

Interstate 65 Multimodal Corridor Study



Technical Memorandum 1: Corridor Data and Information Inventory

August 2016



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Department of Transportation by:



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S M I T H A N D
P A R T N E R S



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I-65 MULTIMODAL CORRIDOR STUDY

TECHNICAL MEMORANDUM 1: CORRIDOR DATA AND INFORMATION INVENTORY

1. INTRODUCTION

The interstate system carries a disproportionate amount of traffic and freight in Tennessee. Representing just over one percent of all centerline mileage in the state, the interstate system supports roughly 30 percent of all vehicle miles traveled (VMT) and 80 percent of all truck VMT in the state. The dynamic role that the Interstate 65 (I-65) corridor plays in interregional travel in Tennessee will only continue to expand. The Middle Tennessee region is projected to add another one million people over the next 20 years and communities throughout the corridor will continue to rely on the interstate to fuel economic growth. How the I-65 corridor should develop as a multimodal corridor, then, will become an increasingly important question to answer.

The purpose of the I-65 Multimodal Corridor Study is to examine potential multimodal transportation improvements that would address existing and emerging transportation system issues associated with this corridor, which serves Middle Tennessee and rural counties north and south near the Kentucky and Alabama state lines. The recommendations will reflect identified deficiencies along the route with an emphasis on safety corridor capacity and freight diversion. The planning process for the study will focus on three primary tasks:

1. Identification of existing and future deficiencies at three time horizons (2020, 2030, and 2040);
2. Development and refinement of feasible multimodal solutions; and
3. Prioritization and phasing of recommendations.

The study's findings and recommendations will directly inform and feed into the Tennessee Department of Transportation's (TDOT) planning and project development processes.

1.1 Purpose of Corridor Data and Information Inventory

The I-65 Multimodal Corridor Study is a complex undertaking. Spatial and tabular data, policies, plans, and studies are needed from multiple local, regional, state, and federal agencies. In order to ensure that the study utilizes the most current and appropriate data and information, this memo highlights both the data sources being used and the base information for different system elements. This memo will set the stage for the analytical discussions of existing and future transportation system deficiencies in the study's subsequent task. The following sections provide descriptions of the data and high-level overviews of system information where applicable. The project study area is shown in Figure 1-1.



2. PREVIOUS AND CURRENT PLANS AND STUDIES

Transportation and land use are inherently interconnected and interdependent. Decisions regarding one will inevitably influence the policy and investment decisions of the other. The I-65 Multimodal Corridor Study recognizes this connection and includes a review of both transportation and land use plans as part of the systems inventory and data collection process. While local land use planning is outside of the purview of TDOT, decisions made at the state, regional, and local levels impact and influence one another. Analysis and proposed improvements in this study will be evaluated in light of related state, regional, and local planning activities.

Transportation and land use plans, programs, and studies within the study area were compiled and reviewed. The TDOT and the Nashville Area

Metropolitan Planning Organization’s (MPO) Long Range Transportation Plans (LRTP) and Transportation Improvement Programs (TIP) were reviewed to identify projects and studies in the vicinity of the I-65 corridor. Additionally, regional transportation and land use studies were examined to determine other long-term project recommendations that may not yet be reflected in the LRTPs or TIPs. Table 2-1 shows the complete list of previous and current plans, programs, and studies.



Table 2-1. Previous and Current Plans, Programs, and Studies

 State and Regional Plans, Programs, and Studies	 Local Transportation Plans and Studies	 Local Land Use/ Comprehensive Plans
<ul style="list-style-type: none"> • Nashville Area MPO 2016–2040 Regional Transportation Plan (2015) • Nashville Area MPO Southeast Area Transportation and Land Use Study (2016) • Nashville Area MPO Southwest Area Transportation and Land Use Study (2010) • Nashville Area MPO Transportation Improvement Program, 2014–2017 (2013) • Nashville Area MPO Tri-County Transportation and Land Use Study (2010) • Nashville Area MPO Regional Bicycle and Pedestrian Study (2008) • TDOT 25-Year Long Range Transportation Plan (2015) • TDOT Transportation Improvement Program, 2014–2017 (2013) 	<ul style="list-style-type: none"> • City of Lebanon, City of Mt. Juliet, Wilson County: Bicycle and Pedestrian Master Plan (2002) • Cool Springs Multimodal Transportation Network Study (2015) • Nashville Metropolitan Transit Authority/Regional Transportation Authority Strategic Plan: nMotion (to be completed 2016) • Metro Nashville and Davidson County Access Nashville 2040 (2015) • Spring Hill Bicycle and Greenway Plan (2015) • Williamson County Major Thoroughfare Plan Update (2011) 	<ul style="list-style-type: none"> • Brentwood 2020 Plan Update (2008) • City of Portland Future Land Use Plan • Franklin Land Use Plan (2004) • Maury County Comprehensive Plan (2011) • Metro Nashville and Davidson County NashvilleNext (2015) • Robertson County 2040 Comprehensive Growth and Development Plan (2013) • Rutherford County Comprehensive Plan (2011) • Spring Hill Comprehensive Plan (2011) • Sumner County 2035 Comprehensive Plan (2010) • Thompson’s Station General Plan • White House Comprehensive Plan 2025 (2008) • Williamson County Comprehensive Land Use Plan (2007) • Wilson County Land Use Master Plan (2006)

3. EXISTING DATA AND INFORMATION

3.1 Transportation Capacity, Travel Demand, and Congestion

Evaluating roadway performance, capacity, travel demand, and congestion are critical topics for understanding the existing and projected conditions in the I-65 corridor.

Existing Highway Network

Geographic Information System (GIS) files for all streets in the study area are from the US Census 2010 Streets. This dataset contains only basic attributes such as road name and functional classification, but does provide a helpful network showing all public roads down to local streets. In addition, TDOT provided Transearch Data, which includes highway and rail network geometrics. The highway data includes road names, cardinal direction headings, number of lanes, and functional class, and the rail data includes owner and classification. TDOT also provided highway ramp GIS files detailing ramp length. Highway Performance Management System (HPMS) data was obtained from TDOT and describes roadway performance and geometric characteristics. Finally, existing Intelligent Transportation Systems (ITS) facilities and resources were provided by TDOT.

Existing Travel Volumes

Average annual daily traffic (AADT) counts were provided by TDOT for streets classified as minor arterials and above. AADT volumes along the I-65 corridor range from 18,460 vehicles per day near the Alabama-Tennessee state line to 172,400 vehicles per day near Nashville. Traffic counts are available for the 10 counties in the study area surrounding I-65. TDOT further provided truck traffic counts by classification and American Transportation Research Institute (ATRI) origin-destination traffic volumes for freight movement in the study area. InfoUSA employment and business establishment data was obtained from TDOT, which details the square footage, NAICS employment codes, sales volume,

office size, and number of employees (by range) for every business in the study area.

Existing Areas of Travel Congestion

The study will utilize two travel demand models (TDM) to analyze existing and future travel demand. The Nashville Area Metropolitan Planning Organization's (MPO) TDM analyzes Metro Nashville-Davidson County and surrounding counties, including Maury, Robertson, Rutherford, Sumner, Williamson, and Wilson. The MPO TDM forecasts travel in years 2010 and 2015 using TransCAD version 6. The following counties fall outside of the MPO's limits: Cheatham, Dickson, Hickman, Marshall, Bedford, Giles, and Lincoln. The Tennessee Statewide Travel Model (TSTM) from TDOT will be used to analyze the counties outside of the MPO's limits. The TSTM has a base year of 2010, and also runs in TransCAD. Figure 3-1 displays the data coverage of the MPO TDM model. Again, data for counties outside of this coverage area will be obtained from the TSTM. TDOT will issue an update of the TSTM in the summer of 2016, after the publication date of this report. Data and output from the new model will be incorporated into the study where applicable.

During future work tasks, the analysis will rely on the travel models plus data from the National Performance Management Research Data Set (NPMRDS), Air Sage data, and crash data provided by TDOT. The NPMRDS comes with a GIS shapefile identifying Traffic Management Center (TMC) locations, and a table of average travel time between different sites. The Air Sage data provides origin-destination traffic volumes for the study area. TDOT provided crash data for 2015 and 2016 for the 10 counties in the study area surrounding I-65.

3.2 System Operations and Maintenance

A high level of coordination among various agencies and jurisdictions is required to ensure the proper operation and maintenance of the transportation system.

Jurisdictions and Coordination

TDOT coordinates with various local, state, and federal agencies to accomplish a number of operations and maintenance objectives. These

include signage and marking, emergency management planning, facility maintenance, and systematic inspections. Highlighted below are some of the major coordination activities.

The Regional Operations Office in each of the four TDOT Regions are responsible for directing operations and maintenance activities. Operations and maintenance responsibilities at the regional level include highway maintenance and repair, bridge inspection and repair, traffic and highway pavement markings, materials and testing, highway beautification, traffic engineering, incident response, and intelligent transportation systems.

The Maintenance Policy Office of TDOT is responsible for developing and refining the procedural guidelines for field maintenance activities. The guidelines ensure high quality and uniformity of maintenance activities within TDOT right-of-way. The guidelines are supported by national best management practices and effective procedures from peer departments. The office also coordinates special maintenance programs such as the Emergency Preparedness Plan, Vegetation Management Program, and other special programs. The office works with the TDOT Environmental Compliance Office on issues related to Municipal Stormwater Sewer System documents and other environmental issues as needed.

Local maintenance contracts are agreements with local agencies for maintenance of the paved surface on state-owned highways that fall within urban local jurisdiction limits. Through these contracts, an agreement between the local jurisdiction and the state ensures that maintenance of the roadway will be completed by the local jurisdiction on behalf of the state. Municipalities and counties within the study area with maintenance contracts in place are:

- La Vergne
- Lebanon
- Metropolitan Nashville-Davidson County
- Pulaski
- Rutherford County
- Shelbyville
- Smyrna

TDOT also coordinates with state and federal agencies in the development and implementation of transportation safety, security, and resiliency programs and projects. While multiple divisions of the department coordinate externally, the coordination flows through a single conduit, TDOT's

Office of Emergency Management. The TDOT Office of Emergency Management and the TDOT coordinator stationed at the Tennessee Emergency Management Agency (TEMA) are responsible for emergency preparedness coordination with external agencies.

ITS Features and Operation

Intelligent Transportation Systems (ITS) improve transportation safety and mobility and enhance productivity through advanced management and communication technologies. TDOT's Intelligent Transportation System, referred to as TDOT SmartWay, uses live video cameras to monitor highways from TMCs across the state, sensors to gauge traffic flow, and large electronic message boards to provide urgent traffic notices and safety messages to drivers. The primary ITS program components include the following:

- Camera video surveillance by way of closed-circuit television (CCTV) that monitors congested freeways and provides improved incident management capabilities;
- Radar and video detection systems that monitor traffic flow and help calculate travel times for routes;
- Roadway traffic sensors that report traffic counts, speed, and travel time;
- Dynamic Message Signs (DMS) mounted over interstate travel lanes that provide traffic and construction information to motorists, as well as other key messages about driving;
- TMCs that serve as focal points for traffic management operations and communications in Memphis, Nashville, Chattanooga, and Knoxville;
- HELP freeway service patrols that reduce congestion by removing minor incidents in a timely fashion in the four urban areas;
- TN 511, a voice activated phone system, that provides up to date traffic information about conditions on Tennessee roadways as well as weather information from the National Weather Service;
- The Smartway mobile app, which provides real-time traffic information to the traveling public.; and
- An extensive fiber-optic and wireless communications and power network that

connects and communicates all elements of the system.

The Nashville Area Regional ITS Architecture is coordinated with the statewide architecture and was developed through the Nashville Area MPO in June of 2010. This regional ITS architecture provides a framework for implementing ITS projects, encourages interoperability and resource sharing among agencies, identifies applicable standards to apply to projects, and allows for cohesive long-range planning among regional stakeholders. Any ITS project in the Nashville region must show conformance with this regional ITS architecture in order to be eligible for federal funding. The Nashville Area MPO will be updating the Regional ITS Architecture in 2016.

To meet the growing needs of motorists, TDOT continues to expand the SmartWay system. The following SmartWay expansion projects for I-65 in TDOT Region 3 (Middle Tennessee) are currently under construction as of April 2016.

- North of Nashville - Davidson, Sumner, Robertson Counties – from Milemarker (MM) 96.6 to 110.2 (13.6 miles) - adding 9 CCTV and 4 DMS
- South of Nashville - Davidson, Williamson Counties – from MM 57.6 to 76 (includes I-840

MM 50 to 57) (25.4 miles) –adding 13 CCTV and 4 DMS and 29 RDS

HELP Program routes ultimately share the same boundaries as the rest of the TDOT SmartWay system. Region 3 HELP currently consists of 24 highway response operators staffing six major established high-volume routes. The proposal of three additional routes under this expansion will allow two of the heaviest traveled corridors to be extended where daily traffic is in excess of 90,000 vehicles per day. The proposed routes include:

- I-65 north of Nashville - extend coverage to mile marker 110 in Robertson and Sumner County
- I-65 south of Nashville - extend coverage to end at Exit 65 (SR 96) in Franklin, Williamson County

With the pending completion of the two current system expansion projects, the I-65 SmartWay system will extend from Milemarker 110.2 (approximately two miles north of Exit 108 at SR 76) to Milemarker 57.6 (approximately one mile south of the I-840 interchange), a total distance of approximately 53 miles. ITS infrastructure included along these 53 miles of I-65 will include 62 CCTV cameras, 152 speed detectors, and 23 DMS. The current ITS system coverage of the I-65 corridor is shown in Figure 3-2.

