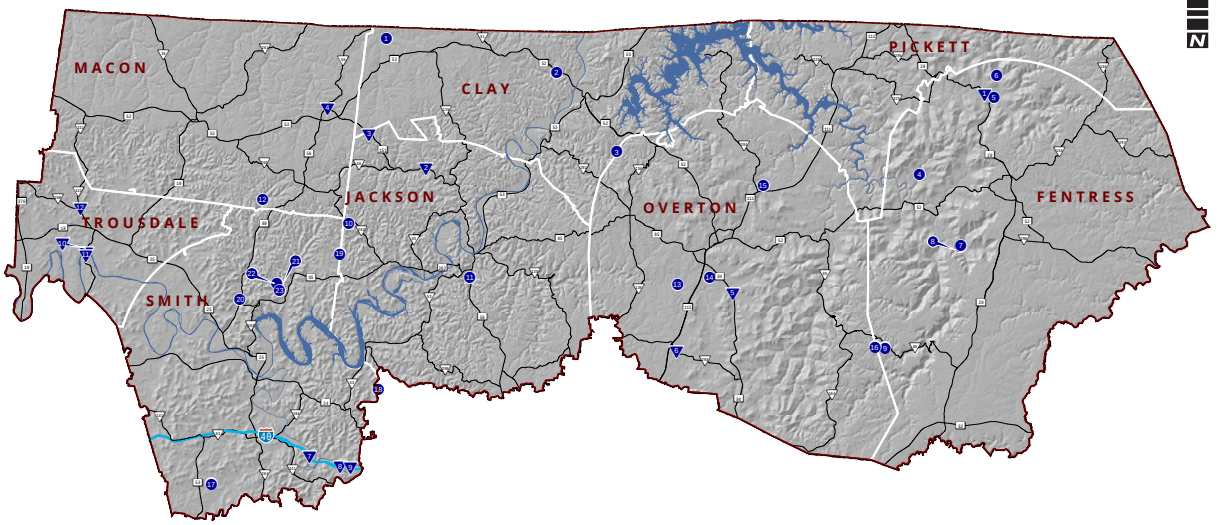
2010 Volume / Capacity Ratio Mileage

County	0.000 - 0.249	0.250 - 0.499	0.500 - 0.749	0.750 - 0.999	1.000+
Clay	128.86	0	0	0	0
Fentress	190.92	2.21	0	0	0
Jackson	228.54	0.02	0	0	0
Macon	222.49	3.97	0.03	0	0.02
Overton	252.92	4.57	0	0	0
Pickett	86.8	0	0	0	0
Smith	222.57	40.98	0	0	0
Trousdale	81.96	2.06	0	0	0

Table 3.4

0 5 10 20 Miles

Dale Hollow Structurally Deficient Bridges



Map 3.2

Table 3.1

Figure 3.4 : Bicycle and Pedestrian Crashes in Dale Hollow

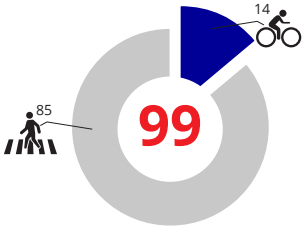


Figure 3.5 : Bicycle and Pedestrian Crashes by Location

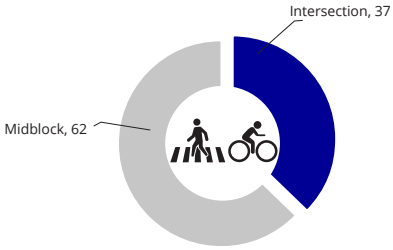


Figure 3.6: Bicycle and Pedestrian Crashes in Dale Hollow Counties

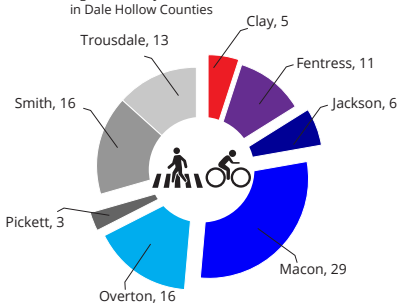


Figure 3.7 : Bicycle and Pedestrian Crashes by Weather Conditions

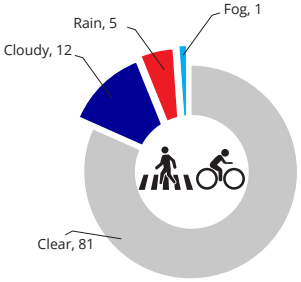


Figure 3.8 : Bicycle and Pedestrian Crashes by Light Conditions

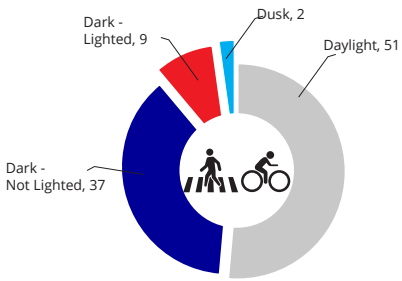
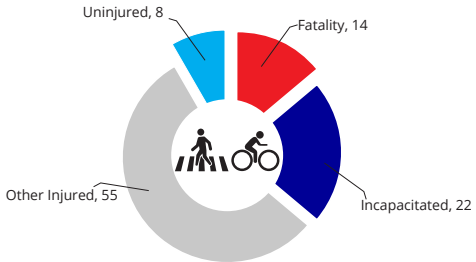


Figure 3.9 : Bicycle and Pedestrian Crashes by Severity



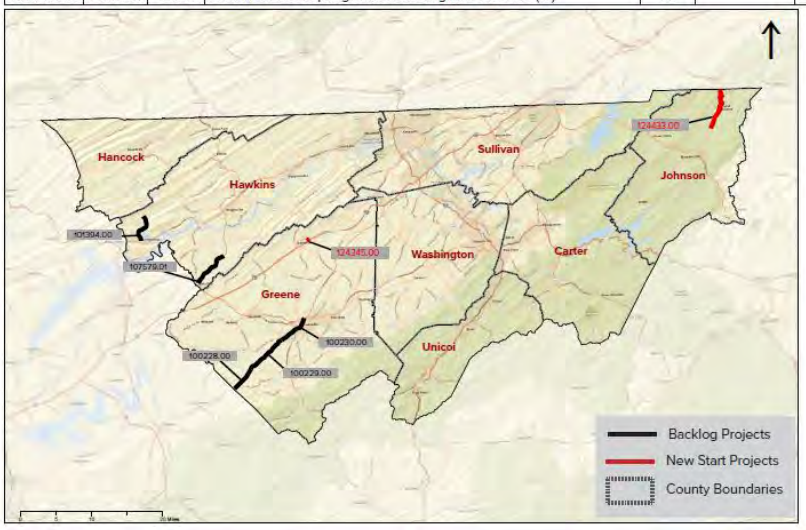
RPO Project Ranking Profiles

The objective of this project was to provide the RPO's with specific traffic and project data for each of the 3-year work program projects located within their jurisdictions. Each RPO was tasked with ranking their 3-year work program projects in regards to priority and in order to do so they needed data relevant to each project. The Data Visualization office created project profiles within each of the 12 RPO's, totally 123 projects. Each individual project profile provides the purpose and need for each project, two maps showing the project location, and a table detailing all relevant traffic data for the project (existing/forecasted traffic volume, truck volume, v/c ratio, and crash rates).

First Tennessee RPO's

Candidate Projects for TDOT's FY 2019-2021 Three Year Program

PIN	County	Route	Termini	Phase	RPO Ranking[1]	AADT 2016[2]	AADT 2040[3]	Truck AADT 2016[4]	V/C Ratio 2010[5]	Section Crash Rate[6]
100228.00	Greene	SR-35 (US-321)	(Newport Hwy.) From North of Cocke County Line to North of Nolichucky River (Bright Hope Road) (IA)	Construction		2,510 - 3,510	1,550 - 1,945	211 - 226	0.079 - 0.103	0.649
100229.00	Greene	SR-35 (US-321)	(Newport Hwy.) From North of Nolichucky River (Bright Hope Road) to South of SR-349 (Warrensburg Rd.) near Pate Lane (Re-Budgeted-ROW) (IA)	Right-of-Way		3,510 - 5,610	3,957 - 6,068	211 - 281	0.103 - 0.181	0.531
100230.00	Greene	SR-35 US-231	(Newport Hwy.) From Sotuh of SR-349 (Warrensburg Rd.) near Pates Lane to near SR-34 (US-11E) (Re-Budgeted-ROW) (IA)	Right-of-Way		3,930 - 10,870	3,881 - 10,761	128 - 284	0.118 - 0.479	0.669
101394.00	Hawkins	SR-31	(Flat Gap Rd.) From Mooresburgh to Adams Lane (Re-budgeted-ROW) (IA)	Right-of-Way		2,250 - 3,040	2,421 - 3,180	91	0.064 - 0.080	0.507
107579.00	Hawkins	SR-66	From SR-34 in Bulls Gap to South of Speedwell Road./Old Highway 66 (IA)	Right-of-Way		3,770 - 4,450	4,159 - 6,405	189 - 223	0.105 - 0.184	0.404
124345.00	Greene	I-81	Greene County Rest Area Renovation (IA)	PE		27,320	36,632 - 37,816	9,562	0.224 - 0.288	0.152
124433.00	Johnson	SR-91	From Near Cold Springs Rd. to the Virginia State Line (IA)	PE		2,990 - 4,120	2,929 - 4,603	288 - 299	0.077 - 0.123	0.760



Data Notes:

1 - Overall project priority, to be determined by RPO.

2 - Average Annual Daily Traffic, TRIMS 2016 Data.

3 - Forecasted Average Annual Daily Traffic for the year 2040, forecasted data using the Statewide Travel Demand Model.

4 - Average Annual Daily Traffic for Trucks, TRIMS 2016 Data.

5 - Traffic Volume/Traffic Capacity for the year 2010, calculated using the Statewide Travel Demand Model. A V/C ratio of 0.5 is generally considered average and as the value increases and nears 1, it represents a road that is becoming more congested.

6 - Section crash rates are the number of crashes per million vehicle miles. Higher numbers do not necessarily mean that more crashes occur and may or may not signify safety deficiencies. These crash rates were calculated using data from 2012-2014 and compared against the 2012-2014 statewide average for each road type.

Higher Than Average — Lower Than Average

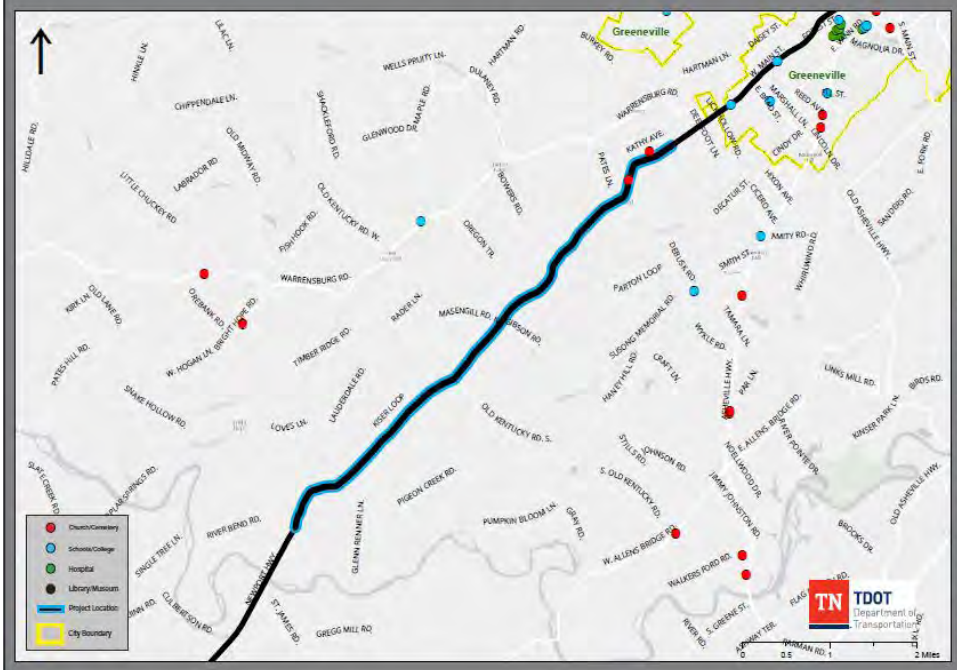
TN TDOT Department of Transportation

This is an IMPROVE Act Project

SR - 35 (US - 321)
Greene County, 100229.00

Purpose and Need:
This is an IMPROVE Act Project.

PIN	Project Type & Description[1]	Status & Funding[2]	Cost[3]	2016 AADT[4]	2040 AADT[5]	2016 Truck AADT[6]	2040 Truck AADT[7]	2010 V/C Ratio[8]	2040 V/C Ratio[9]	Section Crash Rate[10]
100229.00	(Newport Hwy.) From North of Nolichucky River (Bright Hope Road) to South of SR-349 (Warrensburg Rd.) near Pate Lane (***) (Re-Budgeted-ROW) (IA)	Active PE: 96/97	$34,800,000	3,510 - 5,610	3,957 - 6,068	211 - 281	228 - 371	0.103 - 0.181	0.123 - 0.222	0.531



Data Notes:

1-3 - Project Type & Description, Status & Funding, and Cost information were gathered from PPRM (Project Programming Resource Management) and the Statewide Project Overview Tracker (SPOT) Map.

4 - Average Annual Daily Traffic, TRIMS 2016 Data.

5 - Forecasted Average Annual Daily Traffic for the year 2040, forecasted data using the Statewide Travel Demand Model.

6 - Average Annual Daily Traffic for Trucks, TRIMS 2016 Data.

7 - Forecasted Average Annual Daily Truck Traffic for the year 2040, forecasted data using the Statewide Travel Demand Model.

8 - Traffic Volume/Traffic Capacity for the year 2010, calculated using the Statewide Travel Demand Model. A V/C ratio of 0.5 is generally considered average and as the value increases and nears 1, it represents a road that is becoming more congested.

9 - Traffic Volume/Traffic Capacity for the year 2040, calculated using the Statewide Travel Demand Model. A V/C ratio of 0.5 is generally considered average and as the value increases and nears 1, it represents a road that is becoming more congested.

10 - Section crash rates are the number of crashes per million vehicle miles. Higher numbers do not necessarily mean that more crashes occur and may or may not signify safety deficiencies. These crash rates were calculated using data from 2012-2014 and compared against the 2012-2014 statewide average for each road type. The crash rates were then measured against the Statewide Crash Average for each individual type of road to determine the appropriate color ramp.

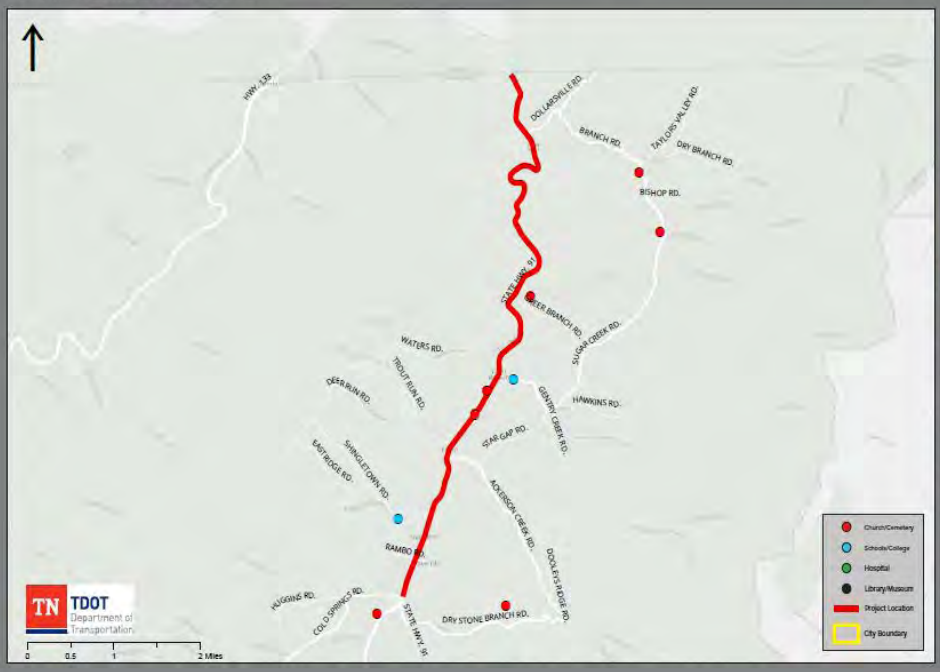
Higher Than Average — Lower Than Average

This is an IMPROVE Act Project

SR - 91
Johnson County, 124433.00

Purpose and Need:
The primary purpose and need for the proposed improvement options is to provide a more efficient system linkage between Mountain City and I-81 to the north suitable for various types including local traffic, tourists, non-motorized users, and commericial truck traffic.

