
Transportation



Synopsis

Nashville has been commended as a world-class city. Sprawling development endangers the region's prosperity, however, because more revenue is needed to maintain sprawling infrastructure. Long commutes are common, and only half of the region's jobs are accessible by transit. Another million people are expected to make the 10-county region their home by 2040. This growth will strain the transportation system and will require Nashville and the region to think creatively about how we design our cities and how we move people and goods.

Widening streets, building more roads, and constructing buildings and dwellings that only encourage car access are no longer viable, sustainable solutions. This background report contains an analysis of Nashville's existing transportation and current initiatives, challenges are discussed such as city's ability to maintain existing transportation infrastructure and improving safety to reduce economic costs, and key transportation recommendations are presented for the NashvilleNext planning process.

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Role and purpose of background reports



This background report was developed to provide input to the NashvilleNext planning process. It was researched and authored by community members interested, involved, and knowledgeable on the topic. The authors present best practices, an evaluation of the state of the topic in the Nashville community today, and recommendations for consideration during the planning process.

This report provides a starting point for broader community discussion and reflection based on the research and recommendations of the authors. Throughout the planning process, NashvilleNext will use this and other background reports, ongoing research, departmental involvement, community input and engagement to discuss, refine and formulate the policies and recommendations for the general plan.

The information and recommendations provided in this background report are solely those of the authors and contributors and are being provided at the beginning of the NashvilleNext process to start community discussion.

The NashvilleNext Steering Committee thanks and extends its sincere appreciation to the authors of and contributors to this background report for the time and effort to provide this report for community consideration and discussion. The Steering Committee looks forward to the ongoing dialogue on the issues and recommendations that the authors provide.

Any final policies and recommendations endorsed by the NashvilleNext Steering Committee for the consideration of the Metropolitan Planning Commission will be the result of the entire planning process and upcoming community engagement and discussion.

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Introduction

Nashville has, for many decades, been an auto-centric city. Nashville's auto-dependency is driven, in part, by the city's street system of "pikes" – a network of arterial roads emanating from Downtown Nashville to adjacent neighborhoods. The pikes form a "wheel and spoke" system as opposed to a grid system, which makes it more difficult to efficiently provide transit. Examples of these arterial pikes include Dickerson Pike, Gallatin Pike, Clarksville Pike, Hillsboro Road, Lebanon Pike, and Charlotte Avenue. Nashville also experienced significant growth right as autos were becoming more affordable and more common. Post-World War II development patterns in many American cities encouraged residents to commute daily from suburban neighborhoods to the central business districts of many cities. Nashville's suburbs such as Madison, Woodbine, Donelson, Bellevue, and Antioch grew tremendously in this era and the automobile played a central role. Most development during this era of construction did not include sidewalks. Biking was not an option. Transit options diminished with the end of the street car system, and transit by bus was only used by riders who had no other options. By design, people were encouraged to rely on their automobile. The car gave some Nashvillians independence and freedom and made it more difficult for other Nashvillians to move about the city.

There is a growing understanding among Nashvillians that relying solely on autos – and designing streets and transportation networks solely for autos – is not sustainable financially, or in terms of how to manage growing traffic and provide transportation options for all Nashville residents. As a result, Nashville's transportation system has evolved since the post-World War II development boom. Although bus service declined through the 1960s, Metro Nashville chartered the Metropolitan Transit Authority (MTA) by 1973 and transferred the operation of the city's bus system from private to public ownership. Metro Nashville realized at the time that a viable public transportation system contributes to a healthy economy by providing access to jobs and reducing



traffic congestion and air pollution.¹

In the 1990s, the Greenways Commission was created by then Mayor Phil Bredesen and the Metro Council. The Greenways Commission was charged with planning and developing a greenway system throughout Davidson County.² There are now over 50 miles of multi-use greenway trails within Davidson County.³ The development process in Davidson County also changed in the 1990s to include the dedication of easements for greenways and the construction of sidewalks when subdividing.⁴ Metro Nashville has constructed miles of sidewalks across the city targeting schools, filling in segment gaps, and prioritizing highly needed locations where they may not have been built when housing was originally developed.⁵

By the 2000s, a commuter rail line was under construction. Today, it takes commuters by train on weekdays from Lebanon to the Downtown Riverfront with stations along the way.⁶ Metro Nashville's [Strategic Plan for Sidewalks & Bikeways](#), developed in 2003 and updated in 2008, expanded upon the Greenways Commission's vision, and numerous miles of bike routes and bike lanes have been built by Metro Nashville and the Tennessee Department of Transportation to safely accommodate bicyclists while on Nashville streets.⁷ Today, bicyclists ride from Percy Warner Park to Percy Priest Dam on the Music City Bikeway, a series of bike lanes, bike routes, and greenways.⁸ MTA constructed Music City Central at

the intersection of 4th Avenue North and Charlotte Avenue in Downtown. Music City Central provides 24 bus bays for loading and unloading, climate-controlled waiting areas, and route arrival times for riders of MTA buses. Nearly 20,000 people travel through the region's transit hub each weekday.⁹

The future transportation network in Nashville is guided by [Mobility 2030](#), a functional plan of Metro's General Plan (the update to the General Plan begins in 2013 and is called NashvilleNext). [Mobility 2030](#) pulls together component plans that guide transit ([Strategic Transit Master Plan](#)), streets ([Major and Collector Street Plan](#)), bicycle, and pedestrian ([Strategic Plan for Sidewalks and Bikeways](#)) infrastructure investments.¹⁰ One component plan, the [Major and Collector Street Plan](#), was recently updated to reflect the Complete Streets approach. The future vision for streets in Nashville now considers the movement of all people and goods and closely ties the design of future improvements to the surrounding context.¹² This update to the [Major and Collector Street Plan](#) was prompted, in part, by Mayor Karl Dean's "Complete Streets" Executive Order, which was signed in 2008 and instructs Metro departments to be mindful of the accommodation of pedestrians of all ages and abilities, bicyclists, transit riders, drivers of motor vehicles, and freight and goods movement in its plans, policies, and programs.¹¹

Today, planning, design, and construction of the city's transportation components strive to reflect the Complete Streets mandate. Metro Nashville recently opened the 28th Avenue-31st Avenue Connector Bridge that connects North Nashville to the Midtown/West End Area. The bridge included a protected shared use area for bicyclists and pedestrians and six new bus shelters. Public art was also included as part of the design.¹³ MTA also began fixed route bus service called the University Connector, which uses the 28th Avenue-31st Avenue Connector to link Tennessee State University with Vanderbilt University, Belmont University, and Lipscomb University.

Mobility 2030 Principles

- Create efficient community form.
- Offer meaningful transportation choices.
- Sustain and enhance the economy.
- Value safety and security.
- Protect human health and the environment.
- Ensure financial responsibility.
- Address transportation from a regional perspective.

Complete Streets Executive Order

"Give full consideration to the accommodation of the transportation needs of all users, regardless of age or ability..."

This cross-town connector provides a vital connection within MTA's bus route system.¹⁴ Similar cross-town routes will likely be implemented in the future as funding permits so riders do not have to transfer through Downtown to move across the county.

Design for The Amp, the city's first full service bus rapid transit (BRT) line, is also underway. BRT lanes are being planned along a 7.1 mile corridor from Five Points in East Nashville to White Bridge Road in West Nashville. The Amp will utilize distinct and specially designed buses in dedicated transit lanes to transport riders to stations along the route. The use of dedicated lanes and frequent service will make The Amp line reliable, with vehicles arriving every 10 minutes during peak travel and every 15 minutes during off-peak travel times. Stations will be equipped with real-time travel information. Over 1,000 park-and-ride spaces will be available for commuters along the route. Bicyclists will be able to transport their bikes on the buses to connect to bike lanes and routes throughout the city. Currently MTA, with the full support of Mayor Karl Dean, is seeking federal money to fund a portion of The Amp route. The Amp's estimated 1.6 million annual ridership is projected to grow over time. This project is critical if Nashville wants to avoid the dramatic increases in traffic congestion



that will arise as population continues to increase in this busy corridor and to support existing businesses and industries.¹⁵ In the next phase of planning for The Amp, the community will be engaged to address community concerns, reflect community values, and create this important link in Nashville’s growing transit system.

Projects like The Amp, the Gallatin Pike Bus Rapid Transit Lite, and the recently launched Murfreesboro Pike Bus Rapid Transit Lite, are critical for the prosperity and well-being of Nashville in the future. Providing additional transit options – and supplementing transit with complete sidewalk, bikeway and greenway networks – ensures that Nashville can move more people and freight throughout the city, support existing businesses and their employees, and make Nashville attractive to new businesses and new residents. Additional transportation options make Nashville welcoming for the elderly, the young and the disabled, who may not be able to drive. These

transportation options also help Nashvillians to be healthier by adding more walking into their daily routines and they make the city more sustainable by helping with air quality.

1.0 Regional Transportation Trends and National Benchmarks

1.1 Growth and Development Trends

The Nashville area has emerged as the state's foremost economic engine, but sprawling land development patterns place continued prosperity at risk as the region continues to represent one of the most land-extensive metropolitan areas of the nation with 1.7 million residents distributed across 3.4 million acres throughout the ten counties of Cheatham, Davidson, Dickson, Maury, Montgomery, Robertson, Rutherford, Sumner, Williamson, and Wilson.¹⁶ This development pattern – characterized by low densities positioned away from central business districts and town centers – strains government resources, requiring additional infrastructure per capita, consumes large amounts of natural resources and open space critical for biodiversity and food supply, and abandons once-prosperous residential, commercial and civic services located closer to existing community cores, which are replaced with new development constantly being constructed on the edge of the region.

From a transportation perspective, this sprawling pattern means long and costly commutes as jobs become further decentralized from the urban core while energy costs are at their highest in decades. Moreover, because of this disconnect between housing and employment centers, only half the region's jobs are accessible by mass transit – ranking Nashville 92nd out of 100 metropolitan areas for workforce transit accessibility at a time when transit demand is surging locally and nationally.¹⁷ As energy costs continue to rise, a choice in transportation options will become even more critical to economic productivity. Growth indicators related to energy and transportation (e.g., vehicle miles traveled, fuel expenditures, etc.) suggest an unsustainable urban footprint that needs to be addressed in the short-term in order to ensure future, long-term prosperity.

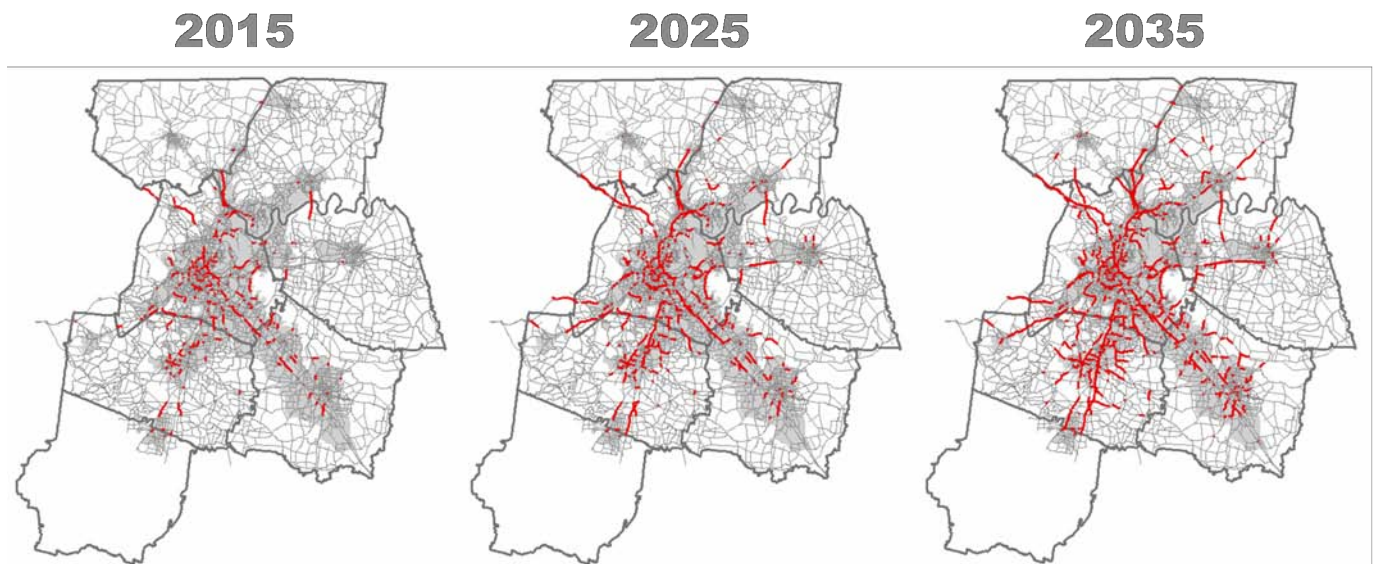
Over the next 25 years, another million people are expected to make the 10-county region their home, the total population growing to around 2.7 million residents – roughly the size of the present-day Den-



ver, Colorado metropolitan area. This growth will further pressure the transportation system and other critical infrastructure, and if not managed well, will negatively impact our environment and detract from the future economic competitiveness of both the Nashville region and Tennessee.