Table 3-1. ITS Resources on I-65

   	ITS Resource	Count
	TMC Operators	22
	HELP Operators	24
	HELP Vehicles	30
	IT Technicians	3
	Interstate Miles (SmartWay)	183
	Interstate Miles (HELP Routes)	146
	CCTV Cameras	178
	Speed Detectors	234
	Dynamic Message Signs (DMS)	70
	Highway Advisory Radio (HAR) Transmitters	14
	HAR Signs w/Beacons*	47
	Portable Variable Message Signs (PVMS)	3

* HAR systems are in the process of being removed

3.3 Multimodal Facilities and Services

Increasingly, transportation agencies across the nation are recognizing the important role of multiple transportation modes to achieve access and mobility goals.

Public Transportation and Transportation Demand Management

Public transportation throughout the I-65 study area is provided by a number of different fixed route, commuter, and demand response providers (Figure 3-3), including Nashville Metropolitan Transit Authority (MTA), Middle Tennessee Regional Transportation Authority (RTA), Transportation Management Association (TMA) Group, Franklin Transit Authority, Murfreesboro Rover, Mid-Cumberland Human Resource Agency (MCHRA), and South Central Tennessee Development District (SCTDD).

Figure 3-2. Nashville SmartWay, 2016

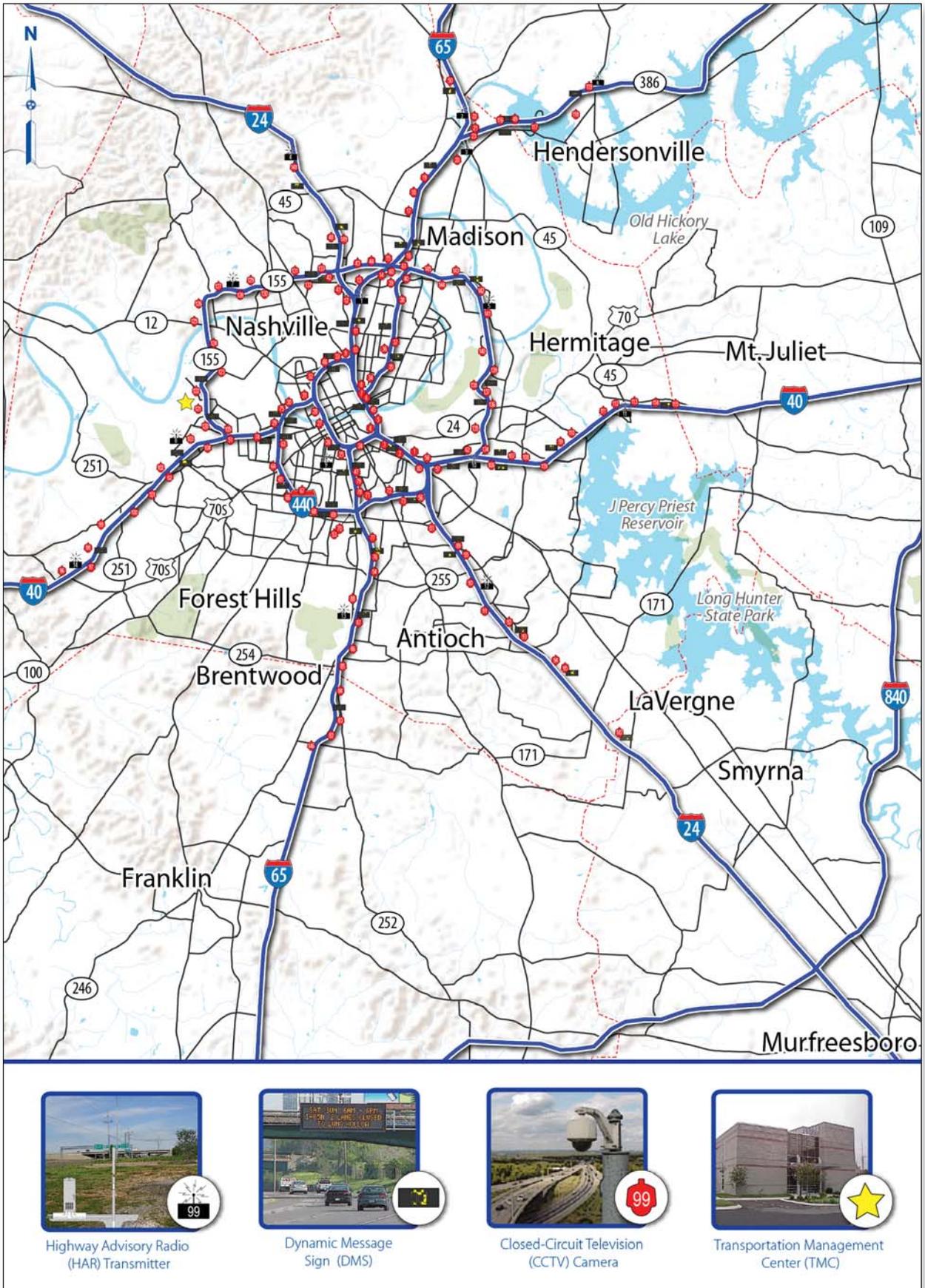


Figure 3-3. Public Transportation Providers and Routes

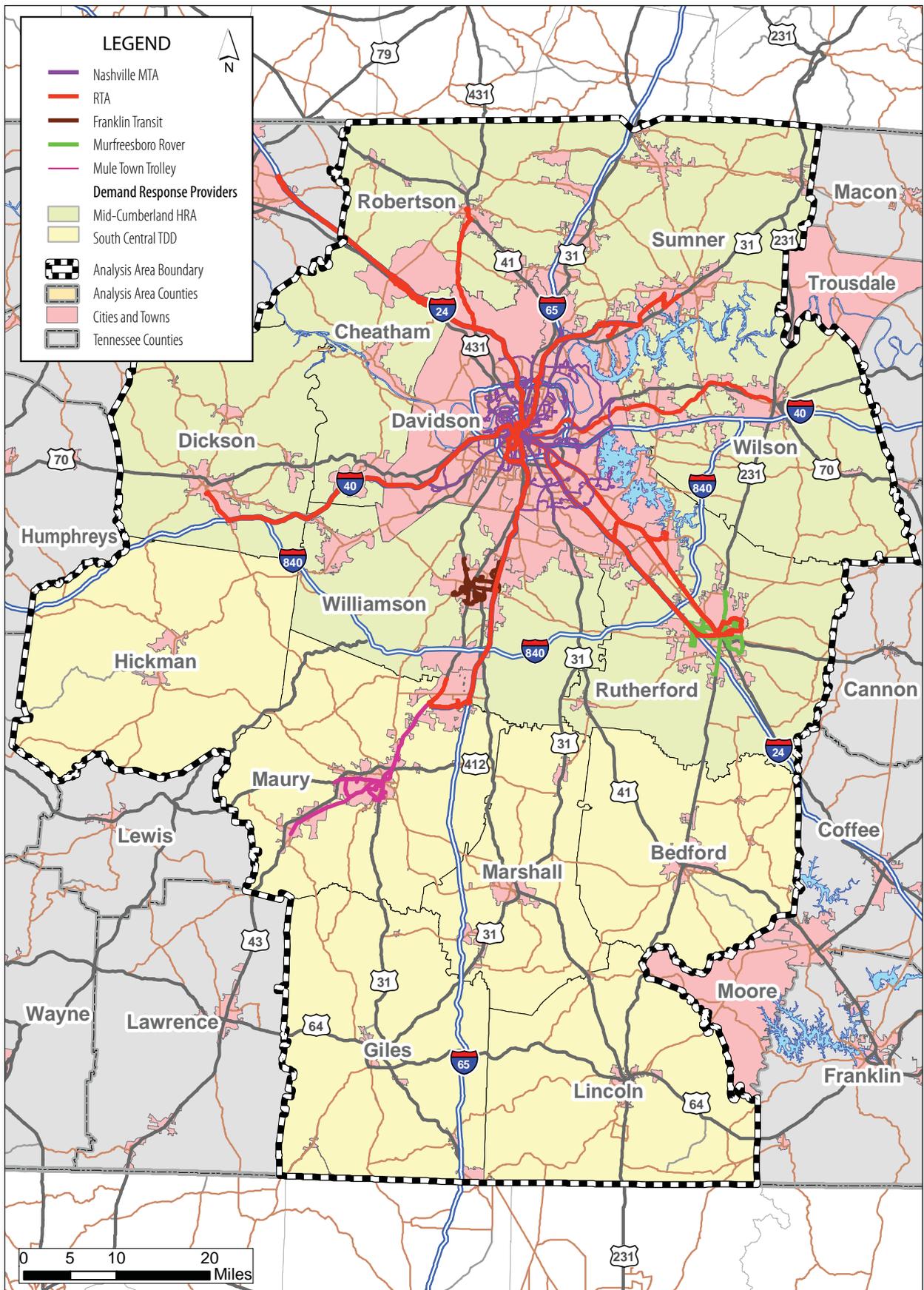
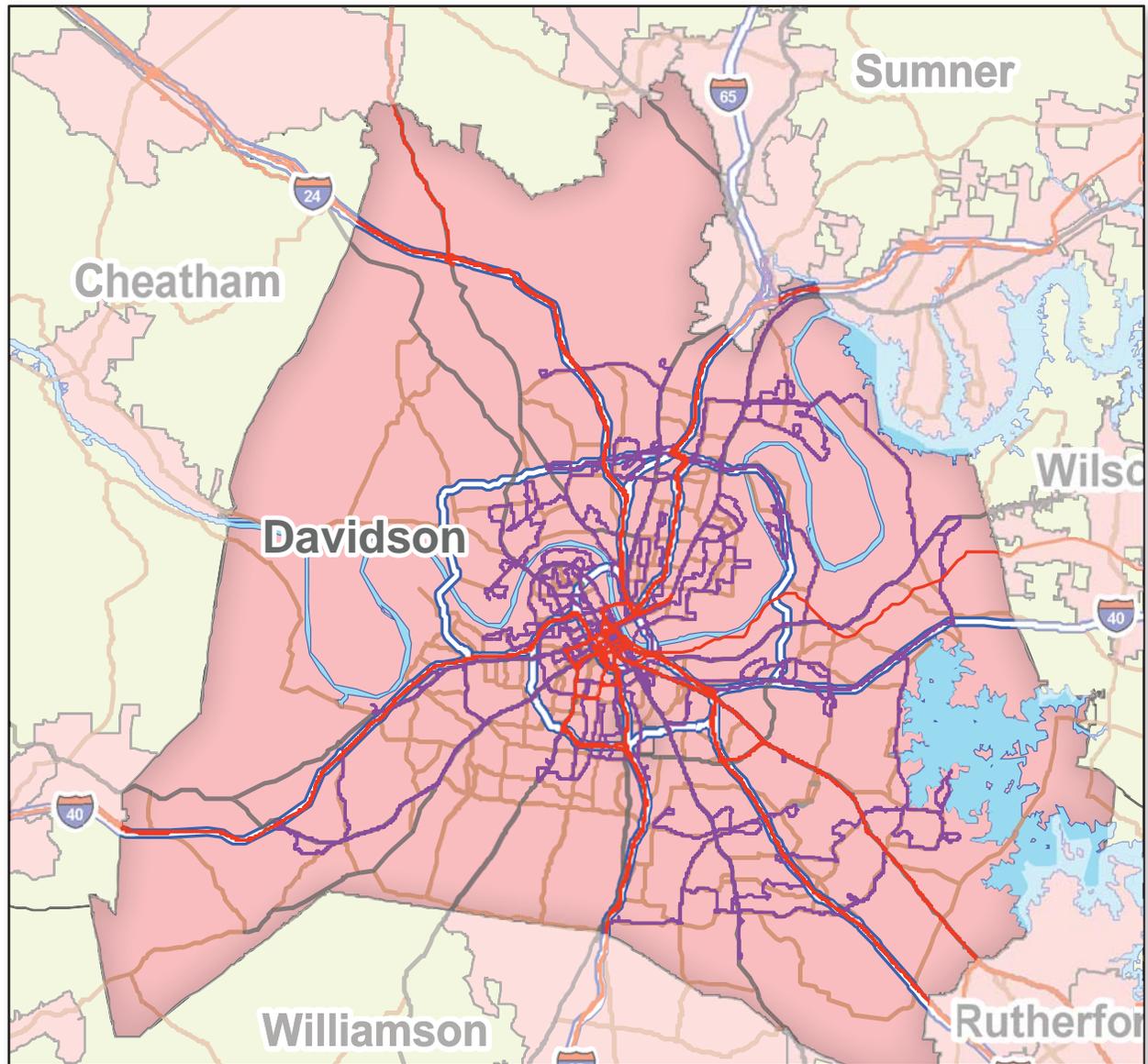


Figure 3-3b. Public Transportation Providers and Routes – Davidson Co.



Metropolitan Transit Authority

The Nashville MTA provides public transportation services within Metropolitan Nashville-Davidson County. Nashville MTA currently operates 43 fixed route bus routes. In addition, the Nashville MTA provides door-to-door paratransit services, known as AccessRide, for seniors and people with disabilities in Davidson County within 1.5 miles of the fixed routes. Fares for local service are \$1.70 with seniors and people with disabilities receiving a discounted rate of \$0.85. Ridership on fixed routes totaled over 9.2 million in 2014. Demand response services provided nearly 406,000 passenger trips in 2014.

