

# 2.0 Regional Issues & Thinking

- 2.1 Challenges & Opportunities ..... 2-1
- 2.2 Regional Planning Partnerships ..... 2-4
- 2.3 Related Planning Efforts ..... 2-6
- 2.4 Public Attitudes ..... 2-9

## 2.1 Challenges & Opportunities

Over recent years, the Nashville region has received national recognition for its economic development, culture and prosperous economy. As this success continues, residents and businesses in Middle Tennessee have begun to feel the pressure of that growth. This prosperity has led to mounting congestion, rising cost of living, funding challenges for transportation and increasing costs of health care. To balance its growth, the counties across the Nashville region must work together to directly address these issues and protect its quality of place. They must also recognize the role that transportation investments can have in either improving or worsening these issues.

### Growing Costs of Traffic Congestion

Traffic congestion is often the first visible sign of economic prosperity as more people commute to work and school and make more trips to spend their increased discretionary income. Still, traffic congestion must be managed in order to minimize its impact on quality life and the cost of doing business. The Texas Transportation Institute (TTI) at Texas A&M University has found that growing delays are impacting cities and towns of all sizes. TTI's *Urban Mobility Report* (2012) shows that as communities deal with this congestion, they are struggling to implement enough projects, programs and policies to meet the demand of their growing regions.

While it is difficult to calculate the true cost of this congestion for Middle Tennesseans, TTI has gained a solid reputation as the leading authority for publishing congestion-related data for urban areas across the nation. Based on the same report noted above, the Nashville-Davidson Urbanized Area (UZA), which includes only a portion of the Nashville Area MPO planning area, estimates the average annual cost of congestion to be about \$801 million – or \$1,034 per auto commuter due to time and fuel costs.

### Aging of America and Increasing Diversity

The cultural diversity of a region is a hallmark of economic competitiveness and promotes talent attraction and retention. By the year 2040, Middle Tennessee is forecasted to be home to more than three million people – and the characteristics of that population will be more diverse in age and ethnic makeup. As this shift occurs over the next 25 years, the region will have to adapt its land use polices, infrastructure investments and development patterns to meet the changing expectations of these groups.

National trends show both Millennials and Baby Boomers have a growing preference for smaller living quarters in walkable communities with access to transit. This aspiration has caused many, especially younger people, to leave suburban neighborhoods for more urban environments which offer proximity to amenities such as shopping, entertainment and transportation options. Additionally, Baby Boomers are more accustomed to driving and as such possess less of a desire to abandon their vehicles. Understanding this behavior is important for suburban transit operators who may one day serve a senior population as they age out of driving. These attitudes toward driving and housing demands have led city planners to develop strategies for neighborhood infill and explore retrofitting suburban areas to become more walkable and transit-friendly. As an example of this trend, Nashville-Davidson County's general plan – NashvilleNext – which was adopted in June 2015, calls for the city's arterial pikes and neighborhood centers to accommodate new residents and workers as the community grows.

Due to the region's welcoming environment and quality of life, the share of foreign-born populations is expected to continue to grow in Middle Tennessee. By 2040 it is expected that a combined 40 percent of the population in the seven-county region will be Hispanic/Latino, Black, or Asian/Pacific Islander. In Nashville-Davidson County, that number jumps to 68 percent, with the county becoming a majority-minority community before 2040. These trends will affect policy decisions as market preferences shift with demographic change.

### Public Health Concerns and Increasing Healthcare Costs

According to the Centers for Disease Control and Prevention (CDC), Tennessee ranked among the top 10 most obese states in the nation in 2012. Moreover, 2012 CDC data show that 29 percent of the residents in the Nashville-Davidson-Franklin-Murfreesboro Metropolitan Statistical Area (MSA) were rated as obese. Conditions such as obesity, which is directly related to physical inactivity, combined with injuries from vehicular crashes and diseases related to air pollution, cost the United States hundreds of billions each year in health care costs. Declining public health is due in part to the built environment of cities and neighborhoods; and has led planners and community leaders to reevaluate investments in transportation infrastructure to address public health issues.

The MPO places significant focus on the pursuing transportation policies and projects that can help improve public health outcomes. Specifically, transportation projects submitted for the RTP are evaluated for their expected impact on air quality, provision of active transportation facilities, and potential to improve safety and personal health in areas of concern. The MPO has received national recognition for its commitment to improving public health through transportation planning. Highlights include:

- In 2013, the MPO was highlighted in a white paper by the U.S. Department of Transportation's Volpe Center as one of four leading MPOs who include health in transportation planning and policy.
- The MPO's 2035 Regional Transportation Plan was one of nine recipients of the 2012 National Transportation Planning Excellence Awards from the U.S. Department of Transportation for the inclusion of health in transportation planning, policies and programs.
- In 2012, the *Kinesiology Review* published an article about the 2035 Regional Transportation Plan and the emphasis on health impacts through active transportation modes such as walking, bicycling and transit.
- In 2011, the 2035 RTP was featured in the *National Prevention Strategy: America's Plan for Better Health and Wellness*. The *National Prevention Strategy* is a comprehensive plan that increases the number of Americans who are healthy at every stage of life by preventing disease. The plan is an effort of the National Prevention, Health Promotion, and Public Health Council, which is comprised of seventeen Federal agencies.
- The American Institute of Architects released a report in December 2012 that highlights work around the nation from communities including health in the built environment. The policy and funding work of the Nashville Area MPO is featured in the report: *Healthier Communities through Design*.
- In 2015, the Houston-Galveston Area Council of Government released their 2040 Regional Transportation Plan with the Health Framework for the plan based, in part, on the health components of the MPO's 2035 RTP.

### **Housing and Transportation Affordability**

While the overall cost of living in the Nashville region ranks relatively low compared to other large metros outside of the Southeastern U.S., the increasing cost of transportation and the growing demand for housing has started to strain household budgets.