The good news is that the nation may already be seeing a shift in trends as result of the land use inefficiencies of decades past. The Brookings Institution has labeled the 21st Century as a “Metro Century,” spelling the end to the preference for the suburbanization of the late-20th Century.¹⁸ As of July 2011, the U.S. Census Bureau reported that suburban growth had slowed to less than that of urban areas and that American cities were growing faster than the country as a whole.¹⁹ This is largely attributable to the financial and foreclosure crises that have pushed more people to rent, soaring gas prices, and the relentless congestion making long commutes unappealing. More than half of the world's population now lives in cities, and that share is expected to grow to 60 percent in 2030, and to 70 percent by 2050.²⁰ With this rapid worldwide urbanization – more people living in close proximity to one another in order to access employment and training opportunities and the lifestyle amenities that cities offer – comes an in-

Future Congested Routes - Recurring Congestion in Red



creased demand for environmentally-friendly goods and services – including sustainable land use planning and transportation infrastructure.

1.2 Congestion and Travel Times

As the region grows, travel and associated congestion on its roadways is expected to continue to increase. Congestion occurs regularly on certain roads and freeways as traffic approaches or exceeds the roadway's operating capacity – most typically during rush hour periods. Historically, congestion has been associated with radial commuting patterns leading in and out of downtown central business districts. Over the last 40 years or so, however, large suburban retailers chose to locate along arterial routes to take advantage of commuter traffic, resulting in commercial clusters that are now the location of frequent, recurring, volume-based congestion.

According to the Texas Transportation Institute's (TTI) *2012 Urban Mobility Report*, congestion costs commuters in the Nashville-Davidson urbanized area more than \$1,000 per person per year in excess fuel and lost time – essentially an extra tax paid to sit in traffic. That amounts to more than \$800 million per

year spent on congestion across the urbanized area. The area ranks 11th worst in the nation for average delay per commuter as a result of traffic congestion.²¹

Transportation planners monitor two types of congestion: recurring and non-recurring. Recurring congestion results when traffic demand approaches or exceeds the available capacity of a facility as determined by the physical limitations of a roadway and/or the operation of the facility (e.g., signalization or other traffic control devices). This type of congestion is somewhat predictable based on analysis of current and forecasted demand and the supply of roadway capacity. Non-recurring congestion, however, is much more difficult to predict – as it depends largely on factors beyond a transportation planner's control including weather, driver behavior and/or impairment, accidents, and special events.

Across the U.S., less than half (45%) of all congestion is considered recurring and caused by bottlenecks or poor signal timing.²² That portion of congestion can be treated or managed through transportation improvements that add capacity to the network in the form of transit service, sidewalks, bicycle lanes, in-

tersection or ramp improvements, or through more efficient traffic control measures (e.g., improved traffic signal timing).

The remaining congestion, about 55 percent, is considered non-recurring — or beyond the direct control of transportation planners or engineers.²³ Still, DOTs and MPOs seek to minimize delays caused by bad weather, special events, work zones, or traffic crashes by employing more effective traffic incident management techniques, and targeting funding at improving the safety of high-crash locations.

When it comes to measuring the effectiveness of our transportation system, congestion levels and personal costs might serve as the most obvious indicators. However, planners realize that land use patterns are influencing commutes as much as volume-to-capacity ratios. In 2010, a national report designated the Nashville region as “America’s worst commute,”²⁴ challenging rankings published in TTT’s *Urban Mobility Report* every other year. *Driven Apart*, published by CEOs for Cities, posits that policy-makers should look at the total amount of time people spend traveling (usually by car), not just the amount of time spent in traffic, as total time spent traveling is perhaps a more meaningful and complete measure of quality-of-life.

Driven Apart argues that the distance between jobs and housing is just as significant in defining the commute for workers as is the travel delay caused by suburban and urban congestion. In Nashville’s case, the sprawling, low-density land development pattern that has largely materialized over the last half-century accounts for the region’s dubious recognition as the nation’s most onerous journey to work. Creating opportunities for people to live affordably, closer to where they work, shop, or play can reduce the duration of peak travel times, enabling local economies to be more productive and lucrative over the long-haul because destinations are walkable, bikeable, and transit-ready.

1.3 Household Costs for Transportation

Higher prices for all petroleum products — not just fuel — are here to stay. The nation may experience some fluctuation in the cost of fuel, but the reality is there is a finite supply, and focus needs to be placed on making the transportation system more sustainable. Due to the rising cost of gasoline, vehicle upkeep and insurance, and greater driving distances between destinations, transportation is now the second highest household expense after the rent or mortgage, with lower-income households spending a much higher percentage of their income on transportation costs than on housing. For the average family in the 25 largest U.S. metro areas, any income gains made in the last decade have been erased — and then some — by the skyrocketing combined cost-burden of housing and transportation.²⁵ Moderate-income households pay a disproportionate share: for those earning 50 to 100 percent of the median income of their metropolitan area, nearly three-fifths (59%) of income goes to housing and transportation costs.²⁶ For these households, the growing costs of place are particularly burdensome, leaving relatively little left-over for expenses such as food, education, and health care, not to mention savings. Policymakers and planners are starting to recognize that placing lower-cost housing in areas located far from job centers and public transit does not provide an “affordable” housing solution.

Transportation is the second largest expense for American households, costing more than food, clothing, and health care. Even before the recent increase in gasoline prices, Americans spent an average of 18 cents of every dollar on transportation, with the poorest fifth of families spending more than double that figure. The vast majority of this money, nearly 98 percent, is for the purchase, operation, and maintenance of automobiles. Drivers spent \$186 billion on fuel last year, and without improvements to fuel economy, Americans will spend an estimated \$260 billion in 2020 on gasoline.²⁷ The situation is much worse in Middle Tennessee where the Center for

Neighborhood Technology estimates that more than 9 out of every 10 households spend more than 1 in 5 dollars earned on transportation costs, and an alarming 16 percent spend more than 28 percent. Compare those figures with a place like Denver – where only 42 percent of households spend more than 20 percent of household income on transportation-related expenses.²⁸

1.4 Public Health Concerns

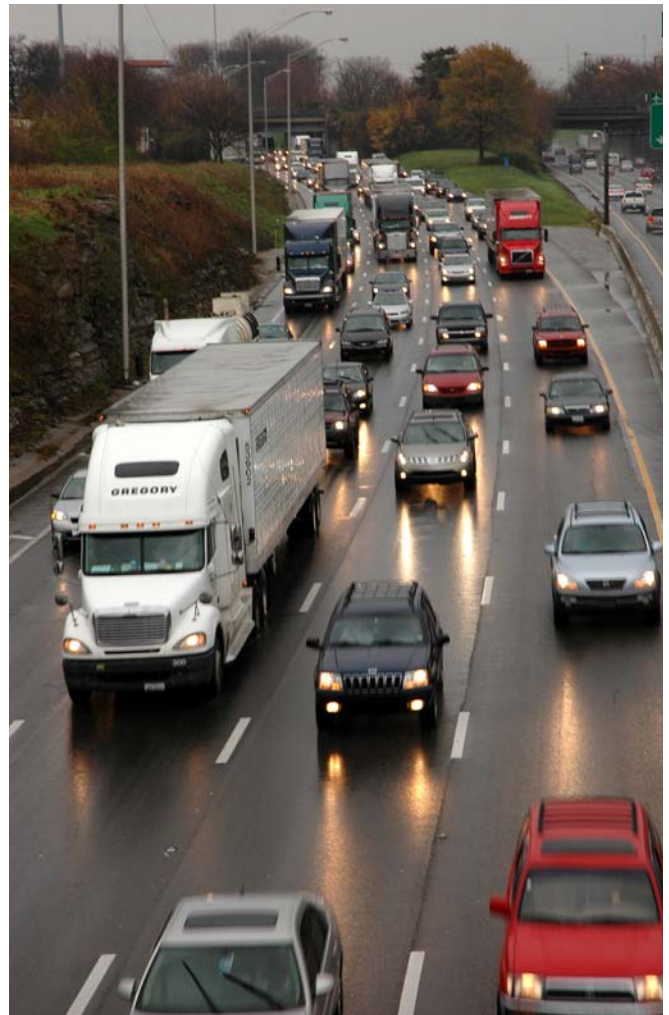
As the evidence increasingly points to the form of American cities as a major influence on the shape of Americans, planners are reconsidering how the built environment affects public health – not only obesity, but also asthma, cardiovascular disease, roadway safety, and mental health. Traffic crashes, air pollution, and physical inactivity costs American society hundreds of billions of dollars a year in health care, lost work days and productivity, pain and suffering, and premature death. Obesity accounts for approximately 9% of total U.S. health care spending and adds an estimated \$395 per year to per-person health care expenses.²⁹ A portion of these costs are attributable to auto-oriented transportation and sprawling land development patterns that inadvertently limit opportunities for physical activity, social interaction, and access to healthy food. Recent estimates put the annual economic cost of traffic crashes at almost \$300 billion (more than three times the cost of congestion) when accounting for comprehensive costs for fatalities and injuries such as medical and emergency services, lost earnings and household production, and compromised quality-of-life, among others.³⁰

1.5 Changing Demographics

Not only is the region expected to significantly increase its residential population by the year 2040, it also is predicted to grow older, as well as more racially and ethnically diverse.³¹ By the year 2035, about 15 percent of Middle Tennesseans will be 65 years or older, compared with about 11 percent today. Nationally, by the year 2025, experts expect less than

one-third of all households will have children living at home³² – compared with about half of households back in the 1950s.

These changes have implications for land use and transportation policy-makers, as attention must be adequately paid to how plans address the needs of all people. A recent report regarding public transit for seniors shows Nashville as the 4th-worst in the nation among metropolitan areas with a population of 1 million or more. Commissioned by Transportation for America and titled, *Aging in Place, Stuck without Options*, the report shows that Nashville's percentage of citizens aged 65 to 79 with poor transit access will be 85 percent in 2015.³³ Only Atlanta, Kansas City



and Oklahoma City project to have higher percentages. Raleigh-Durham, N.C., ranks fifth, with 80% of its seniors expected to have poor access to transit by 2015.

In addition, Nashville has been ranked the 14th most dangerous city for pedestrians in the U.S, with blacks, Hispanics, seniors and children 15 and younger at the most risk of being affected by roadways poorly designed for pedestrians.³⁴ Recent research suggests that communities with more high-quality options for active transportation have residents with greater “well-being” overall (physical and mental health) and spend less money on treating chronic illness like heart disease and asthma. Both Nashville and the Nashville Area MPO policy-makers are attempting to include potential health costs in transportation decision-making processes so as not to undermine economic stability and quality-of-life. Factors such as the location of crash locations, mapping older populations in the region, and identifying geographic areas where the population is most prone to obesity can identify where infrastructure improvements are most needed to encourage more active forms of transportation such as walking and biking. Health Impact Assessments (HIA) are also being conducted by partnering the Metro Health Department to determine the health impacts of potential projects such as the location of a new Metro Health Department on Charlotte Avenue or the past impacts of the development of an interstate corridor on neighborhoods and the social fabric of a community.

1.6 Greenhouse Gas Emissions and Climate Change

During the 21st century, global warming is projected to continue and intensify. Scientists have used climate models to project different aspects of climate: depending on future anthropomorphic emissions of heat-trapping greenhouse gases and how the Earth responds, average global temperatures are projected to increase by 2°F to 11.5°F by 2100.³⁵ Increased concentrations of GHGs in Earth’s atmosphere are

expected to: increase the planet’s average temperature, influence patterns/amounts of precipitation, reduce ice/snow cover and permafrost, raise sea level, and increase ocean acidity. These changes will impact global food supply, water resources, infrastructure, ecosystems, and health.

The world’s cities are responsible for up to 80 percent of harmful greenhouse gases while occupying just two percent of its land. The transportation sector accounts for almost three-quarters of America’s oil consumption (ten million barrels per day to move people and goods on roads and rail) and one-third of its carbon emissions, and is the fastest-growing contributor to America’s CO₂ pollution, with emission rates rising two percent each year – the Southeastern U.S. being responsible for the greatest of those increases. From 1990 to 2006 alone, transportation GHG emissions increased 27 percent, accounting for almost one-half of the increase in total U.S. GHG emissions. Transportation is also the primary cause of U.S. oil dependence and its attendant security risks (97 percent of U.S. transport is in petroleum).