Regional Transportation Authority

The RTA is a nine county authority that oversees the operation of a variety of regional commuter transit services including a commuter rail service. The RTA operates nine regional bus routes in collaboration with the Nashville MTA between downtown Nashville and Clarksville, Franklin, Gallatin, Hendersonville, Joelton, La Vergne, Murfreesboro, Smyrna, Springfield, Spring Hill, and Thompson's Station. Fares for all express routes are \$4.25 each way. Ridership on all commuter bus routes totaled nearly 198,000 in 2014.

Two commuter fixed routes travel via I-65 north to and from Sumner County for a portion of their service:

- **87X – Gallatin Express** operates two morning trips to downtown Nashville and three afternoon trips from downtown Nashville each weekday; and
- **92X – Hendersonville Express** provides two morning trips to downtown Nashville and three afternoon trips from downtown Nashville each weekday.

Two commuter fixed routes travel entirely via I-65 south to and from Williamson County:

- **91X – Franklin Express** operates three morning trips to downtown Nashville and three afternoon trips from downtown Nashville each weekday.
- **95X – Spring Hill Express** provides two morning trips to downtown Nashville and two afternoon trips from downtown Nashville each weekday.

Finally, one commuter fixed route travels a portion of its route via I-65 to and from Robertson County:

- **89X – Springfield/Joelton Express** operates two morning trips to downtown Nashville and two afternoon trips from downtown Nashville each weekday.

In addition, the RTA's rideshare program organizes vanpools and carpools for commuters. Vanpool services provided approximately 178,000 passenger trips in 2014.

Additionally, both MTA and RTA operate park-and-ride lots throughout the region to serve commuters. These lots are shown in Figure 3-4

Transportation Management Association Group

The TMA Group provides transportation in fourteen middle Tennessee counties throughout the I-65 study area. The TMA Group operates and manages VanStar, a commuter vanpool service, on behalf of the RTA and Williamson County. The average cost to participate in a vanpool is \$85.00 per month plus a percentage of actual fuel usage. The TMA Group provided nearly 63,000 passenger trips in 2014 through its vanpool service. There are no limitations on the origins or destinations of the vanpools, provided that the trip passes through the Nashville Area MPO boundaries.

Franklin Transit Authority

The Franklin Transit Authority provides public transportation services in the Franklin area. Service is provided from 6:00 AM to 6:00 PM along three fixed routes. Transit On Demand (TODD) is a pre-arranged, curb-to-curb service that also provides all-day, same-day access to Franklin's fixed route services. Both services are managed and operated by the TMA Group. Fares for local service are \$1.00 with seniors and people with disabilities receiving a discounted rate of \$0.50. Ridership on fixed routes totaled almost 50,000 in 2014. Meanwhile, demand response passenger trips were nearly 26,000 in 2014.

Mid-Cumberland Human Resource Agency

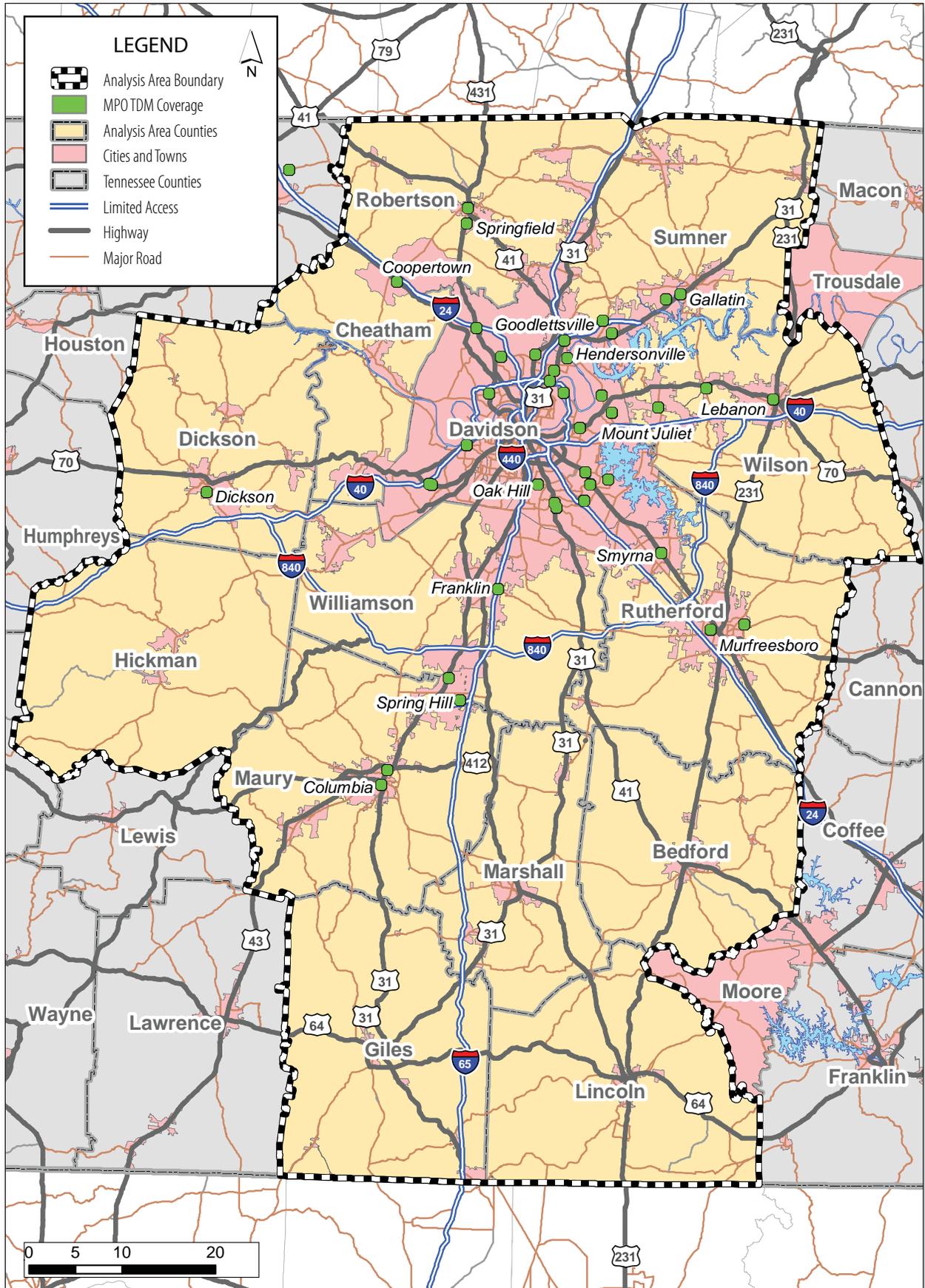
The MCHRA provides demand response public transportation services to 12 counties. Within the study area, MCHRA provides transportation to Cheatham, Dickson, Robertson, Rutherford, Sumner, Williamson, and Wilson counties. As a demand response system, riders must make advance reservations to use the service. Transportation services are available to anyone regardless of age or income on a first-call, first-served basis. MCHRA operates Monday through Friday from 6:00 AM to 6:00 PM. Fares vary depending on county of origin and destination. MCHRA provided over 267,000 passenger trips in 2014.

South Central Tennessee Development District

The SCTDD is an association of 35 municipal and 13 county governments in southern middle Tennessee. SCTDD contracts with transit agencies in each of the counties within the district to provide demand response services. Within the study area, SCTDD provides transportation to Bedford, Giles, Lincoln, Marshall, and Maury counties. Rural public transportation is available for everyone. Passengers must call their county transportation office at least 24 hours in advance for a reservation request. Service is provided within each county at a minimum of Monday through Friday from 6:00 AM until 6:00 PM. Fares vary depending on county of origin and destination.

SCTDD also offers deviated fixed route service for Maury County to surrounding areas. The service

Figure 3-4. Regional Park & Ride Lots



includes a total of four routes running hourly. Two routes provide services from the Columbia area to Mt. Pleasant and to Spring Hill. These routes connect to two routes in downtown Columbia. Deviated service is offered to anyone within 3/4 mile radius of the regular scheduled route. Fares for local service are \$1.00 with seniors and people with disabilities receiving a discounted rate of \$0.50. SCTDD provided over 271,000 passenger trips on their demand response and deviated route services in 2014.

Finally, SCTDD offers fixed route commuter bus service from Lawrenceburg to Nashville and Murfreesboro and from Linden to Nashville. Two daily round trips from Lawrenceburg to Nashville are made on Monday, Tuesday, Thursday, and Friday. Trips from Lawrenceburg to Murfreesboro are scheduled on Wednesdays. Round trip tickets range from \$12.00 to \$20.00 depending on origin and destination. SCTDD provided nearly 14,000 passenger trips on their commuter bus routes in 2014.

Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities expand travel options and support more efficient development patterns. Figure 3-5 shows the existing state bicycle routes within the I-65 study area. With over 1,000 miles of signed bicycle routes, significant progress has been made on making the area accessible by bicycle. In particular, existing state bicycle routes parallel I-65 on the following roadways:

- US 31, Robertson and Sumner County line;
- Dickerson Pike (US 31W), Davidson County;
- State Route 6 (SR 6), Williamson County and Maury County; and
- SR 11 and SR 272, Giles and Marshall Counties.

Planned state highway bicycle routes are illustrated in Figure 3-6. The Kentucky to Natchez Trace Parkway route runs alongside I-65 north of Nashville. The route veers away from I-65 south of Nashville as it becomes the Natchez Trace near the border of Williamson County. Four proposed routes run perpendicular to I-65:

- Reelfoot Lake to Nashville;
- Memphis to Nashville/Nashville to Bristol;
- Natchez State Park to Alabama; and
- Memphis to Chattanooga.

Of note, in 2013 the American Association of State Highway and Transportation Officials (AASHTO) designated a 154-mile route from the Kentucky border to Alabama as U.S. Bike Route 23 (USBR 23) in Tennessee. USBR 23 travels parallel to I-65 for the majority of its route as it begins in rural Robertson County before entering metropolitan Nashville. The route then goes through downtown Nashville and continues south through Franklin. The route south of Franklin is rural and connects to Henry Horton State Park, Chapel Hill, and Lewisburg before heading into Alabama.

Passenger Air and Rail Services

Two airports provide a majority of the aviation capacity in the study area. The Nashville International Airport (BNA) is a commercial and military airport located to the east of I-65. The current terminal was constructed in 1987 and has four runways. The airport is currently served by 10 airlines with an average of 410 daily arriving and departing flights. According to the Nashville Airport Authority, nearly 11.2 million passengers traveled into and out of BNA during 2015.

Generally, flights from BNA provide access to the larger cities connected via the I-65 corridor including Chicago and Indianapolis. Cities accessible off the I-65 corridor such as Cincinnati and New Orleans also have direct flights from BNA. However, flights to Birmingham from Nashville are typically routed through Atlanta and flights to Louisville from Nashville are typically routed through Atlanta or Chicago (O'Hare). Many communities within the study area use I-65 as the primary route for most (Brentwood, Franklin, Columbia) or a significant part (Gallatin, Hendersonville) of their trip to access the airport.

The Middle Tennessee RTA operates the Music City Star passenger rail service that connects downtown Nashville with Lebanon to the east. Currently there is no passenger rail service providing north-south mobility within the corridor

3.4 Safety and Security

Jurisdictions and Coordination

Tennessee Highway Patrol (THP) is the highway patrol agency throughout the state. They are responsible for enforcing all federal and state traffic laws on the state's federal and state highways,

including the Interstate system. THP also has a Commercial Vehicle Enforcement Division that inspects commercial vehicles and driver logs, weighs commercial vehicles, and patrols highways with a focus on truck traffic violations.

The Tennessee Highway Safety Office (THSO) works with the National Highway Traffic Safety Administration, Tennessee Highway Patrol, and other law enforcement personnel to develop, execute, and evaluate programs to reduce traffic fatalities, injuries, and economic losses. As part of their mission, they coordinate the collection and tabulation of vehicle crash data and statistics. The latest available crash data was provided by TDOT for the entire state. This spatial data provides the location and basic information about crashes along the study corridor, including date, time of day, crash type, weather and light conditions, and number of vehicles involved. This data will be used in this study to identify crash hotspots and potential patterns.

The TDOT Strategic Transportation Investments Division conducts regular Road Safety Audits, which address spot safety improvements on state roads. Issues identified are addressed quickly, often within one year of the final report. Recently-completed reports were provided by the division for review.

The division also houses Tennessee's Strategic Highway Safety Plan (SHSP) and creates the Highway Safety Improvement Program (HSIP) annual report.

Monitoring and Response

As discussed earlier, TDOT's SmartWay Program monitors traffic in Chattanooga, Knoxville, Memphis, and Nashville. The Nashville TMC began in 2003 and operates at all times monitoring traffic conditions and reacting and coordinating response. The Nashville TMC is instrumental in providing information and coordinating between local (fire, EMS, police) and state (THP) entities who may be responding to incidents along the I-65 corridor.

TDOT's HELP Program provides highway incident response, and patrols I-65 in the Nashville area. These units are staffed with trained emergency response personnel who are often first on the scene to provide assistance, traffic control, emergency medical response, cleanup, and other duties. They

are a critical component to a quick response and clearing of most incidents.