PIN	Project Type & Description[1]	Status & Funding[2]	Cost[3]	2016 AADT[4]	2040 AADT[5]	2016 Truck AADT[6]	2040 Truck AADT[7]	2010 V/C Ratio[8]	2040 V/C Ratio[9]	Section Crash Rate[10]
124433.00	From near Cold Springs Rd. to the Virginia State Line	Active	$90,000,000	2,990 - 4,120	2,929 - 4,603	288 - 299	401 - 704	0.077 - 0.123	0.092 - 0.144	0.760



Data Notes:

1-3 - Project Type & Description, Status & Funding, and Cost information were gathered from PPRM (Project Programming Resource Management) and the Statewide Project Overview Tracker (SPOT) Map.

4 - Average Annual Daily Traffic, TRIMS 2016 Data.

5 - Forecasted Average Annual Daily Traffic for the year 2040, forecasted data using the Statewide Travel Demand Model.

6 - Average Annual Daily Traffic for Trucks, TRIMS 2016 Data.

7 - Forecasted Average Annual Daily Truck Traffic for the year 2040, forecasted data using the Statewide Travel Demand Model.

8 - Traffic Volume/Traffic Capacity for the year 2010, calculated using the Statewide Travel Demand Model. A V/C ratio of 0.5 is generally considered average and as the value increases and nears 1, it represents a road that is becoming more congested.

9 - Traffic Volume/Traffic Capacity for the year 2040, calculated using the Statewide Travel Demand Model. A V/C ratio of 0.5 is generally considered average and as the value increases and nears 1, it represents a road that is becoming more congested.

10 - Section crash rates are the number of crashes per million vehicle miles. Higher numbers do not necessarily mean that more crashes occur and may or may not signify safety deficiencies. These crash rates were calculated using data from 2012-2014 and compared against the 2012-2014 statewide average for each road type. The crash rates were then measured against the Statewide Crash Average for each individual type of road to determine the appropriate color ramp.

Higher Than Average — Lower Than Average

INFRA Grant Support

The Data Visualization office assisted with the INFRA (Infrastructure for Rebuilding America) Grant submittal for Lamar Avenue and the I-69 corridor. The Data Visualization Office provided analysis and support by creating project location maps, I-69 freight data acquisition and analysis, summarizing each state's Long Range Transportation Plan (LRTP), Freight Plans, and State Improvement Projects (STIPs). To facilitate submittals, the Data Visualization office created report templates for both the I-69 corridor and Lamar Avenue.

I-69 was divided into five separate segments running southeast to northwest from east of Dyersburg to north of Union City. Table 2 presents the previously incurred costs on the project.

Table 2 Previously Incurred Costs*

Cost Categories	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Total
PE	$1,968,425	$1,836,820	$2,143,248	$65,689	$3,176,883	$9,191,065
ROW Acquisition	$15,370,962	$2,930,048	$3,708,208	$5,758,411	$4,462,890	$32,250,519
Utility	$0.00	$0.00	$1,496,155	$0.00	$824,921	$2,321,076
Construction	$0.00	$0.00	$22,293,700	$42,607,740	$0.00	$64,901,440
Total	$17,339,387	$4,766,868	$29,641,311	$48,431,840	$8,464,694	$108,664,100
(%Fed / %State)	50/50	50/50	50/50	50/50	50/50	50/50

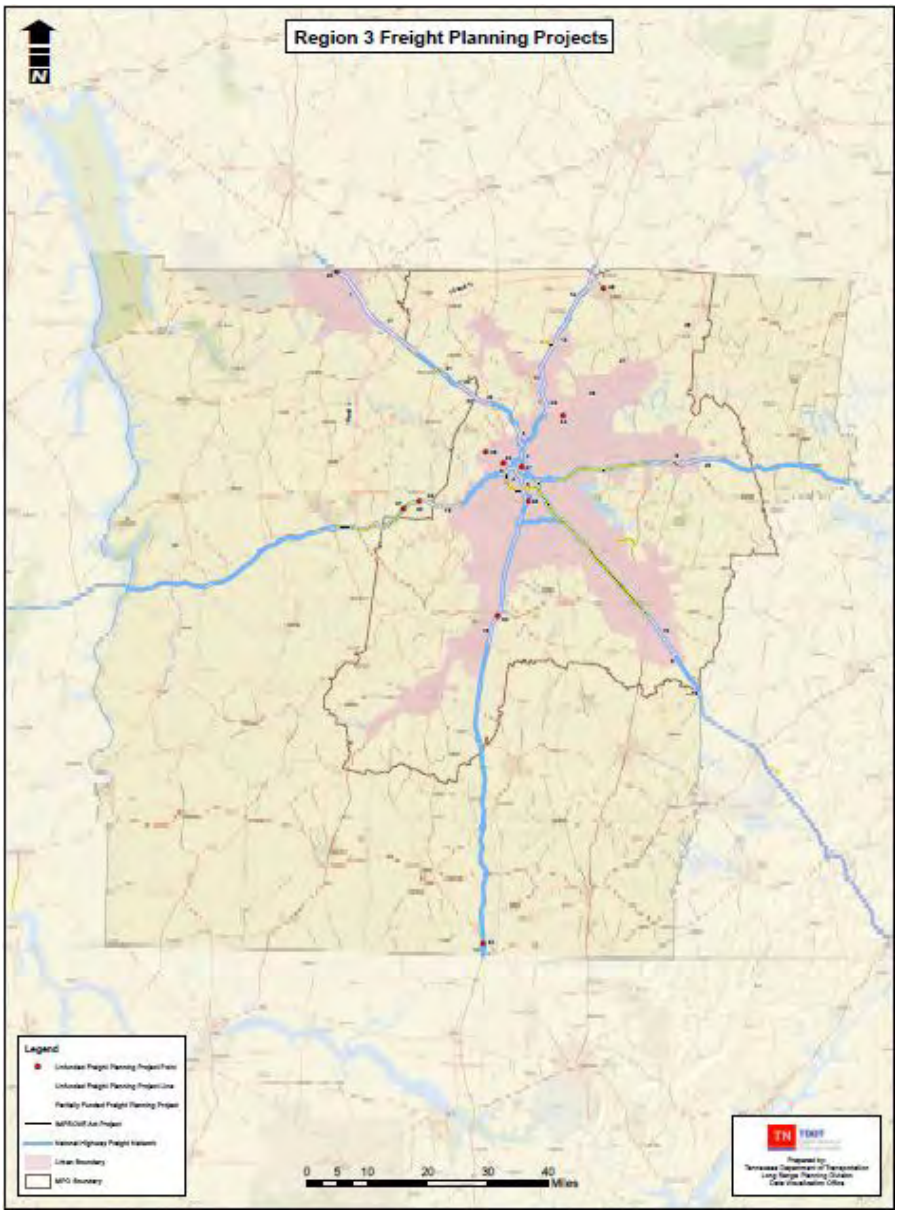
*2016 Dollars

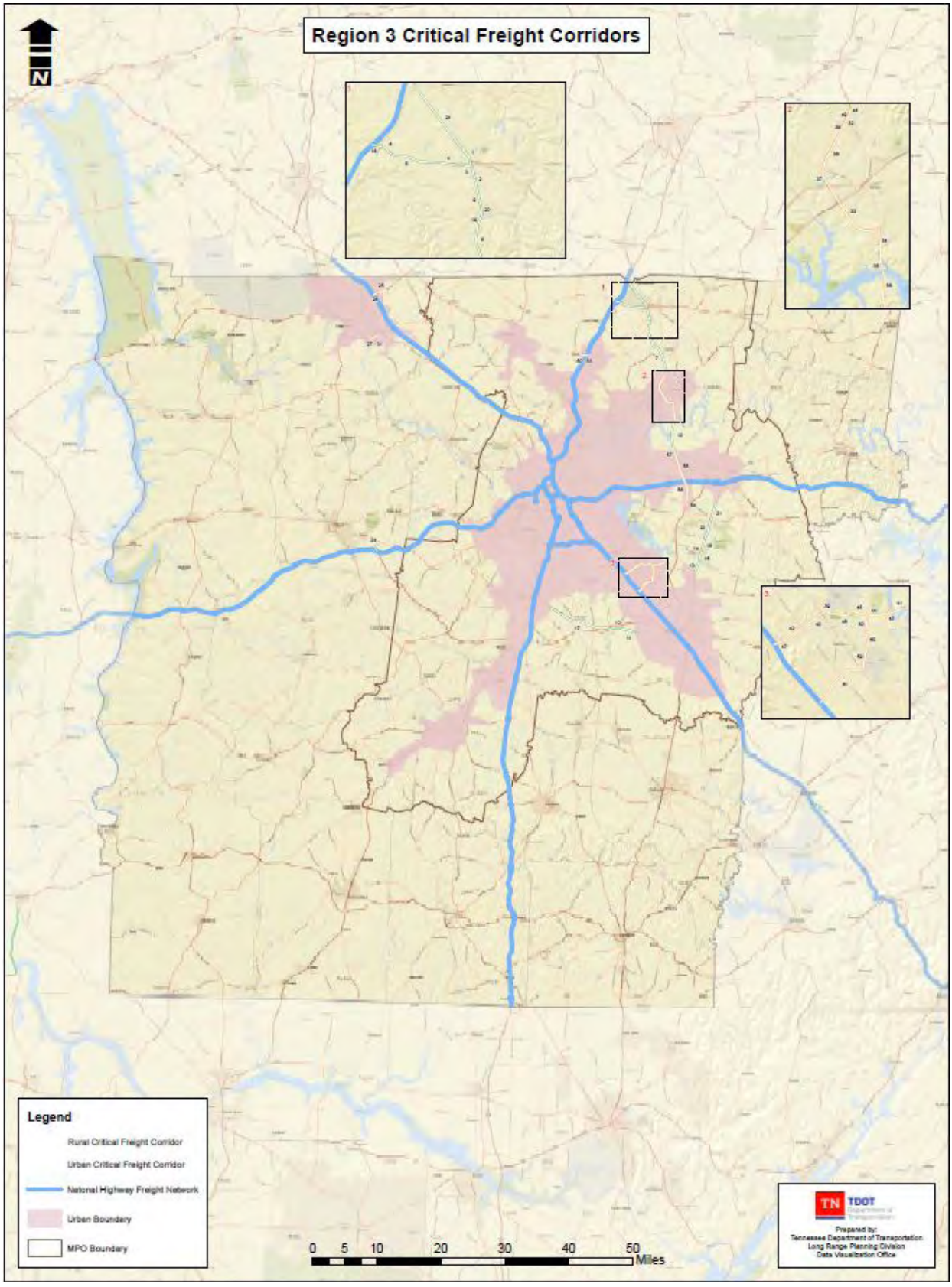
Historical highlights of the project include:

- First construction contract for I-69 was let in 2009. Construction for this segment began in 2010 and was completed in 2012.
- Construction was stopped on other segments of I-69 in 2012 due to budget issues. Construction resumed in 2016.
- In 2017, TDOT and the Kentucky Transportation Cabinet are working out the details of a multi-state partnership to complete the final segment at the Tennessee/Kentucky state line.

Freight Plan Update

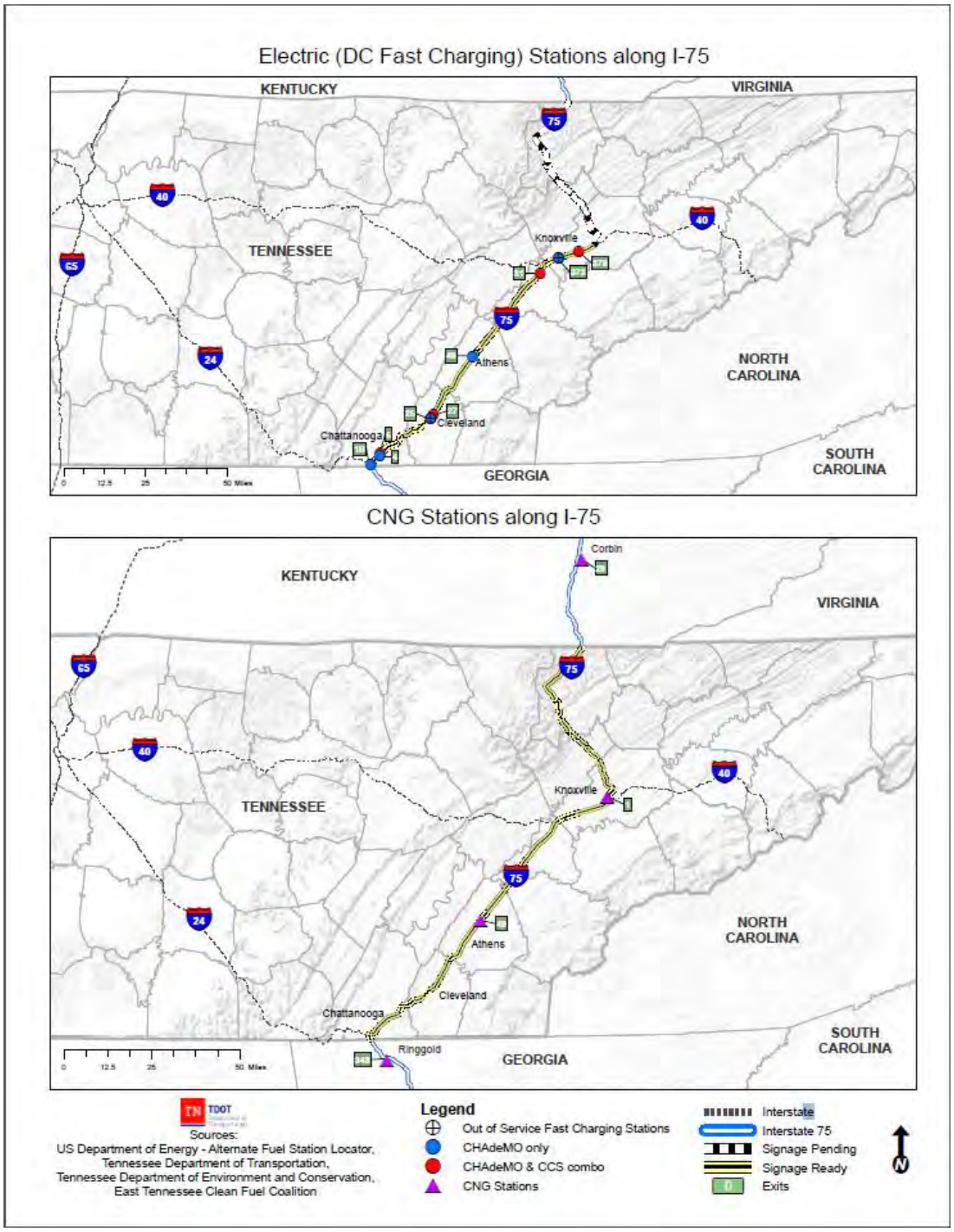
The Data Visualization office assisted the Policy office in updating the State's Freight Transportation plan. The office's production of numerous maps, including large plotted maps of Critical Freight Corridors, freight projects, and supplying Linear Reference System (LRS) information for the rural and urban Critical Freight Corridors were key in the plan's implementation. Using new and innovative ways to display large plotted maps with varying datasets, the Data Visualization office has provided leadership with the critical understanding of the plan in order to make the most informed decisions.