More efficient fuels and ‘clean’ vehicles will not offset the estimated 59 percent increase in driving between now and 2030. Even with improvements in vehicles and fuel economy, CO₂ emissions from transportation will rise 41 percent above today’s levels if driving is not curbed. Growing awareness of how travel behaviors affect the environment means that the low-to-no carbon modes will play a critical role in meeting local, state, and federal sustainability goals.

In a 2010 report to Congress³⁶, the U.S. Dept. of Transportation identified national strategies for reducing transportation’s contributions to planetary warming, one of which was aligning planning and investments:

“The efficiency of the transportation system, and the level of travel activity...can be directly influenced through decisions that are made by Federal,

State, regional, and local governments regarding the planning, funding, design, construction, and operations of the Nation's transportation systems. Coordinating transportation and land-use decisions and investments enhances the effectiveness of both and increases the efficiency of Federal transportation spending. In most communities, jobs, homes, and other destinations are located far away from one another, necessitating a separate car ride for every errand and long delivery routes for goods. Strategies that support mixed-use development, mixed-income communities, and multiple transportation options help to reduce traffic congestion, lower transportation costs, improve access to jobs and opportunities, and reduce dependence on foreign oil, in addition to reducing greenhouse gas emissions. Prioritizing through planning low carbon alternatives such as public transportation, pedestrian facilities for biking, and walking, and lower carbon freight options such as rail or marine, can reduce GHGs, especially when deployed with synergistic policies such as land use. Similarly, prioritizing strategies such as signal timing, real-time traveler information, faster clearance of incidents, congestion pricing, freeway ramp metering, and other intelligent transportation systems can reduce the pressure for new capacity while modestly reducing GHG emissions."

1.7 Forum to Address Regional Issues

Middle Tennessee addresses these regional transportation issues through the Nashville Area Metropolitan Planning Organization's (MPO) [2035 Regional Transportation Plan](#) (RTP). It outlines a vision for long term regional mass transit, prioritizes fixing aging infrastructure first, and emphasizes expanding biking and walking infrastructure. The 2010 adoption of the RTP by the region's elected leadership has improved the region's progress to develop and sustain a multi-modal transportation system.³⁷ Federal transportation policies such as the recent transportation legislation signed into law, Moving Ahead for Progress in the 21st Century (MAP-21) also contain such multi-modal priorities and maintenance emphasis.³⁸

2035 Regional Transportation Plan Goals

Goal #1

Maintain and preserve the efficiency, safety, and security of the region's existing transportation infrastructure.

Goal #2

Manage congestion to keep people and goods moving.

Goal #3

Encourage quality growth and sustainable land development practices.

Goal #4

Protect the region's health and environment.

Goal #5

Support the economic competitiveness of the greater Nashville area.

Goal #6

Offer meaningful transportation choices for a diverse population including the aging.

Goal #7

Encourage regional coordination, cooperation, and decision-making.

Goal #8

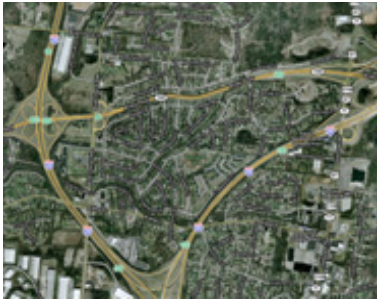
Practice thoughtful, transparent financial stewardship by ensuring that transportation improvements meet regional goals.

2.0 Nashville's Transportation System

2.1 Highways, Streets, and Roads

The Nashville region has an extensive system of roads: from interstates and other controlled-access freeways to suburban arterials, city streets, and rural highways. Roadways are the most visible and productive component of our national, state, and regional transportation infrastructure. The greater Nashville region benefits from easy access to three major U.S. Interstates. However, those facilities demand constant monitoring, maintenance, and management to ensure an acceptable level of service for a growing region.

In general, there are four classifications of roadways in the Nashville area, each requiring different measures of performance, and unique solutions to problems.



Freeways

A divided highway having two or more lanes for the exclusive use of traffic in each direction and full control of access. The freeway is the only type of highway intended to provide complete “uninterrupted” flow. Bicycle and pedestrian travel is discouraged within the immediate right-of-way.

Examples: Interstate 24, 40, and 65, State Route 155-Briley Parkway, State Route 6-Elington Parkway, 440 Parkway, etc.



Arterials

A major thoroughfare that is vital for moving people and goods and feeds into the interstate and freeway systems. In a city, wide sidewalks are common for pedestrians and bike lanes may be provided for bicycling.

Examples: Gallatin Pike, West End Avenue, Dickerson Pike, Hillsboro Pike, Nolensville Pike, Lebanon Road, State Route 96, etc.



Collector Streets

Intended to balance access and mobility considerations by serving through movement as well as access to land. Collectors connect traffic on highways and arterials to local streets and adjacent land. In a city, sidewalks are common and bike lanes or a shared road marking may identify a bike route.

Examples: Belmont Boulevard, Paragon Mills Road, Jones Avenue, etc.



Local Streets

All other streets are generally considered to be local. Local streets typically support direct access to homes and are generally designed for slow speeds to safely allow for other neighborhood activities like walking and biking.

Examples: Woodyhill Drive, Albion Street, Briarwood Drive, Morton Mill Road, etc.

Transportation

There are more than 8,000 lane miles of major roadways throughout the Nashville Area MPO planning area, of which more than 6,700 lane miles are eligible for federal funding made available through the MPO. Generally speaking, major roadways classified as collectors, arterials, and freeways in urban areas are eligible for federal funding opportunities. In rural areas, major collectors, arterials, and freeways are eligible for federal programs. Some exceptions are made to allow federal funds to be used for improvements to bridges on local roads, or projects that improve the safety of local roadways for the non-motorized modes of transportation (e.g., sidewalks, bicycle lanes, etc.).

[Mobility 2030](#) serves as the local transportation plan for Nashville. It provides broad policy guidance for a countywide transportation system that addresses land use and urban design. It requires that all of Metro's transportation improvements:

- Create efficient community form and improve the movement of people and goods safely to destinations;
- Offer meaningful transportation choices: options for pedestrians, cyclists, transit users, drivers;
- Sustain and enhance the economy: generate economic development and/or sustain property values;
- Value safety and security;
- Protect human health and the environment;
- Ensure financial responsibility; and
- Address transportation from a regional perspective.

The [Major and Collector Street Plan](#) (MCSP), a component of [Mobility 2030](#), provides guidance on how every roadway classified as a major or collector street in Nashville should be improved. In 2011, the Met-



ropolitan Planning Commission adopted the MCSP to reflect the Mayor Dean's Complete Streets Executive Order. A design element has been added to the traditional functional classification system described above to closely tie the design of streets to future land use changes and community character. The adopted MCSP focuses more on mobility of people instead of moving only cars. Complete Streets and context sensitivity are discussed in more detail below.

2.2 Mass Transit Services and Ridership

The Nashville area is served by multiple transit agencies that provide a variety of services to Middle Tennesseans, ranging from rural demand response operated by the Mid-Cumberland Human Resource Agency (MCHRA) to vanpools operated by the Transportation Management Association or TMA Group to commuter rail operated by the Regional Transportation Authority (RTA). The following presents an overview of the existing urban fixed route services offered within Davidson County by the Regional Transportation Authority, the Nashville MTA, and the Mid-Cumberland Human Resource Agency.

Regional Transportation Authority (RTA): The RTA is a multi-county authority created by state statute in

1988 to encourage transportation alternatives and develop a regional mass transit system. RTA oversees the operation of a variety of regional transit services that including the area's first commuter rail line, express bus routes between Nashville and surrounding counties, and the regional ridesharing and vanpool program.

Nashville Metro Transit Authority (MTA): The MTA was formed in 1973 for the purpose of stabilizing existing public transportation services and meeting other transportation needs of the citizens within Davidson County and visitors who visit the city and local areas. Nashville MTA currently has more than 200 fixed-route buses and a host of paratransit vehicles for customers with a disability. A five-member Board of Directors, appointed by the Mayor and approved by the City Council, governs the Nashville MTA. A management team, headed by a Chief Executive Officer (CEO), oversees the day-to day operations. Nashville MTA receives funding from federal, state, and local governments to supplement its operating revenue.

Between 1995 and 2008, public transportation ridership in America grew 36 percent – almost three times the growth rate of the U.S. population (14 percent), and substantially more than that of vehicle miles traveled on our nation's streets and highways (21 percent) over the same time period.³⁹ In fact, in 2011, the 10.4 billion boardings onto U.S. public transportation systems likened to a ridership level that had grown back to that which existed at the state of the Interstate highway era.⁴⁰ Regionally, after a long period of declines during the 1980s and 1990s, transit in greater-Nashville has significantly expanded during the first part of the 21st Century – the largest component of which has been realized by Nashville's MTA, which manages a majority of Middle Tennessee's transit service and ridership.

During the growth in ridership seen in the early 2000s, the Nashville MTA began to expand service

to reach more Nashville customers. Though this expansion required additional operations funding, the service has effectively increased passengers-served per hour of service. Other operators in the region have also been in a pattern of increasing transit offerings; new types of services have been introduced in recent years, traditional bus service still being the most prominent. The recent economic downturn and rising fuel costs recently required MTA and other operators to consider a reduction in service and an increase in fares in 2008.

Responding to demand from citizens, political leaders, and employers, other jurisdictions are also increasing transit offerings, including the Franklin Transit Authority, Murfreesboro Rover, and the Regional Transportation Authority. Typically as the quality and quantity of service increases, so goes posted ridership numbers. In fact, the Nashville MTA and Regional Transportation Authority of Middle Tennessee (RTA) recorded 10 million passenger trips for the 2012 fiscal year—up 14 percent over the year prior. Ridership of the Music City Star commuter rail line also increased 14 percent; regional bus ridership went up 49 percent.⁴¹

The Nashville MTA's [Strategic Transit Master Plan](#) is a guide to help 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 MPO's [2035 Regional Transportation Plan](#). The Master Plan identifies specific capital and operational services to be prioritized and implemented over the next couple of decades.

Some projects within the current Master Plan have already been implemented such as more frequent service along the West End route, more frequent service to Bellevue, and the beginning of Bus Rapid Transit

(BRT) Lite service along Gallatin Pike and Murfreesboro Pike.

MTA will start an update to the Strategic Transit Master Plan in 2013. Its regional counterpart, RTA, will also begin an update to the regional master plan. Both RTA and MTA are now working diligently to implement the services called for by the MPO's [2035 Regional Transportation Plan](#) and the MTA [Strategic Transit Master Plan](#). With route increases in both Nashville and the surrounding counties, these agencies are running more buses more frequently, providing faster trips, serving new or under-served areas, making service easier to use, deploying environmentally-friendly vehicle technologies, and working to improve the image of transit.

2.3 Walking and Biking

While 40 percent of all trips taken on the roadway system are 2 miles or less in length⁴² – highly walkable or bikeable distances – historically, the region has not placed significant priority on safe and enjoyable bicycle and pedestrian facilities in its urban development. Over the past several years, however, Middle Tennessee communities have rediscovered the importance of the non-motorized modes, as well as the need for crosswalks and traffic control features. These facilities are crucial for safe, convenient, and attractive access to transit, and the movement of people along corridors in a way that facilitates opportunities for physical activity in daily life. They provide connections between neighborhoods, schools, regional activity centers, community centers, parks, and greenways. Federal funding opportunities – along with a growing local and regional interest in health, the environment, congestion reduction, and energy conservation – have helped to promote a greater interest in increasing everyday opportunities to walk or cycle.

A 2009 regional inventory revealed that there are currently over 55 miles of greenway and multi-use paths, 33 miles of bike lanes, 59 miles of bike routes and thousands of miles of sidewalks in Davidson County.



While on and off-road bicycle and pedestrian facilities exist in every MPO county, Davidson County has the highest concentration of bike lanes, bike routes, and greenway facilities. Although the provision of bike lanes and bike routes throughout the region adhere to AASHTO standards, the exact definition of a greenway has had many variations since these facilities were first introduced. While Middle Tennessee's greenways appear to mostly follow AASHTO standards for 'shared use paths,' widths and materials vary greatly by community. Designated greenways or multi-use paths are usually paved and can range from 12-foot wide asphalt or concrete paths, to only 5-foot concrete paths in some communities⁴³. The AASHTO minimum standard for 'shared use paths' is ten feet.⁴⁴ Nashville greenways are typically built between ten and 12 feet wide with asphalt. The quantity of on and off-road facilities that have been programmed over the last ten years is considerable given that many area communities over that same time period had no bicycle facilities whatsoever. Since 2000, a number of municipalities in the MPO planning area have developed bicycle and pedestrian master plans and greenway master plans, as well as enacted policies to encourage pedestrian and bicycle accommodations. Nashville developed the [Strategic Plan for Sidewalks and Bikeways](#) in 2004 and updated it last

in 2008.