While THP responds, investigates, and reports most traffic incidents along the corridor, THP's Critical Incident Response Team (CIRT) is also available to assist in investigation and reconstruction of motor vehicle traffic crashes. CIRT provides a higher level of crash investigation when necessary to investigate serious and/or fatal crashes.

3.5 Freight Data and Models

Goods and commodities movement is a critical role that all transportation systems must support. Building on the more general highway network data sources, this section discusses some of the data sources and data points that will be analyzed in order to better understand the implications of freight movement in the I-65 corridor.

Tennessee Statewide Travel Model

In the TSTM, truck trips are estimated based on truck GPS data (RSG, Inc. & RPM, Inc., 2013) provided by the American Transportation Research Institute (ATRI). Truck origins and destinations are identified based on the spot speed and time, and the number of trips between origins and destinations is adjusted based on traffic counts. The estimates use a historical count database within Tennessee, which includes 12,297 count stations and contains traffic counts from 1983 through 2013. The TSTM also provides a 30-year forecast of traffic flows. The population growth is forecasted using the data from the University of Tennessee's Center for Business and Economic Research (CBER), Woods & Poole, Inc., MPO forecasts, and historical growth rates.

Transearch

Transearch is an annual database of the U.S. county-level freight movement data, which is used for freight modeling and forecasting. The first generation of the database was developed in 1995. Transearch is composed using various data sources, including government regulatory agencies, the largest truck companies, and different transportation agencies. The database includes information for more than 450 individual commodities and seven transportation modes, including:

- For-hire truckload;
- For-hire less-than-truckload;
- Private truck;
- Conventional rail carload;
- Rail/highway intermodal;
- Air; and
- Water.
- Drayage for inland waterways, pipelines, international air, and rail carload transfers;
- Small package and mail shipments moved entirely over-the-road;
- Non-manufactured goods;
- Military and other government trucks;
- Household goods and local service trucks; and
- Domestic pipeline flows.

The commodity flows are presented in terms of annual sort tons and can be further converted to units (e.g., truck counts), dollar value, vehicle miles traveled, and ton-miles. The Standard Transportation Commodity Codes (STCC) system is used to represent the commodity groups. A total of four groups of freight flows are considered:

- Intra-market (internal);
- Inbound (external-to-internal);
- Outbound (internal-to-external); and
- Overhead or through (external-to-external).

Development of an annual version of the database is based on market specific outputs by industry or commodity. For the majority of commodities, market specific outputs are retrieved from IHS Economics' Business Markets Insights (BMI) database. The data for certain commodity types are not taken from BWI, including the following: agricultural products and livestock, coal and automobiles, selected chemicals, and minerals.

Along with freight flows for all counties by mode, the database also includes a 30-year forecast. The forecast is based on supply and demand side factors including employment, output, and purchases by industry and county. The process involves predicting supply projections (originating flows) and demand (destination flows) by county and 4-digit commodity code. The World Trade Service data are used to forecast international flows (e.g., flows to/from Canada and Mexico, imports/exports from the U.S. seaports). Transearch does not provide information for the following types of freight movements:

Freight Analysis Framework (FAF)

The FAF database was developed by the Federal Highway Administration (FHWA) in 2002. It is composed using information from various sources. FAF4 provides commodity flows expressed in tonnage and value by regions of origin and destination for seven transportation modes, including:

- Multiple modes and mail (e.g., parcel delivery by multiple modes);
- Truck;
- Rail;
- Water;
- Air;
- Pipeline; and
- Other and unknown (i.e., movements not falling under the other categories).

The database includes flows for a total of 43 commodity types. The commodities are classified at the 2-digit level of the Standard Classification of Transported Goods (SCTG).

Inland Waterways

Data for freight movements on barge are available from the U.S. Army Corps of Engineers Navigation Data Center. Waterborne commodity flows for the Cumberland and Tennessee Rivers are available and include tonnage by commodity type for river segments. Data for other parts of the inland waterway system can be obtained if required (e.g., the TN-TOM Bigbee, the Mississippi, etc.). Data is also available for the total tonnage by commodity moved through the Port of Nashville and other ports in Tennessee. These data include tonnage by commodity.

Shortline Railroads

All railroads are located in GIS format for mapping purposes. However, no data on commodity movements on shortline railroads is available.

3.6 Economic Access

The locations of economic activity centers, and the commodity flows that connect them, are influenced by many factors, including demographics, development patterns, land use plans and policies, and environmental constraints. The I-65 Multimodal Corridor Study will consider all of these influences and constraints in the transportation analysis.

Population, Employment, and Demographics

Using socioeconomic data contained in both the Nashville Area MPO and TDOT statewide travel demand models (TDM) traffic analysis zones (TAZ), a high-level overview of key demographic indicators is presented in Table 3-2. These data are compiled for the two TDM base years, which is

2010. The base year typically represents the most recent year for which actual data is available.

In 2010, over one-third of the study area’s population and households were located within Metropolitan Nashville–Davidson County, with other significant concentrations in Rutherford, Sumner, and Williamson Counties. Collectively, these four counties comprised over two-thirds of the population, or 70 percent, in the study area.

Employment within the study area was much more concentrated in 2010, with approximately 50 percent of all jobs located within Metropolitan Nashville–Davidson County. An additional 23 percent of the area’s jobs were located in Rutherford and Williamson Counties. Five counties, Cheatham, Giles, Hickman, Lincoln, and Marshall, collectively accounted for five percent or less of the area’s total employment in 2010.

Environmental Justice Populations

Title VI of the Civil Rights Act and Executive Order 12898 on Environmental Justice relate to the programs and projects of federal agencies and their impacts to minority and low-income populations.

Table 3-2. 2010 Population, Households, and Employment

County	 Population		 Households		 Employment	
	Total	Percent	Total	Percent	Total	Percent
Bedford	45,058	3%	16,530	2%	25,809	2%
Cheatham	39,107	2%	14,521	2%	15,899	1%
Davidson	626,682	36%	259,500	38%	542,773	50%
Dickson	49,664	3%	19,106	3%	22,469	2%
Giles	29,485	2%	11,875	2%	14,153	1%
Hickman	24,690	1%	8,976	1%	6,543	1%
Lincoln	33,361	2%	13,382	2%	14,892	1%
Marshall	30,617	2%	11,850	2%	12,004	1%
Maury	80,956	5%	31,663	5%	39,996	4%
Robertson	66,283	4%	24,197	4%	28,067	3%
Rutherford	262,604	15%	96,232	14%	133,803	12%
Sumner	160,645	9%	60,975	9%	55,354	5%
Williamson	183,182	10%	64,886	10%	120,266	11%
Wilson	113,993	7%	42,563	6%	51,640	5%
TOTALS	1,746,327	100%	676,256	100%	1,083,668	100%

As such, TDOT must consider the environmental, social, and health impacts of any federally-funded transportation projects on these populations, particularly any impacts that could be considered disproportionately high and/or adverse. To this end, the I-65 Multimodal Corridor Study will consider these populations as recommendations are drafted.

U.S. Census Bureau American Community Survey (ACS) data for the most recent year available (2014) are examined to determine the distribution of potential Environmental Justice (EJ) populations within the study area. Potential EJ populations are identified where the census tract contains a minority or low-income population that, as a percentage of the tract's total population, exceeds the state average. Minorities comprise approximately 22 percent of all state residents while low-income residents comprise approximately 18 percent of all state residents. Minority populations are defined as non-white populations, and low-income populations are defined as individuals whose income was under the federal poverty line in the last 12 months.

Figures 3-7 and 3-8 show the distribution of potential EJ populations within the analysis area.

Existing Land Use Character

A high-level review of existing land use conditions and plans and policies was conducted in order to understand the existing character of the study area as well as identify areas where major residential, commercial, or industrial growth is planned. Given the large size of the study area, the discussion of land use characteristics, plans, and policies is limited to those counties that include I-65.

In the northern section of the corridor, land use immediately adjacent to I-65 is predominantly rural. Several intersecting highways connect the route to smaller communities such as Portland and White House. This pattern of mostly rural character continues as the route moves southward through the Highland Rim. Once the route moves out of the Highland Rim and into the Nashville Basin, the land use character abruptly changes from rural to more suburban character in the communities of Millersville and Goodlettsville.

Entering the central section of the corridor, the land use character transitions to more intense

suburban-type development patterns through Goodlettsville and entering into Metropolitan Nashville-Davidson County. South of the interstate's intersection with Briley Parkway (SR 155), the land use character intensifies to general urban, remaining generally static until reaching the center of downtown Nashville. South of downtown Nashville, land use character is general urban with some high intensity industrial and logistics locations. Southern Metropolitan Nashville-Davidson County is more suburban in nature as the route transitions into Brentwood and Williamson County.

Approaching Brentwood, the land use character remains generally suburban with a major activity node at the Old Hickory Boulevard interchange. Land uses intensify north of Moores Lane (SR 441) as the route bisects the Cool Springs regional activity center, remaining relatively intense until south of State Route 96, at which point land uses quickly transition back to low-density suburban. It is important to note that the Goose Creek interchange (Exit 61), just south of I-65, is in the process of transitioning as Berry Farms, a major residential and employment center, takes shape. Slightly more intense suburban development is encountered in the Thompson's Station and Spring Hill communities.

Land use character in the south section of the corridor quickly transitions from suburban to rural character as the route moves south of Spring Hill. This rural character remains largely static along the remainder of the route, with some highway connections to major towns in the area, such as Columbia and Lewisburg. Topography in the southern portion of the state becomes more varied, and land use character near the Alabama state line is highly rural with limited development.

Land Use Policies, Plans, and Studies

At the regional level, the Nashville Area MPO and member jurisdictions have teamed to undertake a number of transportation and land use studies incorporating the I-65 corridor. These studies have included the development of character area maps that summarize each municipality's future land use policy. Maps depicting these for the counties within the MPO planning area are shown in 3-9, 3-10, and 3-11. Additionally, a number of counties and municipalities (discussed from north to south)