The cost of housing in the urban core of Nashville has risen over recent years as many move from suburban neighborhoods back to the center of the city. This increase in housing cost has pushed many lower income populations to seek housing further from the center of town and often further from their work. As a whole, this segment of the population is often transit dependent and these individuals are disproportionately affected by this trend. For residents living in poverty with no access to a privately owned car, decreasing the proximity to their source of income can limit their ability to keep a job. This affects both those attempting to climb out of poverty and employers who are seeking workers.

Data from the Center for Neighborhood Technology and the U.S. Department of Housing and Urban Development show that nearly a quarter of homeowners in Nashville pay more than 35 percent of their income on housing, with four out of 10 renters paying that level or higher. When the cost of transportation is added to the cost of housing, the average share of household budgets going to housing and transportation combined jumps to 54 percent.

### **Extreme Weather Vulnerability**

Climate change and its implications has been the focus of ongoing conversation across the globe for more than two decades. Locally, the Nashville region has seen the impact of extreme weather on its communities with unprecedented flooding in 2010, increasing periods of drought and rain, as well as extreme temperature fluctuations.

Virtually all human activities have an impact on the environment, and transportation is no exception. While transportation is crucial to the economy and quality of life, it is also a significant source of greenhouse gas (GHG) emissions. In 2013, U.S. greenhouse gas emissions totaled 6,673 million metric tons (14.7 trillion pounds) of carbon dioxide (CO<sub>2</sub>) equivalents. This 2013 total represents a six percent increase since 1990 but a nine percent decrease since 2005. This decline since 2005 may reflect a combination of increased energy efficiency and shifts in the economy during the great recession. Among the various sectors of the U.S. economy, electricity generation (power plants) accounts for the largest share of emissions, 32 percent of total greenhouse gas emissions, with transportation a close second.

The following are ways planning and policy decisions can mitigate the impact of transportation and curb the amount of CO<sub>2</sub> and other GHG's emitted:

- By increasing fuel efficiency of cars and trucks;
- By increasing the use of electric vehicles and alternative fuels;

- Providing more options for transportation that encourage shifts toward transit, walking, biking;
- Working with businesses to offer employees the ability to telecommute or encourage ridesharing which could decrease vehicle trips;
- By encouraging neighborhood infill, transit oriented developments and housing developments closer to employment centers.

In 2014, the MPO joined more than 30 communities across the U.S. that have developed climate adaptation plans through the national Climate Solutions University (CSU) program. As part of the CSU program, the MPO conducted outreach to targeted organizations that represent populations identified as disproportionately vulnerable to the risks and impacts of the environment. These risks include both climate and non-climate related stressors outlined in the climate adaptation plan, such as regional growth and development, and severe weather, especially flooding and extreme heat. Maps were developed to identify areas of overlap between risks, such as flood zones, and areas of the region with higher than average vulnerable populations. The work conducted to develop the plan allowed staff to better understand the benefits of improved land stewardship, quantify the economic benefits of natural resource conservation, and recommend policy changes and solutions to natural resource challenges as they relate to transportation planning and land use.

### **Connectivity and Mobility Redefined**

Once defined singularly as the ability to freely move or be moved – mobility is now interpreted in a more complex and personal way. Today, personal mobility implies freedom. This is different than just moving from point A to B; people expect a transportation system which offers convenience, efficiency, flexibility, reflects their values, and enhances quality of life.

Recent studies have identified a connection between personal values and travel behavior. This was acknowledged by the 2014 *Mobility Attitudes Survey* conducted by the TransitCenter. This national study determined that a person’s values toward productivity, connection, privacy, community, and the environment all shaped attitudes toward transit or auto travel. Understanding the basic values and preferences of existing or potential riders allows for the development of a transit system which reflects the individuality and culture of the community it serves.

The evolution of the sharing economy has created new markets in transportation with ridesharing services such as Uber and Lyft. These modes of travel capitalize on the growing trend of individuals to borrow or share goods and services rather than use their own resources. In communities across the county, ridesharing companies are finding success by serving as an alternative to the personal car or mass transit with similar convenience, efficiency, flexibility.

### **Innovation and Technology**

Transportation relies heavily on the existence of technology and its future innovations. As advancements continue to redefine the way people connect, these changes in technology use have had an enormous impact on the development and implementation of transportation systems. Advances in technological innovation have improved fuel efficiency, led to the creation of autonomous or driverless cars, use of real time traffic data, and enhanced safety. While some initiatives such as autonomous cars have been named as the future of transportation, this technology is still in its infancy and its practical applications to improve congestion, safety and mobility still remain to be tested.

Throughout the region, the existing transportation network is equipped with various forms of Intelligent Transportation Systems (ITS). ITS refers to the use of technology to manage the transportation system more effectively, improve its efficiency, and make it easier to use. In the Nashville area, TDOT uses dynamic message signs along interstates to provide important traffic-related messages to motorists. Similarly, radar detectors and video cameras have been installed on the interstates to alert transportation officials to a slow-down that could indicate that an incident has occurred. Faster response and clearance of these incidents reduces traffic congestion and helps prevent “secondary” incidents from occurring when motorists slow down to look or swerve to avoid a stopped vehicle.

Local jurisdictions are using ITS to improve signal coordination along important arterial routes, and to establish traffic management centers where data is collected and analyzed. Over the long term, the local and state efforts are coordinated through a plan known as the ITS Regional Architecture. This plan spells out what types of data are being collected by each agency, what will be shared, and the compatibility needs for equipment. The regional architecture is continuously updated.

The Nashville area has undertaken several deployments of ITS programs throughout the region. These programs have come from multiple agencies and cover multiple transportation modes.