As part of the 2009 MPO's [Regional Bicycle & Pedestrian Study](#), a Bicycle and Pedestrian Level of Service was produced for many area roadways. Similar to Level-of-Service measures used for automobile travel (traffic and roadway factors etc.), there are also models to evaluate the suitability of a roadway for walking and bicycling. Levels of Service for walking and bicycling are based on the comfort level of the pedestrian and bicyclist using the roadway (ranked from A to F, with A = best conditions and F = worst conditions). Both the MPO's Pedestrian Level of Service (PLOS) and Bicycle Level of Service (BLOS) models were developed with feedback from actual pedestrians and bicyclists. Factors used to evaluate the comfort level of the users involve roadway geometry, motor vehicles using the road, and the presence and condition of pedestrian and bicycle facilities.

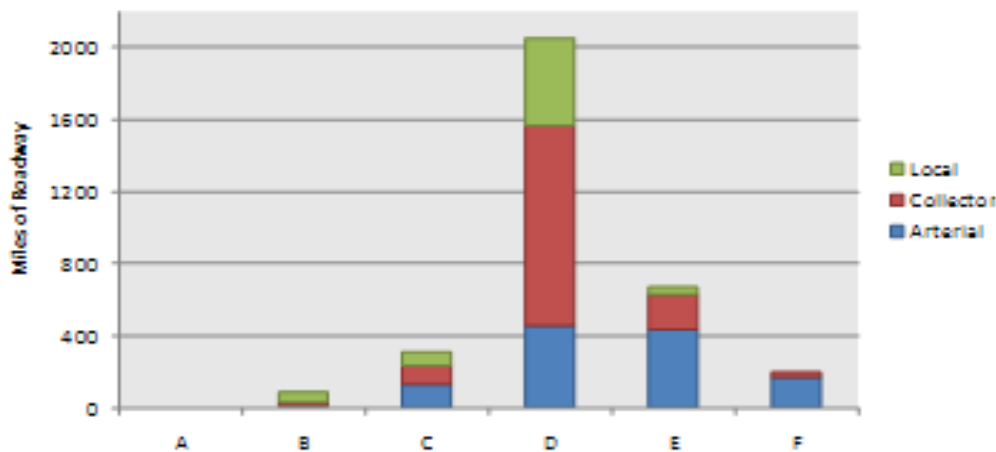
As shown, at least 50 percent of roadways in each of the MPO counties are operating at a Pedestrian LOS of D or worse, with Davidson County roadways providing the highest level of pedestrian service as compared to other MPO counties. Meanwhile, the Levels of Service provided by roadways in each of the counties for bicycle movements are significantly better than those of pedestrians. All counties have at

least 80 percent of roadways with bike facilities operating at a Bicycle LOS of D or better.⁴⁵

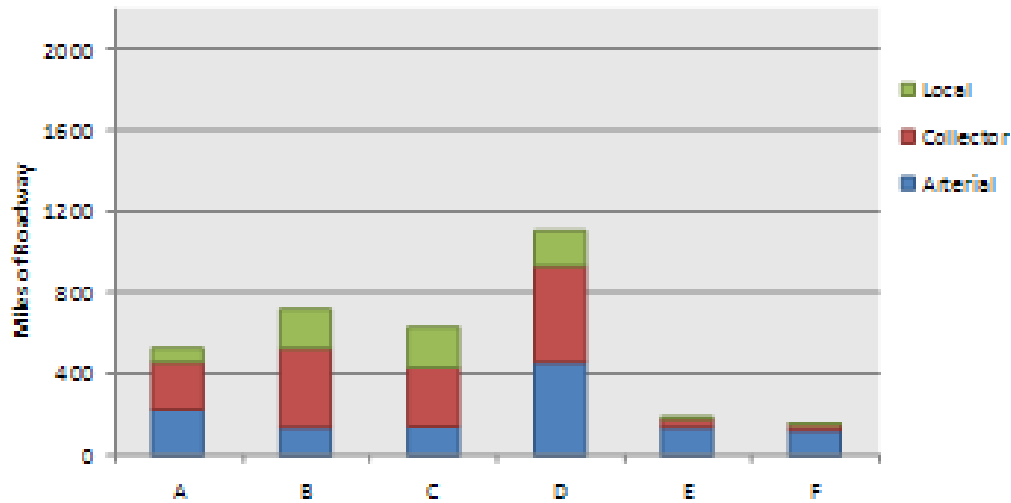
While there is strong public support for existing bicycle and pedestrian facilities – greenways and other routes that are currently being used frequently by many pedestrians and cyclists – the most common challenge to walking and bicycling in our region, as identified through various public involvement processes, such as public meetings, workshops, and surveys, is the lack of facilities altogether, and the lack of facilities with connectivity (a complete, uninterrupted bikeway, for example, between the A-and-B destinations where people actually want or need to go).

On a “Complete Street,” safe and convenient access to the transportation network for bicycles, transit riders, pedestrians, and automobiles is afforded within the travel-way realm. Increases in crashes between motorists, pedestrians, and cyclists can reliably indicate a corridor with poor access management or a number of conflict points between motorists, pedestrian, and cyclists in accessing driveways, parking lots, and businesses. To help determine locations within the region where improvements are needed to increase safety for bicyclists and pedestrians, the MPO mapped 2,076 reported crashes involving these

Regional Pedestrian Level of Service by Roadway Class



Regional Bicycle Level of Service by Roadway Class



modes, as provided by the Tennessee Department of Safety (2003-07), 107 of which resulted in a fatality.

Mayor Karl Dean signed an Executive Order in 2008 creating the Bicycle and Pedestrian Advisory Committee (BPAC). Their responsibility is to promote biking and walking as acceptable forms of transportation, serve as a resource to plans, policies, and programs, assist in updating and implementing the [Strategic Plan for Sidewalks and Bikeways](#), work to promote community investment in bike infrastructure, educate on safe biking and walking skills, and serve as a resource to local and regional planning entities. Under the BPAC's leadership, a *Multi-Modal Connectivity Study* was completed in 2010 to identify the most needed connections between existing bicycle, pedestrian, and transit facilities and between trip attractors and generators. The Music City Groove Map was developed to map pockets of Nashville with more bicycle friendly areas. Also, the city was recognized in 2012 receiving a Bronze Award and Bicycle Friendly Community Designation.

As noted above, Mayor Dean also signed an Executive Order formalizing Nashville's Complete Streets policy in October of 2010.⁴⁶ This approach ensures

Metro departments are mindful of the accommodation of pedestrians of all ages and abilities, bicyclists, transit riders, drivers of motor vehicles, and freight and goods movement in its plans, policies, and programs. Urban streets are an important part of community livability, and should be for everyone – young or old, motorist or bicyclist, walker or wheelchair user, bus rider or shopkeeper.

Through Complete Streets and Context Sensitive Solutions, the city's roads are designed according to the surrounding anticipated land uses and the type of future users. For example, a street in Bellevue, which has more suburban land uses, might be built with vehicular travel lanes, a center landscaped median, bike lanes, curb and gutter for stormwater runoff, a planting strip with trees, and a sidewalk. A more rural street near Joelton might have the vehicular travel lanes, a wide shoulder, swale to handle stormwater runoff, and adjacent shared-use trail to accommodate bicyclists and pedestrians. A street in Downtown will have the vehicular travel lanes, crosswalks at intersections with countdown pedestrian signals, curb and gutter for stormwater runoff, and wide sidewalks with tree wells. The design and components of the street in each instance are tailored to the surrounding

landscape and users.

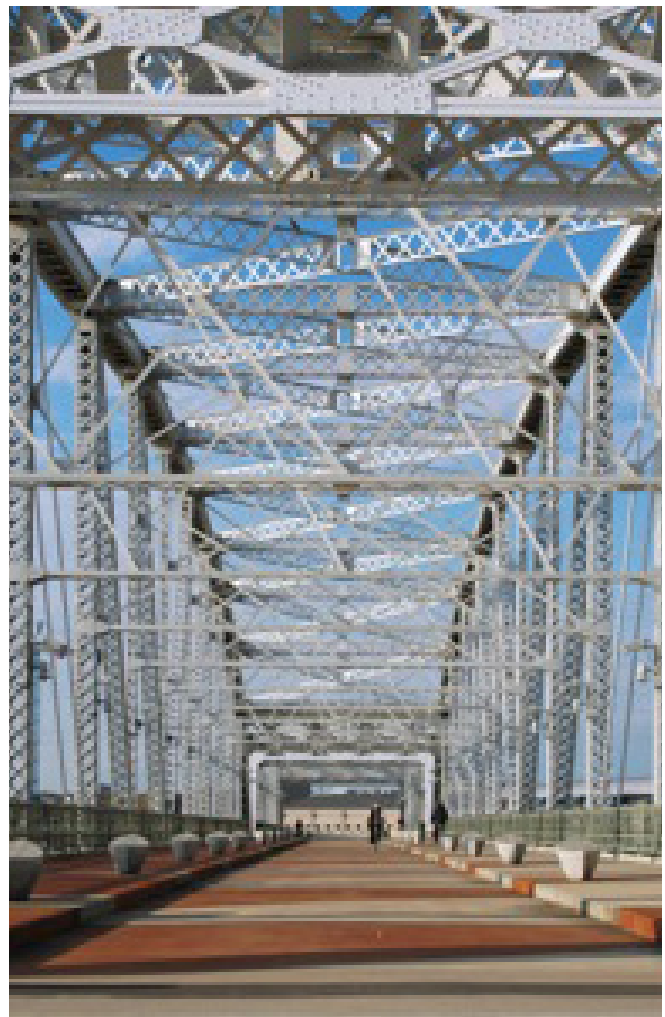
2.4 Bridges and Overpasses

Bridges are part of a city's transportation system, but they are also part of its distinctive architectural and aesthetic landscape. They are part of the character of a city, but because they are all structure (unlike a building, which has walls, stairs, and other features that add strength and stiffness to a structural system), bridges possess no hidden sources of strength – therefore every aspect of a bridge has important safety and security implications, and must receive appropriate ongoing maintenance. America's metropolitan areas carry a disproportionate share of all trips on bridges with degrading structural integrity — with the nation's largest 102 metropolitan areas carrying 75 percent of all traffic crossing a deficient bridge each day.⁴⁷ According to a report from Transportation for America⁴⁸, more than 11 percent of America's bridges are classified as “structurally deficient,” with 6.2 percent of the more than 1,200 bridges in Tennessee tagged as deficient. While Tennessee ranks 44th on the list of states in terms of needed repairs, the fact remains that aging bridges need attention before it is too late. The average age of bridges across the country is 42 years, and the typical design-life of a bridge is 50 years. “Structurally deficient” does not mean that the bridge will fall down in 50 years, but it does mean that we can expect the bridge to require major maintenance, rehabilitation or, potentially, replacement.

The aesthetics of bridges can also be an important tool for economic development and enhanced livability. For example, the award-winning design of the Natchez Trace Parkway Arch Bridge, the first of its kind in the U.S., inspires bridge enthusiasts and attracts tourists to the Natchez Trace National Park. *Enhancing The Bridges*, a joint project between the MPO and the Nashville Civic Design Center, is meant to elevate the conversation around innovative bridge designs when new projects emerge — offering alternatives to traditional highway bridge designs and

exploring the concept of “signature” bridges (highly-visible gateways, entrances), as well as showcasing potential future locations for signature bridges in downtown Nashville.