Figure 3-7. Minority Populations

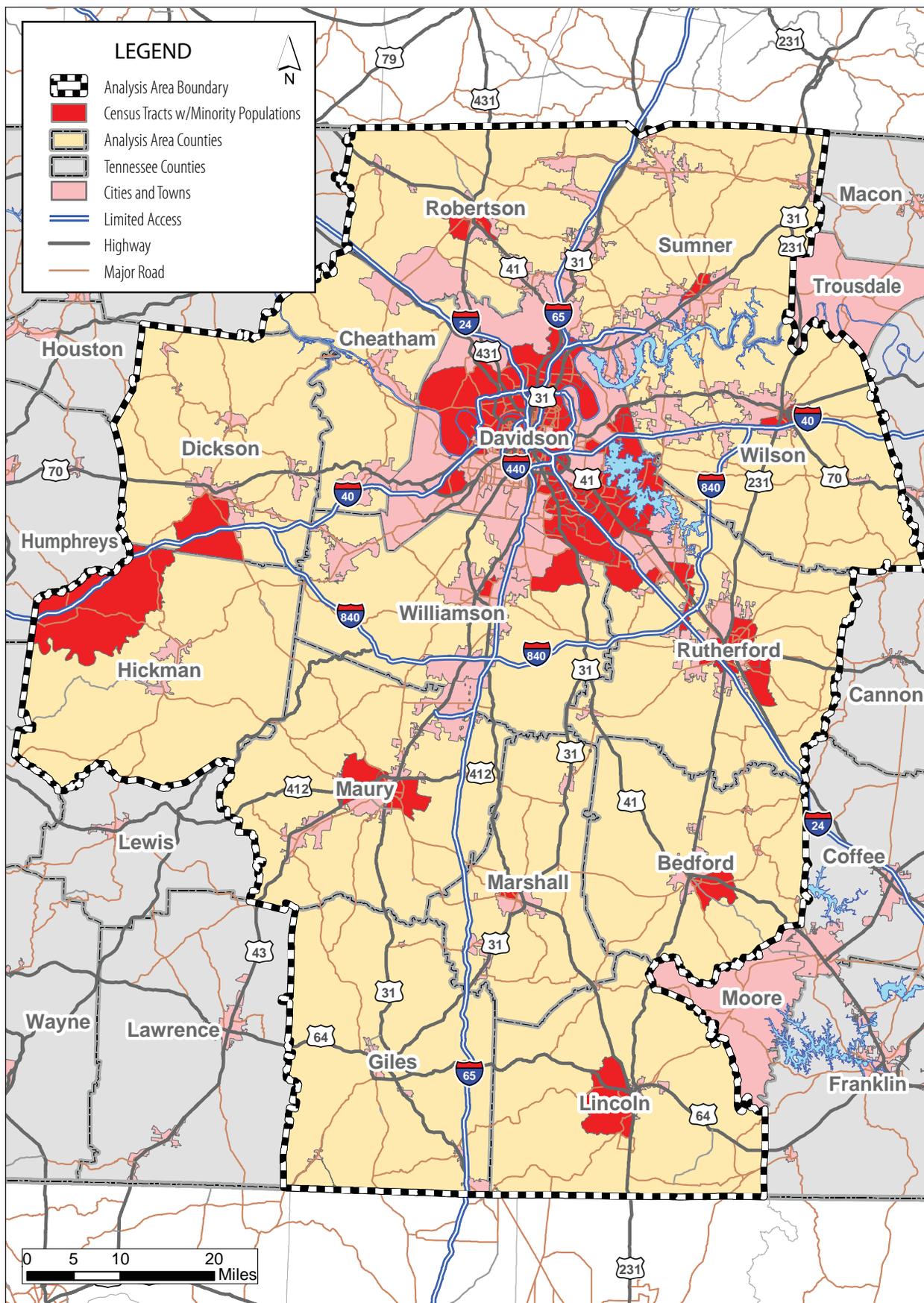
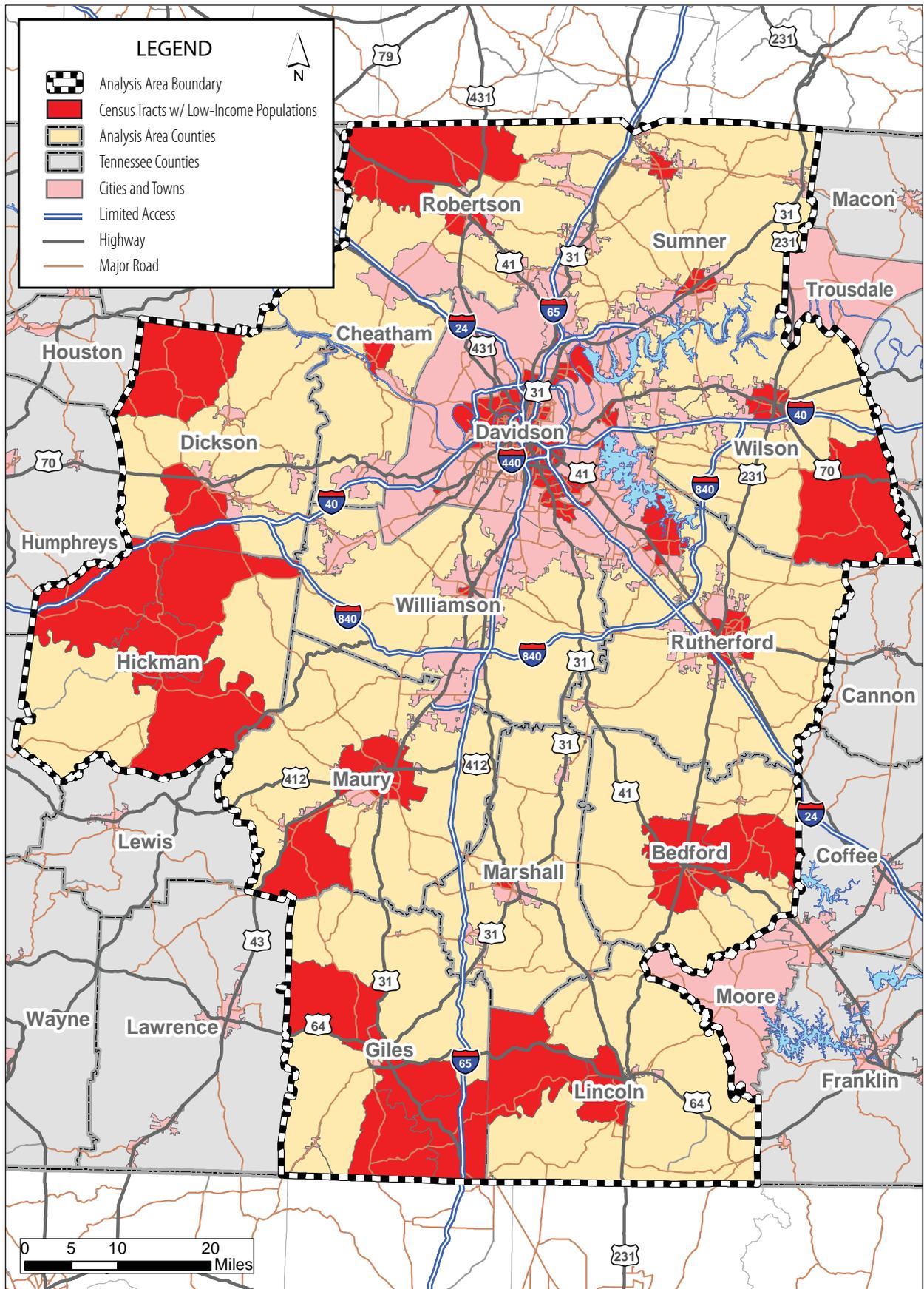


Figure 3-8. Low-Income Populations



have comprehensive plans affecting the I-65 corridor.

Robertson County

The Robertson County 2040 Comprehensive Growth and Development Plan calls for expanded suburban development along I-65 west and south of the Portland area, as well as around the existing footprints of White House and Millersville. General urban and suburban development are envisioned for the White House area. Employment center development is planned for the area west of I-65 between SR 76 (Exit 108) and SR 25 (Exit 112).

Sumner County

The Sumner County 2035 Comprehensive Plan calls for expanded suburban development patterns around Portland, extending all the way to I-65 to the west. The areas around and between White House and Millersville are planned for expanded suburban development as well. An activity center node is planned for the area immediately east of the interchange with SR 25 (Exit 112). The development would likely include the SR 25/US 31E intersection.

The White House Comprehensive Plan identifies the land adjacent to the SR 76 (Exit 108) interchange as a “potential I-65 interchange commercial activity node.” The interchange area is intended to be developed as a typical highway commercial activity center, with the potential additions of regional offices or office headquarters and park-and-ride lots.



Metropolitan Nashville-Davidson County

NashvilleNext, the comprehensive plan for Metro Nashville, includes a land use vision that will largely preserve the general urban character along the I-65 corridor. Development centers are identified at the I-65 interchanges with Vietnam Veterans Boulevard (SR 386), Briley Parkway (SR 155), Harding Place (SR 255), and Old Hickory Boulevard (SR 254). Additionally, I-65 from the downtown loop to Harding Place (SR 255) is identified as an “immediate need” priority corridor, meaning that more intense housing and commercial areas may be developed along the corridor in concert with improvements to high capacity transit service.

Williamson County

The Brentwood 2020 Plan Update largely preserves the existing low-density residential development within the City of Brentwood. The Old Hickory interchange area will remain a major employment center within the city, and additional office and commercial development will come online after the completion of the Town Center project, which is focused along US 31 near the I-65/Old Hickory Boulevard interchange.

The Franklin Land Use Plan identifies continued development and intensification of the existing activity center in the Cool Springs area between Moores Lane (SR 441) and south of Murfreesboro Road (SR 96). As discussed earlier, the Goose Creek interchange is in the process of transitioning to a major residential and employment center. The One Franklin Park development will add a considerable amount of Class A office space and related development to land adjacent to the I-65/McEwan Drive interchange. Additionally, continued development and intensification will occur along Carothers Parkway parallel to I-65 between the Moores Lane and SR 96 interchanges. This whole area will continue to grow and will likely have major implications for I-65. Land to the east of I-65 is likely to experience additional residential and commercial development as well.

The Spring Hill Comprehensive Plan projects continued residential and commercial growth within the city. The focus of commercial and office growth is along US 31. Additional growth will continue to spread eastward on currently undeveloped land, eventually resulting in additional

Figure 3-9. Character Area Map– Nashville Area MPO (North)

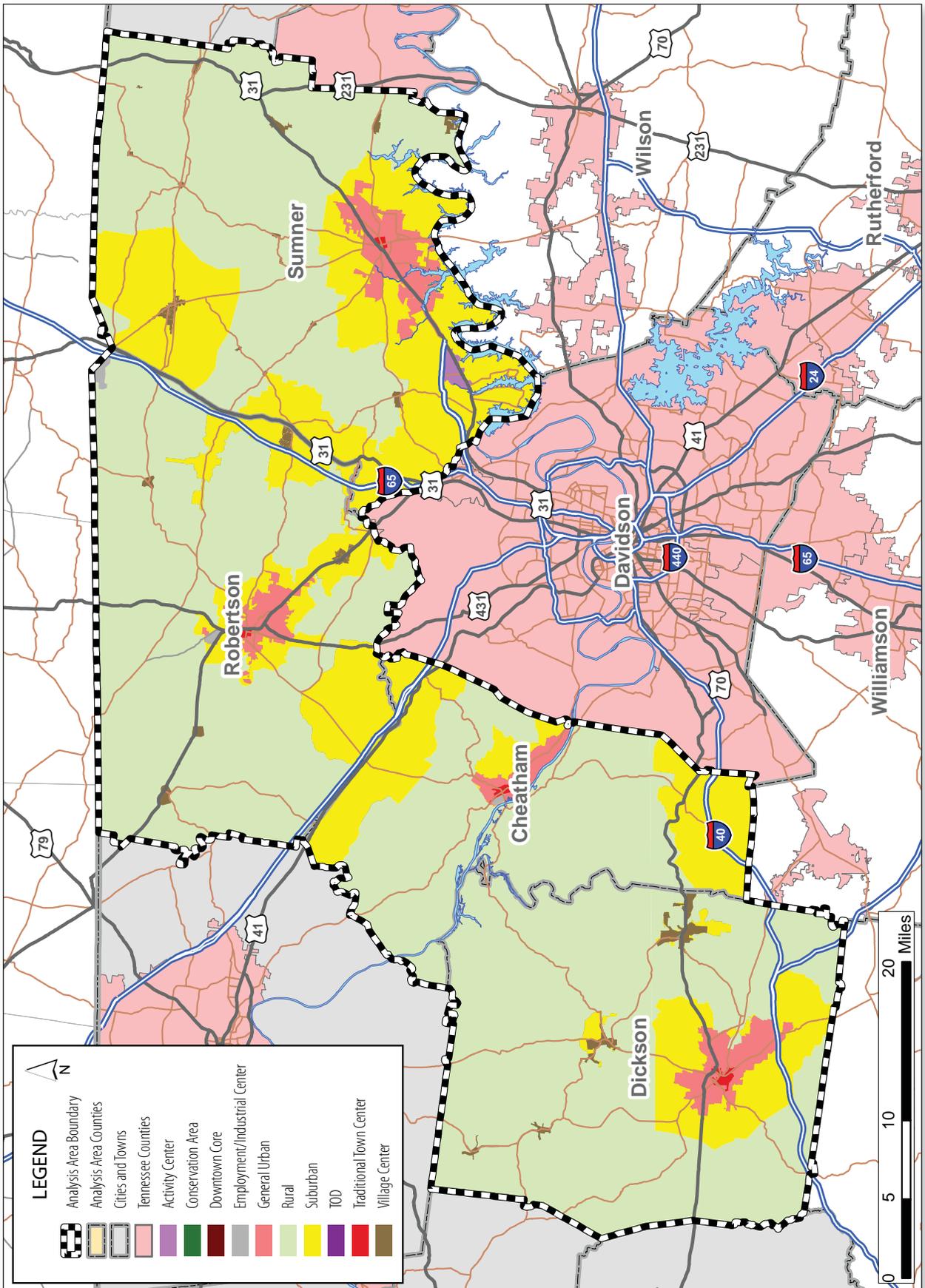


Figure 3-10. Character Area Map– Nashville Area MPO (Central)