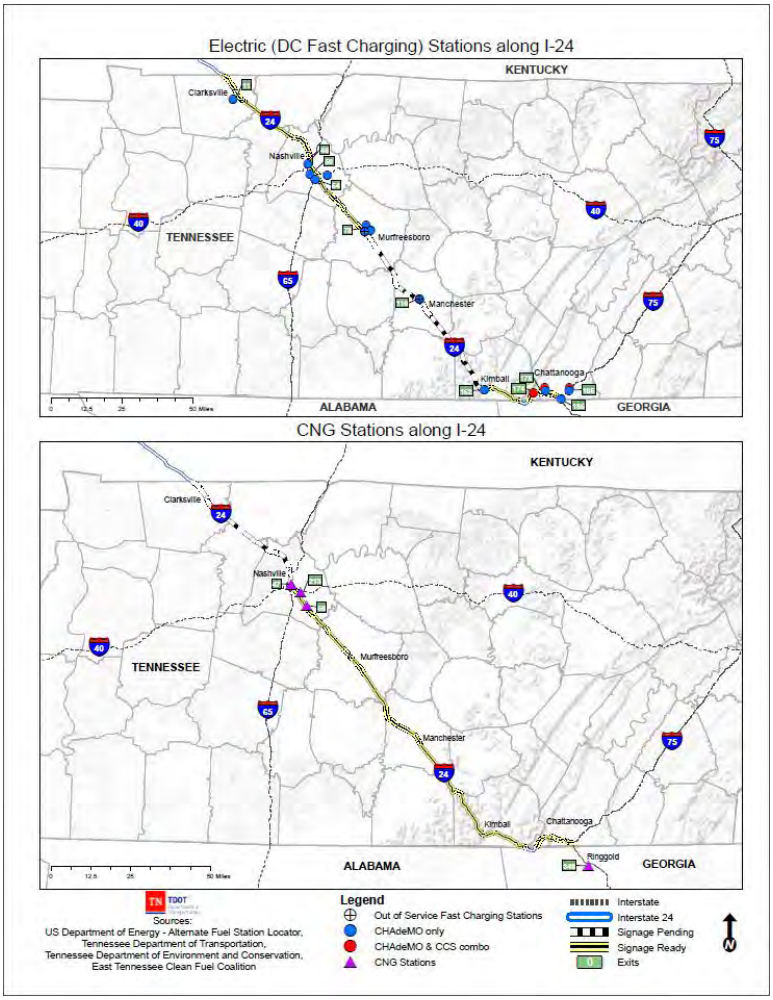


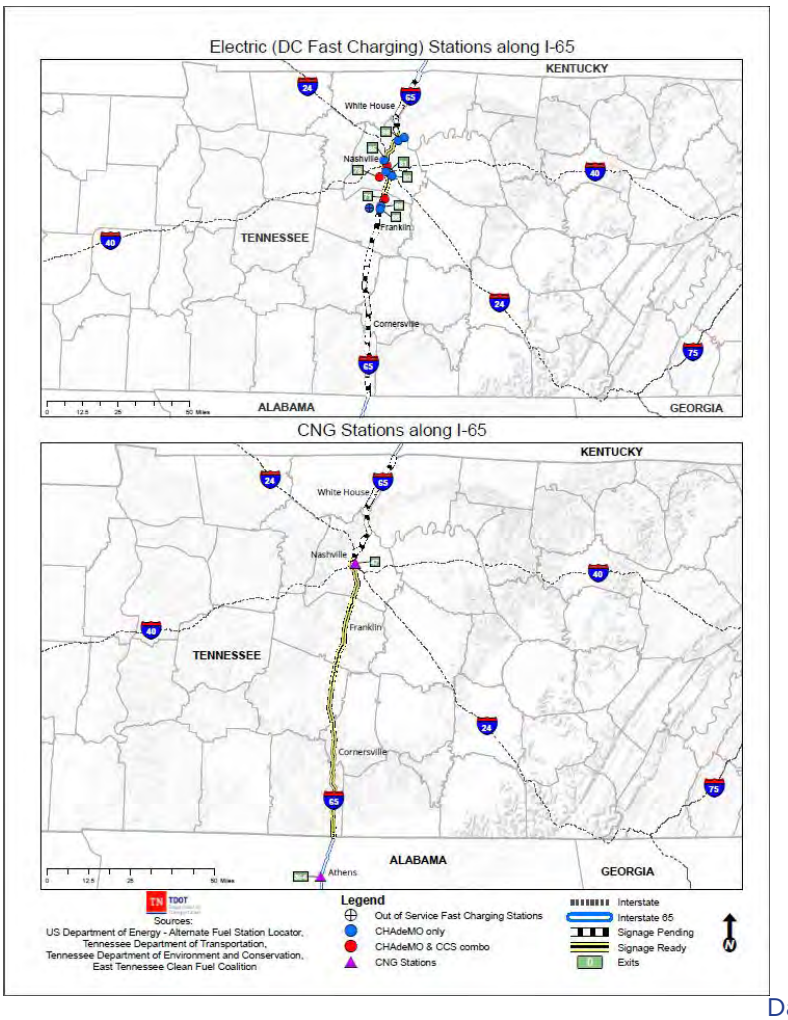

Region 3 Critical Freight Corridors
N
Legend
Rural Critical Freight Corridor
Urban Critical Freight Corridor
National Highway Freight Network
Urban Boundary
MPO Boundary
0 5 10 20 30 40 50
Miles
TN TDOT
Prepared by:
Tennessee Department of Transportation
Long Range Planning Division
Data Visualization Office

Alternative Fuel Corridors

The Data Visualization office collaborated with the Policy and Research offices on the Alternative Fuel Corridor project. The office's deliverable included the collection and analysis of project data and creation of supporting intermodal maps and visualizations for submittal.




Electric (DC Fast Charging) Stations along I-24
KENTUCKY
Clarksville
Nashville
Murfreesboro
Manchester
Kimball
Chattanooga
TENNESSEE
ALABAMA
GEORGIA
CNG Stations along I-24
KENTUCKY
Clarksville
Nashville
Murfreesboro
Manchester
Kimball
Chattanooga
Ringgold
TENNESSEE
ALABAMA
GEORGIA
Sources:
US Department of Energy - Alternate Fuel Station Locator,
Tennessee Department of Transportation,
Tennessee Department of Environment and Conservation,
East Tennessee Clean Fuel Coalition
Legend
Out of Service Fast Charging Stations
CHAdeMO only
CHAdeMO & CCS combo
CNG Stations
Interstate
Interstate 24
Signage Pending
Signage Ready
Exits


Electric (DC Fast Charging) Stations along I-65
KENTUCKY
White House
Nashville
Franklin
Cornersville
TENNESSEE
ALABAMA
GEORGIA
CNG Stations along I-65
KENTUCKY
White House
Nashville
Franklin
Cornersville
Athens
TENNESSEE
ALABAMA
GEORGIA
Sources:
US Department of Energy - Alternate Fuel Station Locator,
Tennessee Department of Transportation,
Tennessee Department of Environment and Conservation,
East Tennessee Clean Fuel Coalition
Legend
Out of Service Fast Charging Stations
CHAdeMO only
CHAdeMO & CCS combo
CNG Stations
Interstate
Interstate 65
Signage Pending
Signage Ready
Exits

3-Year Project Profiles

Collaborating with staff from the Roadway Inventory and Forecasting offices, the Data Visualization office created project profiles for all projects included in the 3-year legislative projects work program. Intended as prioritization tools, the project profiles contain maps, graphics, demographic data, existing and forecasted traffic characteristics, crash rates, and other relevant information for each project. The Data Visualization office was responsible for land use and project pin maps for all projects, compiling existing traffic data, crash data, creating the template design, and composing each of the 60 profiles.

SR - 104

Gibson and Dyer Counties, 104123.06

Purpose and Need:

The purpose of this project is to improve the safety and roadway deficiencies associated with the existing SR-104 to west of SR-188 that would minimize impacts to the human and natural environment and bring traffic conditions to meet current TDOT design standards. The project is needed to develop a transportation solution that is compatible with existing and planned land use activities adjacent to or nearby the new roadway, is able to meet present and future traffic demands, provides local and regional motorists with improved connections to other major highways including SR-54, SR-5, and US Route 45W, improves regional mobility and highway safety, and reduces traffic congestion through Trenton.

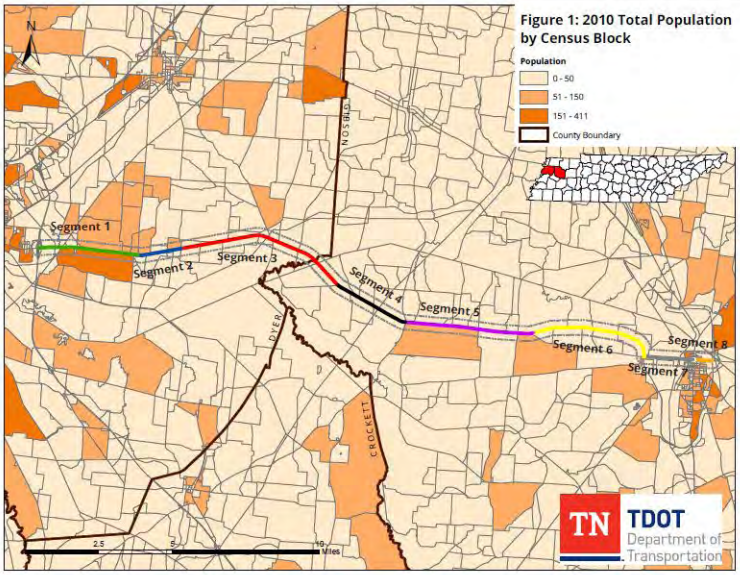
Socio-Economic Data

Table 1: Gibson County Socio-economic Data

	2010	2016	2021	2050
Total Population	49,726	49,705	50,334	50,061
Median Age	39.95	40.12	40.4	40.5
Number of Households	19,699	20,620	21,013	20,224
Mean Household Size	2.47	2.36	2.35	2.42
Median Household Income	35,923	42,408	48,308	76,126

Table 2: Dyer County Socio-economic Data

	2010	2016	2021	2050
Total Population	38,321	38,209	38,935	40,150
Median Age	39.34	39.97	40.24	39.92
Number of Households	15.185	15.837	16.213	16.022
Mean Household Size	2.49	2.38	2.37	2.47
Median Household Income	$ 38,754	$ 44,923	$51,010	$78,651



Traffic Data

Table 3: Traffic Data for State Route 104 (Rural Minor Arterial & Urban/Rural Principal Arterial)

Measure	Source	Segment 1 (2 Lane Undivided Urban SR)	Segment 2 (2 Lane Undivided Rural SR)	Segment 3 (2 Lane Undivided Rural SR)	Segment 4 (2 Lane Undivided Rural SR)	Segment 5 (4 Lane Divided Rural SR)	Segment 6 (4 Lane Divided Rural SR)	Segment 7 (2 Lane Undivided Rural SR)	Segment 8 (2 Lane Undivided Rural SR)
AADT	Original Base Count	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Original Forecasted Count	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Statewide Model (2010) Version 3	3,020	2,610	1,020	1,310	1,690	1,820	1,560	3,240
	TRIMS (2015) - Existing/Current Count	3,230	2,460	1,270	1,300	1,550	1,740	2,100	2,910
	Statewide Model (2040) Version 3 Forecasted	3,527	3,118	1,316	1,646	1,963	2,109	1,707	3,462
Truck Volume	Statewide Model (2010) Version 3 Truck Flow	105	60	75	75	59	27	39	39
	TRIMS (2015) - Existing/Current Count	129	123	51	52	109	104	105	87
	Statewide Model (2040) Version 3 Forecasted Truck Flow	162	109	124	124	105	44	54	49
Volume/Capacity Ratio	Statewide Model (2010) Version 3	0.10	0.09	0.03	0.04	0.05	0.02	0.05	0.12
	Statewide Model (2040) Version 3 Forecasted	0.12	0.1	0.04	0.05	0.06	0.02	0.05	0.13
Crash Rate	Section Level (2012 - 2014)	0.40	0.24	0.33	0.52	0.35	0.16	0.86	0.47
	Statewide Section Average	2.556		1.709		0.768		1.709	
	Intersection Level (2012 - 2014)	0.00	0.24	0.83	0.46	0.39	0.66	2.01	2.06
	Statewide Intersection Average	0.408		0.482		0.203		0.482	

1

SR - 460/SR - 15
Fayette County
101607.01, 101607.02

Purpose and Need:

The purpose of this project is to improve the safety and roadway deficiencies associated with the existing SR-15 west of Somerville to SR-76 south of Somerville that would minimize impacts to the human and natural environment and bring the facility to meet current TDOT design standards. The project is needed to construct a new bypass that would provide increased traffic capacity to meet present and future traffic demand, improved connections to existing roads and future developments, and improved safety and operations conditions.

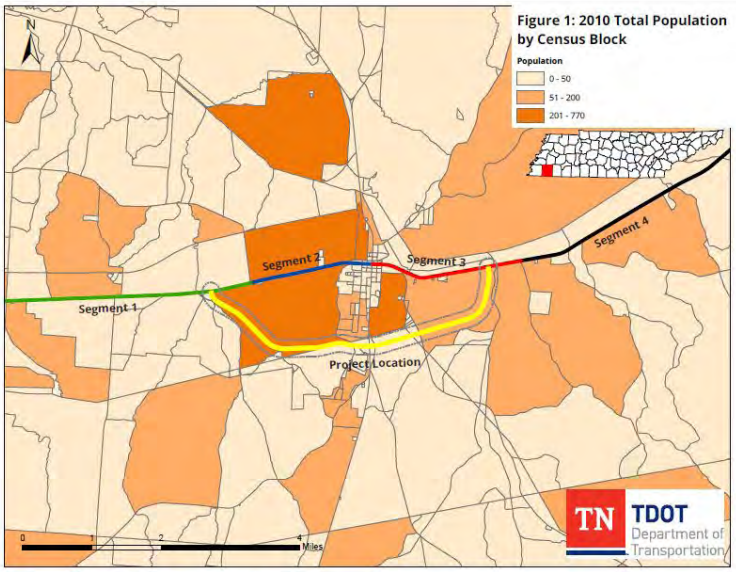


Figure 1: 2010 Total Population by Census Block

Socio-Economic Data

Table 1: Fayette County Socio-economic Data

	2010	2016	2021	2050
Total Population	38,404	40,442	44,290	69,371
Median Age	42.02	45.33	46.58	44.92
Number of Households	14,522	16,319	18,115	28,630
Mean Household Size	2.62	2.45	2.42	2.4
Median Household Income	37, 978	47,743	59,039	107,798

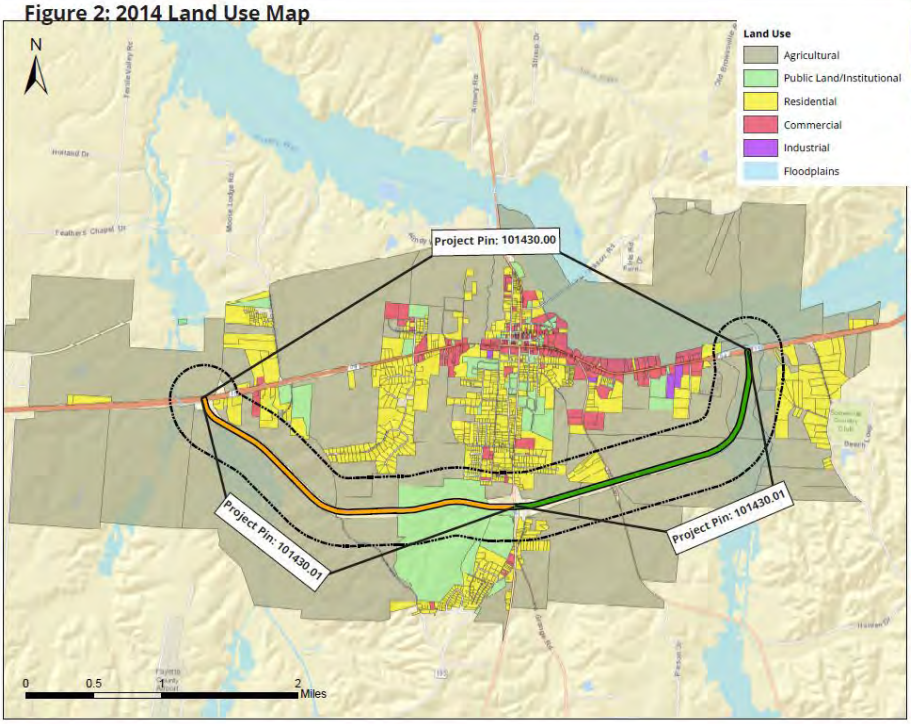
Traffic Data

Table 2: Traffic Data for State Route 15 (Rural Principal Arterial)