## **Funding Shortfalls**

Over recent years the call for Congress to address the nation’s transportation funding crisis has continued to grow. As Congress continues to draw from the general fund to fill holes in the Federal Highway Trust Fund, cities and states are now looking inward to find funding solutions for their growing transportation needs. The current funding issues are due in part to the declining purchasing power of the federal gas tax, which has not been increased since 1993. The value of revenue from this source has fallen by more than 40 percent due to inflation and is compounded by drivers buying less gas as fuel efficiency standards for cars and trucks has significantly improved. According to the U.S. Environmental Protection Agency standards, by 2025 the average car will achieve 54.5 miles per gallon on average, nearly double that of today’s cars – saving consumers over \$1.7 trillion in gas over the lifetime of a 2025 vehicle, and slashing U.S. oil consumption by 12 billion barrels. These realities are met with similar struggles at the local level, as Tennessee’s state gas tax has not been increased since 1989.

Declining gas tax revenues and buying power means fewer projects, slower progress, and less benefit to communities and economies—thus forcing local governments to find other means to meet funding needs. In the state of Tennessee, TDOT has long operated under a pay-as-you-go policy which has kept the state from going into debt to build or maintain roads. However, as funding dwindles, the policy has pushed the state into a position where funds are used mainly for maintenance of existing facilities with few resources to invest in improvements or expansions to the network.

Shifts in demographics and geographic characteristics have led to increasing interest in regional mass transit in Middle Tennessee to improve mobility. Today, the region as a whole has underfunded its existing transit systems and led to the existence of a product that does not meet the needs of potential riders. In 2014 the Nashville area was defined as ‘transit deficient’ by the TransitCenter’s Mobility Attitudes Survey.

To develop a regional system that supports the growth that is expected over the next 25 years will require significant investment. The limitations of existing funding sources coupled with the present lack of dedicated funding detracts from ensuring stability in services, and also does not make the region competitive for federal capital funds to build modern transit infrastructure.

## **2.2 Regional Planning Partnerships**

One of the defining strengths of Middle Tennessee lies within its demonstrated capacity to effectively organize key leaders to address issues of regional significance. The development of the 2040 Regional Transportation Plan is no exception as hundreds of community leaders have spent significant time engaged in the development of regional goals, objectives and desired outcomes of the plan. The MPO coordinates with the following organizations that play a major role in shaping the region’s transportation plan; many of them are ultimately responsible for the plan’s implementation:

### **Federal Agencies**

The MPO collaborates with a host of federal agencies including the Environmental Protection Agency, Department of Health and Human Services, and Department of Housing and Urban Development, and the Army Corps of Engineers. The Federal Highway Administration and Federal Transit Administration of the U.S. Department of Transportation both serve as non-voting members of the MPO Executive Board and Technical Coordinating Committee.

### **State Agencies**

The MPO coordinates with various functions of state government including the Governor’s Office, the Department of Safety, the Department of Health, and the Department of Economic and Community Development, and works regularly with the Tennessee Department of Transportation and Tennessee Department of Environment and Conservation (TDEC). TDOT typically represents the Governor’s Office on the MPO Executive Board. Both TDOT and TDEC serve on the MPO’s Technical Coordinating Committee.

## Middle Tennessee Mayors Caucus

Since 2009, the Middle Tennessee Mayors Caucus has provided leadership on important issues facing a rapidly changing regional landscape. Transportation, and particularly the pursuit of a modern mass transit system, served as the early catalyst, but in its brief history, the Caucus has served as an effective forum to build personal relationships among the mayors, improve relationships among jurisdictions, and help local governments support each other on issues ranging from flood recovery to proposed state regulation. The Caucus includes approximately 40 city and county mayors from across the 10 Middle Tennessee counties of Cheatham, Davidson, Dickson, Maury, Montgomery, Robertson, Rutherford, Sumner, Williamson, and Wilson.

## Greater Nashville Regional Council

The Greater Nashville Regional Council (GNRC) is a joint regional council of governments and development district organization for 13 counties in northern Middle Tennessee including Cheatham, Davidson, Dickson, Houston, Humphreys, Montgomery, Robertson, Rutherford, Stewart, Sumner, Trousdale, Williamson, and Wilson counties. GNRC helps the MPO by providing technical assistance to local government members and assisting with public outreach efforts.

## Regional Transportation Authority

Created by state statute in 1988 (amended in 2009), the Regional Transportation Authority (RTA) is responsible for developing, managing, operating, and maintaining a regional transit system for the citizens of Middle Tennessee. The RTA oversees the largest commuter vanpool program in the Southeast, facilitates thousands of carpools, coordinates regional Relax & Ride regional bus routes, and operates the area's first regional rail project. Recent amendments to state law designate the RTA to serve as the administrator of regional dedicated funding for transit projects and services.

## Local Public Transit Agencies

The MPO has an ongoing partnership with each of the following public transit agencies. While each transit agency is responsible for short-range planning for their respective service areas, those agencies collaborate with the MPO in developing mid- and long-term transit plans for the region.

- **Nashville Metropolitan Transit Authority (MTA):** Provides local bus, bus rapid transit (BRT)-lite, and ADA paratransit service to residents and visitors in Nashville-Davidson County.
- **Franklin Transit Authority (FTA):** Provides local bus/trolley and ADA paratransit service to residents in Franklin including the Cool Springs area. FTA is operated by The Transportation Management Association (TMA) Group, a 501(c)(3) non-profit organization which also operates vanpool programs for RTA and Williamson County Government.
- **City of Murfreesboro Transportation Department (Rover):** Provides local bus and ADA paratransit services to residents in Murfreesboro.

## Regional Non-Profit Organizations

The MPO has an ongoing partnership with each of the following non-profit organizations that help connect additional private-sector partners to the planning process.

- **Nashville Area Chamber of Commerce:** Co-produces with the MPO an annual indicators report entitled, "*Nashville Region's Vital Signs*" to help draw attention to the area's strengths and weakness through ongoing tracking of various performance measures that relate to quality of life. The Nashville Area Chamber of Commerce also helps the MPO coordinate with other Chambers across the region to ensure that local businesses have a voice in the transportation planning process.
- **Nashville Civic Design Center:** Works with the MPO to integrate good urban design considerations into the transportation planning process. Together, the MPO, the Nashville Civic Design Center, and the University of Tennessee at Knoxville School of Architecture and Design partner to publish two booklets per year that illustrate best practices and concepts to provide guidance to the region.
- **Cumberland Region Tomorrow (CRT):** A non-profit organization formed in 2000 to advocate for quality growth and to support local communities in their comprehensive planning efforts. Through its work, CRT brings people together to address the challenges and opportunities that come with growth and development in Middle Tennessee. Its mission is to foster communication, collaboration, and action as the region plans for the long-term livability, economic vitality and sustainability.