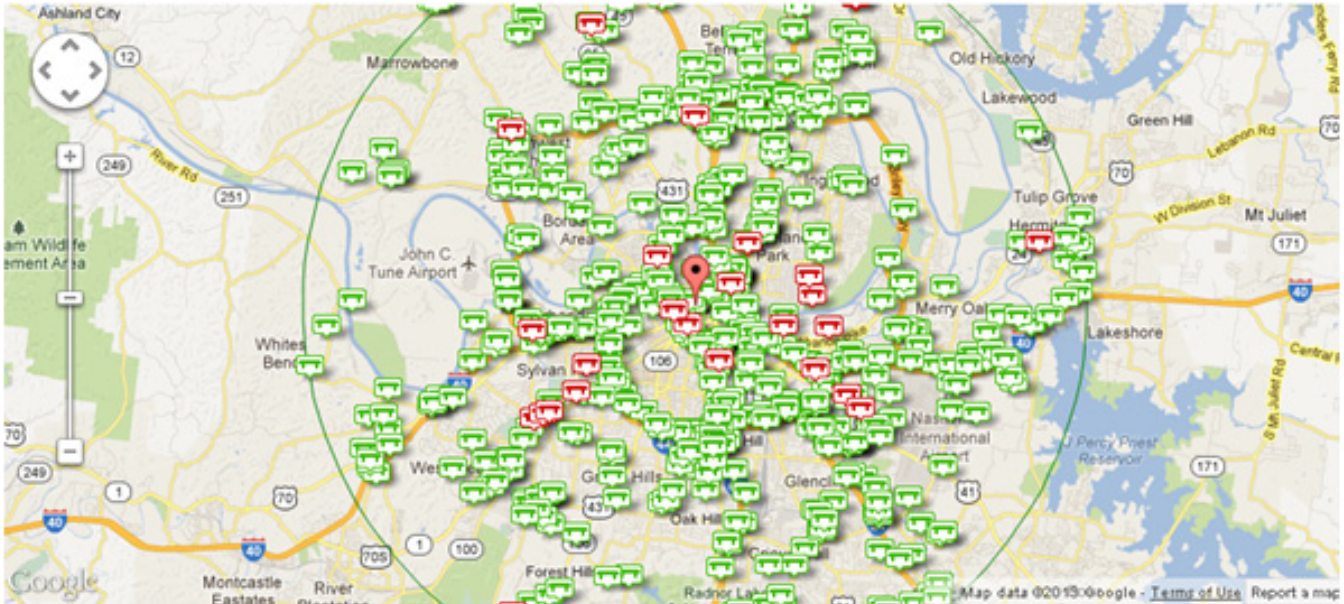
A significant number of bridges have been developed as Nashville's greenway system has expanded: the Cumberland River Bridge spanning the Cumberland River connects the Stones River greenway and Shelby Bottoms greenway. The rehabilitation of the Shelby Pedestrian Bridge across the Cumberland River, as well as the Old White Bridge Road bridge, provide unique and historic connections. Without these connections, the river and old railroad tracks would be



Bridges in the Nashville Area

Bridges within ten miles of:

 Structurally deficient



Source: *The Fix We're In For: The State of Our Bridges* - <http://t4america.org/resources/bridges>

obstacles for pedestrians and cyclists.

Nashville recently completed a strategic vehicular connection that divided the predominantly African American community of North Nashville and home to Tennessee State University with other universities centered in Midtown, Belmont, Lipscomb, and Vanderbilt Universities. The 28th Avenue-31st Avenue Connector Bridge opened in the fall of 2012, connecting North Nashville to Midtown and West End over railroad tracks that divided the communities. The Connector was constructed to accommodate pedestrians and bicyclists with a separated, protected shared use lane, bus shelters that incorporate public art, landscaping, and public art lining the railings of the bridge. Additionally, Nashville MTA began a bus service called the University Row Connector linking the universities and utilizes the new bridge.

Nashville is also planning another bridge connection linking pedestrians within the Gulch to the new

roundabout at the Music City Center. No construction plans have been finalized at this time.

3.0 Transportation Policy, Plans, Programs Impacting Nashville

3.1 Recent Initiatives

Nashville and Middle Tennessee is on the move with respect to transportation policy and planning, as elected officials and businesses realize the importance of sound infrastructure planning in job creation and sustained prosperity. The Middle Tennessee Mayors Caucus was formed at the request of Mayor Karl Dean in 2009 to provide leadership on important issues facing a rapidly changing regional landscape. Transportation, and the pursuit of a modern mass transit system, served as a catalyst to its formation. City of Gallatin Mayor Jo Ann Graves served as the inaugural chair alongside vice-chairs Mayor Dean and Montgomery County Mayor Carolyn Bowers. A 12 member executive committee manages the Caucus program.⁴⁹ These leaders have continued to champion the discussion of transportation and the need for a regional mass transit system. Through the Transit Alliance of Middle Tennessee, a nonprofit advocacy organization, and the Mayors Caucus, these leaders supported legislation passed by the Tennessee General Assembly to enable the creation of customized RTA boundaries, providing the authority to issue financing bonds and pursue a regional dedicated funding source for transit capital/operations. Further discussions will be needed on exactly what that funding will be in the future.

Because of the significant regional efforts undertaken by the Mayors Caucus, Transit Alliance, and others, the adoption by local elected officials in the region of the Nashville Area MPO's [2035 Regional Transportation Plan](#), which establishes a new vision for regional transportation with a balanced set of recommendations that can be achieved over the next 25 years, was a natural fit. Currently, Williamson County Mayor Rogers Anderson serves as the Chairman and Portland Mayor Kenneth Wilber serves as the Vice-Chairman. Nashville Mayor Karl Dean is the immediate Past Chairman of the MPO's Executive Board. The 2035 Plan provides:

- A first-of-its-kind, adopted 10-county vision to

communicate the region's long-term intentions for transit service;

- Funding for road corridor and adjacent land use studies and transit circulator studies to lay out more specific strategies to implement the vision;
- A call to establish a dedicated funding source or revenue to improve transportation agencies' operational capacity to build out the vision;
- Minimum federal investments in transit, walking, and bicycling infrastructure to advance regional goals and objectives.

Under this adopted vision, major corridor studies to help determine specific mass transit investments to be championed by the Mayors Caucus and the Transit Alliance. The [Northeast Corridor Mobility Study](#) was completed in 2010 by the Nashville Area MPO to develop a regional transportation investment strategy for the 30-mile corridor between Downtown Nashville and Gallatin. It examines the feasibility of passenger rail, bus rapid transit, potential roadway improvements, and land use policies that need updating by local jurisdictions to accomplish continued movement of people and goods in the sector of the region in a sustainable and viable way for the future. The *Southeast Area Mobility and Land Use Study*, which will examine the corridor between Nashville and Murfreesboro, is currently underway and will undertake a similar approach.

3.2 Federal Transportation Policy

The largest single source of funding for improvements to the region's major transportation system is the federal government. The Federal-Aid Highway Act and the Highway Revenue Act in 1956 established the Highway Trust Fund in order to create a financing mechanism for the Interstate Highway System. That trust fund is financed by the 18.4-cent per gallon tax on gasoline and the 24.4-cent per gallon tax on diesel that consumers pay at the pump. Since

1956, several congressional acts have been passed to continue the federal government's role in shaping transportation.

Moving Ahead for Progress in the 21st Century (MAP-21), the new federal surface transportation bill signed into law by President Obama during the summer of 2012, largely continues the tradition set by federal acts since 1991. MAP-21 calls on the nation to expedite project delivery, establish policies to improve freight movement, enhance innovative financing options, and consolidate a number of programs across federal highway, transit, and safety funding sources. In both the metropolitan and statewide planning sections of MAP-21, the program maintains and strengthens federal, state and local partnerships in the nation's regions. The newly-created Transportation Alternatives account, which includes Transportation Enhancements and Safe Routes to Schools, among other programs, saw a reduction in funding with an opt-out clause for states that does have some potential to negatively impact expansion of non-motorized transportation facilities in some communities.

A highlight of MAP-21 is its declaration that, "It is in the interest of the United States, including the economic interest of the United States, to foster the development and revitalization of public transportation systems."⁵⁰ For the first time, MAP-21 grants transit agencies the access they have needed to capital investment grants for projects that expand core capacity. Previously limited to new projects exclusively, these grants can now be used to extend or expand existing lines – potentially a big help to cities like Nashville that are seeking to add capacity to long-established transit services such as Bus Rapid Transit Lite along Gallatin Pike and Murfreesboro Pike and The Amp along West End from Five Points to White Bridge Road.

Federal agencies such as the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) along with their state-associated partners such

as the Tennessee Department of Transportation (TDOT) are currently in the rulemaking process of MAP-21 where the agencies interpret the law and issue more detailed regulations to follow the transportation law. Metro Nashville, the Nashville Metropolitan Transit Authority (MTA), the Regional Transportation Authority (RTA), and the Nashville Area Metropolitan Planning Organization (MPO) are working with these agencies to determine how future funding programs will be handled through FTA under MAP-21. Metro Nashville and MTA will be actively participating in these programs to maintain the current funding levels and existing transit service and seeking ways to enhance funding opportunities and expand the region's transit service area, quality, and reliability.

3.3 Tennessee Long-Range Plan and Improvement Program

Tennessee's Long-Range Transportation Plan (LRTP), also known as [PLANGo](#), brings together the needs for all modes of transportation, including rail, transit, ports and waterways, aviation, pedestrians and bicycles in addition to highways. Although the Tennessee Department of Transportation has developed transportation plans in the past, this is the first multimodal plan that strives to integrate all modes of transportation into a seamless system.

As part of the federal requirements for transportation planning, TDOT develops a 4-year short-term improvement program called the Statewide Transportation Improvement Program (STIP). To develop the STIP, TDOT works directly with the Rural Planning Organizations (RPOs) and MPOs throughout the state to determine project needs. For urban areas, the state participates in the metropolitan planning process to ensure the inclusion of state projects in the appropriate MPO Transportation Improvement Program.

3.4 Regional Transportation Plan and Improvement Program

Since the 1960s, the federal government has required that the nation's metropolitan areas plan 20-plus years into the future, and account for all regionally significant road, transit, freight, intelligent transportation systems (ITS), walking and bicycling projects in that plan, in order to ensure eligibility for federal transportation funding. The Nashville Area MPO is responsible for fulfilling those requirements as the federally-designated transportation planning agency for Davidson, Rutherford, Sumner, Williamson, Wilson, and parts of Maury and Robertson counties.

Over the past few years, the MPO has worked with a broad coalition to develop a new transportation plan that would set policy for how the region will fund transportation improvements over the next 25 years. That effort culminated in December 2010 when Middle Tennessee's mayors adopted the [2035 Regional Transportation Plan](#). The plan rests on the view that transportation infrastructure is more than just a tool to improve mobility: it is a significant contributor to the overall health, sustainability, prosperity, and character of a place – be that a small community or a large metropolitan region.

The 2035 Plan lays out a strategy to invest nearly \$6 billion in anticipated revenues into the region's transportation system as it absorbs about another million more people and a significant increase in vehicle miles traveled. Most transportation agencies have seen their revenues dwindling in recent years while infrastructure continues to age. A significant portion of funds now goes to maintenance of existing infrastructure. Less money is available in 2013 to build new road facilities as in years past. To respond to some of these funding implications, the Plan rests on three major policy initiatives:

- *Create a Bold, New Vision for Mass Transit* to help guide the expansion and modernization of the region's mass transit system in preparation for an



increasingly competitive global economy, and to proactively address growing concerns about the health of our environment, worsening congestion, and sprawling land development patterns that encroach upon the area's cherished rural countryside.

- *Support Active Transportation & the Development of Walkable Communities* to improve connectivity between people and places within the urbanizing area of the region, foster opportunities for Middle Tennesseans to be more physically active, and serve as the backbone of investments in mass transit.
- *Preserve & Enhance Strategic Roadway Corridors*, with a focus on repairing aging roadways and bridges to ensure the safety of the traveling public and freight transport, improving operations through the integration of new technologies, and complete streets to provide a balanced system that works for all potential users of our roads – reclaiming streets for communities and not just for cars.

As a demonstration of commitment to the 2035 Plan, the MPO's Executive Board under the leadership of

Nashville Mayor Karl Dean at the time elected to re-direct its share of federal Surface Transportation Program (STP) grant funds to projects and programs that directly support the Plan's three major policy initiatives. The new strategy calls for minimum levels of investment in walking, bicycling, transit infrastructure, and roadway technology advancements, and is administered through four programs:

- **Multi-Modal Roadway Capacity & Safety:** 70 percent of funds are programmed on or allotted to traditional roadway projects where improving safety and implementing complete streets principles are emphasized. These include the building of new facilities and major widenings.
- **Active Transportation Program:** 15 percent of funds are dedicated to active transportation such as biking and walking facilities (sidewalks, greenways, streetscapes) and education.
- **Mass Transit Program:** 10 percent of funds are allotted to a combination with federal transit funds to modernize and enhance the area's transit system.
- **Traffic Operations & Intelligent Transportation Systems (ITS) Program:** 5 percent of funds are dedicated to operational improvements, stand-alone ITS, and incident management upgrades.

Projects in the 2035 Plan span three planning horizons, including short-term (2011-2015), mid-term (2016-2025), and long-term (2026-2035). Projects included in the short-term horizon years also comprise the MPO's regional [Transportation Improvement Program](#) (TIP), which includes more than a billion dollars in investment through 2015, and represents the most realistic catalogue for actual project implementation (construction of infrastructure, etc.), as most items in the TIP have an identified funding source attached to them.

4.0 Key Challenges

As Middle Tennessee continues to advance transportation initiatives, particularly those focused on expanding transit options, it is important to report and track the region's progress and its growing challenges for continued maintenance, safety, demand management, freight movement, funding, and choice of travel options.

4.1 Maintain Infrastructure in a State of Good Repair

To meet the multitude of challenges in balancing mobility needs with quality-of-life, the region must diversify its investment strategy to not only seek to build new infrastructure, but demonstrate that we can fix what we have and make it even better by serving more modes of transportation, including walking and biking.

Because the vast majority of money for major metropolitan transportation projects, or “capital” projects, historically have come from federal tax dollars, it has been far too easy to perceive these projects as “free.” The truth is that capital funding for mega-projects comes at the expense of other long-awaited improvements to the existing transportation system. Additionally, federal funding for transportation infrastructure is in decline due to ongoing deficits in Highway Trust Fund receipts, which supports states’ and MPOs’ transportation systems with federal money via taxes on transportation fuels such as gasoline.