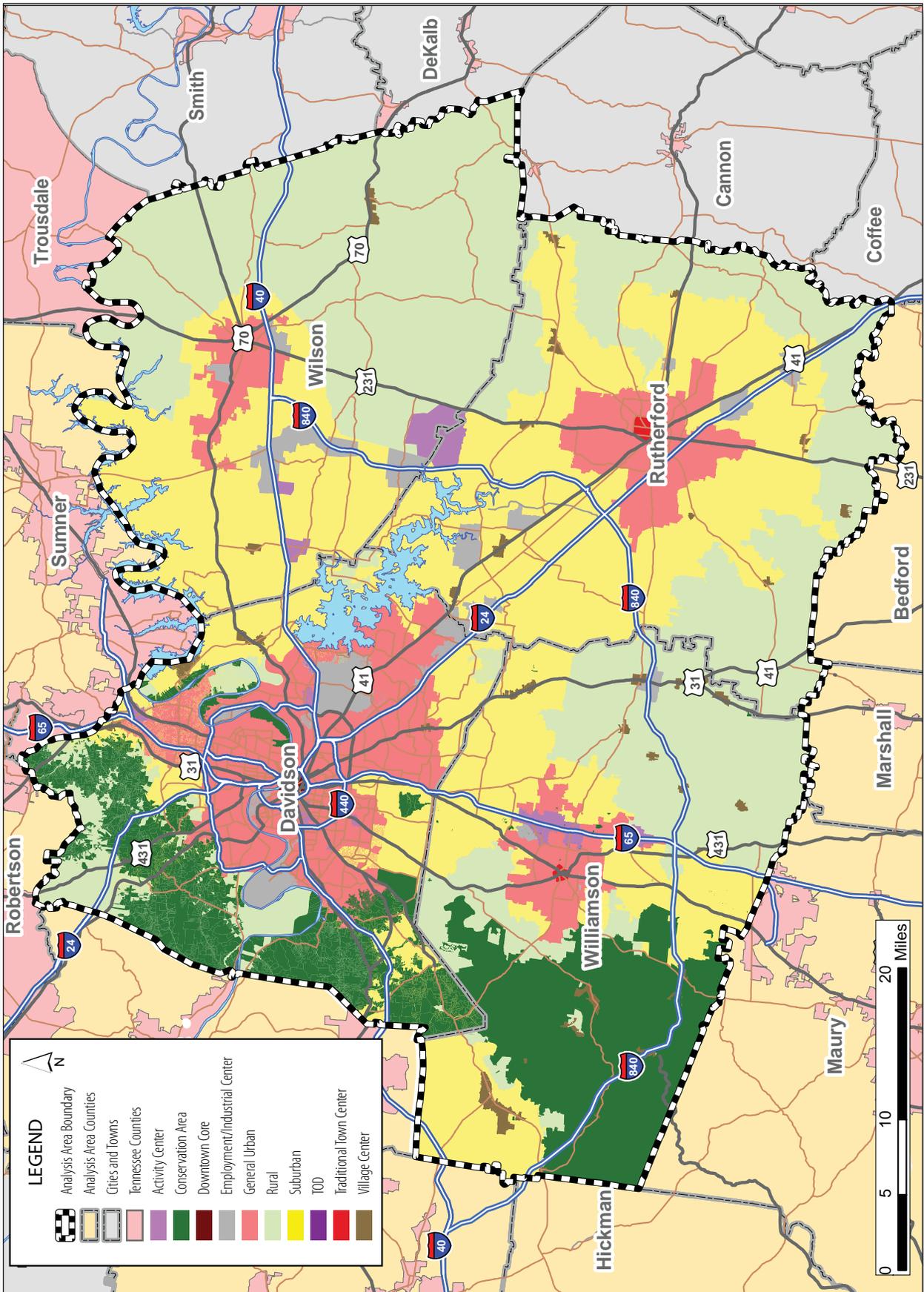
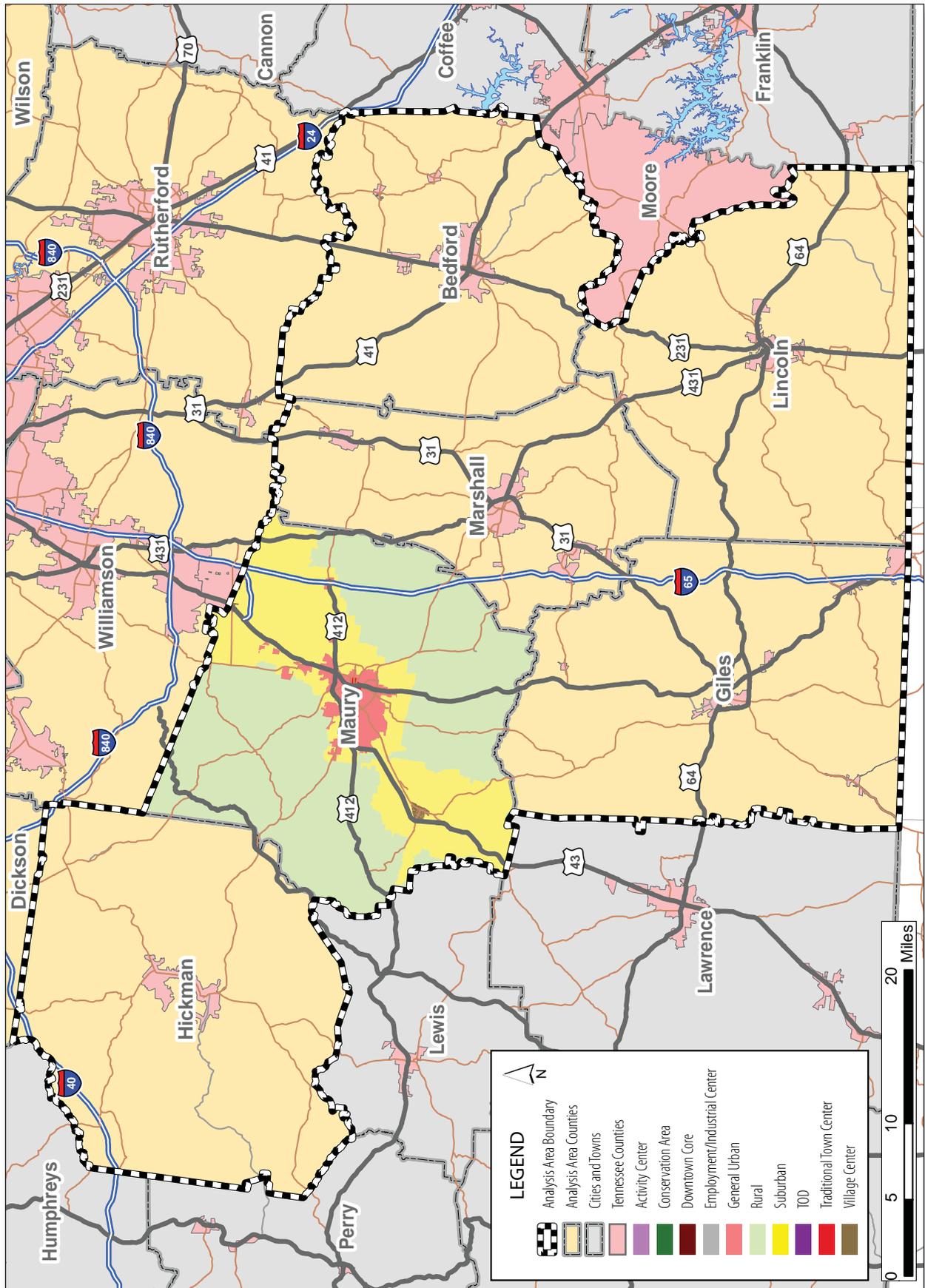


Figure 3-11. Character Area Map– Nashville Area MPO (South)



residential and commercial growth between I-65 and US 431.

The General Plan for Thompson's Station suggests that future development in the town will be done in a way that preserves the area's rural character. The General Plan encourages cluster development that contains a mixture of development types. The plan also emphasizes the incorporation of greenbelts and low-density between or among these cluster developments.

The Williamson County Comprehensive Land Use Plan largely preserves the existing rural character of southern unincorporated Williamson County. A major activity center, the "840 Center," is proposed in the Triune area near the intersection of US 41 and I-840. According to the plan, the new center will include new residential growth opportunities, along with a mix of locally oriented businesses.

Maury County

The Spring Hill Comprehensive Plan identifies the interchange of I-65 and Saturn Parkway (SR 396) as a major growth center (the city is located in portions of both Williamson and Maury Counties). East of the interchange is designated as an activity center. This area is largely undeveloped at the present time. Industrial development is proposed along Saturn Parkway between the interchange and the General Motors Spring Hill Plant. Continued suburban residential and commercial growth is planned all the way to Spring Hill's southern border.

The Maury County Comprehensive Plan identifies the interchange areas at Bear Creek Pike (US 412) and New Lewisburg Highway (SR 50) as future employment areas, with complementary interstate gateway districts. The gateway districts will consist of typical highway-oriented commercial development often seen at interchanges. The surrounding employment district will consist of office parks, technology parks and research facilities, and industrial uses. These areas are primarily rural at the present time.

Additionally, Bear Creek Pike between I-65 and Columbia is identified as a suburban growth corridor. Suburban style development, such as residential, office, mixed-use, and civic development types, will be permitted along the corridor, creating a more intensely developed

connection to the City of Columbia. This area is also predominantly rural, with some large-lot residential development, at the present time.

Marshall County

Marshall County does not currently have land use plans or policies within the project area.

Giles County

Giles County does not currently have land use plans or policies within the project area.

Environmental Features and Conditions

Wetlands

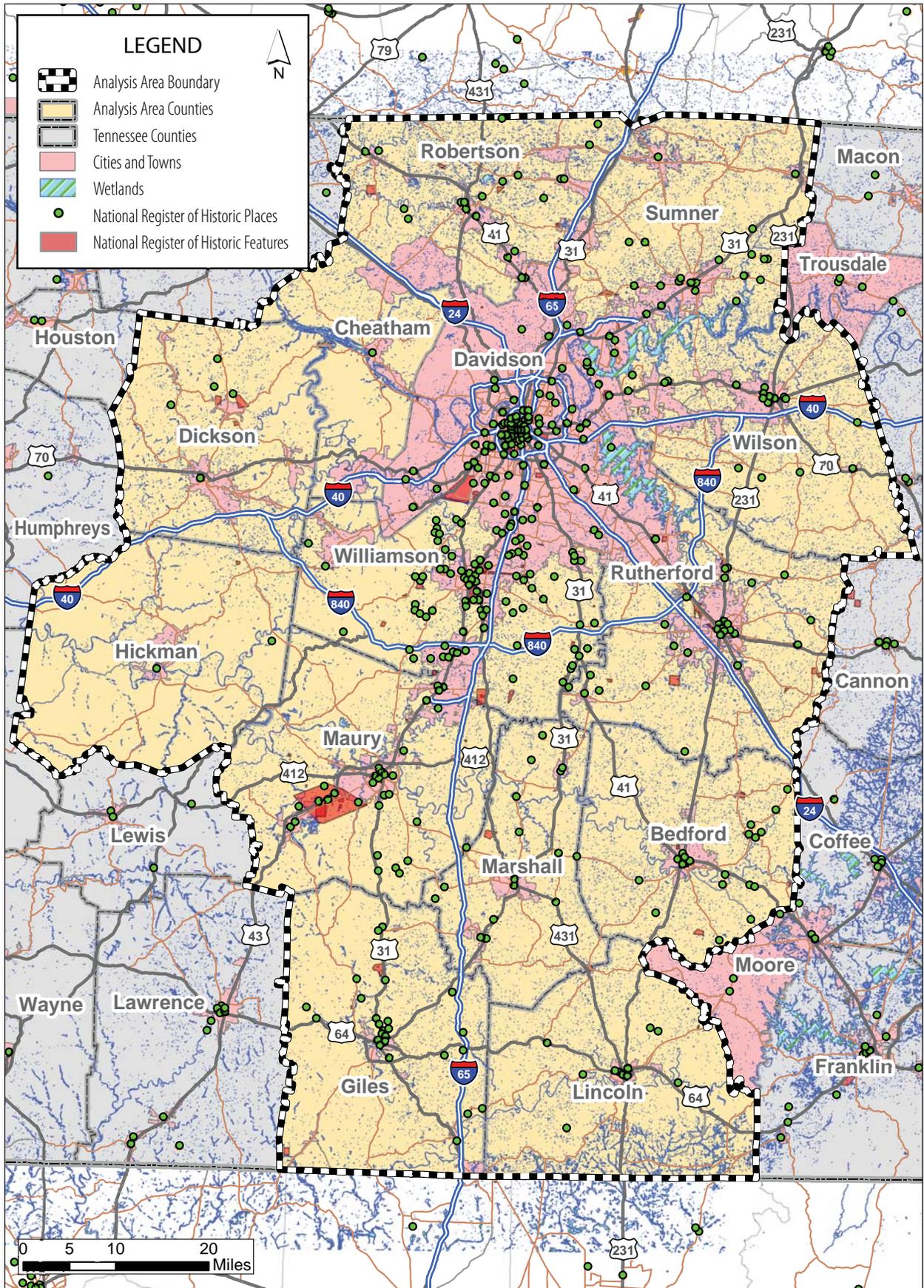
Wetlands are an environmental resource which any proposed improvements will seek to avoid when possible, and to minimize or mitigate impacts when avoidance is not possible. Known wetlands are mapped and made available through the US Fish and Wildlife Service (USFWS). The most recently updated geo-database was obtained directly from USFWS for the entire state of Tennessee. It should be noted that additional field surveying would be necessary during project environmental and design activities, but the database should provide a suitable resource at the planning level for this study.

Historic Resources

Historic resources are another resource to avoid, or minimize and mitigate potential impacts. The current National Register database was obtained through the National Park Service web portal. The Tennessee Historic Commission is the State Historic Preservation Office (SHPO) for Tennessee, and maintains a listing of state owned historic resources. This listing was reviewed, and no state owned resources were observed in the I-65 study corridor. It should be noted that additional field surveying would be necessary during project environmental and design activities to look for both archaeological and historic resources.

Figure 3-12 displays the wetlands and historic resources data obtained for the study area. Historic resources are the red polygons and orange points, and all blue shapes are wetlands.

Figure 3-12. Wetlands and Historic Data



4. FORECAST FUTURE CONDITIONS

In addition to understanding the existing data and information that influence and are influenced by the corridor, understanding future forecasts is critical to tailoring the project's analysis and recommendations to ensure that the corridor can serve the dynamic and growing region in the decades to come.

4.1 Economic and Population Growth

Recent economic trends in Tennessee indicate that the I-65 corridor is a major driver of economic growth statewide. According to the Tennessee Department of Labor and Workforce Development, the Nashville Metropolitan Statistical Area (MSA) accounted for 61.1 percent of all MSA job growth in the state, adding approximately 30,000 jobs between 2013 and 2014. Recent growth in the Nashville MSA has been driven by increases in professional and business services; trade, transportation and utilities; and leisure and hospitality.

According to the University of Tennessee Center for Business and Economic Research, Tennessee employment is forecasted to grow by a 1.1 percent compound annual growth rate (CAGR) between 2015 and 2021, which slightly outpaces the projected national rate of one percent growth. Though manufacturing is projected to experience short-term employment gains, by 2025 manufacturing employment is projected to be 0.1 percent less than it was in 2015 despite projected gains in manufacturing output. Employment growth is expected to be largest in the professional and business services sector, followed by education and health services, and natural resources, mining, and construction.

Given the projections for statewide economic growth, and assuming that recent trends are indicative of future economic patterns, the I-65 corridor, and the Nashville MSA in particular, is poised to capture much of the state's economic growth in the coming years. In order to get a closer look at projected demographic trends in the study area, socioeconomic data projections prepared for

the Nashville Area MPO and TDOT statewide TDMs are examined to determine population, household, and employment growth for the three horizon years in each model: 2020, 2030, and 2040.

