

## ACCESS NASHVILLE 2040

### MAY STATIC DRAFT

This is the static review draft of Access Nashville 2040, Volume V (Elements) of the draft General Plan.

We appreciate that you are giving time to reviewing this work. This chapter is the result of three years of effort on NashvilleNext, combining public visioning and community engagement with topical experts to create a plan for Nashville and Davidson County over the next 25 years.

#### Comments

The public review period is open until the Planning Commission's public hearing on the plan on Monday, June 15, 2015. We are eager to hear your thoughts on the plan. Here's how to provide input:

- » Email: [info@nashvillenext.net](mailto:info@nashvillenext.net)
- » Phone: 615-862-NEXT (615-862-6398)
- » Mail: Metro Nashville Planning Department,  
P.O. Box 196300, Nashville TN 37219-6300

We ask that you include contact information with your comments. We also request that you be as specific as possible in your requests. Referring to a specific page or section is greatly appreciated.

#### Next steps

The most up to date information is always available at [www.NashvilleNext.net](http://www.NashvilleNext.net). Here is the Planning Commission's tentative adoption schedule:

- » 3:00 pm, Monday, June 15: The Metropolitan Planning Commission will hold a public hearing on the NashvilleNext plan at the Sonny West Conference Center in Metro's Howard Office Building, 700 Second Avenue South.
- » 1:00 pm, Monday, June 22: The Metropolitan Planning Commission will resume their consideration on the NashvilleNext plan at the Sonny West Conference Center in Metro's Howard Office Building, 700 Second Avenue South.

*Changes from the March 27, 2015, Review Draft are summarized on the next page.*

## Static Draft changes from the April 26, 2015 Draft

### Access Nashville 2040

- » Major rewrite of the draft text were undertaken and a significant number of graphics and photos were inserted to illustrate concepts
- » Multimodal transportation and active transportation were defined with sidebars
- » An outline of how Access Nashville is organized was added
- » Some editing was done to the five issues that frame the future of transportation in Nashville; household and transportation costs discussion was added
- » The Growth and Preservation Concept Plan was explained and the Lebanon Pike corridor to Donelson was changed to identify an Immediate Need High Capacity Transit Corridor
- » Discussion was added to “Increase safety and resiliency” about street design being different in different contexts related to speed and age—related graphic on Injury Severity and Pedestrian Crashes inserted
- » Discussion was added to “Make decisions equitably” about reassessing streets and tough decisions needed
- » Benefits of a multimodal transportation network added as a sidebar
- » Introduced the concept of “Complete the Trip” and added narratives of Nashvillians in the future using different methods to complete their trips
- » Added additional information on MTA and RTA in sidebar
- » Added discussion about a Bicycle Courier Service serving a need to deliver goods in a sidebar
- » Reinforced under “People driving in single occupant cars” that congestion will not disappear in a vibrant corridor and introduced “latent demand”
- » Added discussion on Road Reconfigurations and Access Management
- » Added more discussion about the importance of linking land use and transportation under “Integrating Land Use and Transportation Decisions”
- » Added discussion on supplemental transportation programs under “Filling in the Transportation Gaps” and the need to address transportation for older adults
- » Added information on how transit signal priority works under “Using Technology to Make City Streets More Efficient”
- » Added information about Metro Police and Public Health Professionals under “Improving Safety and Resiliency of Nashville’s Transportation Network
- » Added discussion about the burden of providing parking and potential parking management program under “Managing Nashville’s Parking Issues”
- » Added brief write-up about Greenways for Nashville and the role of Metro Council under “Advocating for 21st Century Transportation Solutions”
- » Added section on “Working with Additional Partners”
- » Added discussion and graphic on “How a Transportation Project Moves from Idea to Implementation”
- » Added all of the infographics and data related to the Access Nashville Report Card
- » Modified the Transportation Solutions matrix
- » Reorganized all Key Steps under each transportation solution by Funding, Outreach, Prioritization, and Design. There were significant rewrites of these sections.
- » Added a sidebar on Road Reconfiguration
- » Moved the discussion on the different Metro transportation modal plans to before “Immediate Action Steps”
- » Added more details about the meaning of criteria used to determine Countywide Critical Needs and Community Priorities
- » Renamed priorities as Countywide Critical Needs in light blue and Community Priorities in black—no new projects were added; no projects were removed
- » Linked the projects in each network to other projects in a different modal network as appropriate
- » Fixed various errors to numbering of the projects in each modal network and did edits for clarity
- » Added proposed changes to the MCSP to include flagging projects for Roadway Reconfigurations, appropriate dimensions for tree well health, and removing minimum dimensions for streetscaping
- » Linked the “Immediate Action Steps” to various actions of different elements in NashvilleNext
- » The Major and Collector Street Plan will be amended to remove Planned Collector-Avenues north of I-24 in Joelton

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# ACCESS NASHVILLE 2040

Access Nashville is a comprehensive framework for the city’s multimodal transportation network to support Nashville’s quality of life and manage growth, development, and preservation through the year 2040 and beyond. Access Nashville provides a coordinated roadmap for the development of the entire transportation network over the next 25 years. It provides a set of Accessibility Principles, Implementation Strategies, Strategic Initiatives, and a shared Evaluation Framework that allow agencies to collaborate and coordinate around the community’s desired transportation vision.

## Why Access?

Accessibility is the ability to reach goods, services, activities, and destinations. People walk, bike, drive, carpool, and take mass transit to get to jobs, services, and other activities. Access is the ultimate goal of most trips. Accessibility affects where you go, what you do, who you know, your household costs, and your opportunities for education, employment, and recreation.<sup>1</sup> Throughout the region, access determines one’s opportunity to engage in social and economic activities.

Policies that promote mobility—moving people and goods more quickly—for one group of people instead of access for all are inherently unfair. Because we all share in the costs of building and maintaining our transportation network, it is inequitable to favor people who drive over those who access activities by walking, biking, or taking transit. Our transportation network must be accessible to all people living, working, or visiting Nashville—both now and in the future.

Increasing mobility does not always improve accessibility. As automobiles became more common in Nashville, the city managed mobility by designing streets to favor people driving cars over those who walk, bike, or take transit, without critically examining all of the factors that affect how people get where they need to go. In order for the city’s transportation network to remain relevant to the changing needs and growth of the city, our toolkit of transportation solutions must also change and grow.

Today, many Nashvillians find it difficult to access activities in Davidson County without a car. At the same time, residents express a desire to make communities more walkable, bikeable, and transit friendly. Throughout

<sup>1</sup> Victoria Transport Policy Institute’s *Transportation Demand Management (TDM) Encyclopedia* <http://www.vtpi.org/tdm/tdm84.htm>

## What is multimodal transportation?

Multimodal transportation describes the various options or transportation modes such as walking, bicycling, taking the bus, and driving, and the connections among modes. Someone who bicycles to their bus stop, loads their bike on a bus, takes the bus into downtown, and walks their bike to their office has used three modes of transportation—bicycling, taking the bus, and walking. Their multimodal trip into work should be seamless between the different transportation modes.