Measure	Source	Segment 1 (4 Lane w/TL & Divided Rural SR)	Segment 2 (4 Lane w/TL & Undivided Rural SR)	Segment 3 (4 Lane Divided & Undivided Rural SR)	Segment 4 (4 Lane Divided Rural SR)
AADT	Original Base Count	N/A	N/A	N/A	N/A
	Original Forecasted Count	N/A	N/A	N/A	N/A
	Statewide Model (2010) Version 3	16,970	12,370	10,150	6,480
	TRIMS (2015) - Existing/Current Count	16,460	12,170	9,230	6,360
	Statewide Model (2040) Version 3 Forecasted	25,766	18,306	14,245	10,068
Truck Volume	Statewide Model (2010) Version 3 Truck Flow	878	1,541	474	474
	TRIMS (2015) - Existing/Current Count	1,317	1,339	738	509
	Statewide Model (2040) Version 3 Forecasted Truck Flow	1,999	3,122	1,379	1,379
Volume/Capacity Ratio	Statewide Model (2010) Version 3	0.23	0.17	0.1	0.06
	Statewide Model (2040) Version 3 Forecasted	0.35	0.24	0.14	0.09
Crash Rate	Section Level (2012 - 2014)	0.13	0.37	0.25	0.10
	Statewide Section Averag	0.905	1.339	1.203	0.768
	Intersection Level (2012 - 2014)	1.20	0.78	0.81	0.05
	Statewide Intersection Average	0.224	0.270	0.249	0.203

1

Figure 2: 2014 Land Use Map



Top Industries in Somerville

Table 3: Top Industries by Number of Establishments Somerville, TN 38068

Industry	Total Establishments
Retail Trade	36
Construction	31
Other Services (except Public Administration)	27
Health Care and Social Assistance	24
Finance and Insurance	13
Professional, Scientific, and technical services	11
Wholesale Trade	9
Manufacturing	8
Admin and Support and Waste Mgmt.	8
Accommodation and Food Services	7

Project Timeline and Costs:

Table 4: Project Cost

Pin #	Project Type	Status	Cost
101607.00	Right of Way – Somerville Beltway, From SR-15(US-64) West of Somerville to SR-15(US-64) East of Somerville. 2-lane bypass on new alignment w/ at grade intersections	Active PE-D: 96/05 ROW: 99/09 PE: 96/97 ROW: 07/08	
101607.01	Stage Construction New - Somerville Beltway, From SR-15(US-64) West of Somerville to SR-76 South of Somerville. 2-lane bypass on new alignment w/ at grade intersections	Active	$55,600,000
101607.02	Stage Construction New - Somerville Beltway, From SR-76 South of Somerville to SR-15(US-64) East of Somerville. 2-lane bypass on new alignment w/ at grade intersections.	Active	

Land Use Breakdown:

Table 5: SR 15 Corridor Land Use

Land Use	Acres	Percent
Public Land	527	6.46%
Agricultural	6,215	76.15%
Residential	1,158	14.19%
Commercial	247	3.03%
Industrial	15	0.18%
Total	8,162	100%

Sources

- The Purpose and Need statement is from 2008 EA document.
- Figure 1 – US Census Data 2010
- Figure 2 – State of Tennessee Comptroller of the Treasury - Computer Assisted Appraisal System (CAAS) 2014-2016.
- Table 1 - Socio-economic data – 2015 Woods & Poole Economics, Inc.
- Table 2:
  - Original Base and Forecasted Counts are not available for this project.
  - Existing 2015 AADT and Truck Volume from TRIMS.
  - 2010 and 2040 State-wide model V3 (SWMV3) data
  - Crash rate data from TRIMS; recalculated for segments and intersections
- Table 3 - US Census Bureau American Fact Finder; NAICS Industry data (2014).
- Table 4 - Project cost information from 2016 TDOT Projects Report.
- Table 5 - State of Tennessee Comptroller of the Treasury - Computer Assisted Appraisal System (CAAS) 2014-2016.

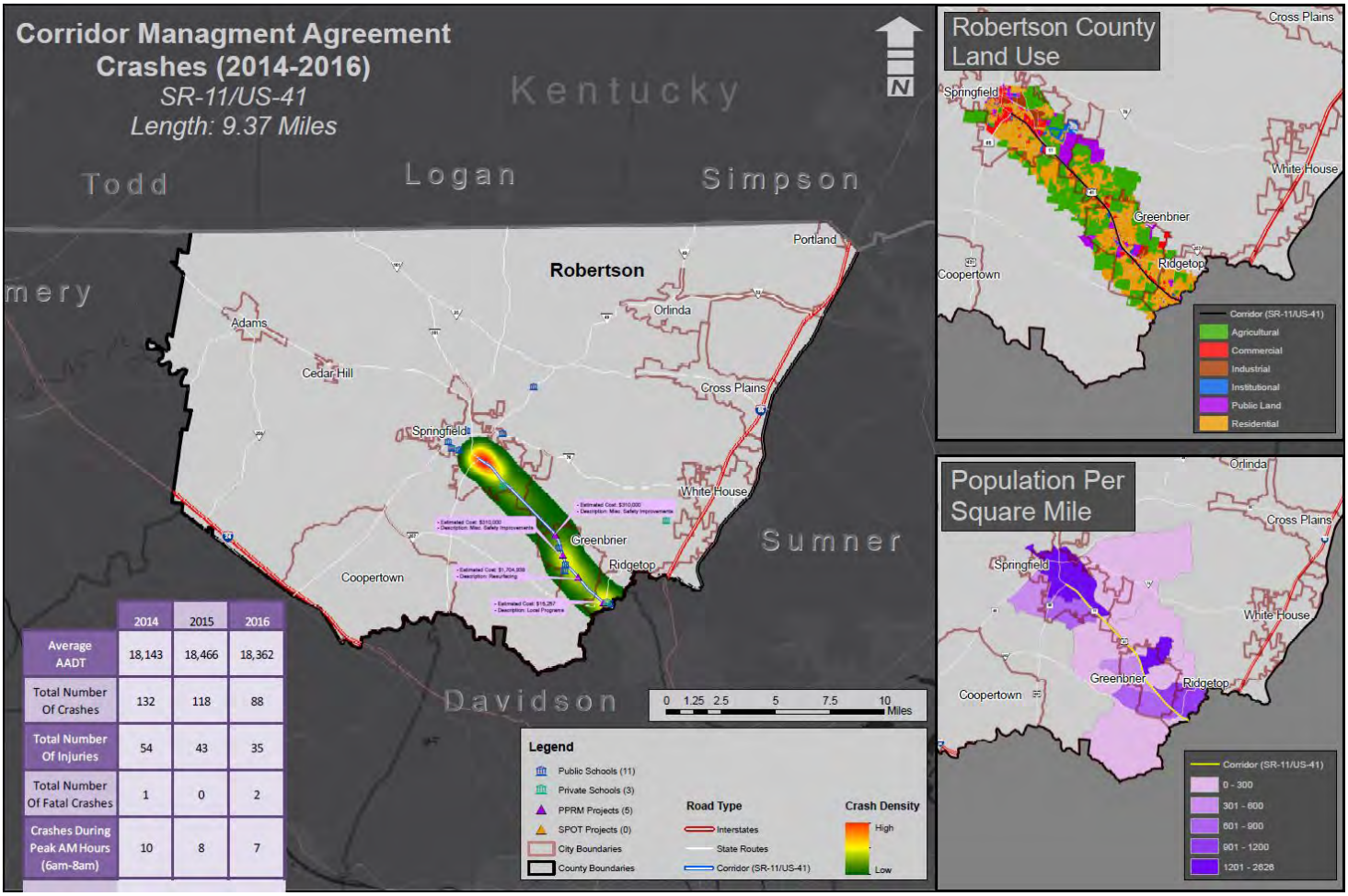
2

TN TDOT Department of Transportation

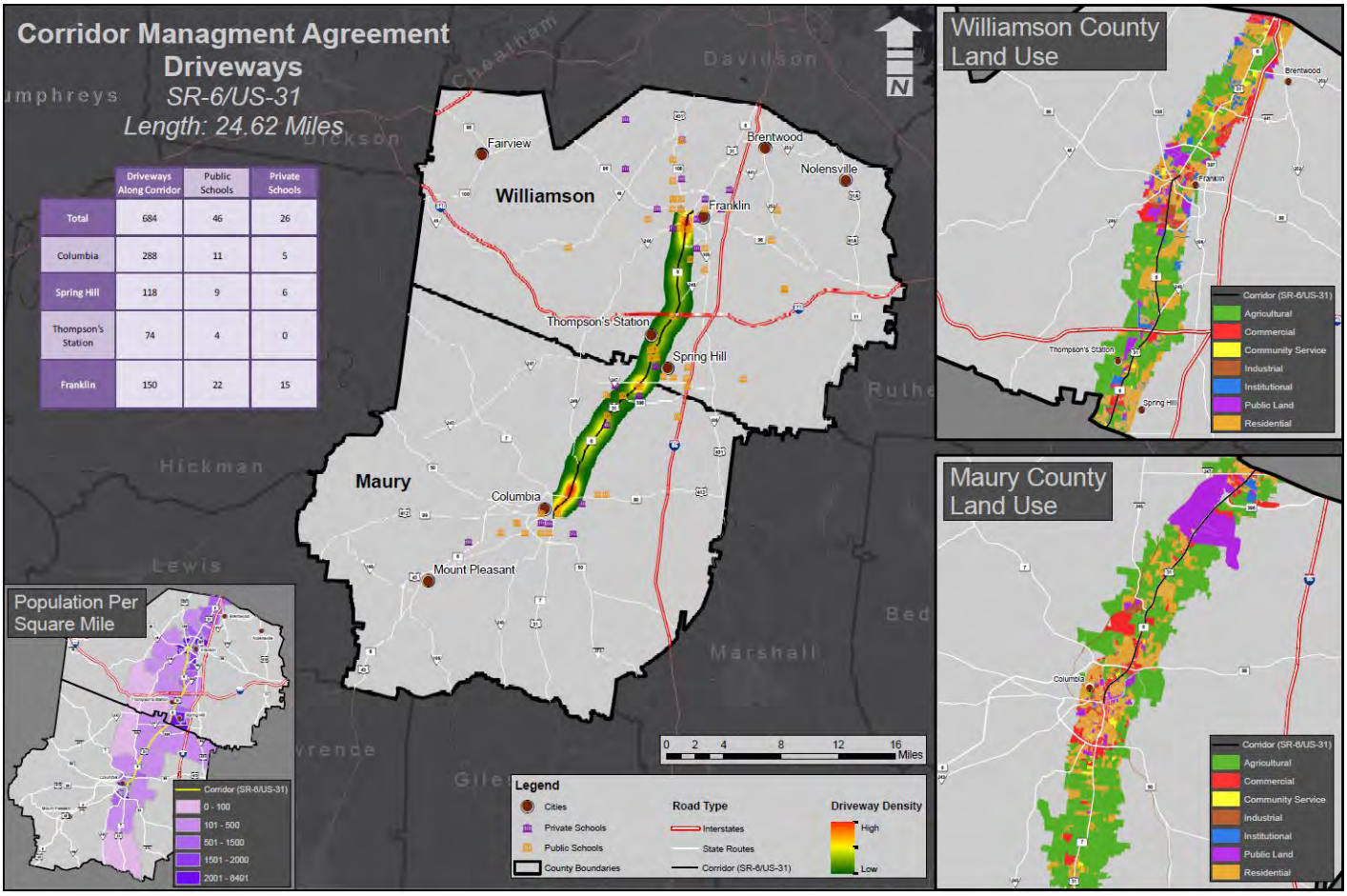
Prepared by TDOT Long Range Planning Division, May 1, 2017

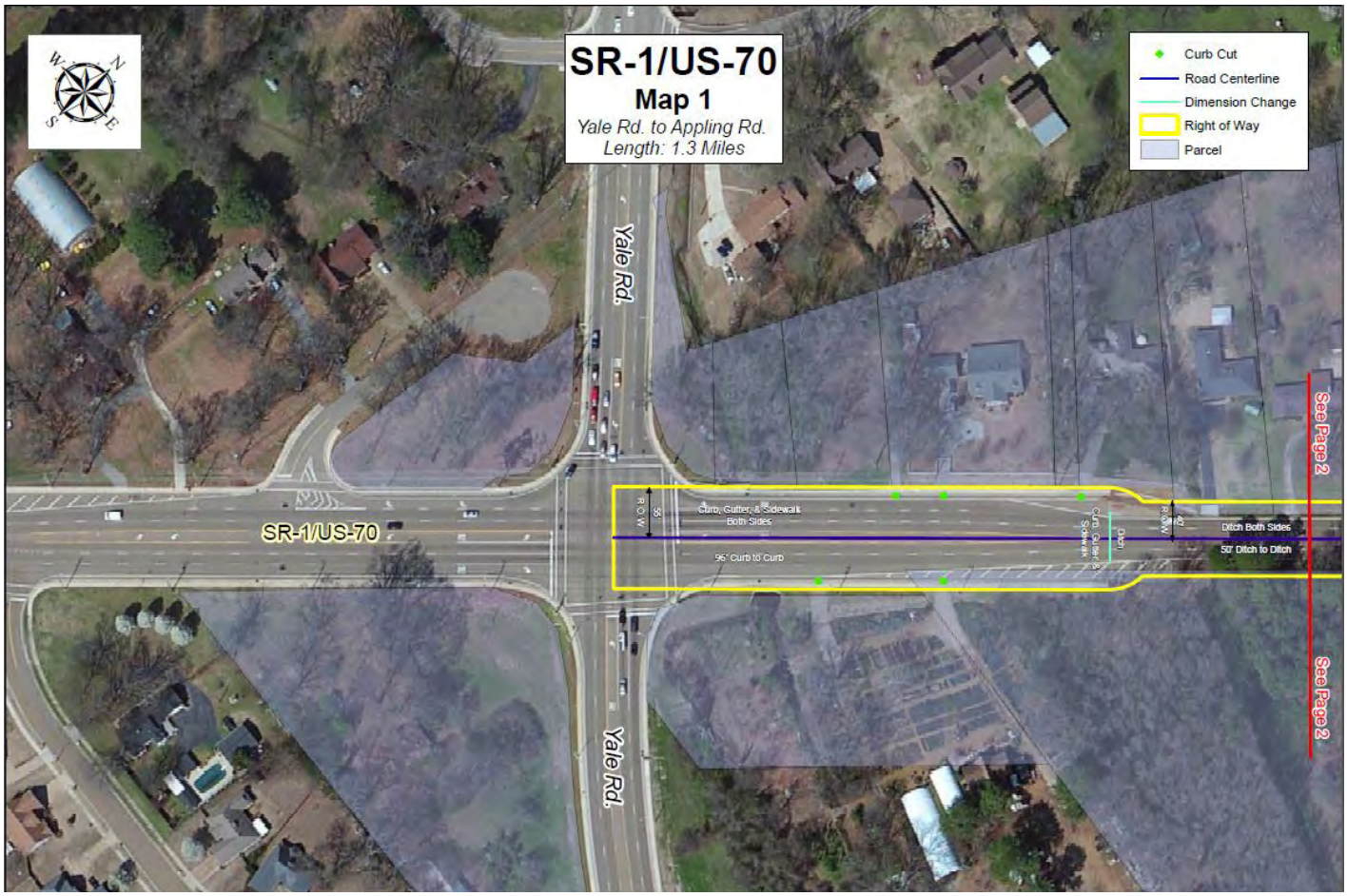
Corridor Management Agreements

The Data Visualization office supported the Region 3 and 4 Offices of Community Transportation (OCT) on multiple Corridor Management Agreements (CMA). Each CMA focuses on distinct corridors within each County. During each process our office assists OCT with analyzing population, land use, crash density, AADT, PPRM projects, SPOT projects, commute time, and major attractions along each route. Our office also produced maps and graphics to visualize all of this data. The purpose of a CMA is to garner interaction between all governing and planning entities and the corridor(s) which they work with to coordinate planning processes and to collaborate on making the route as safe and efficient as possible with future development.