- **Clean Air Partnership of Middle Tennessee:** Administers a public outreach campaign to educate residents and businesses on the importance of good air quality, and encourages alternatives to driving in order to minimize pollution generated by cars and trucks in the region.
- **Transit Alliance of Middle Tennessee:** Comprised of representatives from the business community, the Alliance is a non-profit organization committed to communicating the value of regional mass transportation needs and options. The Alliance fosters education across the region about the economic value of mass transit investments. Through these communication and education efforts, the Alliance will actively participate in the steps necessary to secure dedicated revenues for mass transit investments in the months and years ahead.
- **Leadership Middle Tennessee (LMT):** A leadership institute founded in 1999 to provide a regional perspective to a diverse array of public and private-sector community leaders. Through networking, collaboration, and strategic thinking, LMT develops regional leaders who can contribute to long-term solutions that sustain and balance the quality of life and economic growth across Middle Tennessee.

## 2.3 Related Planning Efforts

### *Local Comprehensive Plans*

Nearly every municipality and county government in Middle Tennessee has its own comprehensive plan to help manage local resources and to prepare for future growth. These plans set land use policies and identify strategies to address needs for schools, parks, water and sewer, as well as transportation. Local transportation priorities are usually identified in the transportation element of these comprehensive plans, or as part of a separate local major thoroughfare plan. The development of the regional transportation plan pulls from these plans to unify the region’s most important transportation priorities for federal funding into one document.

County	Planning Document
Davidson	<ul style="list-style-type: none"> <li>• NashvilleNext</li> <li>• Belle Meade Zoning Code</li> <li>• Goodlettsville Land Use Plan</li> <li>• Ridgetop Future Land Use Plan</li> </ul>
Maury	<ul style="list-style-type: none"> <li>• Maury County Comprehensive Plan</li> </ul>
Robertson	<ul style="list-style-type: none"> <li>• Coopertown Land Use and Transportation Plan</li> <li>• Draft Robertson County Comprehensive Plan</li> <li>• Greenbrier Land Use Plan</li> <li>• Millersville Future Land Use Plan</li> <li>• Millersville Zoning Ordinance</li> <li>• Portland Future Land Use Plan</li> <li>• Ridgetop Future Land Use Plan</li> <li>• Robertson County Zoning Ordinance</li> <li>• Springfield Future Land Use Plan</li> <li>• White House Comprehensive Plan</li> </ul>
Rutherford	<ul style="list-style-type: none"> <li>• Rutherford County Comprehensive Land Use Plan (2011)</li> <li>• Murfreesboro 2035 Comprehensive Plan (2015)</li> <li>• Town of Smyrna Comprehensive Plan (2007)</li> <li>• City of LaVergne Zoning</li> <li>• Eagleville Zoning Ordinance</li> </ul>
Sumner	<ul style="list-style-type: none"> <li>• 2035 Comprehensive Plan: Sumner County's Blueprint to the Future</li> <li>• Gallatin General Land Use Plan</li> <li>• Goodlettsville Land Use Plan</li> <li>• Hendersonville Land Use and Transportation Plan</li> <li>• Long Hollow Pike-Station Camp Plan</li> <li>• Millersville Future Land Use Plan</li> <li>• Millersville Zoning Ordinance</li> <li>• Portland Future Land Use Plan</li> <li>• Westmoreland Future Land Use Plan</li> </ul>



Williamson	<ul style="list-style-type: none"> <li>• White House Comprehensive Plan</li> <li>• Brentwood Long Range Transportation Plan</li> <li>• Brentwood Zoning Ordinance</li> <li>• Comprehensive Plan for Thompson's Station</li> <li>• Fairview Long-range Growth and Land Use Plan</li> <li>• Franklin Land Use Plan</li> <li>• Nolensville Land Use Plan</li> <li>• Spring Hill Future Land Use Plan</li> <li>• Williamson County Comprehensive Land Use Plan</li> </ul>
Wilson	<ul style="list-style-type: none"> <li>• Lebanon Future Land Use Plan</li> <li>• Mt. Juliet Land Use and Transportation Plan</li> <li>• Wilson County Gateway Land Use Master Plan</li> </ul>

### ***Public Transit Plans***

There are multiple transit operators across the MPO area, the largest being Nashville’s Metropolitan Transit Authority (MTA) which operates 46 routes in Davidson County and staffs the RTA which operates nine regional bus routes between downtown Nashville and the following cities: Brentwood, Clarksville, Franklin, Gallatin, Hendersonville, Joelton, La Vergne, Murfreesboro, Smyrna, Springfield, Spring Hill, and Thompson's Station. The RTA also oversees the Music City Star regional rail. The first segment of the regional rail connects Davidson and Wilson counties.

The Nashville MTA/RTA’s strategic planning process, known as nMotion, has been underway since mid-2015 and is expected to conclude in Spring 2016. The nMotion process will result in a 20-year comprehensive plan designed to meet the Nashville area’s needs for transit. Leveraging the MPO’s existing vision for transit adopted in 2010, the MTA/RTA plan will evaluate how the transit system works today and identify opportunities to enhance the transit system, improve service, attract and retain new riders and meet the growing needs of the Nashville region through investment in a program of projects derived from the regional transit vision. While the 2040 RTP reinforces the transit vision adopted in 2010, the RTP will be evaluated upon the completion of the MTA/RTP planning effort to ensure that federal funding is targeted at the region’s most pressing transit needs.