## What is active transportation?

Active transportation describes walking and bicycling for transportation purposes. Sometimes these transportation modes are referred to as non-motorized transportation options. Active transportation is often a component of multimodal transportation trips



**Buses are just one component of a multimodal transportation network**

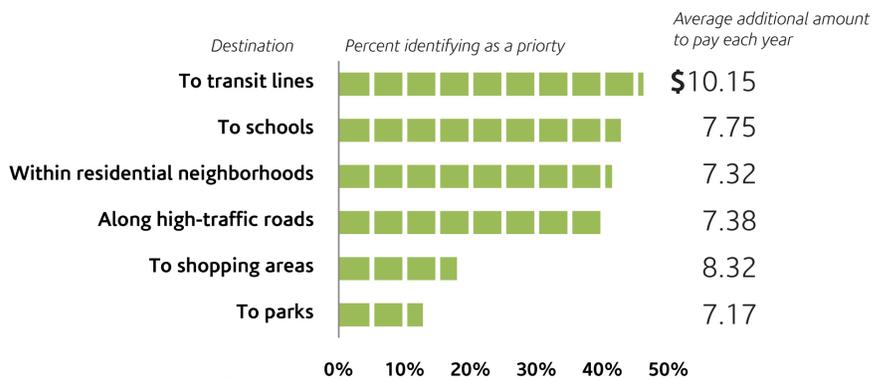
## Factors Affecting Access<sup>1</sup>

Many of the strategies identified in Access Nashville address factors affecting access

- » **Demand** – amount of mobility and access people choose
- » **Mobility** – distance and speed of travel
- » **Accessibility options** – number and quality of access options like walking, bicycling, transit, or ridesharing
- » **User information** – availability of reliable information on accessibility options
- » **Integrated destinations** – the degree to which a place is linked to transportation modes
- » **Affordability** – cost of transportation relative to income
- » **Mobility substitutes** – telecommunications and delivery services that replace physical travel
- » **Land use** – density and mix of uses which may impact accessibility
- » **Design** – elements that make up a street such as car lanes, sidewalks, trees, building placement, or another travelway
- » **Network connectivity** – directness of travel between destinations
- » **Transportation management** – ways to increase the transportation network efficiency
- » **Inaccessibility** – sometimes there is value in limiting access

<sup>1</sup> Todd Litman, 2014, *Evaluating Accessibility for Transportation Planning: Measuring People’s Ability to Reach Desired Goods and Activities* - <http://www.vtpi.org/access.pdf>

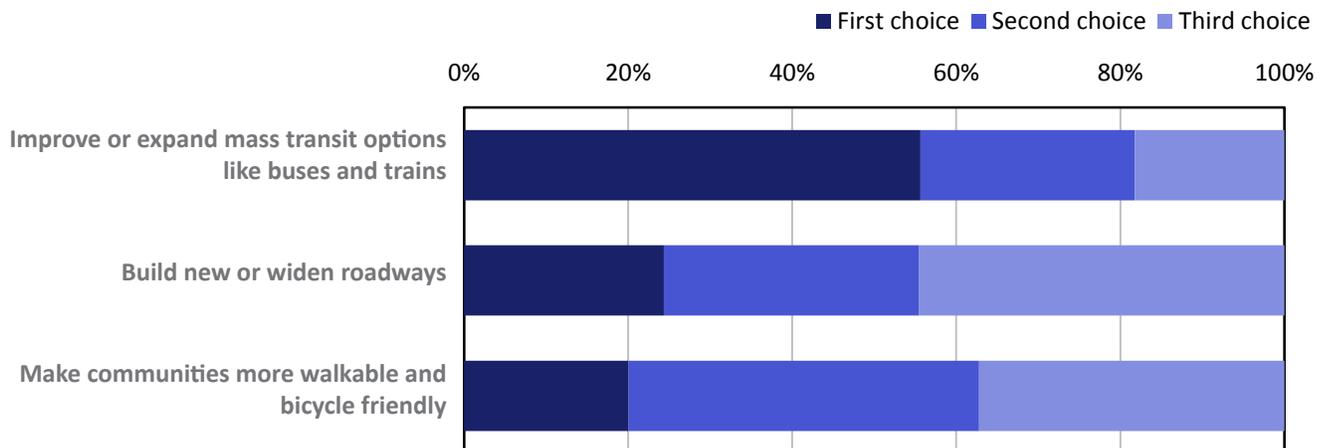
the NashvilleNext process, residents ranked walkable neighborhoods and improved mass transit as top priorities for Nashville’s future. Nashvilleans also want to consider new ways to fund essential transportation improvements. To successfully implement NashvilleNext, our city must identify and fund projects that improve access for people who walk, bike, and take transit.



Participants were asked two questions:  
 1. Which two of the above destinations are most important?  
 2. How much additional should Nashville households pay each year for new sidewalks? No more, \$4, \$8, \$12, \$16. \$4 each year from each household will build about 1 mile of sidewalk.  
 Collected through September 15, 2014

**Figure 1: Preferences for improving transportation**

If you had to decide on an overall strategy for improving transportation in Middle Tennessee, which of the following would be your first, second, and third priority:



Source: Nashville Issues Survey (2012)

## How is Access Nashville organized?

1. Access Nashville describes local accessibility issues and trends. To plan for the future, it is critical to understand how our transportation network evolved, basic assumptions impacting the viability of today's transportation network, how getting around the city is changing, and why people travel.
2. Access Nashville outlines a Transportation Vision for Nashville/Davidson County and Accessibility Principles to strive for in creating a multimodal transportation system that meets the city's current and future needs.
3. The overarching strategy is creating Complete Streets—streets that are safe, comfortable, and convenient for all road users, no matter who they are or how they travel. Complete Streets give people meaningful choices in how they access social and economic activities around Nashville.
4. Access Nashville identifies responsible stakeholders and their roles, to explain which agencies are involved in the city's day-to-day planning, operations, and maintenance of the transportation system and the importance of each in implementing the NashvilleNext vision.
5. Access Nashville recommends an Annual Access Nashville Report Card and lists multimodal indicators that allow our residents and local leaders to assess our transportation network. Baseline data is presented and will be used to evaluate future progress. The many stakeholders that plan, build, manage, and maintain our transportation network can use this shared Evaluation Framework to work towards a collective impact that will be more meaningful than any individual effort in improving accessibility.
6. Access Nashville provides strategies that increase access through specific initiatives. These initiatives are inter-related because we can no longer assume that people will only use one mode of transportation to access daily needs in the future. The initiatives are linked to, and put into action, the Accessibility Principles. The relationship between the various transportation modal plans are described, followed by modal Framework Maps for Nashville's 21<sup>st</sup> Century Transportation Network.
7. Finally, Access Nashville outlines immediate next steps to respond to community concerns heard during NashvilleNext. These next steps are closely tied to the Land Use, Transportation, and Infrastructure (LUTI) Element found in Volume II and its Action Items.