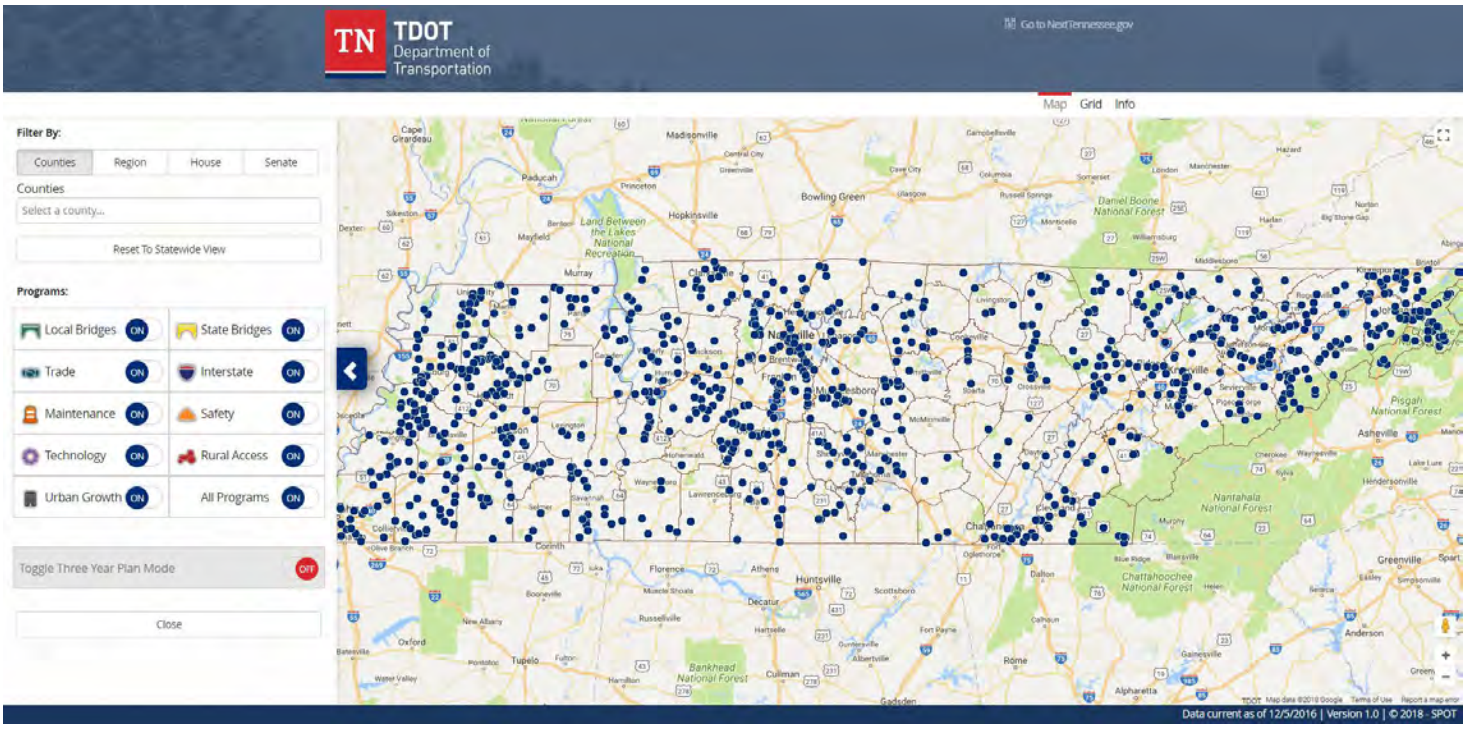
	2014	2015	2016
Average AADT	18,143	18,466	18,362
Total Number Of Crashes	132	118	88
Total Number Of Injuries	54	43	35
Total Number Of Fatal Crashes	1	0	2
Crashes During Peak AM Hours (6am-8am)	10	8	7


Corridor Managment Agreement
Driveways
SR-6/US-31
Length: 24.62 Miles
Driveways Along Corridor
Public Schools
Private Schools
Total 684 46 26
Columbia 288 11 5
Spring Hill 118 9 6
Thompson's Station 74 4 0
Franklin 150 22 15
Williamson
Maury
Fairview
Brentwood
Nolensville
Franklin
Thompson's Station
Spring Hill
Columbia
Mount Pleasant
Cheatham
Davidson
Dickson
Humphreys
Hickman
Lewis
Marshall
Bedford
Giles
Lawrence
Rutherford
N
0 2 4 8 12 16 Miles
Legend
Cities
Private Schools
Public Schools
County Boundaries
Road Type
Interstates
State Routes
Corridor (SR-6/US-31)
Driveway Density
High
Low
Population Per Square Mile
Corridor (SR-6/US-31)
0 - 100
101 - 500
501 - 1500
1501 - 2000
2001 - 6491
Williamson County Land Use
Corridor (SR-6/US-31)
Agricultural
Commercial
Community Service
Industrial
Institutional
Public Land
Residential
Maury County Land Use
Corridor (SR-6/US-31)
Agricultural
Commercial
Community Service
Industrial
Institutional
Public Land
Residential


SR-1/US-70
Map 1
Yale Rd. to Appling Rd.
Length: 1.3 Miles
Curb Cut
Road Centerline
Dimension Change
Right of Way
Parcel
Yale Rd.
SR-1/US-70
R.O.W.
80'
Curb, Gutter, & Sidewalk Both Sides
96' Curb to Curb
Curb, Gutter & Sidewalk
Ditch
R.O.W.
80'
Ditch Both Sides
50' Ditch to Ditch
See Page 2
See Page 2
Yale Rd.

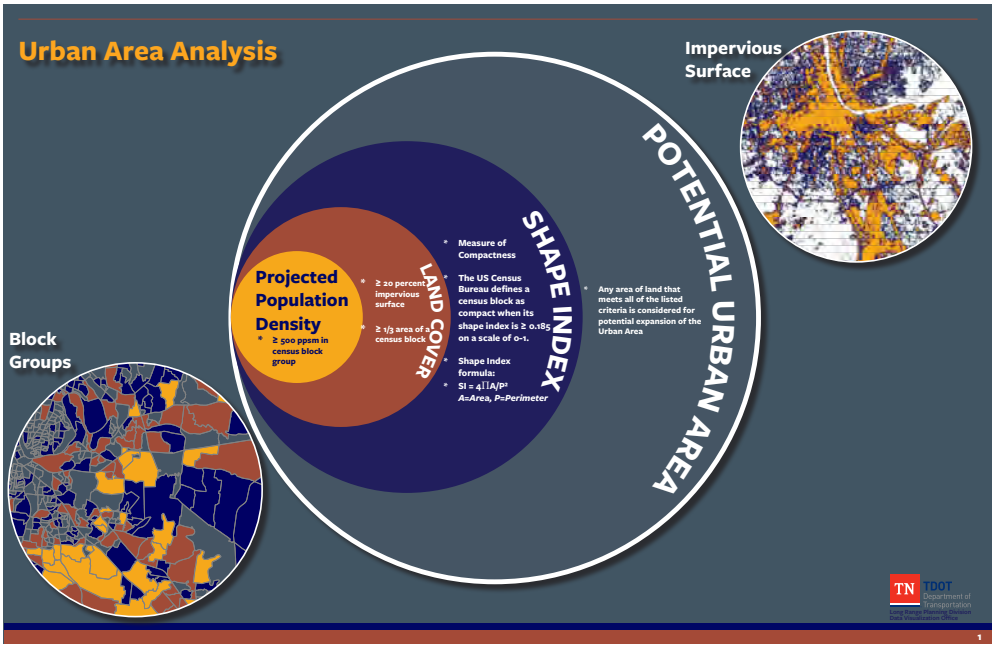
Statewide Project Overview Tracker (SPOT)

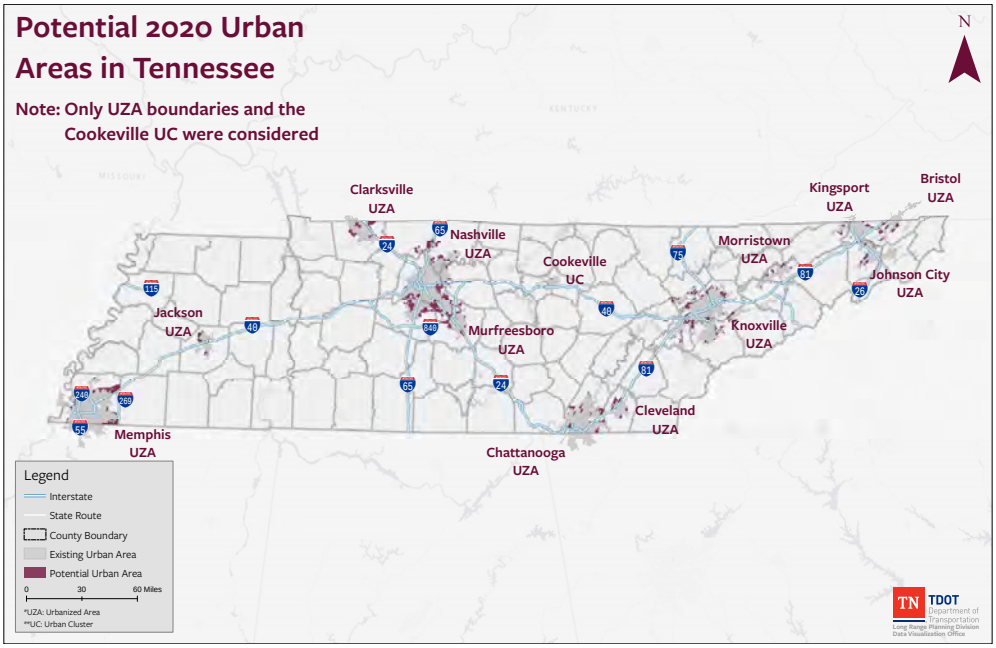
The Data Visualization office assisted the Program Development and Scheduling office with updating and editing the Statewide Project Overview Tracker (SPOT) interactive map on TDOT's website. The Data Visualization office assisted the GIS team in IT creating the online interactive map and verifying alignment of the projects represented on the map and editing their geometry as necessary. The maintenance of this map will be fully migrated to the data visualization group in 2018.



Urban Area Analysis

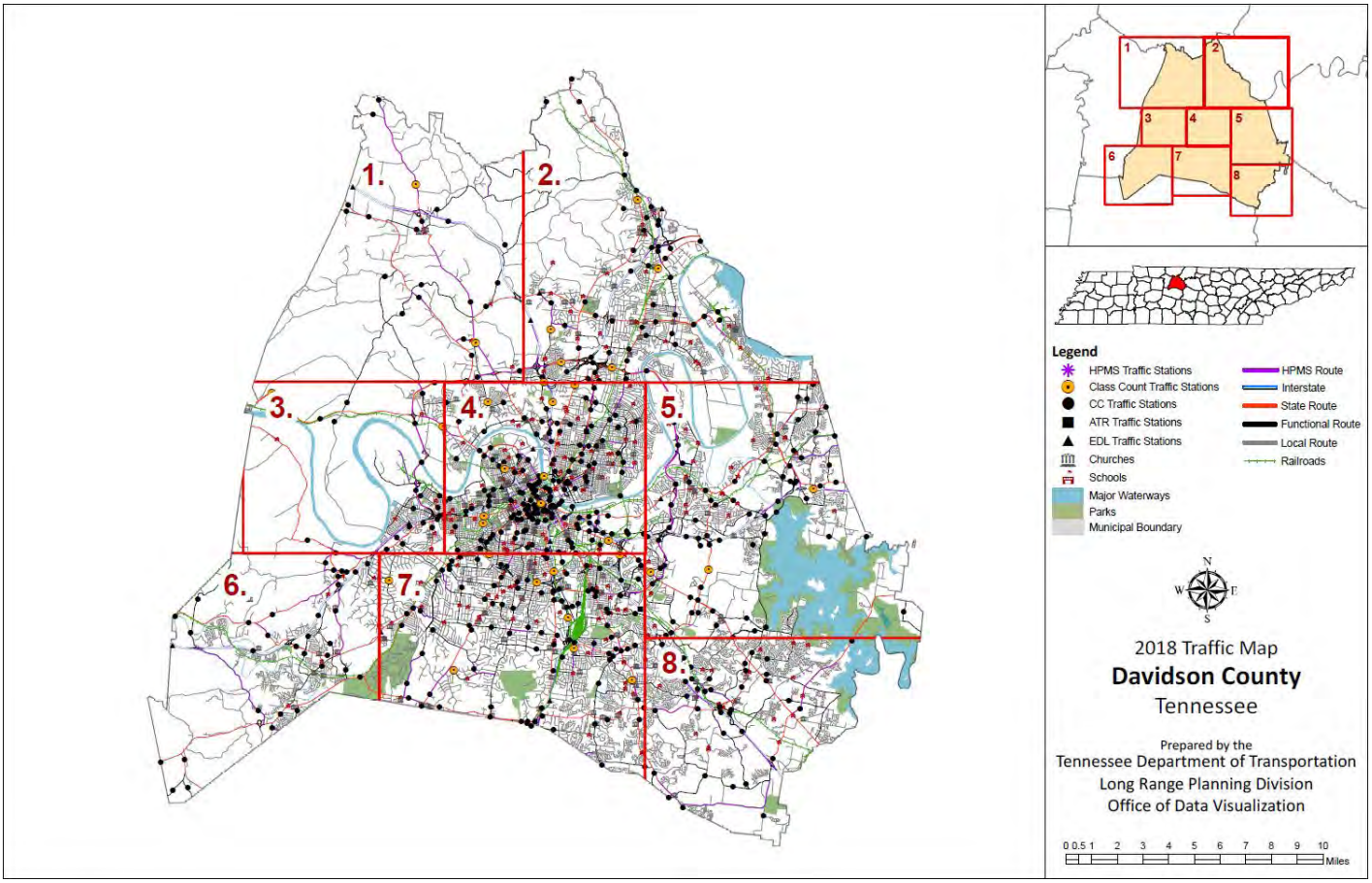
The Data Visualization office fulfilled a request from the Multimodal Division to provide data analysis and mapping for potential areas of land that may be defined as UZA boundaries according to the 2020 census. The analysis involved collecting census past and present data, performing population projections, and examining land cover for the purpose of identifying potential urban areas. This process was intended to assist the Multimodal Division in planning for future transit funding.