The RTP also presents recommendations from local transit plans of the Franklin Transit Authority and the Murfreesboro Rover, and its development is coordinated with the federally-required Coordinated Human Service Transportation Plan for the region. That plan is responsible for identifying a strategy for coordinating the various federal grant programs aimed at provided transportation services to the elderly, disabled, and low-income.

### ***TDOT Studies and Statewide Long-Range Transportation Plan***

The Tennessee Department of Transportation (TDOT) is in the process of updating its long-term vision for transportation in Tennessee. This 25-Year long-range transportation plan (LRTP) provides the foundation for prioritizing transportation investments across the State. The updated plan will aid in accomplishing TDOT's mission to serve the public by providing the best multimodal transportation system in the nation.

A major outcome of this two-year comprehensive effort is a mid-term, 10-Year Strategic Investment Program. The intent of this program is to capture the insights gained during the development of the LRTP to concurrently develop a project program investment plan that is fiscally constrained that can be implemented over a 10-year horizon.

### ***Related TDOT Studies***

- **I-40/81 Corridor Study** – Completed in 2007, the study identified transportation needs from Bristol to Memphis. The study made various recommendations to improve roadway safety, capacity, operations, and maintenance as well as economic access and freight movement. TDOT plans to update this study in the near future.
- **I-24 Corridor Multi-Modal Study** - Conducted in 2014 and 2015, the study identified short and long-term solutions for improving problem spots along the entire I-24 corridor from the Chattanooga area to the Kentucky state line. The study investigated a range of multimodal solutions to address future travel demands, with emphases on managing congestion, improving safety, maximizing the potential for freight diversion, and preserving/enhancing the corridor's economic benefits. The effort also included an additional feasibility study for monorail system along I-24 between Nashville and Murfreesboro.



- **Extreme Weather Vulnerability Assessment Pilot Project** – Started in 2013, this ongoing effort is intended to identify transportation assets which are the most likely to be vulnerable to extreme weather events. The study will identify risks to infrastructure and potential solutions to minimize the impact of those risks.

### *MPO Planning Studies and Technical Tools*

Well before the production of the 2040 RTP began, the MPO already had been engaging the public and interested stakeholders through a series of major studies focused on improving certain elements of the transportation system and/ or the relationship between transportation and land use, urban design, and economic development. The following provides an overview of the major studies conducted during the development of the plan. Each contained a robust public involvement process that included a range of activities, from public meetings and workshops to web-based and telephone surveys. These efforts and others are documented on the MPO’s website at [www.NashvilleMPO.org](http://www.NashvilleMPO.org).

- **Regional Freight and Goods Movement Study (Phase III)** – The MPO is wrapping up the third phase of the regional freight and goods movement study. This phase focused on the local impacts of freight movement and will identify strategies to align economic development, land use decisions, and urban design considerations with freight and local delivery needs while minimizing conflicts with quality of life principles. Prior phases have profiled the region’s freight characteristics, provided tools for forecasting freight movement, and developed methods for integrating freight needs into the regional transportation planning and programming process.
- **Regional Bicycle and Pedestrian Study** – In 2014, the MPO conducted an update to the 2009 Regional Bicycle and Pedestrian Study findings. This revision included updated inventory of facilities, measures of bicycle and pedestrian levels of service, latent demand analysis, and provided new measures of walkability within communities throughout the region.
- **State Route 109 Access Management Study** – In partnership with TDOT and local partners, the MPO is leading an access management study which will provide specific recommendations for the continued development of the regional corridor stretching from I-65 in Sumner County to just south of I-40 in Wilson County. The effort is a follow-up to the Tri-County Transportation and Land Use Study.
- **Southeast Area Transportation and Land Use Study** – The MPO is near completion of its regional analysis of transportation needs across communities in Rutherford County and adjacent areas in neighboring counties through the Southeast Area Study. This study evaluated the growth and development scenarios, identified transportation deficiencies, and various multimodal transportation solutions.
- **Northwest Corridor Transit Study** – In partnership with RTA, the MPO is currently participating in a study to evaluate major transit investment options between downtown Nashville and Clarksville, including the commuter rail alternatives identified in the initial feasibility study which was completed in 2009.

### *Previous Studies that have informed the 2040 RTP*

- **Northeast Corridor Mobility Study (2011)**: A comprehensive planning effort focused on developing transportation investment strategies that support the priorities of communities between downtown Nashville and Gallatin, TN. The study examined the economic growth potential of various land use and urban design scenarios for the fast growing corridor enroute to evaluating potential transportation projects like passenger rail and bus rapid transit. The final recommendation was to incorporate bus rapid transit along Ellington Parkway and Vietnam Veterans Parkway.
- **Tri-County Transportation & Land Use Study (2010)**: A first of its kind effort in the region to bring local governments, citizens, and businesses together to talk about significant growth issues across jurisdictional boundaries. The effort created a formal forum for local leaders in the counties of Robertson, Sumner, and Wilson to consider the growth plans of their neighboring communities in an effort to improve their own – all for the sake of regional coordination and decision-making. The MPO used the effort to generate ideas for the regional transportation plan while local governments used the effort to develop or improve upon their own local comprehensive plan.
- **Regional Freight & Goods Movement Study (Phases I - 2007 and Phase II - 2009)**: A major effort to bring together local leaders, freight industry representatives, and major freight shippers and receivers to discuss the influence that regional freight movements have on our quality of life. The effort helped the MPO to recognize the significant contributions that freight makes in the region while at the same time helped to identify improvements to the transportation system to minimize the undesirable side-effects of being located at the convergence of three major Interstates (I-65, I-40, and I-24).
- **Regional Bicycle and Pedestrian Study (2009)**: A multiple award winning study that provided the region with a comprehensive inventory of non-motorized modal facilities, a measure of the levels of service for walking and bicycling on regional roadways, a model for predicting potential demand for active transportation, a long-range vision for

building a multi-modal network, a process to prioritize candidate projects, a funding toolbox, and a set of roadway design guideline/ considerations. As part of the study, the MPO established a standing Bicycle and Advisory Committee comprised of public and private-sector representatives to help guide future active transportation planning efforts of the MPO.