## Background: Transportation in Nashville

Five issues frame the future of transportation in Nashville. Any attempt to improve Nashvillians' ability to access social and economic activities in Nashville must address these key issues.

### 1. Nashville's street network is mostly built. Acquiring new right-of-way is very challenging.

Nashville has a fairly extensive street network of Interstates, Freeways, Arterial-Boulevards, Arterial-Parkways, and Collector-Avenues that are identified in the city's adopted Major and Collector Street Plan (MCSP). Local streets, which are still being built as new subdivisions are created, supplement the primary streets. The right-of-way, or land on which Metro or the Tennessee Department of Transportation (TDOT) maintains streets, its sidewalks, bikeways, and streetscaping, is also extensive and requires regular maintenance. Acquiring new right-of-way is challenging as Metro and TDOT will often have to work with numerous property owners along a given street because of development throughout the area. Maximizing efficiencies within the existing street system and right-of-way will be essential in the future.

In Davidson County, transportation maintenance improvements are funded in several ways. Metro Public Works operates a paving program and is responsible for installing sidewalks and bike lanes on Local Streets, Collector-Avenues, and Arterial-Boulevards. Public Works' projects are funded annually through the Capital Improvements Budget from the City's General Fund. About 86 percent of the General Fund revenue comes from property taxes, sales taxes, and grants. Gas tax revenues also contribute to the General Fund, among other revenue sources.

TDOT has jurisdiction over state highways, interstates, and larger arterials. TDOT's budget is funded through state and federal sources, including user fees, which have declined in recent years as Tennesseans choose to own more efficient cars and drive less, and also federal transportation funds allocated via a series of short-term transportation bills. Historically, federal transportation legislation has covered funding for nearly five years. In recent years, Congressional gridlock has forced the use of these short-term bills and extensions making it extremely difficult for local transportation agencies and state DOTs to plan future needs without funding certainty.



**Nashville's street network is more efficient with transit service and bike lanes.**

At both the state and city level, maintenance backlogs overwhelm the amount of revenue generated by these sources, and generating new revenue through additional taxes is politically unpopular. Large-scale, new roads and highways require Metro or TDOT to acquire large swaths of land for costly right-of-way; such projects are no longer feasible given today's financial constraints.

Despite these challenges, street connections are still needed, and some streets may be widened along with multimodal improvements. Generally, however, in the upcoming decades, the city and state transportation agencies can no longer expand the street network at the same pace as it did from the 1900s to the 1980s. The city must maintain the current street network, make strategic connections, and provide more travel options on the existing network in the future.

The following photos show the typical estimated cost and approximate lifespan of transportation infrastructure within existing right-of-way. One example shows multimodal elements near 21<sup>st</sup> Avenue at Wedgewood Avenue in Hillsboro Village, and the other location is near 9<sup>th</sup> Avenue North at Church Street in downtown.

## **2. The city's transportation network must reflect what is appropriate for Nashville.**

In most of Davidson County and Middle Tennessee, land uses are not dense. The character of our region's built environment has developed initially without sewers over hills and forested lands, often resulting in neighborhoods that are typically disconnected from surrounding land uses. This disconnected, low density development pattern is a barrier to frequent transit service and walkability. People who live in, work in, and visit Nashville want a robust transit network that links connected, walkable neighborhoods. To provide more frequent transit service and expand walking and biking options, the city must strategically increase density where appropriate.

The geology and geography of the Middle Tennessee region makes the construction of subway-type mass transit systems difficult. The hard bedrock and preserved, forested hills of the region make underground transit cost-prohibitive. Nashville can study the transportation strategies of peer cities to determine what types of transportation will address our accessibility challenges, but a rapid transit solution appropriate for Atlanta