Table 4-1 shows the projected population, housing, and employment trends within the study area.

The projected demographic changes in the region in many ways reflect the existing demographic characteristics discussed earlier. Approaching 2040, Metropolitan Nashville-Davidson County will experience continuing declines in the share of population and employment, relative to the study area. Rutherford and Williamson Counties will remain the two non-Nashville counties that capture the majority of the remaining population and employment, comprising 38 percent and 30 percent of the growth, respectively. Williamson County is expected to have the largest share of population and employment growth in the study area.

In terms of growth rates, the study area is expected to far outpace Metropolitan Nashville-Davidson County's population growth. While Metro Nashville is expected to increase in population by 25 percent by 2040, the study area as a whole will experience a 69 percent increase. Metro Nashville will continue to grow as the regional employment center in Middle Tennessee, though it will still experience a lower rate of change than the study area as a whole. Rutherford and Williamson are poised to become major population and employment centers in their own right.

4.2 Planned Transportation Projects

In February 2016, the executive board of the Nashville Area MPO voted to adopt Middle Tennessee Connected – 2016-2040 Regional Transportation Plan (RTP). This document, in addition to the current MPO TIP and TDOT STIP, were reviewed to identify projects that are planned or programmed along the I-65 corridor or its supporting or parallel routes. Projects along the I-65 corridor range from interstate widening projects to the construction of new roadways and the reconstruction of interchanges. The planned and programmed projects will be considered when multimodal recommendations are made at the conclusion of this study.

Table 4-1. Population, Households, and Employment (2020, 2030, 2040)

2020	 Population			 Households			 Employment		
	County	Total	Share	Increase from 2010	Total	Percent	Increase from 2010	Total	Percent
Bedford	51,610	2%	15%	19,006	2%	15%	29,345	2%	14%
Cheatham	45,334	2%	16%	16,887	2%	16%	19,351	1%	22%
Davidson	680,496	31%	9%	294,590	34%	14%	635,738	49%	17%
Dickson	55,396	3%	12%	21,410	2%	12%	25,839	2%	15%
Giles	31,048	1%	5%	12,614	1%	6%	15,658	1%	11%
Hickman	26,773	1%	8%	9,983	1%	11%	7,187	1%	10%
Lincoln	35,226	2%	6%	14,175	2%	6%	16,287	1%	9%
Marshall	34,072	2%	11%	13,244	2%	12%	12,836	1%	7%
Maury	94,861	4%	17%	37,696	4%	19%	47,043	4%	18%
Robertson	83,977	4%	27%	31,026	4%	28%	33,591	3%	20%
Rutherford	384,504	18%	46%	142,448	17%	48%	170,093	13%	27%
Sumner	193,105	9%	20%	73,636	9%	21%	66,686	5%	20%
Williamson	309,328	14%	69%	110,902	13%	71%	162,311	12%	35%
Wilson	157,139	7%	38%	59,535	7%	40%	65,133	5%	26%
TOTAL	2,182,869	100%	25%	857,152	100%	27%	1,307,098	100%	21%

2030	 Population			 Households			 Employment		
	County	Total	Percent	Increase from 2010	Total	Percent	Increase from 2010	Total	Percent
Bedford	58,175	2%	29%	21,497	2%	30%	32,892	2%	27%
Cheatham	51,565	2%	32%	19,261	2%	33%	22,813	1%	43%
Davidson	734,958	28%	17%	317,202	31%	22%	745,177	47%	37%
Dickson	61,140	2%	23%	23,726	2%	24%	29,219	2%	30%
Giles	32,620	1%	11%	13,366	1%	13%	17,178	1%	21%
Hickman	28,866	1%	17%	10,999	1%	23%	7,839	0%	20%
Lincoln	37,100	1%	11%	14,979	1%	12%	17,690	1%	19%
Marshall	37,530	1%	23%	14,644	1%	24%	13,672	1%	14%
Maury	106,276	4%	31%	42,241	4%	33%	55,746	4%	39%
Robertson	99,100	4%	50%	36,633	4%	51%	39,857	3%	42%
Rutherford	497,364	19%	89%	183,528	18%	91%	215,490	14%	61%
Sumner	218,698	8%	36%	83,313	8%	37%	80,227	5%	45%
Williamson	426,801	17%	133%	153,181	15%	136%	223,802	14%	86%
Wilson	196,478	8%	72%	74,241	7%	74%	81,960	5%	59%
TOTAL	2,586,671	100%	48%	1,008,811	100%	49%	1,583,562	100%	46%

Table 4-1. Population, Households, and Employment (2020, 2030, 2040) *continued*

County	Population			Households			Employment		
	Total	Percent	Increase from 2010	Total	Percent	Increase from 2010	Total	Percent	Increase from 2010
Bedford	64,748	2%	44%	23,996	2%	45%	36,448	2%	41%
Cheatham	57,804	2%	48%	21,637	2%	49%	26,281	1%	65%
Davidson	780,507	26%	25%	335,804	29%	29%	869,137	45%	60%
Dickson	66,896	2%	35%	26,054	2%	36%	32,608	2%	45%
Giles	34,199	1%	16%	14,122	1%	19%	18,704	1%	32%
Hickman	30,967	1%	25%	12,023	1%	34%	8,495	0%	30%
Lincoln	38,984	1%	17%	15,789	1%	18%	19,104	1%	28%
Marshall	40,995	1%	34%	16,054	1%	35%	14,520	1%	21%
Maury	116,514	4%	44%	46,288	4%	46%	65,609	3%	64%
Robertson	112,851	4%	70%	41,723	4%	72%	47,190	2%	68%
Rutherford	602,977	20%	130%	221,926	19%	131%	271,416	14%	103%
Sumner	241,698	8%	50%	91,985	8%	51%	95,970	5%	73%
Williamson	537,377	18%	193%	193,008	17%	197%	307,836	16%	156%
Wilson	233,085	8%	104%	87,889	8%	106%	102,437	5%	98%
TOTAL	2,959,602	100%	69%	1,148,298	100%	70%	1,915,755	100%	77%

The full list of identified projects are available in Table 4-2. Figures 4-1, 4-2, and 4-3 show the distribution of the projects throughout the project area. Significant improvements that are planned or programmed include:

2020 Time Horizon

- Major widening and reconstruction of Nolensville Pike (SR 11) in Davidson County
- Construction of the Portland Bypass in Sumner County
- Widening of SR 109 in Sumner County
- Widening of I-65 (four to six lanes) from I-840 to Saturn Parkway
- Widening of SR 96 from Arno Road to I-840

2030 Time Horizon

- Widening of I-65 (four to six lanes) from Long Hollow Pike (SR 257) to the Kentucky State Line
- Rapid transit and managed lanes between Nashville and Franklin
- Managed lanes for rapid transit from I-65 to SR 109 Bypass

- New interchange on I-65 in Williamson County between Old Hickory Boulevard (SR 254) and Concord Road (SR 253)

2040 Time Horizon

- Complete reconstruction of the I-65/I-40 “loop” in downtown Nashville, including reconstruction of existing junctions

Additionally, the Nashville Area MPO has identified “illustrative” projects for future consideration. A need for these projects has been determined, but no funding source has yet been identified. These projects include:

- New interchange at I-65 and Springfield Highway (SR 11/US 41) in Sumner County
- Extension of Buckner Road to Lewisburg Pike (SR 106/US 31) with a new interchange at I-65
- Extension of Saturn Parkway (SR 396) from its current western terminus to I-840
- Widening and realignment of Nolensville Road (SR 11) from Burkitt Road to I-840 in Williamson County