- **Nashville MTA Master Plan (2009):** A strategic guide to help the MPO and the Nashville MTA set forth a set of guiding principles and policies for improving public transportation in Nashville/Davidson County, as well as describe actions and projects for the short, medium and long term. The plan is an action-oriented strategy that leads MTA closer to the long-term vision established through local collaboration and the long range transportation plan adopted by the MPO.
- **Southeast Corridor Transit Alternatives Analysis (2007):** A formal Federal Transit Alternatives Analysis for the region's 30+ mile southeast corridor connecting Nashville with Murfreesboro. The study followed strict FTA guidelines for the analysis of transit alternatives including a series of interactions with the public to ultimately select a locally-preferred transit alternative for the corridor. The final recommendation was to provide enhanced bus service between Murfreesboro and Nashville and new local circulator service in LaVergne and Smyrna.

## 2.4 Public Attitudes

### American Attitudes toward Transportation Policy

As the country continues to emerge from the Great Recession, investment in our nation's infrastructure is critical to sustaining our economic rebound. The need for increased and accountable investment in transportation across the U.S. has emerged as one of the top priorities for the majority of Americans. The desire for Congress to address transportation funding was identified by a 2011 Rockefeller Foundation poll which showed American's strongly believe that providing a safe transportation system that works is a primary role of our government, and that it should be immune to partisan divisions, more than most other issues.

In addition to the need for sustained funding, cities across the nation are rethinking their transportation investments to fit the needs of the changing demographics of their communities. The Mobility Attitudes Survey (2014) conducted by the TransitCenter, analyzed the different attitudes and behaviors of the U.S. population as it related to travel behavior and location choices. The role of Millennial and Baby Boomers were explored specifically as these two groups are experiencing shifting behaviors as part of generational change – rather than economic or social circumstances. The survey found that the attractiveness of mixed-use neighborhoods is a major factor driving people to choose transit. This is not unexpected as the growing trend for redevelopment and infill in urban areas has increased density and many suburbs are being retrofitted to meet the mix-use desires of residents to create walkable communities.

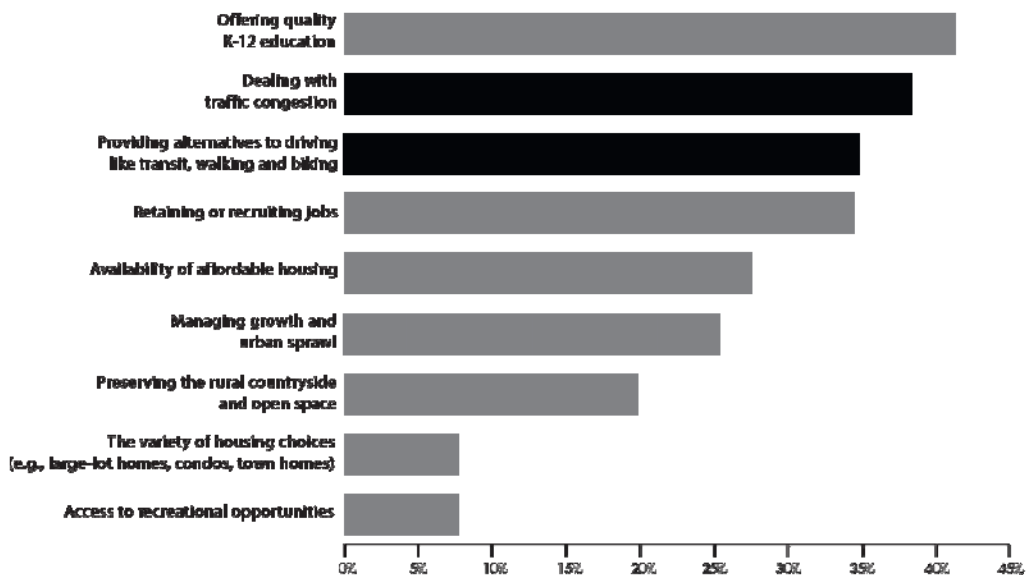
### Middle Tennessee Attitudes

As part of its overall public involvement strategy for the 2040 RTP, the MPO commissioned a statistically-valid research effort on public opinions about transportation among Middle Tennesseans. While national data on the public's attitudes and perceptions about today's mobility status in U.S. metro areas can be helpful in formulating public policies for a southeastern urbanized region, qualitative evidence of a mirroring of overall national attitudes and opinions was surfacing at local public meetings and other speaking engagements held across the ten-county Middle Tennessee region. Subsequently, formal quantitative research data via a 2014 telephone survey revealed the following about localized attitudes and opinions on various transportation-related issues:

## Transportation is a Major Regional Issue

For the first time, transportation related issues have surpassed economic development concerns and closely follow the issue of K-12 education.

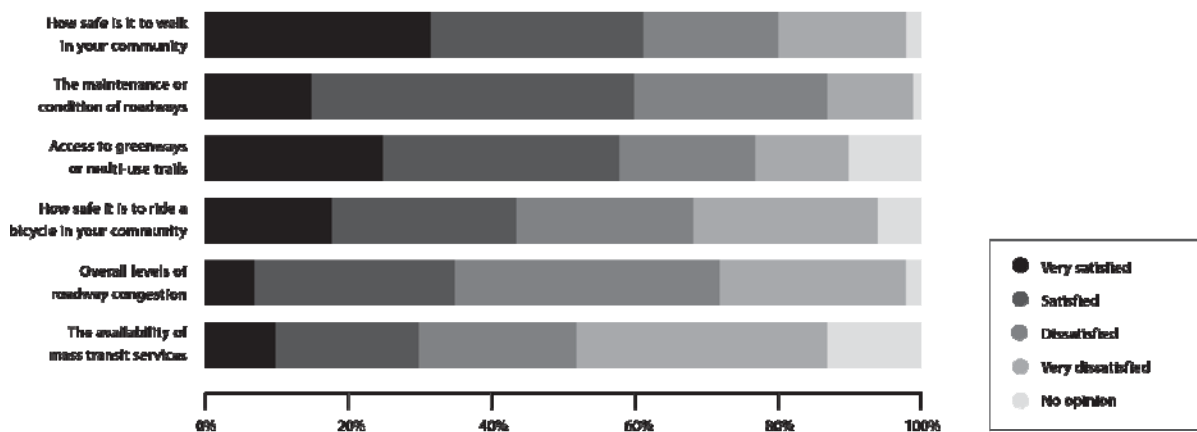
**Figure 2-1 Most Important Quality of Life Issues to Address**