**The typical neighborhood street in Nashville is wide with no sidewalks.**

# How much for this streetscape?

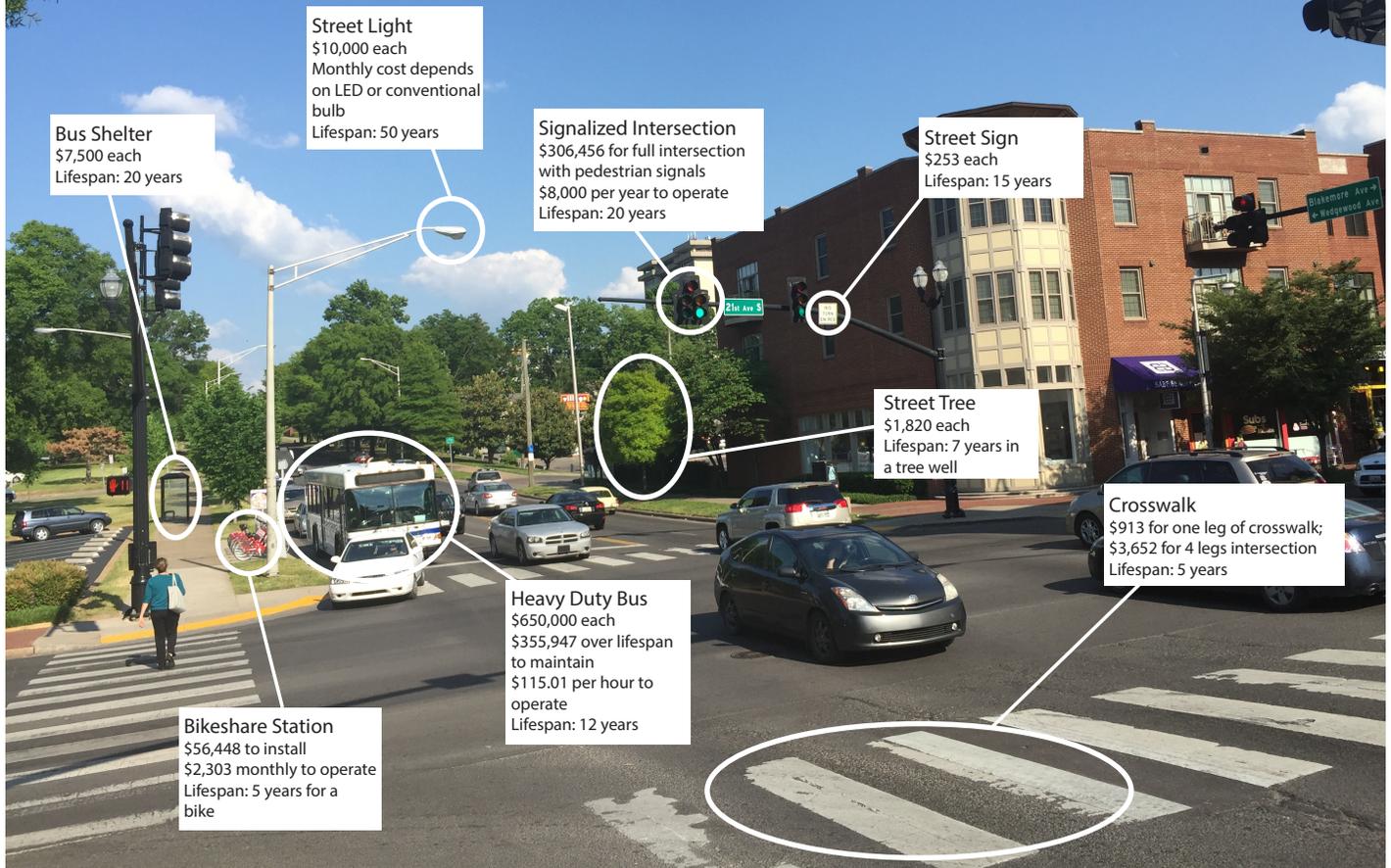


Figure 2: The cost of some transportation components near 21<sup>st</sup> Avenue and Wedgewood Avenue

# How much for this streetscape?

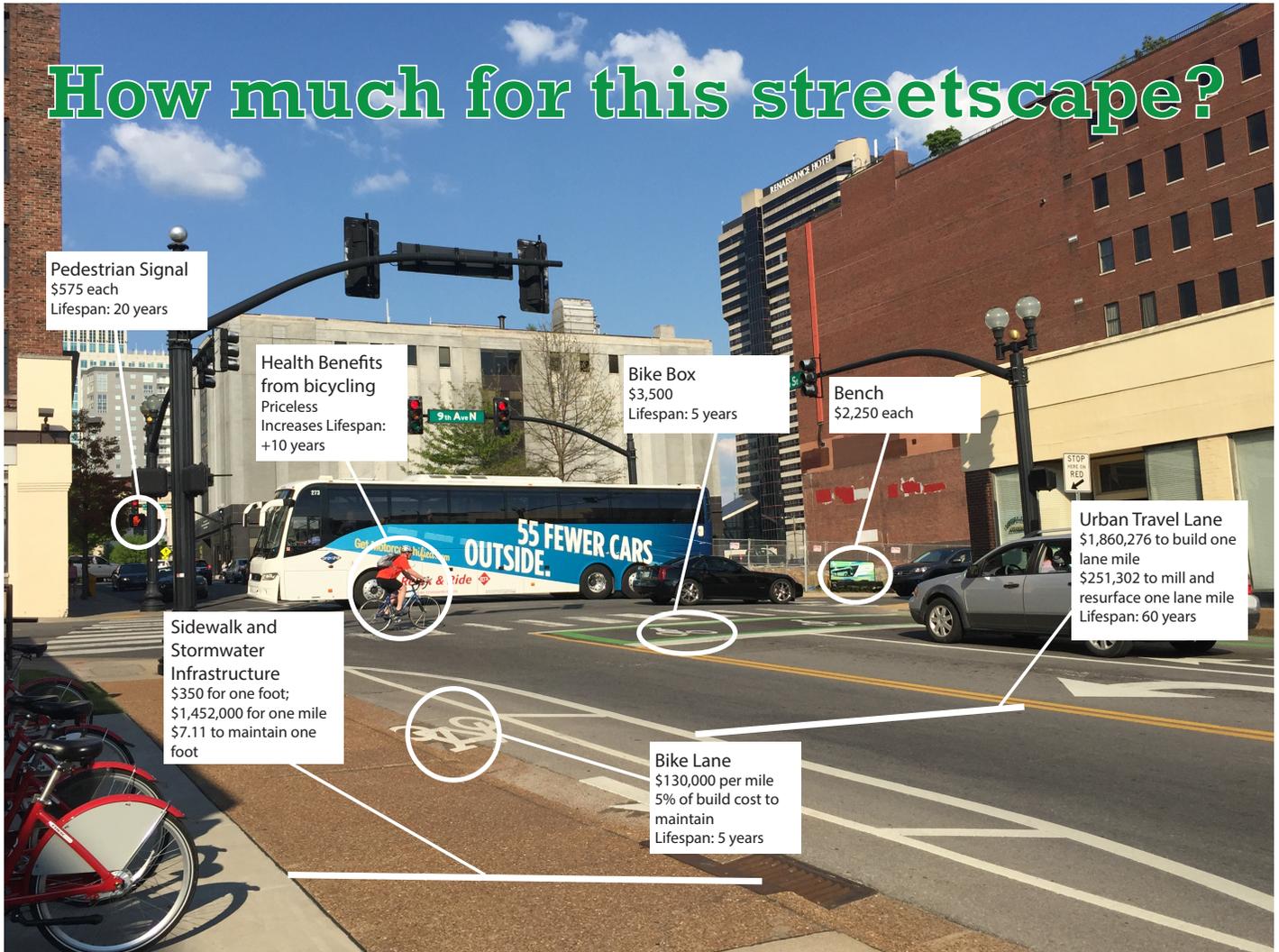


Figure 3: The cost of some transportation components near 9<sup>th</sup> Avenue North and Church Street

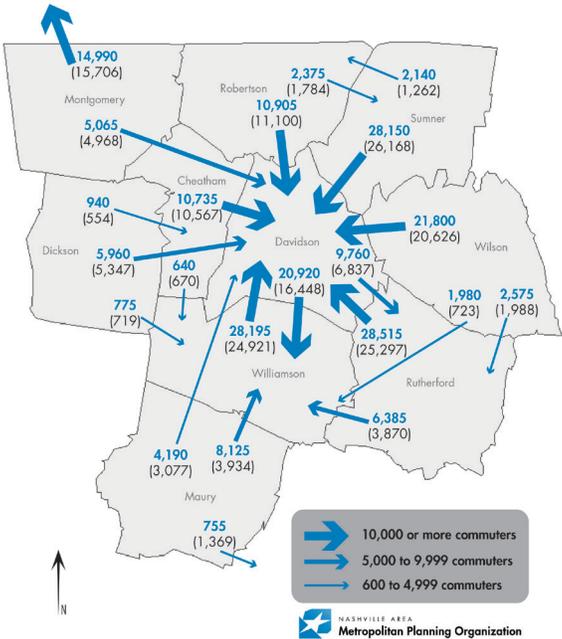
or Oakland may not be feasible in today's Nashville. The selection of transit modes is one part of an important conversation that residents will have with city leaders as Nashville expands access to the transportation system.