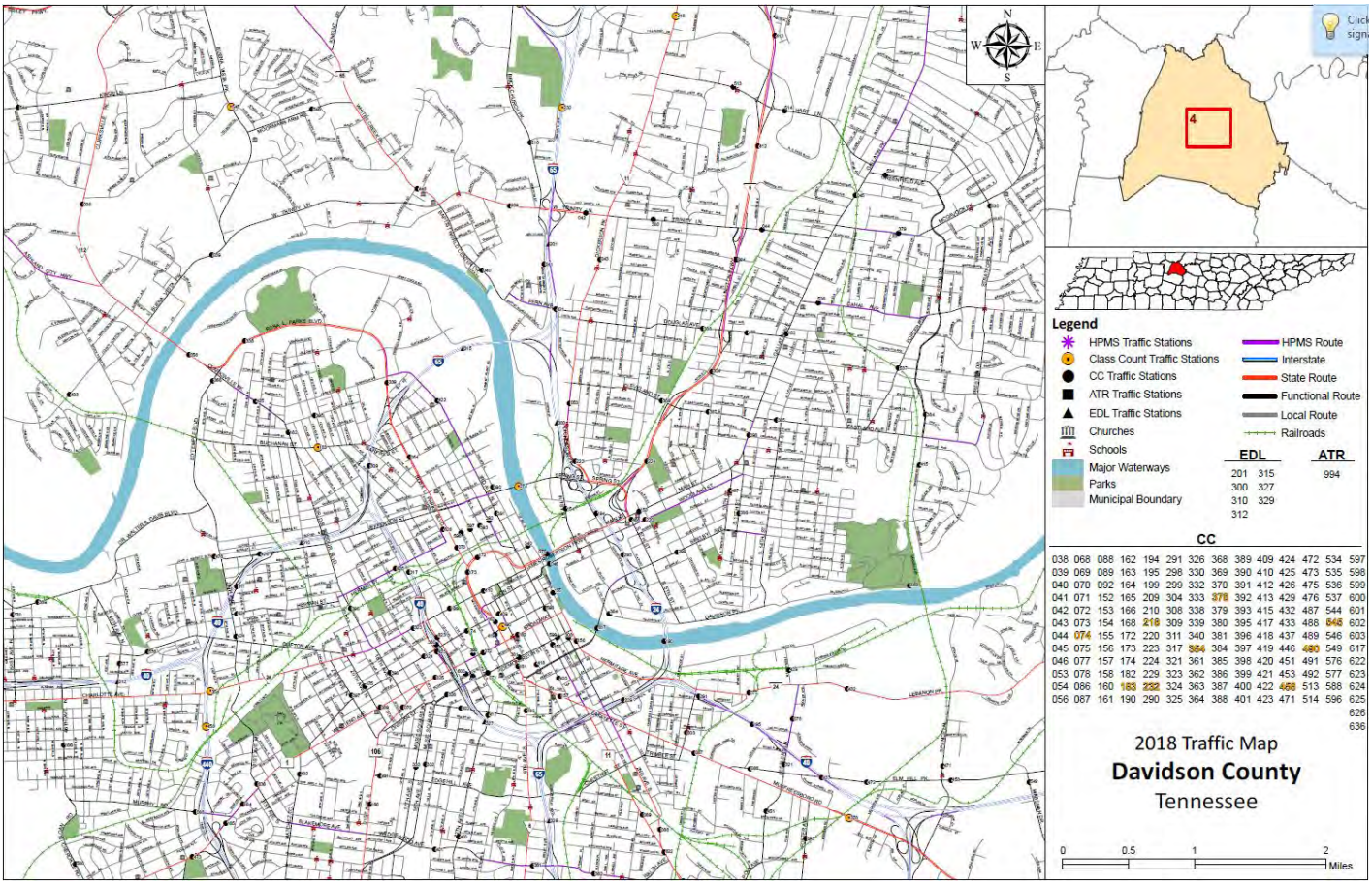


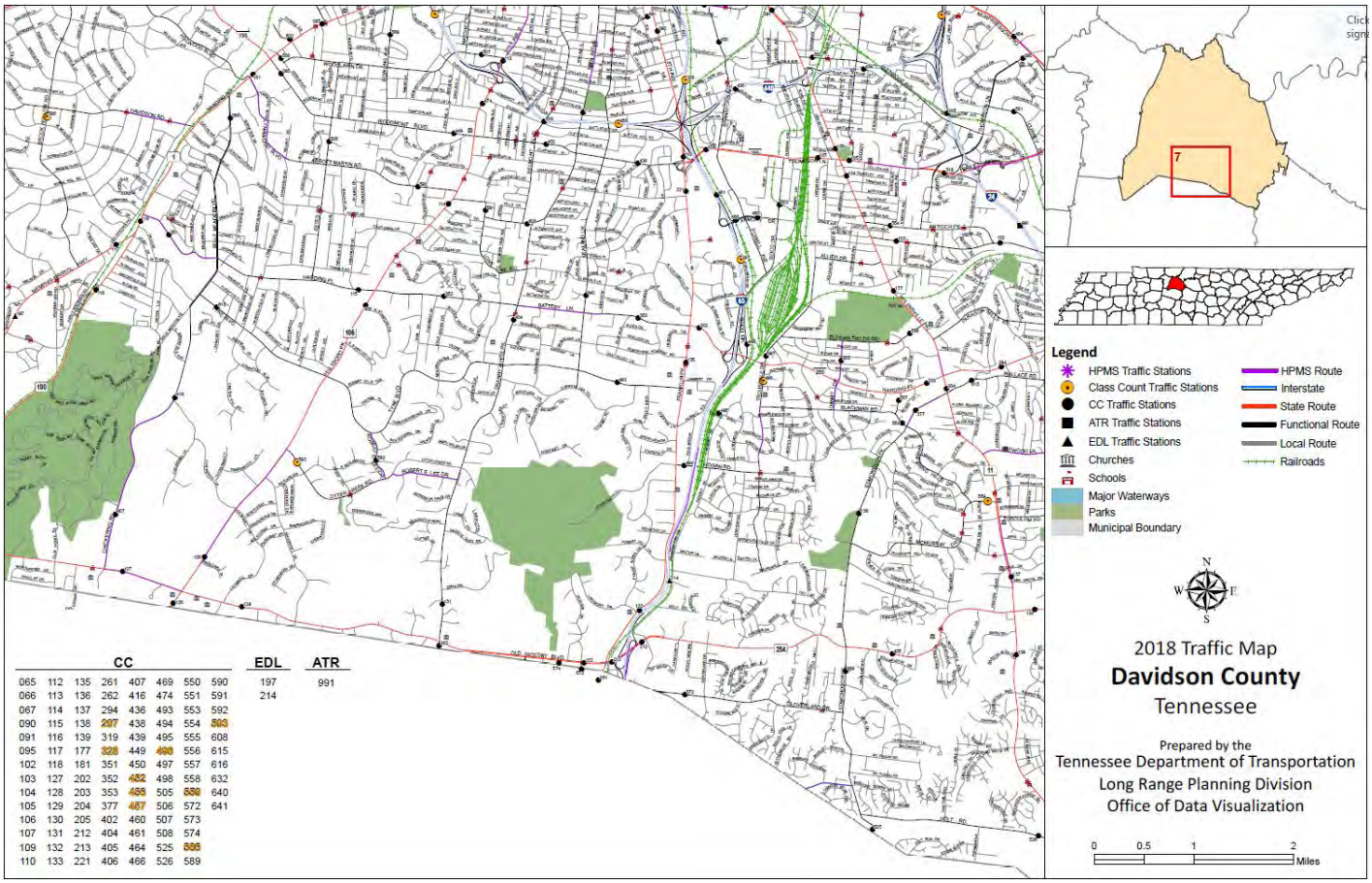


County Traffic Maps

The Data Visualization office continuously creates traffic station maps for all 95 counties to assist field staff in collecting traffic count data. This annual project usually begins in December, as we start to create maps for the following years data collection. The office coordinates with the Road Inventory office to determine the collection schedule for the upcoming year and in what order they need the maps created and delivered. In order to maintain a high level of accuracy, the office continuously makes edits and redistributes copies of the maps as requested throughout the year.



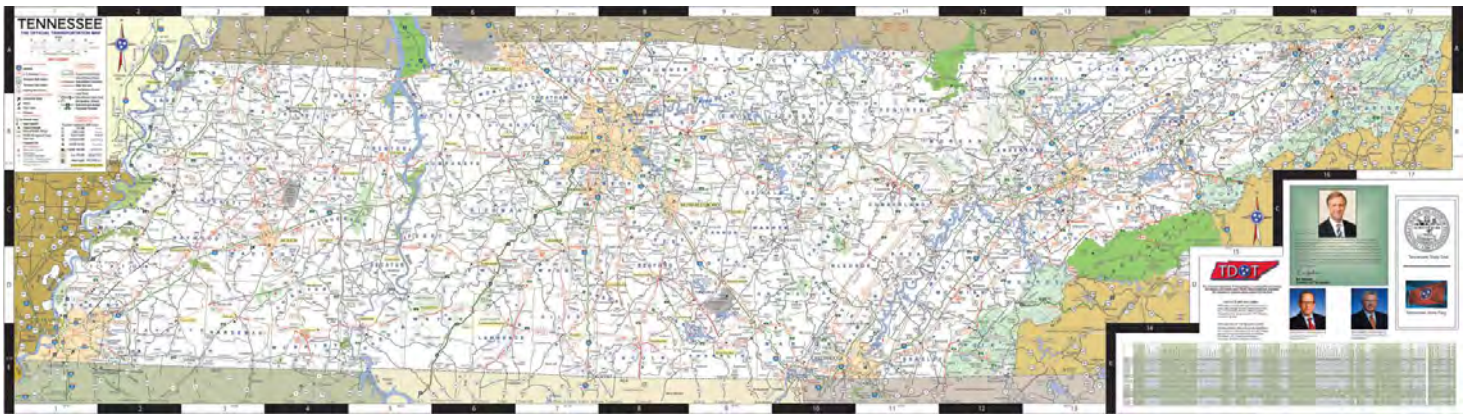

Legend
HPMS Traffic Stations
Class Count Traffic Stations
CC Traffic Stations
ATR Traffic Stations
EDL Traffic Stations
Churches
Schools
Major Waterways
Parks
Municipal Boundary
HPMS Route
Interstate
State Route
Functional Route
Local Route
Railroads
EDL
201 315
300 327
310 329
312
ATR
994
CC
038 068 088 162 194 291 326 368 389 409 424 472 534 597
039 069 089 163 195 298 330 369 390 410 425 473 535 598
040 070 092 164 199 299 332 370 391 412 426 475 536 599
041 071 152 165 209 304 333 378 392 413 429 476 537 600
042 072 153 166 210 308 338 379 393 415 432 487 544 601
043 073 154 168 218 309 339 380 395 417 433 488 545 602
044 074 155 172 220 311 340 381 396 418 437 489 546 603
045 075 156 173 223 317 354 384 397 419 446 490 549 617
046 077 157 174 224 321 361 385 398 420 451 491 576 622
053 078 158 182 229 323 362 386 399 421 453 492 577 623
054 086 160 183 232 324 363 387 400 422 468 513 588 624
056 087 161 190 290 325 364 388 401 423 471 514 596 625
626
636
2018 Traffic Map
Davidson County
Tennessee
0 0.5 1 2
Miles


CC
065 112 135 261 407 469 550 590
066 113 136 262 416 474 551 591
067 114 137 294 436 493 553 592
090 115 138 297 438 494 554 593
091 116 139 319 439 495 555 608
095 117 177 328 449 496 556 615
102 118 181 351 450 497 557 616
103 127 202 352 452 498 558 632
104 128 203 353 455 505 559 640
105 129 204 377 457 506 572 641
106 130 205 402 460 507 573
107 131 212 404 461 508 574
109 132 213 405 464 525 585
110 133 221 406 466 526 589
EDL
197
214
ATR
991
Legend
HPMS Traffic Stations
Class Count Traffic Stations
CC Traffic Stations
ATR Traffic Stations
EDL Traffic Stations
Churches
Schools
Major Waterways
Parks
Municipal Boundary
HPMS Route
Interstate
State Route
Functional Route
Local Route
Railroads
2018 Traffic Map
Davidson County
Tennessee
Prepared by the
Tennessee Department of Transportation
Long Range Planning Division
Office of Data Visualization
0 0.5 1 2
Miles

State Transportation Map

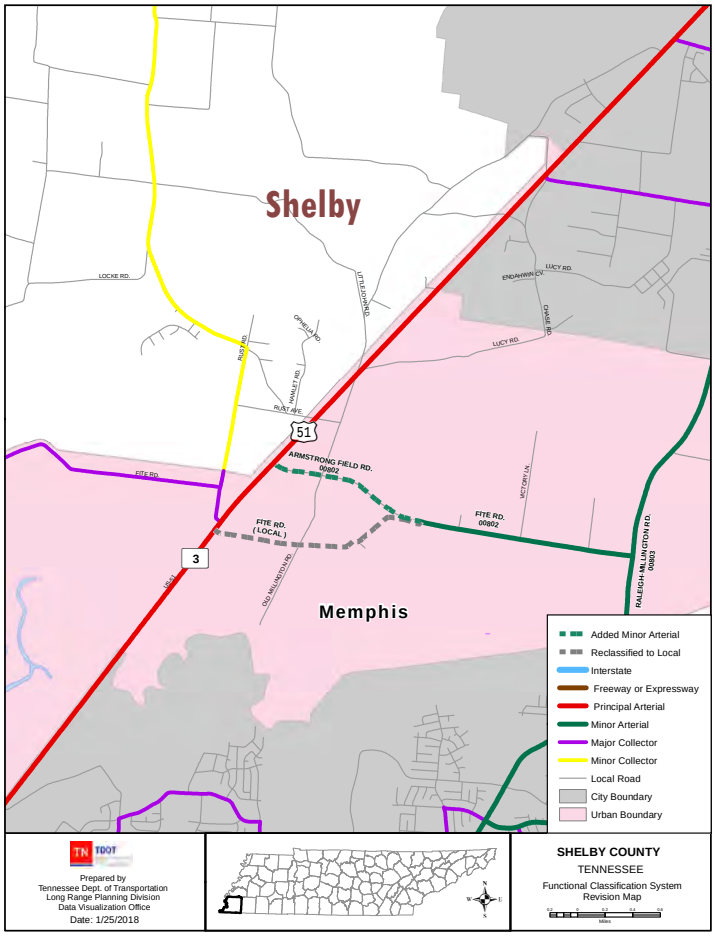
The Data Visualization office updates the official state transportation map every year. This annual project is completed in coordination with the Department of Tourism. Our office makes all of the necessary edits and updates to the transportation network and deliver it to the Department of Tourism within the project deadline so the official map can be printed on schedule. We also attend all of the project meetings to discuss the years map layout, project schedule, and printing process.

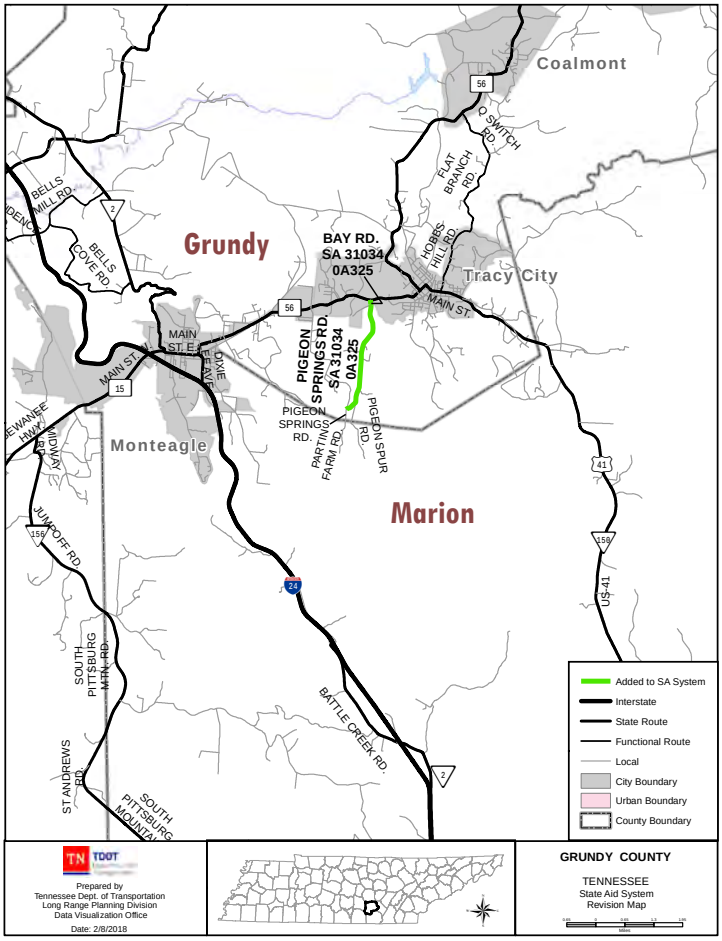
https://www.tn.gov/tdot/driver-how-do-i/look-at-or-order-state-maps/maps/state-maps.html



Functional Classification Change and State Aid Maps

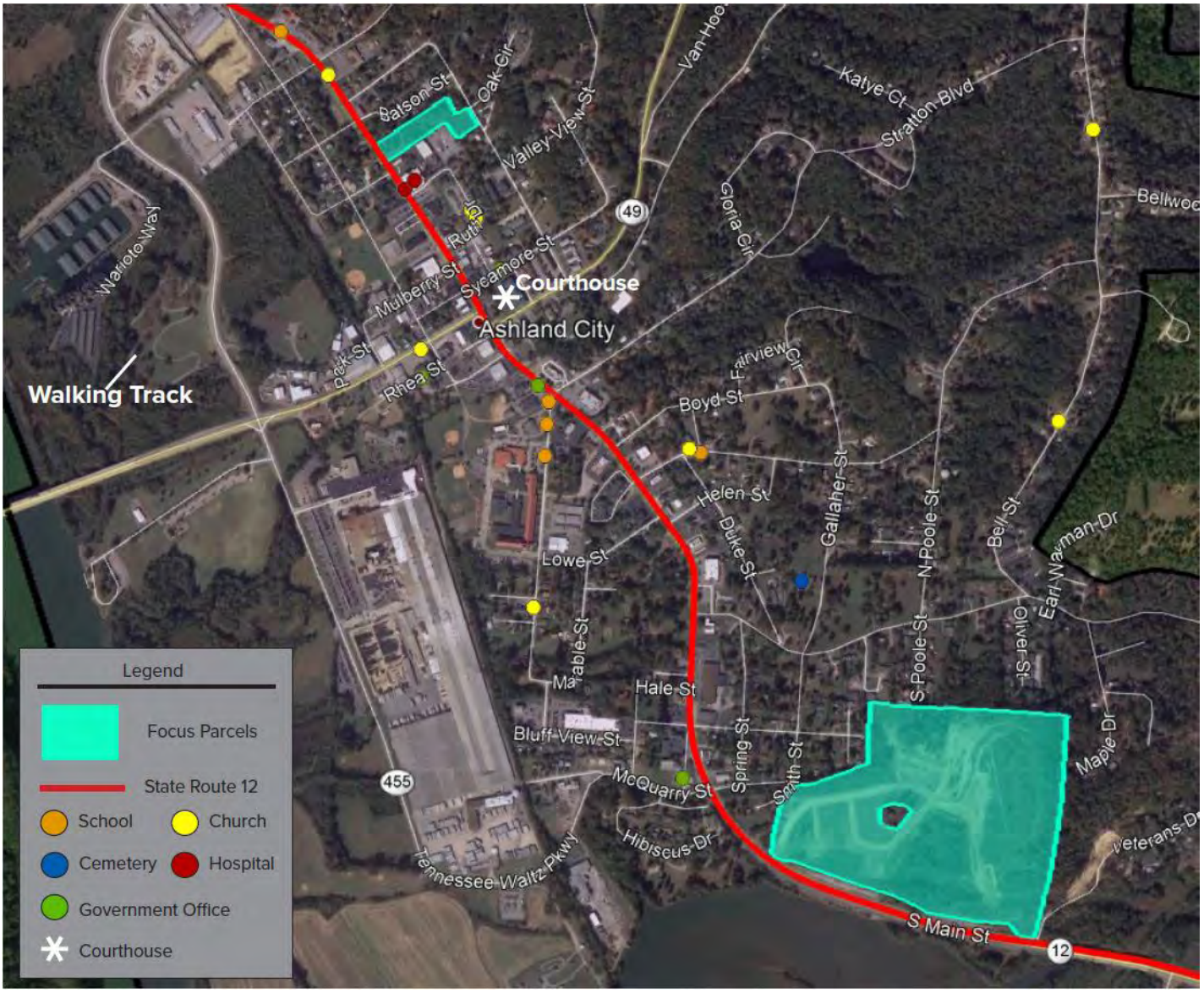
The Data Visualization office continuously creates both Functional Classification Changes (FCC) and State Aid maps as requested by other offices within Long Range Planning. Below is an example of a FCC map.