Once transportation infrastructure is built, state and local governments must adequately maintain and operate roads, bridges, sidewalks, greenways, and transit. Over time, as our region –like other areas around the nation – has continued to build new bridges and roads, the challenge to keep it safe and efficient has grown substantially.

Deferred maintenance leads to transportation deficits. The American Society of Civil Engineers (ASCE) estimates that \$1.6 trillion is needed over the next five years to bring the nation's infrastructure to



a state of good condition.⁵¹ Although postponing maintenance may appear inescapable given shortfalls in transportation funding, replacing facilities will cost three times the system's present value, if not kept in a state of good repair. For every dollar spent today on maintenance, we avoid \$14 in future costs. To emphasize the building of new roads, rather than preventive maintenance, will increase the costs of delivering transportation services over the life of a facility: inadequately maintained roads, for example, add \$800,000 to the overall lifetime cost per lane mile of a road. Driving on roads in need of repair costs Tennessee motorists \$636 million a year in extra vehicle repairs and operating costs (\$152 per motorist).⁵² A strong “fix-it-first” policy allocates substantial investment exclusively to repair and maintenance, hopefully avoiding safety-related catastrophes like the 2007 collapse of Minnesota's I-35W bridge. Fix-it-first can restore public faith in transportation programs, create jobs, and save the average driver hundreds of dollars a year.

4.2 Improve Safety for All Users

Each year, nearly 1,000 people die on dangerous sections of roadways throughout Tennessee.⁵³ In urban areas, drivers waste time waiting to get through

congested intersections, pedestrians and cyclists are injured or killed by motorized vehicles, and public transportation is not a viable choice for the majority of commuters. Over \$3.3 billion in economic costs are attributed to crashes in the greater Nashville area or \$2,116 per person. Although much time has been spent in the past on relieving congestion, economic costs related to congestion in the greater Nashville region cost \$624 million or \$567 per person. Addressing safety issues on the transportation system can have significant impact on the region's economy by reducing health and insurance costs, saving lives, alleviating congestion, and reducing the amount of law enforcement and emergency management time spent on clearing crash scenes.⁵⁴

For safety-conscious planning to be effective, across all modes of transportation, many agencies (MPO, TDOT, local governments, law enforcement, emergency services, trucking companies) and the public must communicate consistently with one another. While the primary focus of safety planning is on reducing injuries and loss of life, improving safety can also decrease economic losses (including health care), and the significant disruptions that produce traffic congestion from crashes. Within the MPO's regional planning area, fatal crashes tend to be the highest in the less populated, or more rural areas, with Robertson and Maury Counties consistently seeing the highest number of fatal crashes per 1,000 licensed drivers. The Nashville area performs worse than the national average in fatal crashes, but significantly better than Tennessee as a whole.⁵⁵

Safety improvements can often be reactive, targeting improvements to identified "hot spots" (large numbers of crashes having already occurred). "Safety-conscious planning" implies the proactive prevention of crashes and unsafe conditions. For example, knowing that a significant portion of safety problems occur where paths of travel intersect, including situations where different modes of transportation meet, such as where bikeways share and cross the

roadway, intersections with crosswalks, and railroad crossings, review teams can discuss countermeasures that will make intersections safer. The MPO and its partners also seek to help clear traffic crashes faster by investing in more effective incident management techniques and targeting funding at improving the safety of high-crash locations. The risk and number of crashes are closely related to one's exposure to traffic, so multi-agency coordination and communication can help to minimize exposure, risk, and consequences.

4.3 Manage Transportation Demand to Maximize Supply

Building new roads or widening existing roads can help alleviate traffic congestion by providing increased capacity for all types of motorized vehicles, but the reduction in congestion may not be proportional to the additional capacity. In some cases, particularly in urban areas, roadway widening is not an appropriate or affordable solution to accommodating growth because of the limitations surrounding the acquisition of the necessary rights-of-way. Instead, transportation plans must call for a diverse array of programs and policies to manage traffic congestion by providing viable options to shift trips away from single-occupancy vehicles, out of peak periods, or to less congested roads or other modes of transportation. These strategies make more efficient use of the existing transportation system during an era in which expanding road capacity is increasingly expensive and availability of future funding for infrastructure is tenuous. There are many low-cost solutions that can effectively alter travel behaviors to reduce or better manage demand on the roadway network during peak travel periods.

By managing demand through rideshare matching, vanpools, and carpool incentives, more people can move through an area without actually increasing the number of vehicles on the road. Furthermore, carpoolers, vanpoolers, and bus patrons are the primary

beneficiaries of appropriately-managed HOV lanes by allowing them to move through congestion. HOV facilities can move significantly more people during congested periods, even if the number of vehicles that use the HOV lane is lower than on the adjoining general purpose lanes, by offering a shorter and predictable travel-time. Other solutions target major employer involvement: strategies such as flexible or staggered work hours, flexible scheduling, transit subsidies, on-site bicycle parking, on-site showers, and worksite parking management.

4.4 Keep Freight and Goods Moving

The Nashville region occupies a strategic North American location – within 650 miles of half the U.S. population and at the nexus of major highway, rail, and water routes.⁵⁶ While this “crossroads” position has produced enormous economic benefits for area communities, it also has brought a set of costly transportation challenges that originate outside Middle Tennessee: highway congestion and declining air quality, for example. Metro areas wishing to control their own destiny are faced with an impending need to influence the overhead flow of through freight traffic.⁵⁷

The volume of American freight movement alone is forecast to nearly double by 2020.⁵⁸ Area decision-makers recognize the significant contributions that freight makes to prosperity; in fact, logistics is a key growth area for the Nashville Area Chamber of Commerce’s Partnership 2020 — Middle Tennessee’s public/private economic development initiative responsible for recruiting businesses to the Mid-state.⁵⁹ Interstates 24, 40 and 65 converge in Nashville, which is about 200 miles from FedEx’s international hub in the Memphis “Aeropolis” near the huge cargo-toting portal that is the Mississippi River, as well as the UPS hub in Louisville. The trucking industry, therefore, has begun to hail the geographic location of Nashville as superior to just about anywhere else in the nation.⁶⁰

Freight mobility and local livability goals, however, sometimes come into conflict. For example, passenger and freight rail traffic can compete in urban areas, with both often limited to a single, constrained corridor. The location of freight and logistics activity centers needs to be coordinated with the routing of truck traffic. In each case, integrating land use planning with transportation planning can identify these potential conflicts early on and thus help communities reach consensus on policy options that marry economic activity with goals for livability. The Nashville Area MPO’s Regional Freight & Goods Movement Study⁶¹ was a flagship effort to bring together local leaders, freight industry representatives, and major freight shippers/receivers to discuss the influence that regional freight movement has on quality-of-life. The Study identified capacity improvement projects on freight corridors such as widening Interstate 24 between Nashville and LaVergne and moving CSX’s intermodal and automotive operations from Radnor Yard to a new site. Lower-cost, high-impact quick fix projects such as adding left turn lanes to Firestone Parkway at the Old Hickory Boulevard intersection and redesigning the Sidco Drive and Powell Avenue intersection were also identified.

4.5 Overcome Funding Shortfalls

Public purchasing power for transportation improvements is steadily declining because the federal gas tax has not been increased since 1997, and Tennessee’s state gas tax has not been increased since 1989. Since that time, inflation has reduced the gas tax value by more than 40 percent. High prices at the pump continue to thwart efforts to adjust the state or federal fuel tax. Moreover, in 2012, the Obama administration and the American auto industry adopted historic fuel efficiency standards for cars and trucks: 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.

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These realities of increasing vehicle fuel efficiency, changes in Americans' driving habits, and even the transition of the U.S. vehicle fleet to petroleum alternatives (electrification, natural gas, biofuels), create a sense of urgency around finding new revenue streams for financing transportation infrastructure investments. To fully fund Middle Tennessee's existing set of transportation needs, as well as the regional transit vision laid out in the MPO's 2035 Plan, the region would need to generate triple the amount of currently-anticipated receipts. The present lack of dedicated transportation funding detracts from ensuring stability in services, and also makes the region less competitive for federal capital funds to build modern transportation infrastructure.

Declining fuel tax revenues and declining buying power means fewer projects, slower progress, and less benefit to communities and economies—thus increasingly forcing local governments to find other means to meet funding needs. Traditional funding sources have not kept pace with inflation. To maintain the existing infrastructure—streets, bridges, buses, transit service, commuter rail, signals, sidewalks, bikeways, and signs—and to create a more complete transportation system to serve Nashville in the future, additional discussion is needed regionally about overcoming these funding shortfalls.



5.0 Key Recommendations for and in Support of NashvilleNext

Sprawling land development patterns have and will continue to create an unsustainable demand for infrastructure as long as they are allowed to persist. With the growth the region will absorb in the coming decades, the area is short on time to accomplish major changes to land use policies that can establish a more sustainable framework for growth and development. A prosperous future depends heavily on our ability to target public and private investments in places with existing infrastructure within commercial centers and along corridors. This requires improved coordination of decision-making among land use, urban design, transportation, historic and environmental preservation, and economic development stakeholders through the use of incentives and/or policies.

A multi-modal transportation system can promote economic prosperity while encouraging sustainable growth and development practices, and equitably protecting and preserving valuable community and natural assets. The following are key transportation-focused recommendations offered for discussion during the NashvilleNext process to achieve the community's desired outcomes.

5.1 Further Integrate Transportation into Land Use Policy and Development Regulations

The primary purpose of a transportation system is to move people and goods from one place to another, but transportation systems also affect community character, the natural and human environment, and economic development patterns. A transportation system can improve the economy, shape development patterns, and enhance quality-of-life and the natural environment.

Land use and transportation are symbiotic: development density and location influence regional travel patterns, and, in turn, the degree of access provided by the transportation system can influence land use and development trends. Urban or community design can facilitate alternative travel modes. For example, a connected system of streets with higher residential

densities and a mix of land uses can facilitate travel by foot, bicycle, and public transportation, in addition to automobile. Conversely, dispersed land development patterns may facilitate vehicular travel and reduce the viability of other travel modes.

Communities that provide transportation options and services within closer reach have driving rates that are about one-third lower than typical American neighborhoods. Depending on several factors, from a mix of land uses to pedestrian-friendly design, compact development reduces driving from 20 to 40 percent, and more in some instances. Studies have repeatedly shown that the most important factors in the feasibility of various transportation modes is land use mix, development intensity, and design.⁶² Focusing land development around corridors and commercial centers will do more to enhance transit in this region than any capital investment. Well-designed developments also address how parking is arranged. Activities and buildings placed in the middle of large parking lots undermine walking and transit options. Instead, good design places parking at the side or rear of a building, and emphasizes on-street parking. Parking garages also promote the rise of pedestrian-friendly communities, since they reduce the amount of surface land consumed by parking, allowing buildings to be closer together.

In Nashville, benefits of such land-use patterns have begun to be realized. For example, these components are already largely in place in Hillsboro Village with a mixture of land uses and scaled development that supports walking, biking and mass transit, whereas Green Hills has the density and mix of uses but is still in the planning stages for critical design improvements. When much of Green Hills originally developed in the 1960s and 1970s, it was primarily built around the automobile and suburbanization. This resulted in tremendous amounts of traffic congestion along main thoroughfares such as Hillsboro Pike. Traffic began to utilize neighborhood streets to avoid congestion on the main thoroughfares. Today,

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the numerous access points, surface parking lots, and low-scale development along Hillsboro Pike encourage travel from one destination to another by car and not by walking, biking, or transit.

Design elements that support walkability are important in retrofitting existing development and new redevelopment. The Hill Center within Green Hills is an example of design changes that can support increased density with a larger mixture of commercial retail and office impacting existing infrastructure less than a development built around moving cars. The Hill Center's design encourages walking between destinations. As the area continues to see private redevelopment, design choices that support walkability between places will change the character of Green Hills and how people move within and to access services in the area. The growing success of these traditional models in modern settings points to how deploying good design elements will help pedestrian-oriented

Transit-Oriented Development (TOD)

TOD is a mixed-use residential and commercial area designed to maximize access to mass transit with features to encourage transit ridership. Some features of this type of development include providing transit throughout the day to the area or a circulator service connecting to nearby existing service, wide sidewalks, narrow streets, quality pedestrian crossings, and densities that support ridership. TOD can play a key role in helping households lower the combined cost of housing and transportation, freeing up income for education, entertainment, health care, savings, and localized charitable giving. As a preferred form of development for capturing new growth, TODs will bring people and jobs closer to transit to get to and from work; also in a typical TOD, schools, retail, and restaurant/entertainment options are within walking or biking distance of home, thereby alleviating or eliminating the high cost of private vehicle ownership and volatile petroleum prices. Nashville might begin to assign some targets for the percentage of population and job growth it would like to see cap-



tured along transit corridors, focusing TOD efforts on the most location-efficient, viable markets and communities, with the greatest demand for affordable housing. For example, the MPO has supported research and design efforts on a potential TOD in Madison near Amqui Station, along a prospective Bus Rapid Transit (BRT) route for the Northeast corridor. Transit-Oriented Development could be a major factor in setting the region's urban core on a path to sustainability.