**3. Nashville is the region's population and employment hub, so Middle Tennessee residents need to connect to Nashville and get around in multiple ways as part of the regional transportation network.**

Transportation issues extend beyond city and county boundaries into the surrounding region. Nashville's thriving, diverse communities, employment centers, and housing choices form the economic hub of Middle Tennessee. Population and employment projections show Nashville's continued importance as the economic center of the region, even as adjacent counties grow. Connecting more people to jobs through Nashville's multimodal transportation network will be important to linking Middle Tennessee communities together.

Figure 4 shows the number of commuters who cross county lines for work. A significant number of residents travel into Davidson County and Williamson County, however, there are people moving across all of the Middle Tennessee counties.

**Figure 4: Number of workers Commuting County to County**



#### 4. Nashville's street network is evolving into a multimodal transportation network and should accommodate all modes and people.

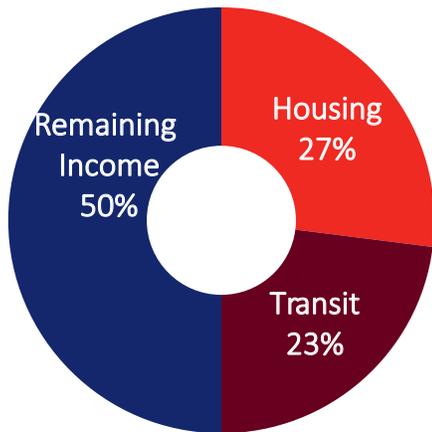
Transportation modes—walking, biking, riding transit, or driving—are the different ways that people get around Nashville. A multimodal transportation network is more accessible, efficient, and equitable than one that works for only one mode.

Outside of the urban core, Nashville's transportation network has developed under the assumption that most people will drive to access daily activities, goods, and services. Residential neighborhoods were built without sidewalks, roads were not designed to address the needs of bicyclists, and the bus system has primarily served people traveling to downtown and those who lack other transportation options. These transportation conditions were the result of sprawling development patterns, and have contributed to congested roadways, traffic fatalities and injuries, high obesity and diabetes rates, and negative biases about transit riders, bicyclists, and pedestrians. Although some residents benefit from a transportation network that prioritizes car travel, all residents can benefit from an equitable, multimodal transportation network. When the individual needs of each mode are addressed comprehensively, the transportation network as a whole will function better and serve more Nashvillians.

Nashville's transportation network is evolving as more people choose car-sharing, bicycling and bike-sharing, walking, and transit. The rapid development of new technologies such as ride sharing apps, driverless cars, electric vehicles, and e-bikes can make existing facilities more efficient in ways that were not envisioned in the past. As we age, our transportation needs change, so older adults may need other mobility and accessibility options to complete their trips. The average transportation costs in Nashville absorb about 23 percent of income. Combined with housing costs, 50 percent of one's income can easily be used for housing and getting around the region. Designing the transportation network for all people and all modes will be critical to Nashville's future to address our changing population's needs and to also reduce transportation costs. It took from the 1900s to the 1980s to develop the extensive street and highway network that exists in the region today. Nashville's multimodal transportation network will also take time to evolve.



**Dickerson Pike is a major transit corridor and does not comfortably accommodate pedestrians.**



**Figure 5: According to the Center for Neighborhood Technology’s Housing and Transportation Affordability Index, on average in Nashville/Davidson County, 50 percent of income is spent on housing and transportation needs.**

## 5. Nashville’s multimodal transportation network evolves as walkable centers grow.

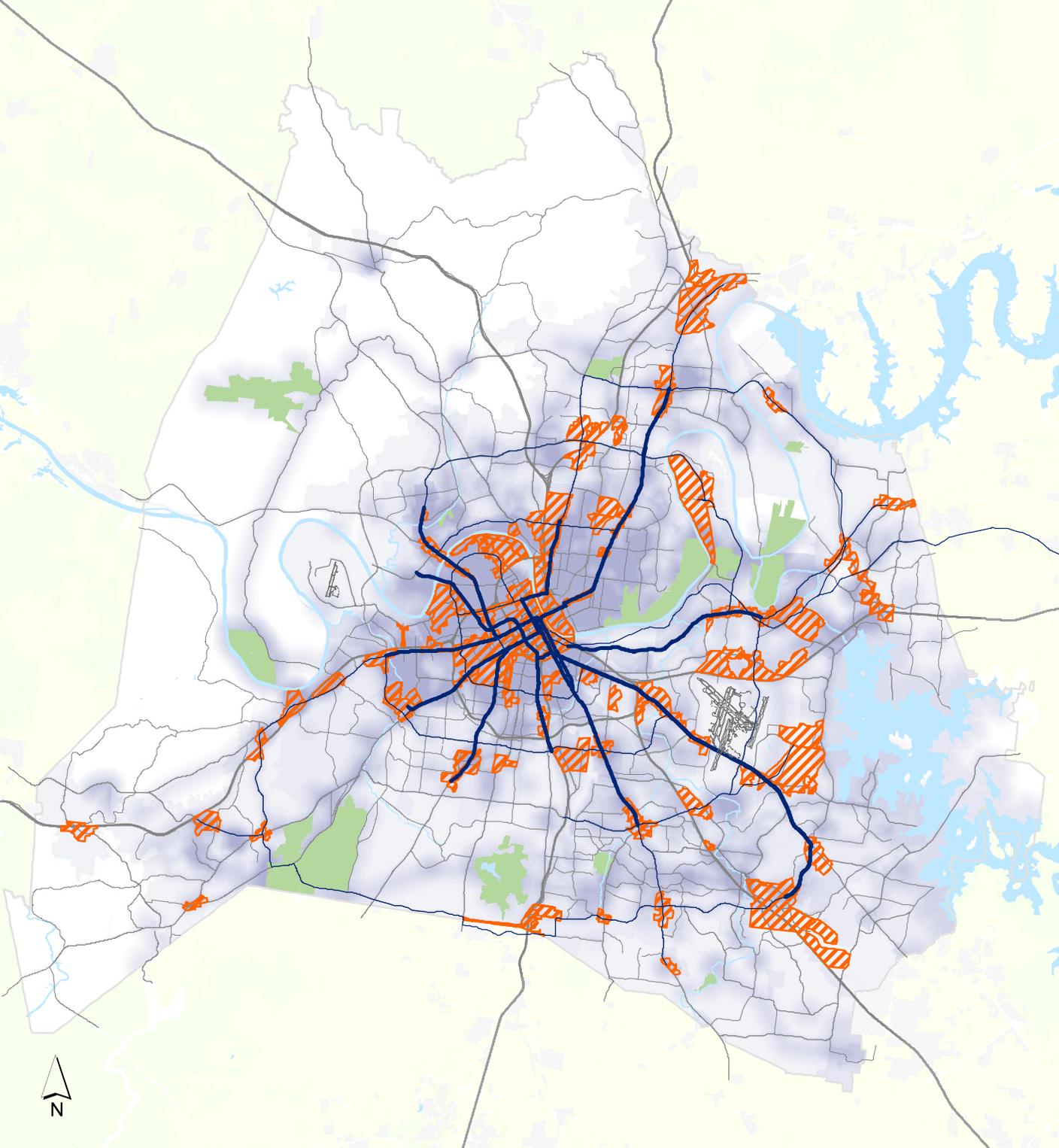
NashvilleNext’s Growth and Preservation Concept Plan identifies Centers and High Capacity Transit Corridors where population and employment density should increase. Figure 6 shows as these areas evolve, their transportation network should also evolve to complement and support the growth. A corridor with low population densities and one or two neighborhood centers can only support sporadic bus service. In these areas, traffic congestion may be low, making it unlikely that a bus will offer faster travel times. Walking may be inconvenient because services are far apart. Corridors like this provide mobility, but they do not emphasize access.