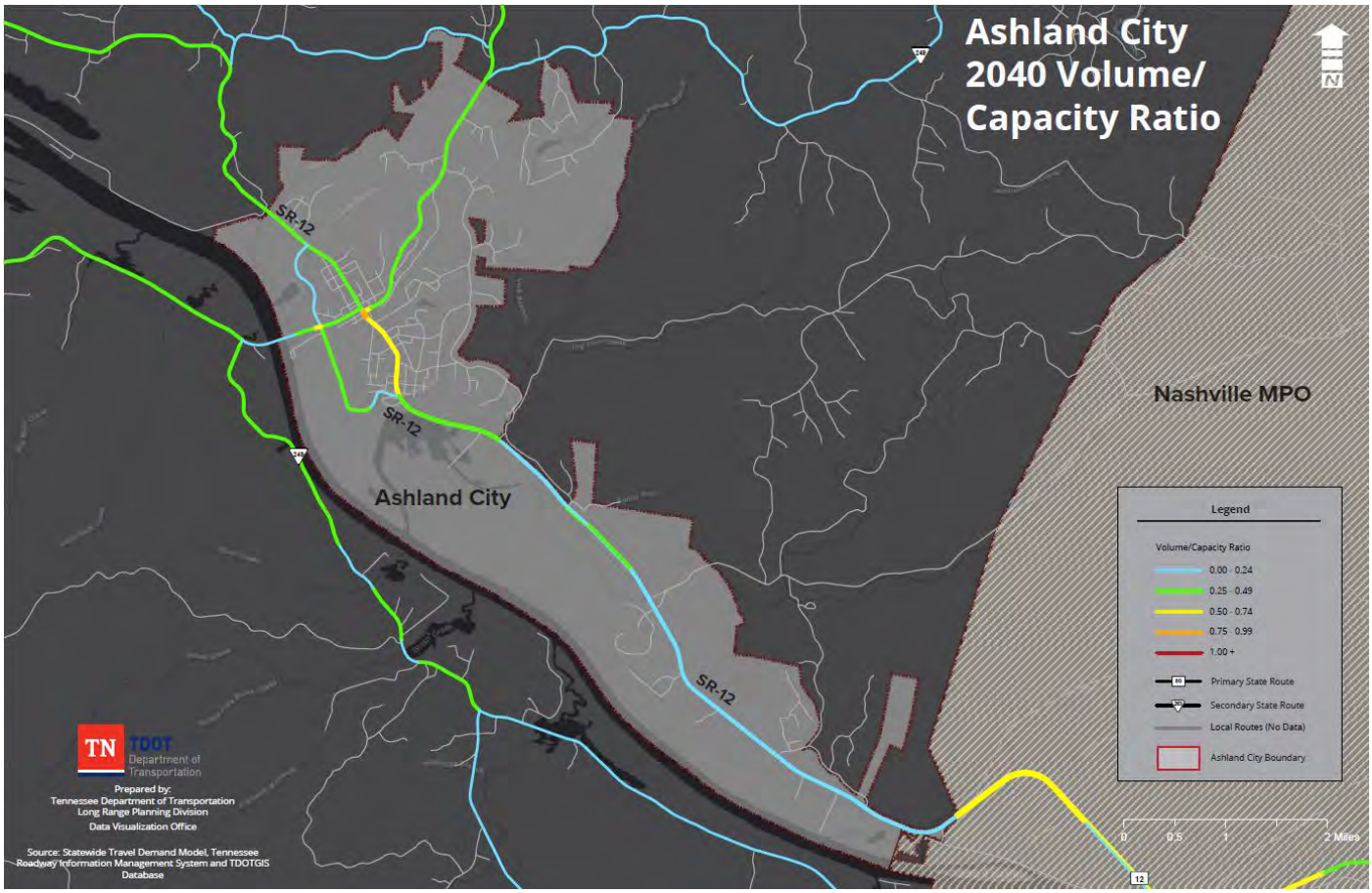


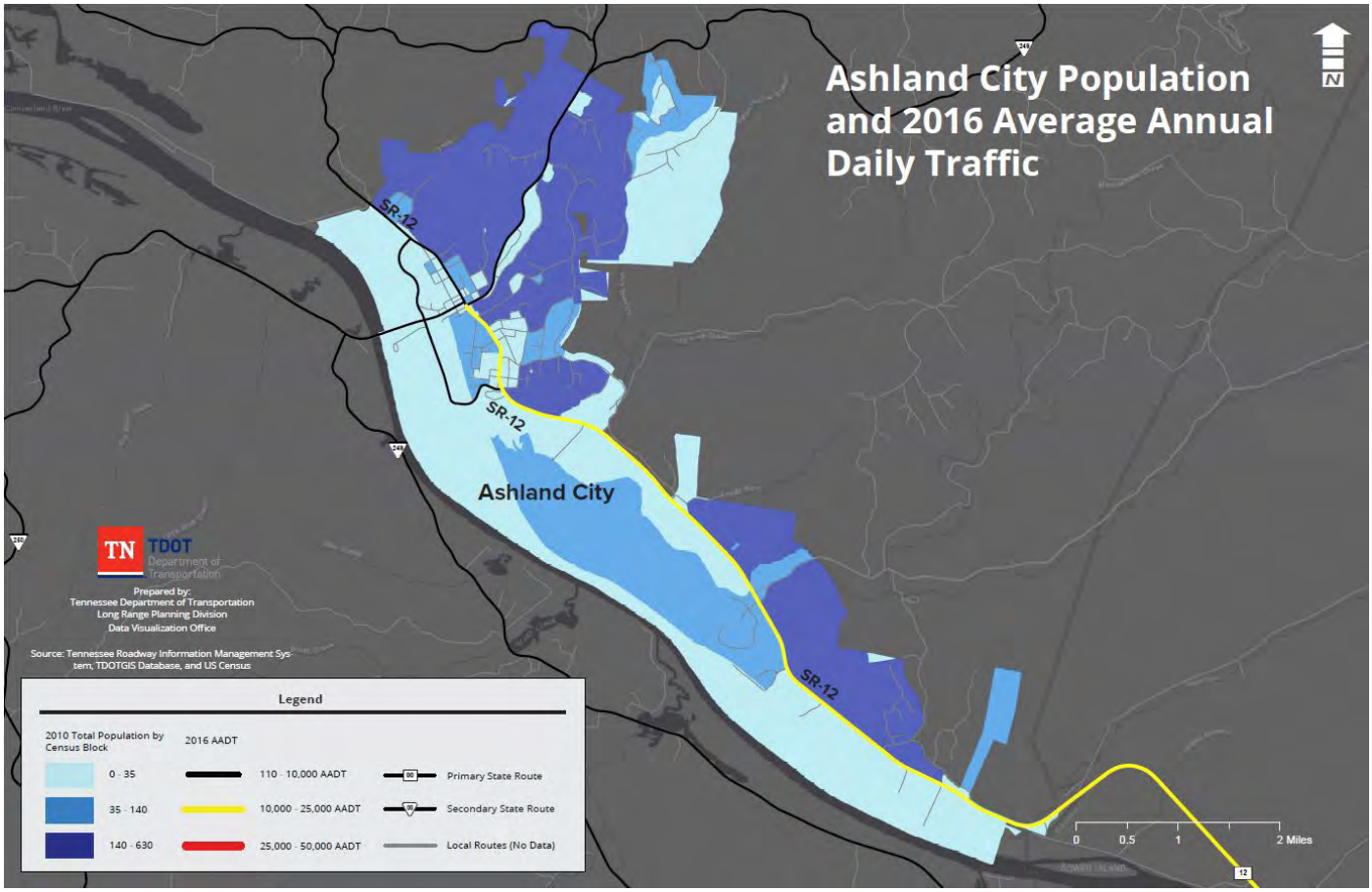


City Map Requests

The Data Visualization office regularly gets mapping and data analysis requests from local jurisdictions. Below and on the following page are a few examples from a recent request we fulfilled for Ashland City. A staff member in the Ashland City Mayor's Office requested our office assistance with creating maps to support a grant submittal that the City was producing. Coordination with the City determined their specific map needs which were used to provided multiple map options for their submittal.



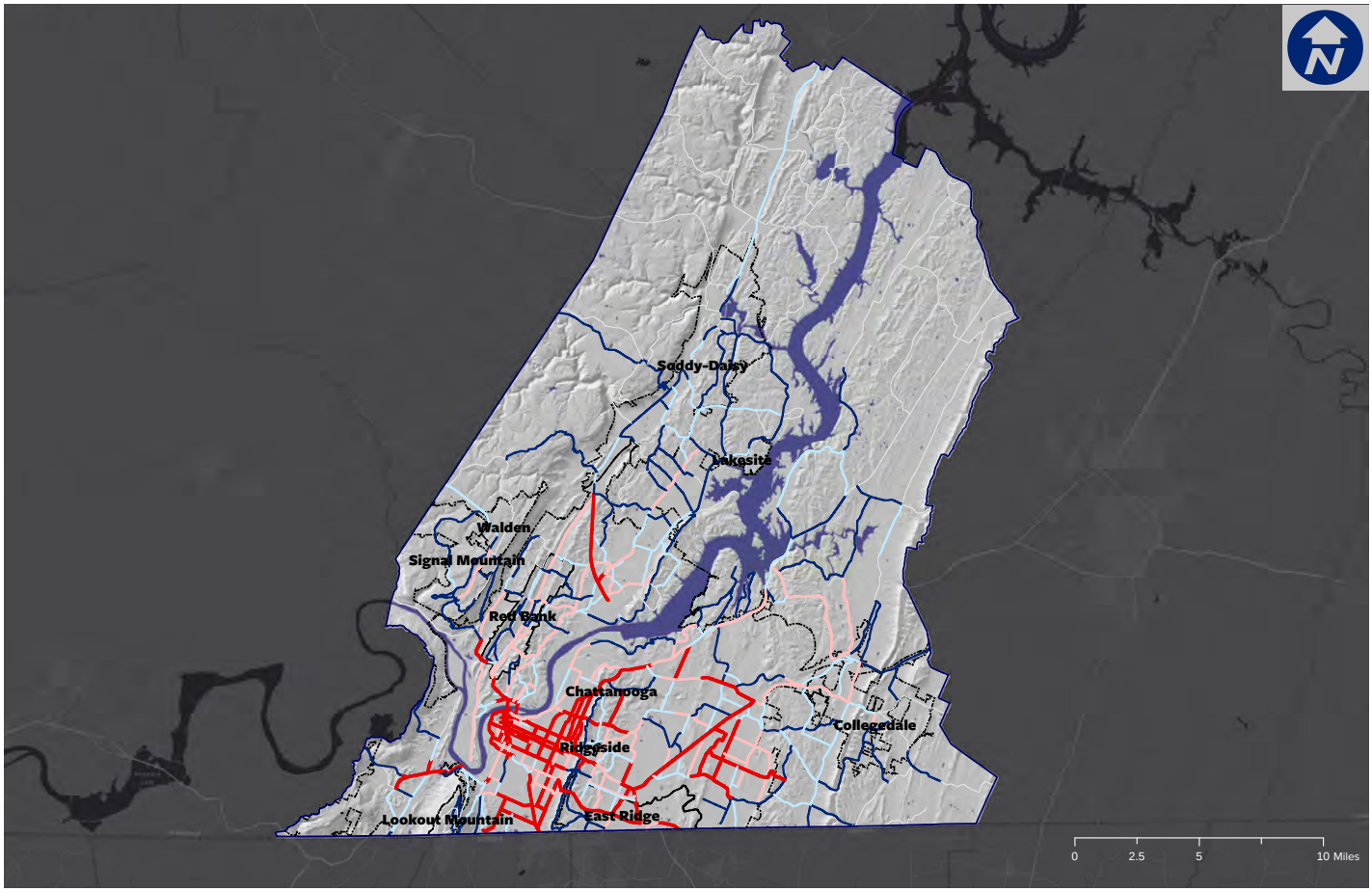

Ashland City
2040 Volume/
Capacity Ratio
N
SR-12
SR-12
SR-12
Ashland City
Nashville MPO
Legend
Volume/Capacity Ratio
0.00 - 0.24
0.25 - 0.49
0.50 - 0.74
0.75 - 0.99
1.00 +
Primary State Route
Secondary State Route
Local Routes (No Data)
Ashland City Boundary
0
0.5
1
2 Miles
TN TDOT Department of Transportation
Prepared by:
Tennessee Department of Transportation
Long Range Planning Division
Data Visualization Office
Source: Statewide Travel Demand Model, Tennessee Roadway Information Management System and TDOTGIS Database