Figure 4-1. Planned Interchange Projects

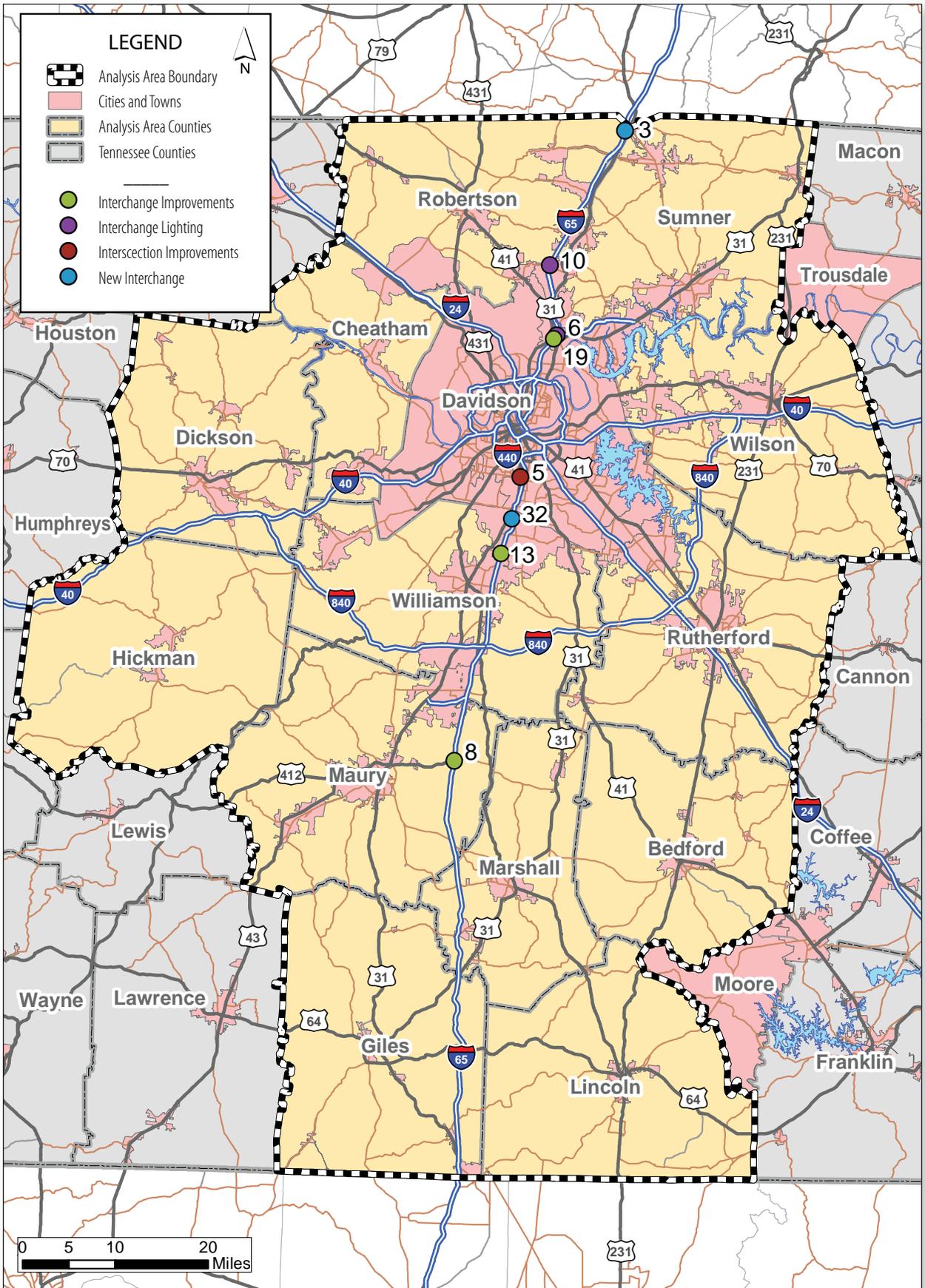


Figure 4-2. Planned Capacity and Reconstruction Projects

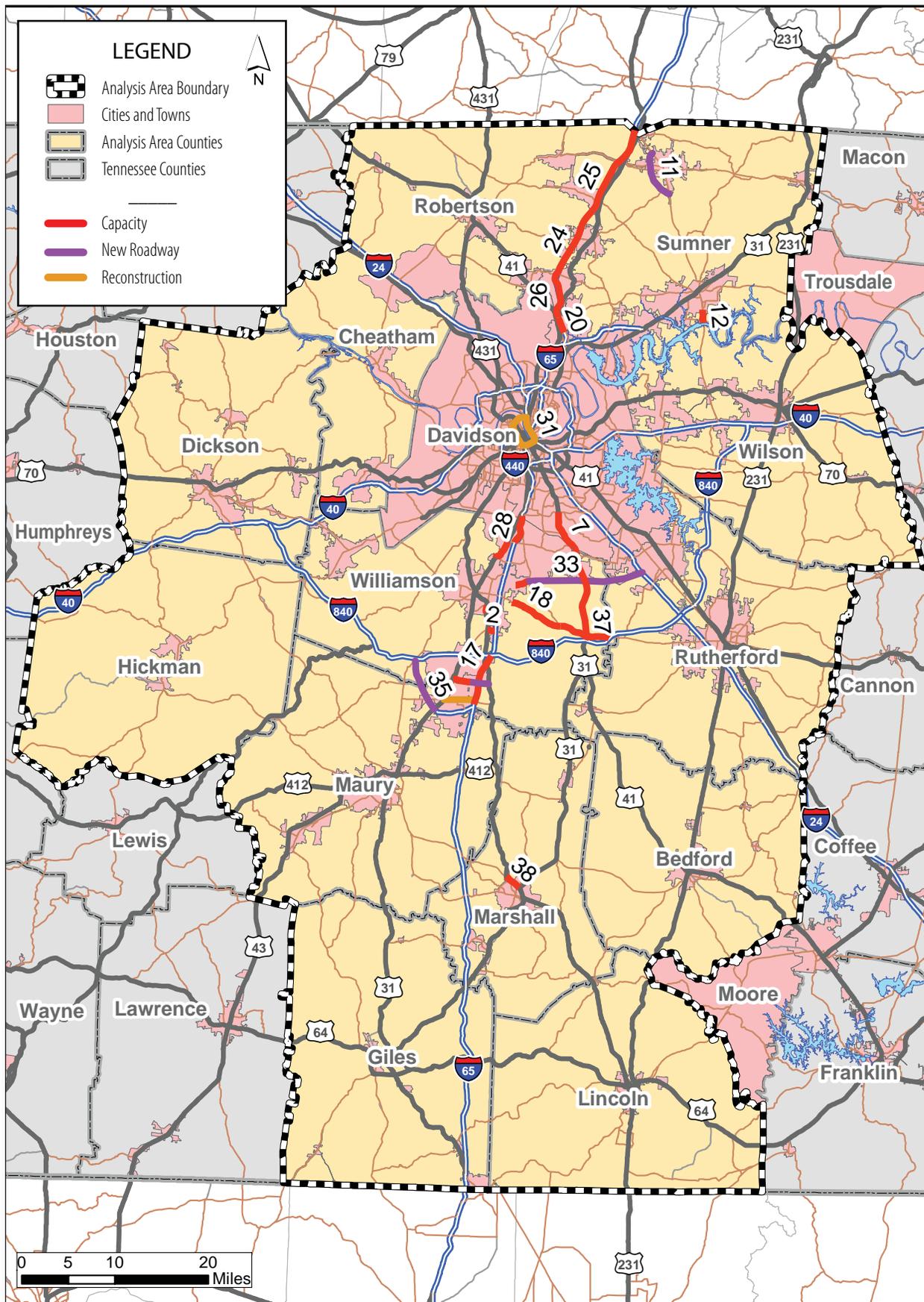


Figure 4-3. Planned Transit and ITS Projects

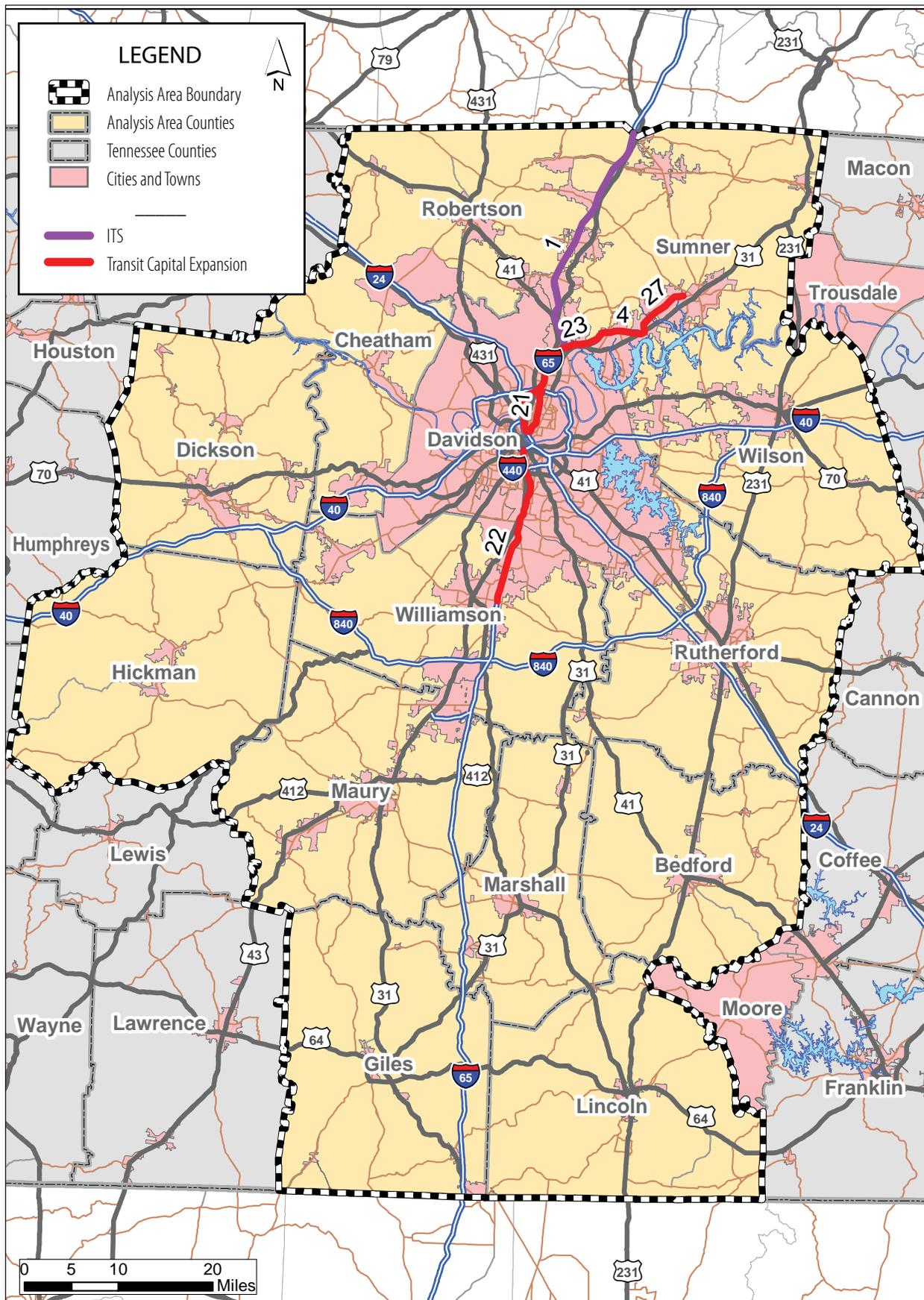


Table 4-2. Planned and Programmed Projects

					Lead Agency/ Funding Type	LRTP# or TIP#
Source ID	Route and Project Limits	Improvement	Cost	Year		
1	I-65 north ITS from Exit 96 to Exit 108 in Davidson, Robison, and Sumner Counties	Install CCTV and dynamic message boards on I-65	\$2,500,000	2014	TDOT/NHPP	TIP # 2012-87-193
2	SR 248 from SR 106 (Lewisburg Pike) to west of I-65	Widen existing 2 lane road to 4/5 lane	\$1,650,000	2014	TDOT/STATE (STA)	TIP # 2012-62-167
3	I-65/SR 109 Prop/SR 41	New Interchange	\$39,300,000	2014	TDOT/NHPP; STP	TIP # 2006-416
4	NE Corridor Regional Express Bus Service	Transit Capital Expansion	\$300,000	2014	TDOT/CMAQ	TIP # 2012-85-180
5	Battery Lane/Harding Place @ Franklin Road	Intersection Improvements	\$1,500,000	2020	TDOT/U-STP	RTP # 2561
6	I-65 @ Rivergate Parkway, Long Hollow Pike, US 31W	Interchange Lighting	\$1,480,000	2020	Goodlettsville/ U-STP	RTP # 1145
7	Nolensville Pike from south of Old Hickory Blvd (SR 245) to south of Burkitt Road	Reconstruction and Widening, 2 to 5 lanes	\$17,750,000	2020	TDOT/NHPP	RTP # 1287/2550
8	I-65 @ Bear Creek Pike (SR 99/US 431)	Interchange Modification	\$5,500,000	2020	TDOT/NHPP	RTP # 1369-1291
9	I-65 Weigh Station near the TN/KY State Line	Roadway Reconstruct	\$14,500,000	2020	TDOT/NHPP	RTP # 1396
10	I-65 @ Bethel Road (SR 257)	Interchange Lighting Improvement	\$50,000	2020	TDOT/U-STP	RTP # 2563
11	SR 109 Portland Bypass	New Roadway, 4 lanes	\$68,880,000	2020	TDOT/NHPP	RTP # 1345
12	SR 109 from north of the Cumberland River Bridge to SR 109 Bypass south of Gallatin	Widening, 2 to 4 lanes	\$16,200,000	2020	TDOT/NHPP	RTP # 1340
13	I-65 @ Moore's Lane	Interchange Improvements	\$4,000,000	2020	Brentwood/ NHPP	RTP # 1176
14	Duplex Road (SR 247) from Main Street (SR 6/US 31) to I-65	Roadway Reconstruct	\$13,500,000	2020	TDOT/S-STP	RTP # 1199-1322
15	Murfreesboro Road (SR 96) from east of Wilson Pike (SR 252) to I-840	Widening, 2 to 5 lanes	\$27,630,000	2020	TDOT/S-STP	RTP # 1316
16	Franklin Road (SR 6) from Concord Road (SR 253) to Moore's Lane (SR 441)	Widening, 2 to 5 lanes	\$22,500,000	2020	TDOT/NHPP	RTP # 1172-1325
17	I-65 from I-840 to Saturn Parkway	Widening, 4 to 6 lanes	\$52,250,000	2020	TDOT/NHPP	RTP # 1415
18	Murfreesboro Road (SR 96) from east of Arno Road to Wilson Pike (SR 252)	Widening, 2 to 5 lanes	\$37,500,000	2020	TDOT/STATE	RTP # 1315
19	NET Corridor Interchange 1 – Vietnam Veterans Parkway (SR 386) @ I-65 Interchange Modification WB to NB and SB to EB Traffic	Interchange Modification	\$26,840,000	2030	TDOT/RTA - NHPP	RTP # 1143
20	I-65 from Long Hollow Pike (SR 174) to Blue Star Road (US 31)	Widening, 4 to 6 lanes	\$36,230,000	2030	TDOT/NHPP	RTP # 1408

Nashville Area MPO FY 2014 - 2017 TIP and 2040 RTP

Interstate 65 Multimodal Corridor Study

					Lead Agency/ Funding Type	LRTP# or TIP#	
Source ID	Route and Project Limits	Improvement	Cost	Year			
21	NE Corridor Transit/Managed Lanes along Ellington Pkwy (SR 6)/I-65 to SR 386	Transit Capital Expansion - Widening, 2 to 4 lanes	\$107,360,000	2030	TDOT/RTA - NHPP	RTP # 2543	
22	Rapid Transit/Managed Lanes between Nashville and Franklin along I-65/US 31/ CSX Corridor	Transit Capital Expansion	\$335,500,000	2030	RTA/TDOT - NHPP	RTP # 9999	
23	NET Corridor Section 1 – Vietnam Veterans Parkway (SR 386) Transit/Managed Lanes from I-65 to US 31E/Saundersville Road	Transit Capital Expansion - Widening, 4 to 6 lanes	\$187,880,000	2030	TDOT/RTA - S-STP	RTP # 1364	
24	I-65 from Bethel Road (SR 257) to SR 25	Widening, 4 to 6 lanes	\$149,300,000	2030	TDOT/NHPP	RTP # 1411	
25	I-65 from SR 25 to TN/KY State Line	Widening, 4 to 6 lanes	\$153,320,000	2030	TDOT/NHPP	RTP # 1410	
26	I-65 (SB only) from Blue Star Road (US 31) to Bethel Road (SR 257)	Widening, 4 to 6 lanes	\$67,100,000	2030	TDOT/NHPP	RTP # 1431	
27	NET Corridor Section 2 – Vietnam Veterans Parkway (SR 386) from US 31E/Saundersville Road to SR 109 Bypass	Multi-Modal Widening, 4 to 6 lanes	\$131,520,000	2030	TDOT/NHPP	RTP # 1277	
28	I-65 between Old Hickory Blvd (SR 254) and Concord Road (SR 253)	New Interchange	\$46,970,000	2030	TDOT/NHPP	RTP # 1175	
29	East McEwen Drive from near Cool Springs Blvd to Wilson Pike (SR 252)	Widening, 2 to 4 lanes	\$36,640,000	2030	Franklin/O-STP	RTP # 1359	
30	Lewisburg Pike (SR 106/US 431) from Mack Hatcher Parkway (SR 397) to Donelson Creek Parkway	Widening, 2 to 4 lanes	\$17,450,000	2030	Franklin/S-STP	RTP # 1341	
31	Downtown Nashville Interstate Loop Interchanges/Junctions Reconstruction	Roadway Reconstruct	\$612,280,000	2040	TDOT/NHPP	RTP # 9999	
32	I-65 @ Springfield Highway (SR 11/US 41)	New Interchange	\$22,000,000	Illustrative	Goodlettsville	RTP # 1149	
33	Smyrna/Williamson County Connector from I-24 @ Rocky Fork Road to McEwen Drive Extension	New Roadway	\$80,000,000	Illustrative	Smyrna	RTP # 1177	
34	Buckner Road Extension to Lewisburg Pike (SR 106/US 431) with New Interchange @ I-65	New Roadway	\$32,000,000	Illustrative	Spring Hill	RTP # 1197	
35	Saturn Pkwy (SR 396) Extension to Carters Creek Pike (SR 246) @ I-840 Interchange	New Roadway	\$125,000,000	Illustrative	Spring Hill	RTP # 1201	
36	Buckner Road Widening from Columbia Pike (SR 6/US 31) to Buckner Lane	Widening	\$23,000,000	Illustrative	Spring Hill	RTP # 1198	
37	Nolensville Road (SR 11) from Burkitt Road to I-840 with Realignment from south of Clovercroft Road to north of Sunset Road in Nolensville	Widening	\$60,000,000	Illustrative	TDOT	RTP # 1255	
TDOT 2014 - 2017 STIP	38	SR 50 US 431	Widening	\$13,500,000	2016	TDOT	STIP # 1459020