More frequent transit service becomes viable as the corridor redevelops with more services, more housing, and more centers that function as hubs for employment, and services/retail for surrounding neighborhoods. Walking and biking become more convenient when services are located closer to one another and to nearby homes. Over time, the centers begin to function as a complete community, and the corridor becomes a significant route connecting centers.

Once development patterns change to support denser housing options and denser employment, more services are generated to meet the needs of nearby residents and workers, buildings evolve with more height, and dense corridors and centers emerge. At this point, permanent transit service like bus rapid transit with dedicated transit lanes is feasible.

Walking and biking are significant components of completing the trip. The street becomes part of the city’s culture—a place where people interact with others, share, and grow. The planned growth areas identified in NashvilleNext offer more transportation choices as they evolve over time.

Figure 6: Pedestrian generators and NashvilleNext centers



**Pedestrian Generator Index Legend**

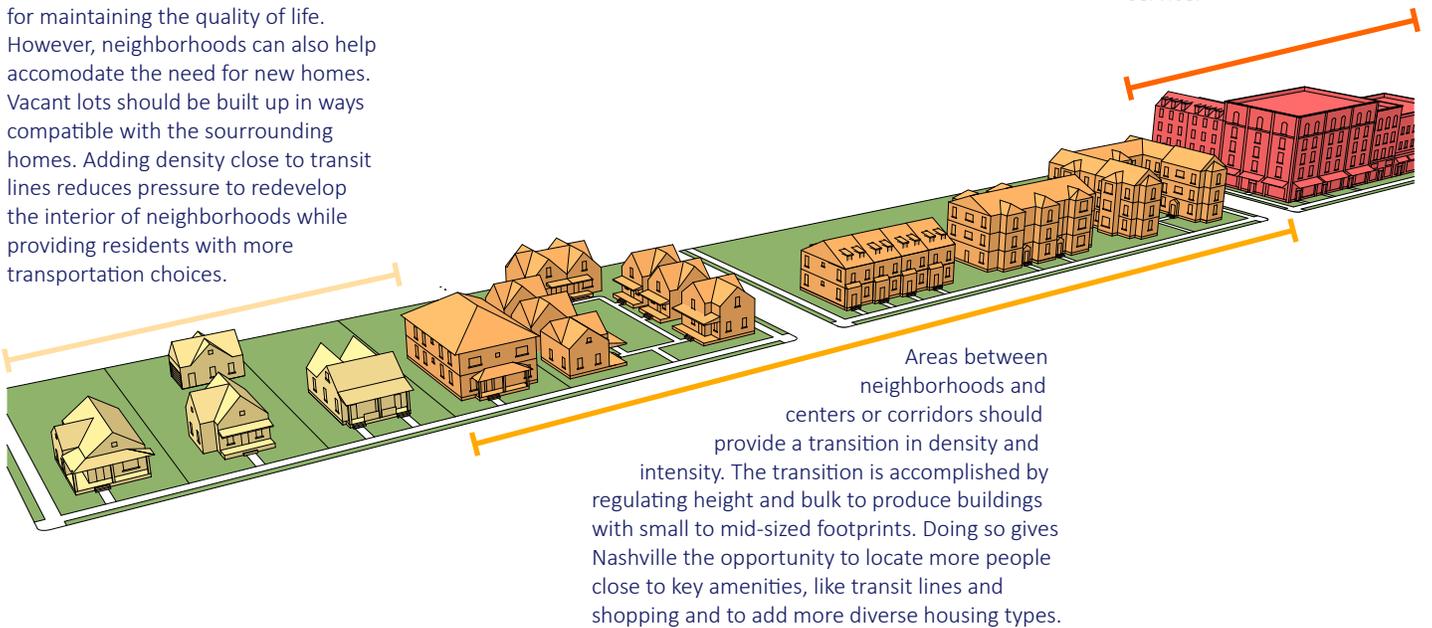
- Water Bodies
  - Anchor Parks
  - Centers
- Pedestrian Generator Index**  
High : 64.8381  
Low : -2

## Figure 7: Abundant housing to create opportunity

Use centers, corridors, neighborhoods, and the areas in between to provide a variety of housing options that keep pace with Nashville's increasing and diverse demand for housing.

Neighborhoods represent an enormous stock of housing that will be critical for the future. Preserving the character of neighborhoods is important for maintaining the quality of life. However, neighborhoods can also help accommodate the need for new homes. Vacant lots should be built up in ways compatible with the surrounding homes. Adding density close to transit lines reduces pressure to redevelop the interior of neighborhoods while providing residents with more transportation choices.

The densest development should occur within centers and along corridors to support frequent transit service.