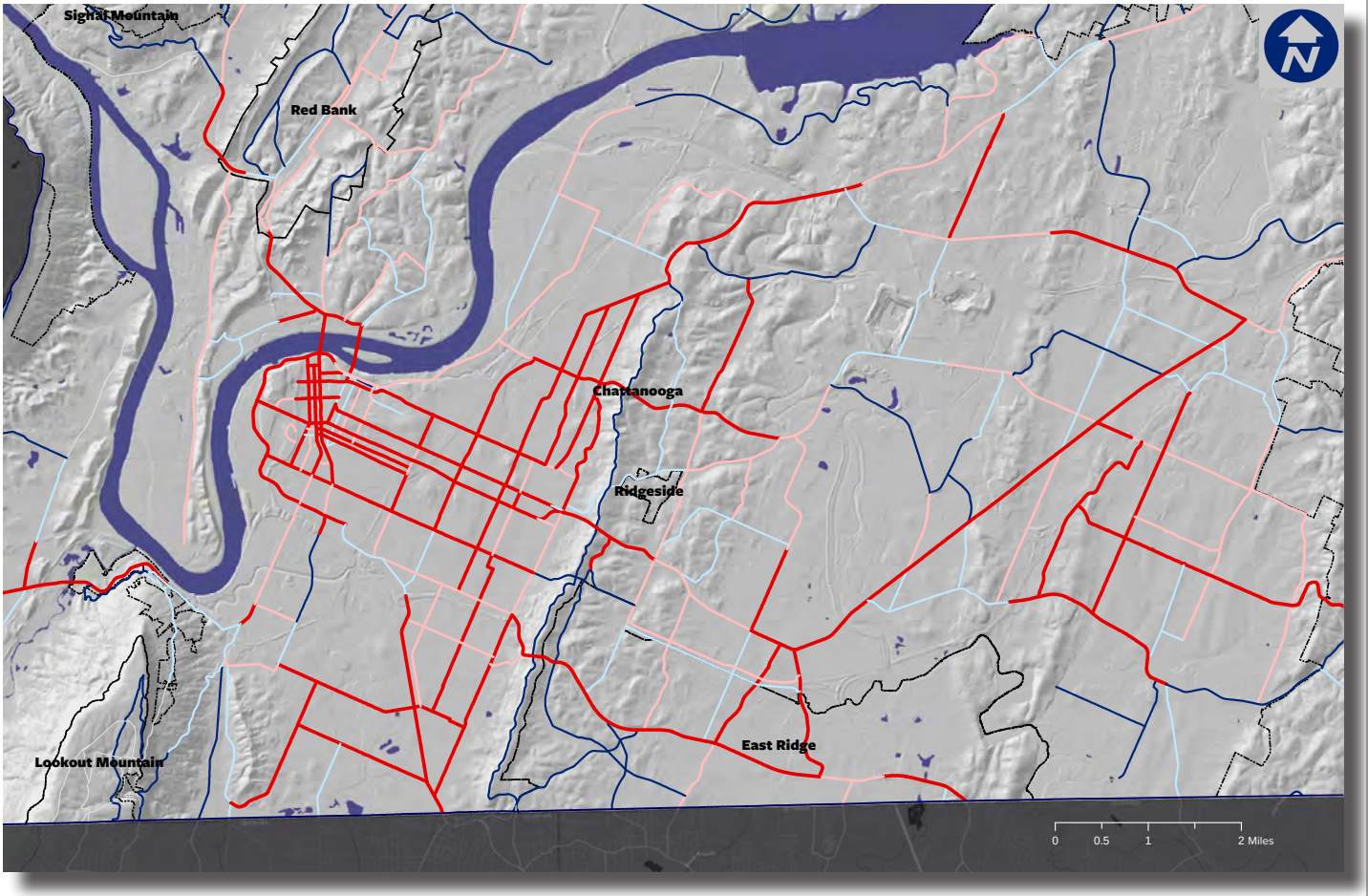

Ashland City Population
and 2016 Average Annual
Daily Traffic
N
SR-12
SR-12
SR-12
Ashland City
TN TDOT Department of Transportation
Prepared by:
Tennessee Department of Transportation
Long Range Planning Division
Data Visualization Office
Source: Tennessee Roadway Information Management System, TDOTGIS Database, and US Census
Legend
2010 Total Population by Census Block
0 - 35
35 - 140
140 - 630
2016 AADT
110 - 10,000 AADT
10,000 - 25,000 AADT
25,000 - 50,000 AADT
Primary State Route
Secondary State Route
Local Routes (No Data)
0
0.5
1
2 Miles

Multimodal Suitability Index (MSI)

The MSI serves as a uniform and consistent way to prioritize roadway segments and identify areas that could benefit from new projects. Planners and policy makers are able to identify areas with the most need for multimodal project development based upon this methodology. This analysis may be used as a component in other types of analyses and project prioritizations.

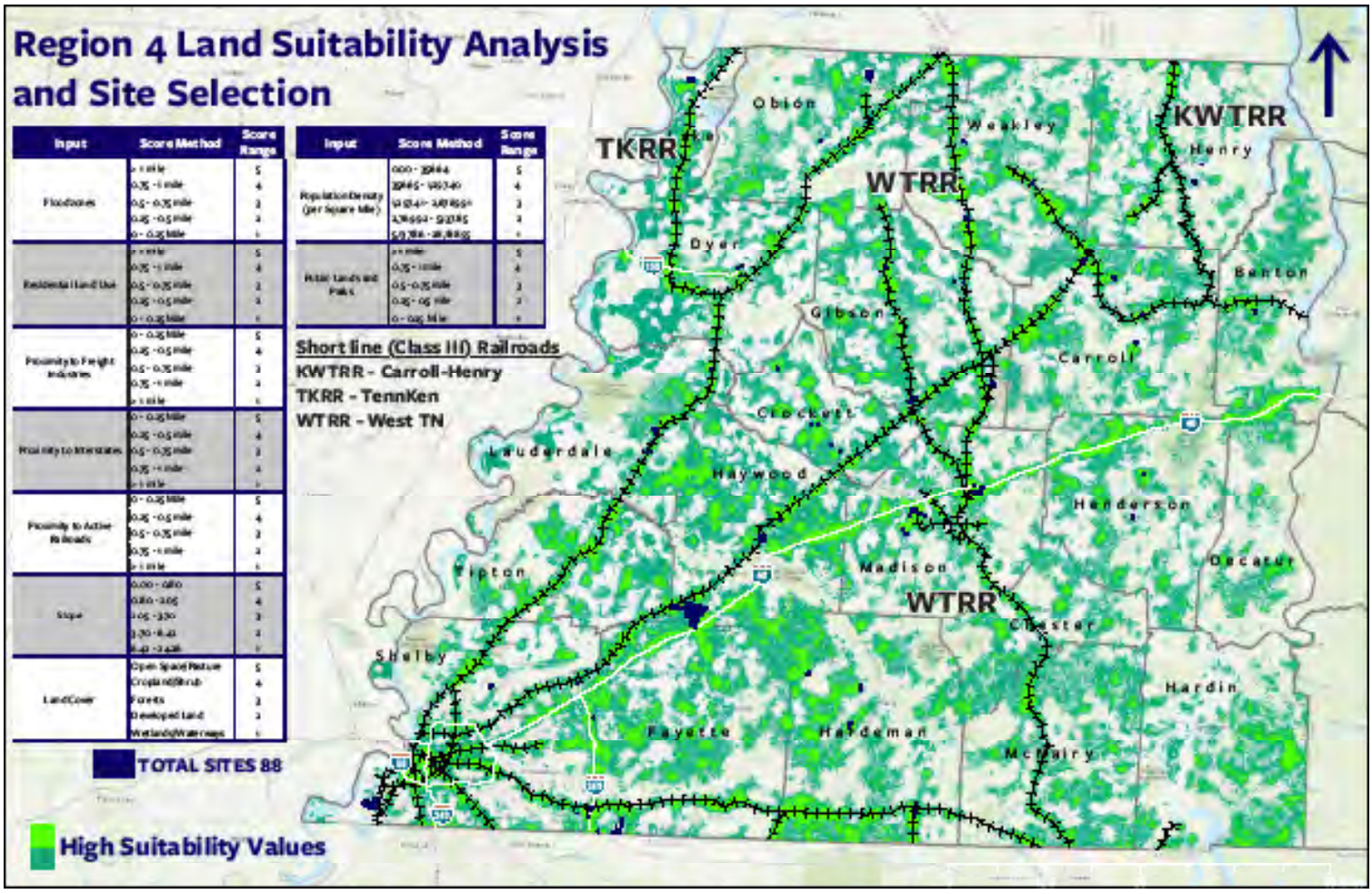
Criteria	Data	Score		Weight
Safety	Multiple Bicycle/Pedestrian Crashes	5		**25%**
	One Bicycle/Pedestrian Crash	3		
	No Bicycle/Pedestrian Crash	1		
Equity	Poverty Level	Sum of populations at the Census Block Group Level with the range of values 1 -5		**25%**
	Non-white Populations			
	Zero Car Households			
	Populations Under 18			
	Populations 65+			
Multimodal Demand	**LIVE** - Population Density	Multimodal Demand values classified from 1 - 5		**25%**
	WORK - Employment Density			
	LEARN - Schools			
	PLAY + SHOP - Businesses, Land Use, Points of Interest, Recreation			
	TRANSIT - Accessibility and Active Commuters (Walk, Bike, Transit to Work)			
Multimodal Supply	**Posted Speed Limit**	> = 40mph	5	**25%**
		30 - 35mph	3	
		< = 25mph	1	
	Pavement Width (Curb to Curb)	> 49 ft	5	
		25 - 48 ft	3	
		< = 24 ft	1	
	Number of Travel Lanes	> 4 Lanes	5	
		3 - 4 Lanes	3	
		2 Lanes	1	
	Traffic Volume	15,000 - 25, 000 AADT	5	
		10,000 - 15,000 AADT	3	
		< 10,000 AADT	1	
	Existing Sidewalks	Yes or No	1 or 5	
	Existing Bicycle Lanes	Yes or No	1 or 5	


Soddy-Daisy
Lakesite
Walden
Signal Mountain
Red Bank
Chattanooga
Collegedale
Ridgeside
East Ridge
Lookout Mountain
0
2.5
5
10 Miles


Signal Mountain
Red Bank
Chattanooga
Ridgeside
East Ridge
Lookout Mountain
0
0.5
1
2 Miles

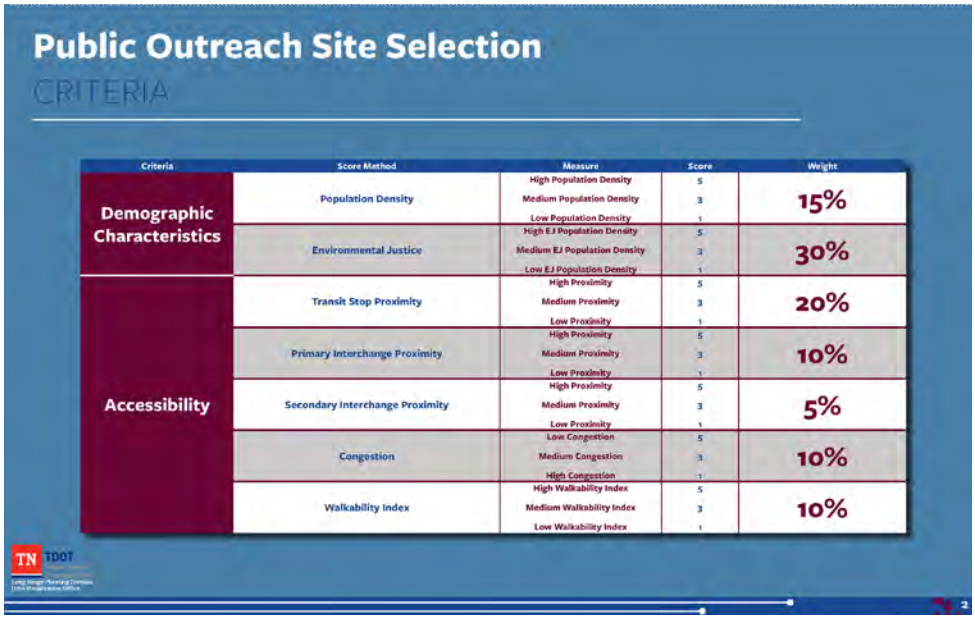
Freight Site Suitability Analysis

The Freight Site Suitability Analysis involved developing a data-driven approach to rank potential sites for freight industries. Tennessee Valley Authority parcels were ranked according to criteria such as, railroad and interstate proximity, environmental features, land use, utility infrastructure, and population density. Data Visualization provided support in this coordinated effort between TDOT and ECD. The results from Region 4 are displayed below.

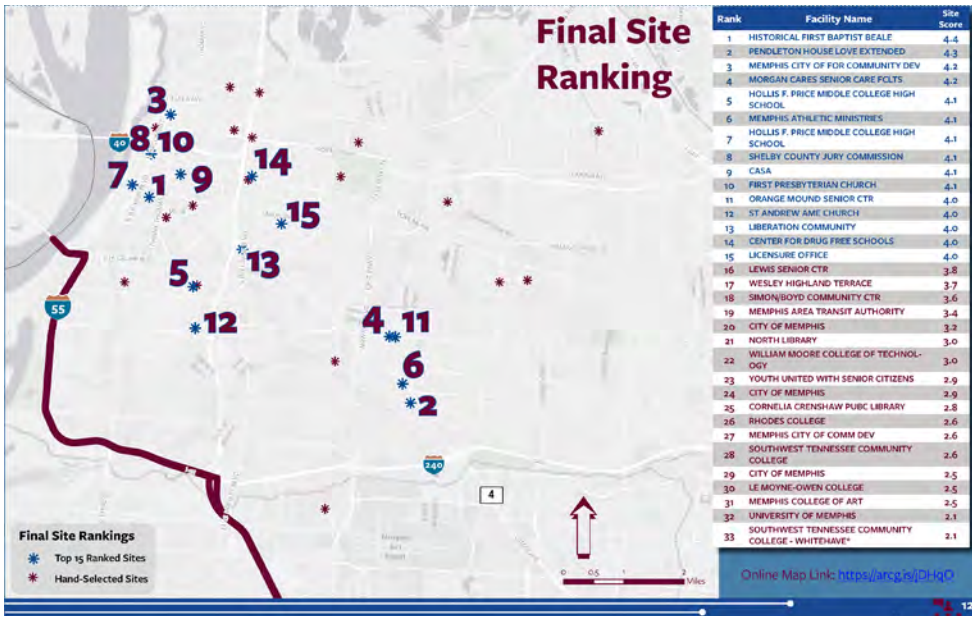


Public Outreach Site Selection

The intent of this analysis is to produce a data-driven approach to assist the OCT staff in determining the most suitable locations for public outreach meetings. This process served as a guide for OCT staff to identify sites and educate the public on the interstate corridor studies throughout the State. Targeted residents would be those who may not only be impacted by the corridor study, but also those who may not have equitable access to attend the meetings. The initial list includes the following facility type: community centers, public schools, colleges/universities, religious institutions, retirement centers, libraries, and public administration buildings. Criteria used in analysis: Population Density, Environmental Justice Populations, Transit Stop Proximity, Corridor Interchange Proximity, Congestion, and Walkability.



Criteria	Score Method	Measure	Score	Weight
Demographic Characteristics	Population Density	High Population Density	5	15%
		Medium Population Density	3	
		Low Population Density	1	
	Environmental Justice	High EJ Population Density	5	30%
		Medium EJ Population Density	3	
		Low EJ Population Density	1	
Accessibility	Transit Stop Proximity	High Proximity	5	20%
		Medium Proximity	3	
		Low Proximity	1	
	Primary Interchange Proximity	High Proximity	5	10%
		Medium Proximity	3	
		Low Proximity	1	
	Secondary Interchange Proximity	High Proximity	5	5%
		Medium Proximity	3	
		Low Proximity	1	
	Congestion	Low Congestion	5	10%
		Medium Congestion	3	
		High Congestion	1	
	Walkability Index	High Walkability Index	5	10%
		Medium Walkability Index	3	
		Low Walkability Index	1	



Rank	Facility Name	Site Score
1	HISTORICAL FIRST BAPTIST BEALE	4.4
2	PENDLETON HOUSE LOVE EXTENDED	4.3
3	MEMPHIS CITY OF FOR COMMUNITY DEV	4.2
4	MORGAN CARES SENIOR CARE FCLTS	4.2
5	HOLLIS F. PRICE MIDDLE COLLEGE HIGH SCHOOL	4.1
6	MEMPHIS ATHLETIC MINISTRIES	4.1
7	HOLLIS F. PRICE MIDDLE COLLEGE HIGH SCHOOL	4.1
8	SHELBY COUNTY JURY COMMISSION	4.1
9	CASA	4.1
10	FIRST PRESBYTERIAN CHURCH	4.1
11	ORANGE MOUND SENIOR CTR	4.0
12	ST ANDREW AME CHURCH	4.0
13	LIBERATION COMMUNITY	4.0
14	CENTER FOR DRUG FREE SCHOOLS	4.0
15	LICENSURE OFFICE	4.0
16	LEWIS SENIOR CTR	3.8
17	WESLEY HIGHLAND TERRACE	3.7
18	SIMON/BOYD COMMUNITY CTR	3.6
19	MEMPHIS AREA TRANSIT AUTHORITY	3.4
20	CITY OF MEMPHIS	3.2
21	NORTH LIBRARY	3.0
22	WILLIAM MOORE COLLEGE OF TECHNOLOGY	3.0
23	YOUTH UNITED WITH SENIOR CITIZENS	2.9
24	CITY OF MEMPHIS	2.9
25	CORNELIA CRENSHAW PUBC LIBRARY	2.8
26	RHODES COLLEGE	2.6
27	MEMPHIS CITY OF COMM DEV	2.6
28	SOUTHWEST TENNESSEE COMMUNITY COLLEGE	2.6
29	CITY OF MEMPHIS	2.5
30	LE MOYNE-OWEN COLLEGE	2.5
31	MEMPHIS COLLEGE OF ART	2.5
32	UNIVERSITY OF MEMPHIS	2.1
33	SOUTHWEST TENNESSEE COMMUNITY COLLEGE - WHITEHAVE*	2.1