Incentivizing Redevelopment

New development often creates demand for the construction of additional schools, roads, sewer lines, and recreational facilities. Providing incentives to redevelop in areas that have declined or have infrastructure and aging buildings can greatly increase the efficiency of land development patterns and discourage scattered, sprawled development. Providing incentives that also promote smarter greenfield development such as TOD will also preserve natural areas that support biodiversity, local agriculture, and recreational and even tourism opportunities.

Key Recommendations

The following strategies are recommended to further integrate transportation and land use:

- Encourage growth in districts that support different modes of travel and around existing corridors that are more easily retrofitted for transit or transit-oriented developments;
- Broaden the development review process to include more input from transportation officials from the MPO, TDOT, and transit agencies, particularly for larger developments or developments along multi-modal corridors;
- Improve coordination between local planning, the development community, and transportation agencies to identify opportunities for build-out along planned rapid or high-capacity transit routes such as what is being coordinated with The Amp project;
- Reform the development review process to provide a more transparent view of the cost-of-services, health and environmental impacts, and the return on investment associated with development proposals;
- Incentivize and incorporate design elements in redevelopment that creates a more complete transportation system through improved connectivity among existing streets, appropriately designed sidewalks, separated bike facilities and bike lanes, and transit station amenities

5.2 Focus Investments in Sustainable Transportation and Complete Streets

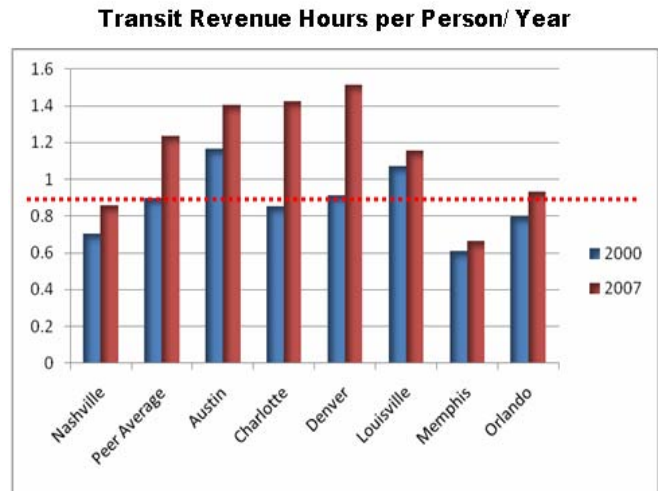
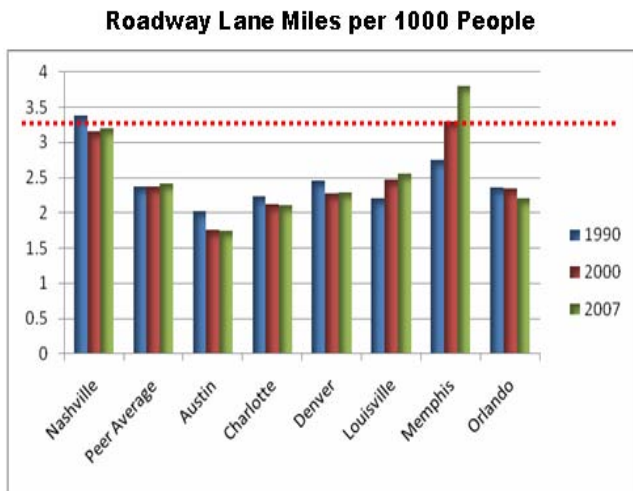
Building new roads or widening existing roads can help alleviate traffic congestion by providing increased capacity for all types of motorized vehicles, but the reduction in congestion may not be proportional to the additional capacity. In some cases, particularly in urban areas, roadway widening is not an

appropriate or affordable solution to accommodating growth because of the limitations surrounding the acquisition of the necessary rights-of-way. Moreover, the roadway system in Nashville is quite extensive as compared with those of other metropolitan peers.

The following graphs show how Nashville stacks up in per-capita lane miles versus transit revenue-hours (a standard measure for level-of-service for mass transit: hours of operation, frequency of next-bus arrivals, etc.). The graph on the left depicts the amount of roadway miles per capita from 1990 to 2007 in peer cities. The number of roadway lane miles per capita in Nashville is higher than its peer averages. The graph on the right shows the amount of transit revenue hours per capita for 2000 and 2007. The red lines on the graphs represent Nashville's value in 2007, so it is easier to see how Nashville compares to its peers. It is clear that Nashville has not kept pace with peer cities in this measurement with a lower amount of transit revenue per person. Nashville's investment strategy has typically favored building road and adding lane miles over increasing transit service and frequency. Limiting transportation choices while disproportionately funding road construction will lead to more sprawling development, continued environmental degradation, productive and recreational time sacrificed to sitting in traffic, and air pollution and sedentary, stressful lifestyles that threaten public health.

Clearly there is a need to catch up to peer cities who have balanced investment strategies to holistically plan for a transit level-of-service that keeps pace with growth, but land uses that support a healthy ridership for transit (such as Transit Oriented Developments) are a key ingredient for expanding the type of transit products Middle Tennessee offers, as well as frequencies. Currently, the levels of residential density in most Middle Tennessee neighborhoods that are currently unserved by public transit would not be sufficient to recommend new transit routes and frequent transit service.

Comparison of Investments in Roadways versus Transit



Red dotted line is a baseline indicating the 2007 values for Nashville.

Transit Infrastructure to Support Corridor Redevelopment

Many places within the urban core of the region already have higher-density zoning that is supportive of transit: the Downtown Code, for example, and many of the Metro Planning Department’s recently updated community plans reflect a desire for more mixed-use, denser development particularly along Nashville’s historic pikes (Gallatin Rd, Murfreesboro Rd, Dickerson Pike, Harding Pike etc). Recent market analysis suggests significant and unrealized development potential exists in the urban core, but is hindered by parking and traffic issues.⁶³ Infill and redevelopment opportunities provide a compelling reason to reform land use planning and permitting processes designed for greenfield development which can hinder smart growth projects. A world-class, functional transit system in the urban core of Nashville will form the backbone of an effective regional transit system, with Nashville’s downtown—a major regional center—being a key to the success of that system. From that backbone, connections to Nashville’s neighborhoods will be important through improved service frequency and circulator service connecting neighborhood destinations to the transit system’s primary routes. With that in mind, The Amp

bus rapid transit project, currently in the design phase of planning, will function as a major component of an efficient, seamless and convenient transit system. This project’s significant estimated ridership of 1.6 million, and associated surrounding land uses to support a healthy ridership for the BRT line, deserves the community’s full support: from all Metro departments, to the business community, to Nashville’s universities located along the corridor.

Continued Emphasis on Bicycle and Pedestrian Coordination

The Metropolitan Government of Nashville, under the leadership of Mayor Karl Dean, dedicates significant time and funding to advancing the sidewalk and bicycle networks in Nashville. There are currently over 55 miles of greenways and multi-use paths, 33 miles of bike lanes, and 59 miles of bike routes in the city. The city recently launched a bike-share program that is managed by the Downtown Nashville Partnership and features over 200 bicycles that can be rented at 20 stations throughout the downtown and immediate areas. The city has produced new maps and an App that can be used to plan bicycle and walking routes throughout the city and connect people to destinations such as parks.

Nashville also has a 15-member mayoral appointed Bicycle and Pedestrian Advisory Committee made up of advocates and concerned citizens who act in an advisory capacity to Metro Agencies such as the departments of public works, planning, parks, health and police. The intent of the committee is to outline bicycle and pedestrian related projects, programs, research and outreach for the city, and to work with Metro departments to carry-out those initiatives.

Since 2011, Nashville has been without a Bicycle and Pedestrian Coordinator, a position that was previously filled for ten years and made Nashville one of the first cities in the U.S. to create such a position. With the popularity and demand for bicycle and pedestrian programs, the purpose of the coordinator is to oversee the bicycle and pedestrian work of the BPAC and various Metro agencies, ensuring that the projects and programs run smoothly and that resources are shared and agencies are connected. With this position unfilled, Nashville is lacking oversight of its bicycle and pedestrian programs. At least five Metro agencies and several non-profits are constructing bicycle and pedestrian projects, conducting bicycle and pedestrian planning, or working on programming like safety education campaigns, but these efforts are disjointed. The BPAC often serves as a forum for a report-out on these initiatives, but there is no project oversight or follow-up action items to keep all initiatives connected. If hired, the Bicycle and Pedestrian Coordinator would ensure compliance with Nashville's Complete Streets policy statement—interagency collaboration on bicycle and pedestrian projects, plans, programs, events and other activities, and would also serve as an informational clearinghouse for an integral and increasingly important portion of the transportation system.

Key Recommendations

The following strategies are recommended to focus short- and mid-term investments on sustainable transportation solutions and complete streets:

- Employ a Bicycle and Pedestrian Coordinator to coordinate bicycle and pedestrian activities, planning, and infrastructure implementation between Metro departments
- Update the Metro Nashville Strategic Plan for Sidewalks and Bikeways so there is increased coordination between Metro Public Works, Metro Planning, Metro Parks, and Metro and MPO BPACs to ensure the appropriate stakeholders are involved in identifying short- and mid-term priorities;
- Direct current revenues to low-hanging fruit, alternative modes, and fix-it-first upgrades to existing roadways to improve safety, traffic operations, and multi-modal access;
- Place emphasis on high-growth areas to lay the appropriate infrastructure to support sustainable development;
- Coordinate investments with MPO, MTA, and TDOT to leverage funding opportunities.

5.3 Translate Multi-Modal Transportation Vision into a Multi-Year Program of Projects

Though the [2035 Regional Transportation Plan](#) and [Mobility 2030](#) provide a clear vision for future transportation investments, and in some cases, specific recommendations for improving facilities and services, those plans must be implemented by agencies separate from the MPO or Metro Planning Commission. To ensure those plans are carried-out as intended by policy-makers, these plans must be translated into a list specific projects, of which the agencies responsible for implementation, operation, and maintenance, will take ownership.

Key Recommendations

The following strategies are recommended to translate a multi-modal transportation vision into a program of projects spanning multiple years:

- Coordinate with the MPO and the RTA to create the first RTA Master Plan that would serve as a capital improvement program to provide refined cost estimates and schedules for the implementation and operation of modern transit products, as well as a list of projects that can compete for local, regional, state, and federal funding;
- Assist the Nashville MTA and other local operators in updating existing master plans to incorporate regional needs, and to identify local connectivity to the regional system;
- Coordinate with the Nashville Area MPO, Metro Public Works, Metro Nashville Airport Authority, Metro Parks, Nashville MTA, Metro and MPO bicycle and pedestrian advisory committees, and Metro Planning to develop countywide transportation priorities for the Mayor's annual Capital Improvement Plan and Budget that are consistent with [Mobility 2030](#) and the new Nashville-Next plan.