Source: MPO 2014 Attitudinal Survey conducted by ETC Institute

## Public Satisfaction with area Transportation Conditions

**Figure 2-2 Levels of Satisfaction with the Transportation System**



Source: MPO 2014 Attitudinal Survey conducted by ETC Institute

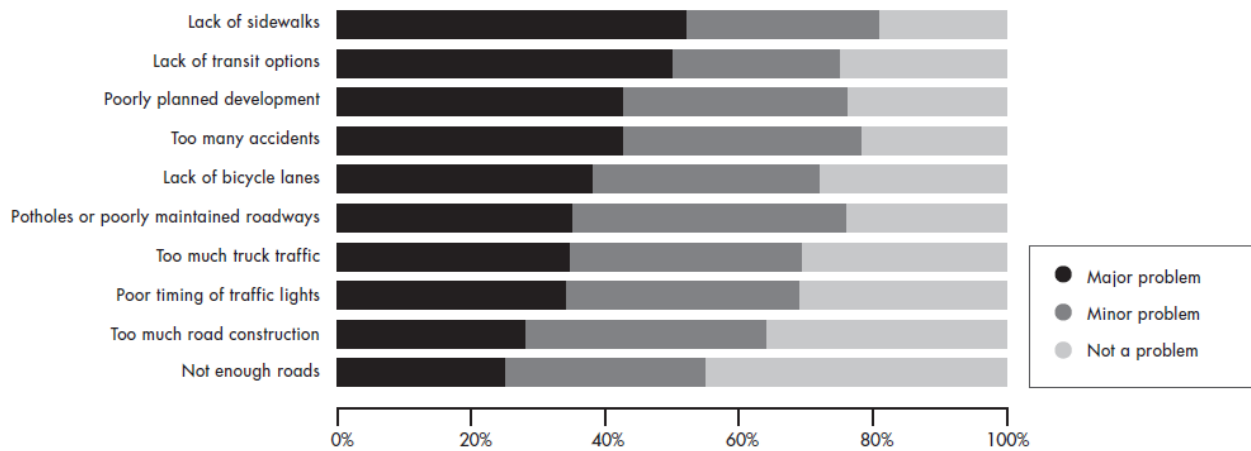
## Shifts in satisfaction since 2010

When public attitudes from the 2014 survey are compared with the exact survey taken in 2010, results show that satisfaction levels have increased for access to greenways (up from 53%) and how safe it is to walk and bicycle (up from 54%), but satisfaction levels have decreased for overall levels of roadway congestion (down from 53%). All other measures remain steady within the margin of error.

## Problems with the Transportation System

The lack of sidewalks and limited transit options top the responses from the survey as the biggest transportation issue in our region.

**Figure 2-3 Problems with the Transportation System**



Source: MPO 2014 Attitudinal Survey conducted by ETC Institute

### Other Key Findings Related to Transportation Problems

- 36 percent report problems with finding a place to park at least once a week
- 69 percent indicated that public transit is not convenient enough to use regularly

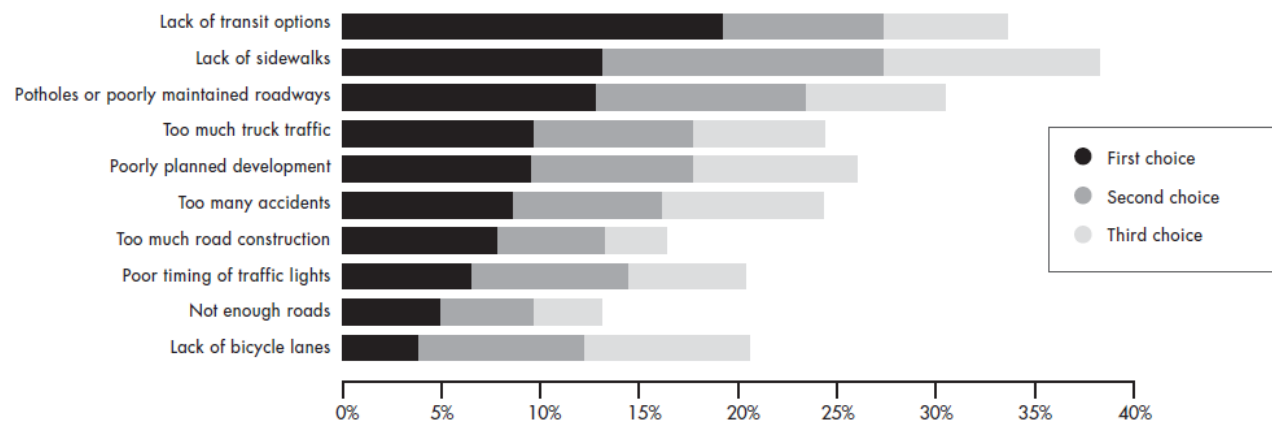
### Increases in Traffic Congestion since 2010

Compared with results from the 2010 survey, nearly every issue was a more significant problem in 2014 on the range of 5 to 10 additional percentage points. Increases in traffic congestion have been particularly noticeable by respondents with 40 percent of workers report experiencing heavy congestion to and from work in 2014, compared with 28 percent of workers in 2010. Those reporting no congestion dropped from 27 percent in 2010, to 16 percent in 2014.