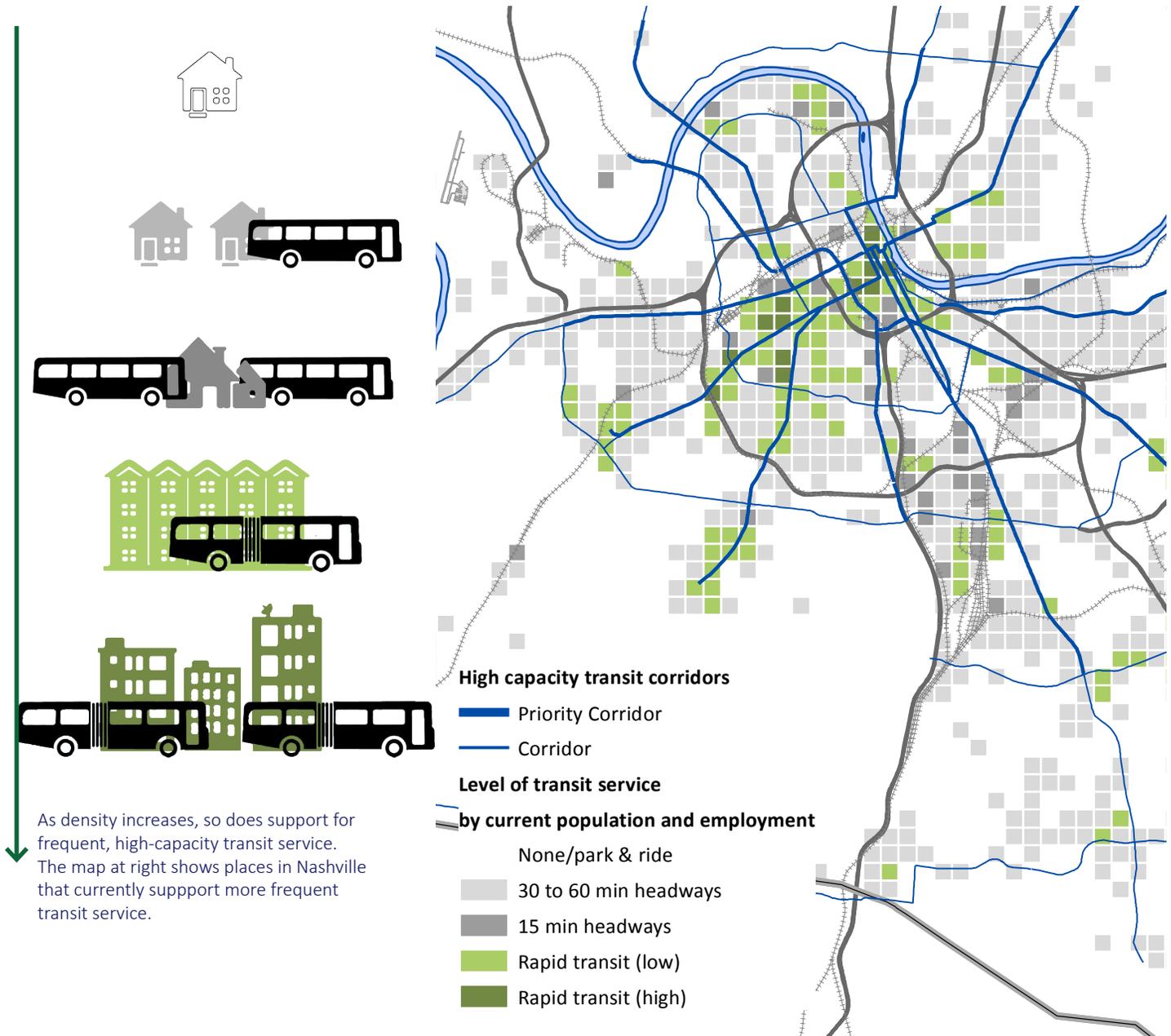
## Figure 8: Land use and transportation

Transit service and investments evolve alongside development patterns. At low densities, there is little support for local service; residents must rely on park-and-rides. As density increases, so does service frequency and capacity. At the low end, this may be buses running only during rush hour or with a half an hour or more between buses.

The densest parts of the County support more frequent service, running every ten to fifteen minutes at peak times. As this happens,

investments follow the most highly used routes, such as covered shelters or signal prioritization.

Nashville is now considering the next step: giving transit dedicated space on roadways. Because this is extremely costly, it requires a commitment to placing more homes and jobs on these routes. Doing so ensures that these investments have the greatest impact on expanding Nashvillians' ability to get around.





# NASHVILLENEXT & THE GUIDING PRINCIPLES



nashvillenext

NashvilleNext is driven by Guiding Principles that inform growth, development, and preservation decisions in the future. Access Nashville builds upon the Guiding Principles with additional Accessibility Principles that guide strategic investments in Nashville's transportation network.

## **ENSURE OPPORTUNITY FOR ALL** *Opportunity is about equity and fairness and for all.*

Nashville and the region are becoming more racially, ethnically and age diverse. For our region to continue to prosper, everyone needs equitable access to opportunities to advance their well-being regardless of their circumstances. Inequities and lack of access to basic services, jobs and housing prevents residents from fully participating in our community, its economy and civic life. We all gain from creating a place where all people can improve their lives and contribute to the larger community. Meaningful opportunity for all is both a means to a healthy, prosperous, resilient community and an end that will benefit everyone.

## **EXPAND ACCESSIBILITY** *Accessibility is critical for equity.*

Today's society has become accustomed to having choices—choices in housing, transportation, education, jobs, and recreation among others. To allow for choice and encourage opportunity, Nashvillians of all ages, incomes and abilities need access to basic things—safe, affordable and accessible housing, employment opportunities, healthy and affordable food, transportation options, recreation, a sustainable natural environment, well-designed places to gather and connect with neighbors, and, increasingly, choice and access to evolving technology to participate in today's active online world.

## **CREATE ECONOMIC PROSPERITY** *Access to prosperity improves all.*

Nashville has long thrived due to a historically diversified economy. Our diversified economy relies on providing work for low-, moderate- and high-skilled workers; providing pathways for individuals to improve their skills and earning power; and providing a low cost of

living, which draws workers of all skill levels to Nashville.

To build upon our prosperity, we must continue to grow our creative and innovative culture, maintain our city's affordability, increase our quality of life, and create, attract and develop workforce talent. Meanwhile, Nashville's prosperity has not reached everyone. More can be done to create pathways for all Nashvillians to provide for themselves and their families and contribute to our rich economy.

## **FOSTER STRONG NEIGHBORHOODS** *Neighborhoods are the heart and soul of Nashville.*

Nashville is stronger due its diverse neighborhoods in rural, suburban and urban settings. Neighborhoods throughout Nashville should be both complete and strong. Nashville has many "complete" neighborhoods that provide choices and opportunities in housing and transportation and have access to employment, education and recreation. Nashville has many "strong" neighborhoods whose residents enjoy rich social connections, opportunities for success in life, and voices that are heard in the decisions that affect them. We will strive to expand the qualities of completeness and strength to all neighborhoods in Nashville.

## **ADVANCE EDUCATION** *Educational access for all is our foundation.*

Education is how we prepare our children for tomorrow's challenges, and how we keep our residents ready to successfully participate in evolving workforce and civic life.