5.4 Secure Dedicated Revenue to Fund Transportation Plans

Even with a sound plan for the future, successful implementation of proposed improvements will require significant collaboration to address severe funding challenges. Resources are strained at all levels of government, and the primary revenue source for transportation funding – the gas tax – has not kept up with project-cost increases or inflation, and is actually nearing the end of its useful life as the U.S. vehicle fleet gradually transitions to alternative energy sources.⁶⁴ To remain stagnant in our transportation planning and implementation efforts will prove enormously costly: the Texas Transportation Institute estimates the cost of congestion to the metro-Nashville area,



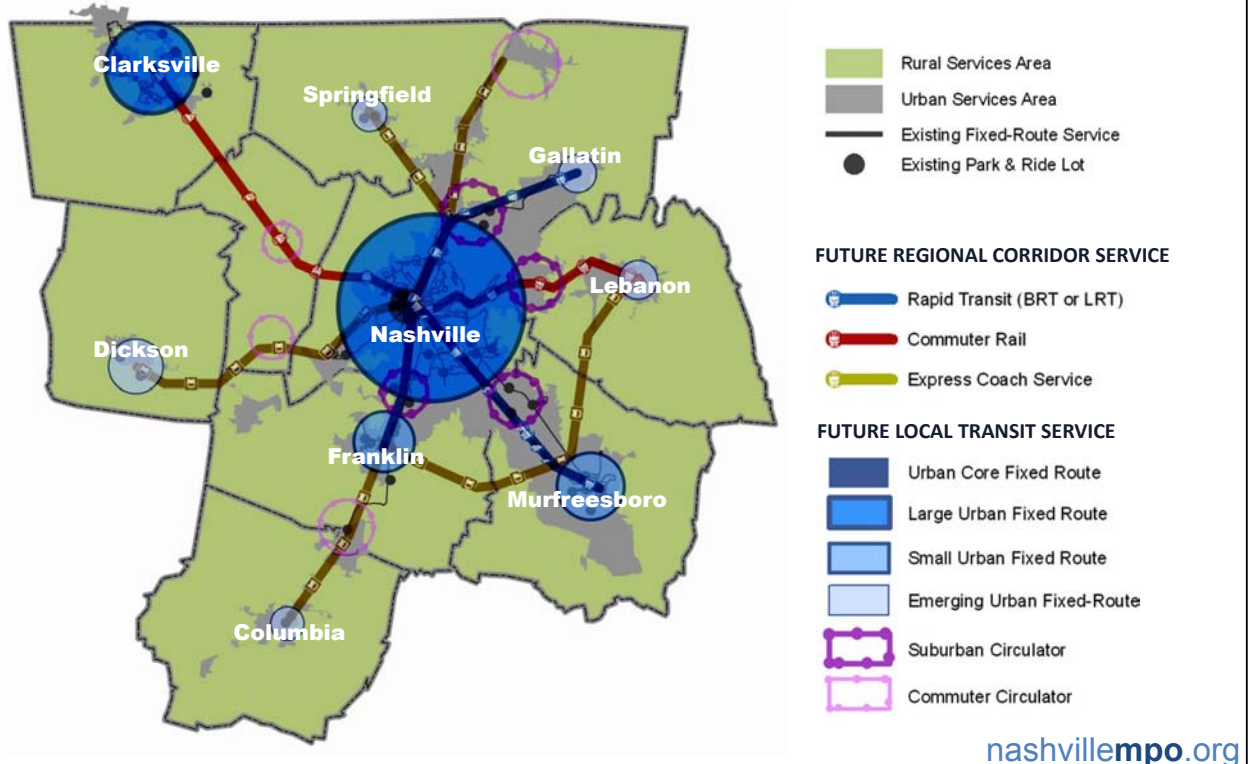
in lost fuel and productive time, could be as much as \$15.6 billion between now and 2035.⁶⁵

In the realm of transit infrastructure, a vision is a critical first step toward the region being awarded competitive federal funds.⁶⁶ The graphics on the following pages show a conceptual vision for future transit regionally and locally, and they tie together. The NashvilleNext process will discuss this and other options.

To qualify for FTA competitive grants, Middle Tennessee must begin to explore how to address a lack of local and regional revenues for all transportation modes – funding that would ensure stability in the operations of existing (and proposed) transportation infrastructure. Funding dedicated to maintaining the existing transportation system and improving its performance and reliability would also enable the region to better compete against other American metropolitan areas for grant dollars to build modern transportation infrastructure for our future, when Middle Tennessee is expected to see significant population growth and demographic shifts including increased racial and ethnic diversity, aging Baby Boomers, and a growing number of young professionals.

Conceptual Mass Transit Vision and Regional Connections

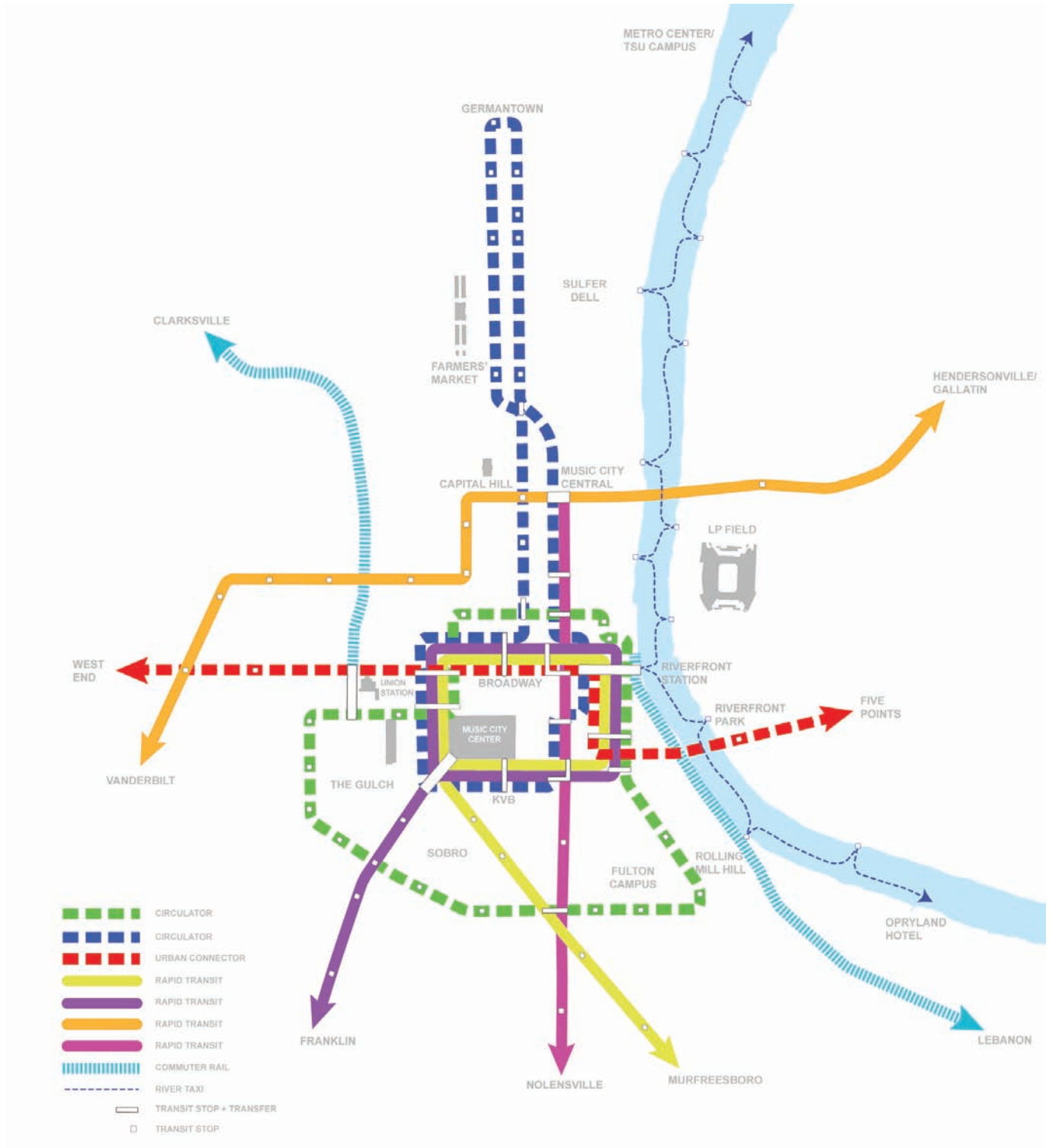
A Bold, New Vision for Mass Transit



Source: 2035 Regional Transportation Plan by the Nashville Area MPO, 2010.



Conceptual Rapid Transit Vision



Source: *Moving Tennessee Forward: Models for Connecting Communities* by the Nashville Civic Design Center, 2012.

Key Recommendations

The following strategies are recommended to secure dedicated revenue to fund local transportation plans:

- Continue to foster coordination and collaboration among members of the Middle Tennessee Mayors Caucus, the Nashville Area MPO, RTA, and local transit agencies to identify, comprehend, and establish political consensus around options for local/regional dedicated funding for transportation;
- Continue collaboration with the private-sector, particularly through organizations like the Transit Alliance of Middle Tennessee, the Nashville Area Chamber of Commerce, Cumberland Region Tomorrow to educate businesses and the public about the need to expand and modernize the region's transportation system;

5.5 Explore the Consolidation of Transportation Policy, Planning, and Implementation Functions into a Countywide Multi-Modal Department of Transportation

Metropolitan Government can take steps to establish greater organizational capacity for implementing the formidable, progressive plans that have already been authored with robust support from affected stakeholders and the public: the MTA [Strategic Transit Master Plan](#), the [Major and Collector Street Plan](#), Greenways for Nashville master plan, etc. Among other tactics, consideration should be given to establishing the city's very own Department of Transportation (DOT) – a stand-alone authority within Metro possessing the in-house expertise to oversee both “big picture” and day-to-day planning, building, monitoring, refinement, and troubleshooting of the city's entire transportation system across all modes: driving, walking, biking, transit, freight, etc. Precedent for this type of organizational structure can be found both locally (Metro's stormwater division)



and nationally with the departments of transportation for other American metropolitan areas with vast transportation management challenges. Metropolitan Government should explore DOT-organizational style examples in Chicago, New York City, Denver, Charlotte and other cities.

Taking a Complete Streets policy from paper ([Mobility 2030](#), the [Major and Collector Street Plan](#)) to practice is not easy, but NashvilleNext might take specific steps to continue the momentum. The city should explore a systematic review of internal and external practices to take place periodically and designate responsibilities to each Metro position responsible for implementing [Mobility 2030](#) — from leadership to general employees. Developing community task forces that advocate for adherence to new design guidelines within Metro agencies with performance measures that monitor the deliverables of implementation (ex., miles of on-street bicycle routes; linear feet of new pedestrian accommodation; number of new curb ramps and/or street trees planted along city streets). To help nudge diverse stakeholders toward implementation of safe, livable streets – so that Nashvillians might get better streets, faster – Metro might publish a street design manual that is accessible and digestible to non-technical audiences (membership of neighborhood organizations, etc): the New York City DOT *Street Design Manual*⁶⁷ is an excellent model of a comprehensive resource for promoting higher-quality street designs and more efficient project implementation – laying out guidelines, not mandates, that will evolve over time.

Key Recommendations

The following strategies are recommended to explore the creation of a multi-modal department of transportation:

- Research the strengths and weaknesses of various models of collaboration and explore options for the consolidation of local transportation functions. At a minimum, the functions within

Metro Public Works, Metro Parks, Metro Planning, Nashville MTA, Metro Nashville Airport Authority, Metro Traffic and Parking Commission, Metro Transportation Licensing Commission, Nashville Area MPO, and the Mayor's Office should be evaluated. A discussion about their functions and linkages to planning, prioritizing, implementing and constructing is strongly needed so functions of Nashville's transportation system are maximized across modes, balanced in their evaluation, and delivered to areas most in need and anticipated future potential;

- Consider developing a strategic plan to implement reforms that stem from the coordinated analysis, with a commitment to attach the appropriate resources (ex., funding, personnel/expertise, office space, etc) to that plan.

Conclusion

In becoming a world class city, Nashville developed around primarily the automobile from the 1950s to today. Since the 1990s, Nashville has made strides to incorporate a broader range of travel options as development and redevelopment occurs. Through the adoption of a multi-modal street plan, a comprehensive bicycle and pedestrian strategy, and a framework for transit investments, Nashville's transportation priorities are changing to meet the needs of its current and future residents. New sidewalks connecting neighborhoods to Tom Joy Elementary School, the 28th-31st Avenue Connector linking North Nashville to West End and Midtown with a separated shared use path, improved bus rapid transit service along Gallatin Road, and the Gateway to Heritage project celebrating the cultural contributions of African Americans along Jefferson Street while improving the beauty and safety of intersections are all examples of the philosophical change in implementing a wide-range of transportation investments in Nashville.

Continuing to develop more multi-modal projects as the city becomes more congested is difficult. Nashville must address maintaining the current investment in infrastructure, improving safety of all users including pedestrians and bicyclists, managing congestion better on the current road system, keeping regional economic prosperity moving by managing freight, and developing a strategic funding mechanism. Residents and leaders should consider these challenges through the NashvilleNext process.

Recommendations to consider in addressing these challenges include:

- Further integrating transportation into land use policy and development regulations.
- Focusing short and mid-term investments in sustainable transportation and complete streets.
- Translating the multi-modal transportation vision into a multi-year program of projects.

- Securing dedicated revenue to fund mass transit.
- Exploring the consolidation of transportation policy, planning and implementation functions into a countywide multi-modal department of transportation.

Nashville can take pride in the significant accomplishments to date, but there is more to do for Nashvillians to maintain the world class title. Widening streets, building more roads, and constructing buildings and dwellings that only encourage car access are no longer viable, sustainable solutions. Significant planning and investments in all modes of transportation are needed for Nashville to keep the city's recognized high quality of life.

Moving people and goods is not restricted by county boundaries. Regionally, many entities plan, develop, operate, and manage critical components of Nashville's transportation system. Streets, highways, vehicles, traffic signals, buses, trains, sidewalks, crosswalks, greenways, bike lanes, bridges, and trucks are some examples of these components. Federal, state, and local governments play a key role in the planning, prioritization, funding, and management of this infrastructure.

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