### Public Opinions Regarding Transportation Priorities

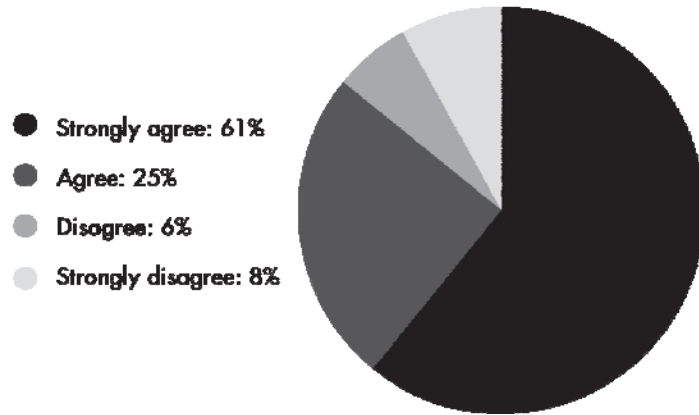
Across the seven-county region, respondents were asked to identify their top priorities related to solving transportation problems. Limited transit options ranked highest on the list, and the lack of sidewalks and need for roadway maintenance both rose. However, on a previous question 61 percent of resident stated they were satisfied with the maintenance of condition of roadways.

**Figure 2-4 Most Important Transportation Problems to Solve**



Source: MPO 2014 Attitudinal Survey conducted by ETC Institute

**Figure 2-5 Public Support for Building a Regional Transit System**



Source: MPO 2014 Attitudinal Survey conducted by ETC Institute

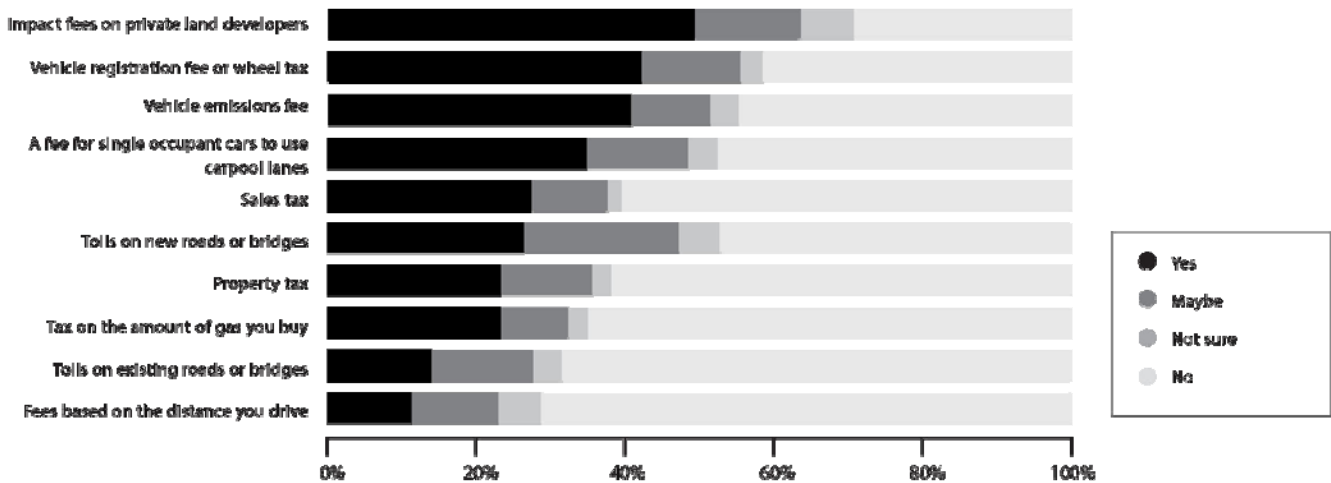
**Other Key Findings Related to Transportation Priorities**

- 69 percent say that they think more people are going to start using transit because of rising fuel prices.
- 87 percent say that mass transit is important for the local economy, and 61 percent disagree that public transit is mostly just a social service for people who cannot afford a car.
- 68 percent say that they would walk or bicycle for transportation purposes if it were safe and convenient.

**Attitudes toward Transportation Funding**

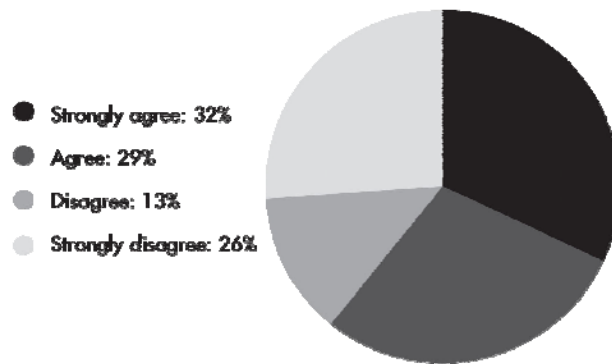
In addition to identifying strong support for building a mass transit system, the survey also gauged support for funding mechanisms for transportation improvements. The greatest support was for applying impact fees on private land developers (49 percent), followed by support for a vehicle registration fee (42 percent); when asked how much respondents were willing to pay annually to increase transportation funding, the mean amount was \$50.20.

**Figure 2-6 Public Support for Transportation Funding Options**



Source: MPO 2014 Attitudinal Survey conducted by ETC Institute

**Figure 2-7 Public Support for Paying More for a Regional Transit System**



*Source: MPO 2014 Attitudinal Survey conducted by ETC Institute*

### **Other Key Findings Related to Transportation Funding**

- When asked if it would be fair for the gas tax to be increased with inflation to keep up with growing costs:
  - 56 percent answered 'yes' or 'maybe'
  - 22 percent answered 'no'
  - 22 percent were not sure

### **Shifts in attitudes since 2010**

Compared with results from the 2010 survey, potential support has increased the most for impact fees (up from 56%), vehicle registration fees/wheel tax (up from 48%), sales tax (up from 29%), and property tax (up from 28%). The level of support for all other options increased only slightly within the margin of error, while support for tolls on existing roadway dropped by 1 percentage point.