Access to educational resources is critical to help Nashvillians fulfill their potential as individuals and positively contribute to a healthy community and prosperous,

sustainable economy. Increased demographic diversity, technological evolution and an increasingly interconnected global economic structure requires a lifetime learning system founded in a pre-kindergarten, elementary, secondary and higher educational environment accessible to all and strengthened through a strong physical, social and emotional support system.

## **CHAMPION THE ENVIRONMENT** *Environmental stewardship is our responsibility.*

Nashville's diverse and vibrant natural environment is one of its major assets. The way we preserve and develop land has a direct impact on our health and quality of life. Preservation of the natural environment and thoughtful, development with a goal of stewardship will ensure the benefits of Nashville's natural environment for generations to come. We will seek to create safe, healthy, and attractive places to live and work while enhancing our natural environment.

## **BE NASHVILLE** *'Nashville' is our strength.*

Nashville/Davidson County has a culture grounded in inclusivity and friendliness, creativity and entrepreneurship, and concern for others. Nashville will experience significant growth in the coming years, but we can retain and build upon the culture that make Nashville unique and strong – a culture that supported equity and civil rights early; that provides opportunities everyone from song writers, to small businesses, to new Americans; that picked up) and cared for our battered neighbors after the flood of 2010; that respects our history and looks eagerly to the future.

# GROWTH & PRESERVATION CONCEPT PLAN

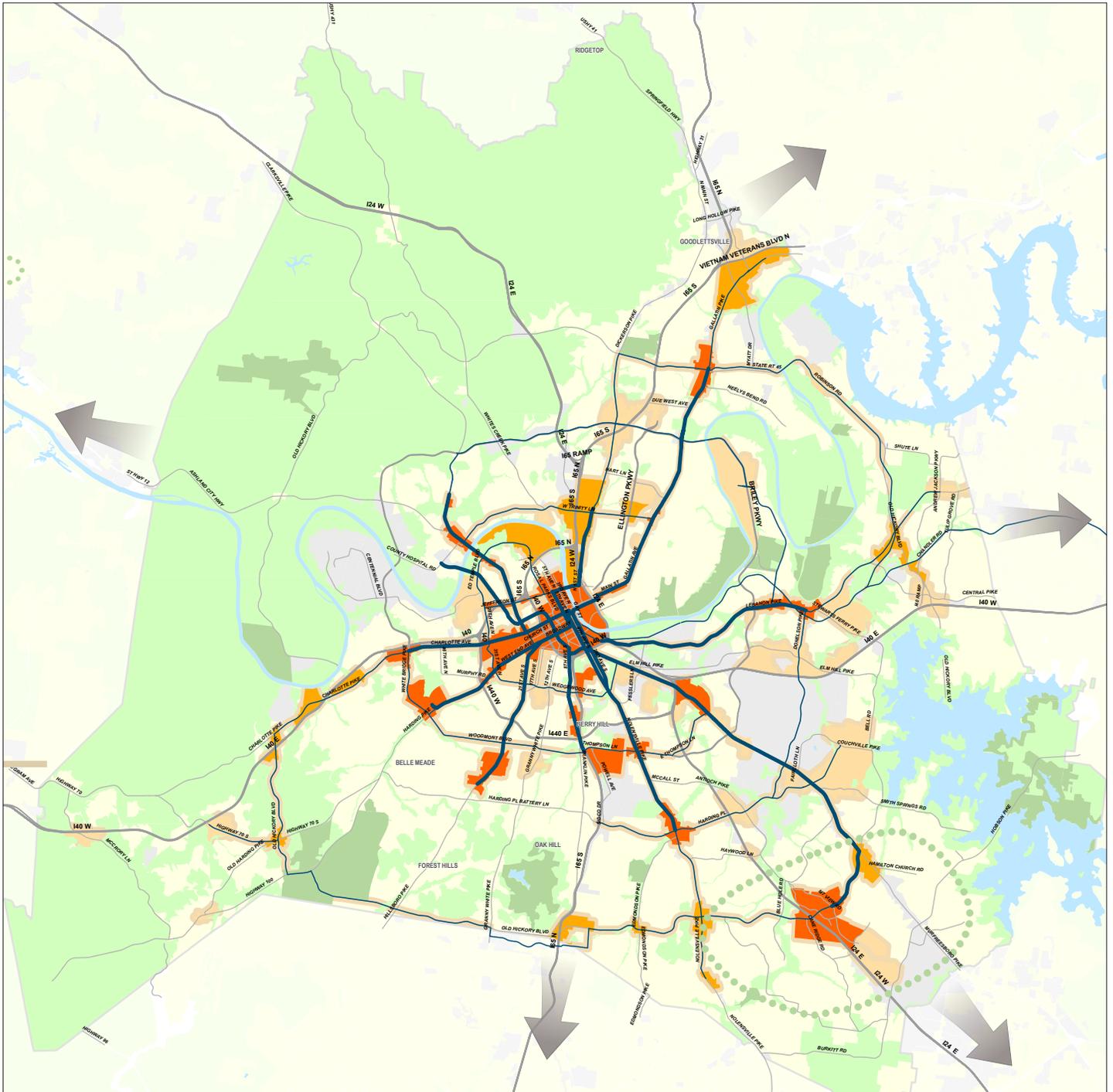
The **Growth and Preservation Concept Plan** has several key elements related to transportation:

**High Capacity Transit Corridors** are identified with **Immediate or Long-Term Needs** as thicker and more narrow blue lines on the plan. These needs are anticipated based upon existing transit ridership, changes already anticipated with more intense corridor development, and connections to Tier One Centers. It is critical to support more residential and job growth along the High Capacity Transit Corridors and to create more connections between centers. The High Capacity Transit Corridors will be prioritized during MTA's *Strategic Transit Master Plan Update* in 2015 through 2016. Regional connections are depicted with arrows to the northwest to Clarksville; to the northeast to Gallatin; to the east utilizing the existing Music City Star commuter rail line to Lebanon; to the southeast to Murfreesboro; and to the south to Franklin. The type of transit to these regional centers may need to be different in transit mode, service frequency, and nearby land use context compared to the High Capacity Transit Corridors identified in Nashville/Davidson County.

**Centers** are identified with an emphasis on coordinating capital improvements in **Tier One Centers** in darker orange. These areas are likely to need more immediate investment in the near future involving upgrades to infrastructure to meet the needs of more intense employment and housing densities. The importance of these centers to transportation is critical to providing a more walkable environment and supporting transit. Increasing the density along the corridors and centers will make more frequent mass transit viable over time.

As NashvilleNext moves into implementation, additional land use and transportation planning efforts of the identified Tier One Centers and High Capacity Transit Corridors prioritized through MTA's Strategic Plan will be needed to outline a comprehensive vision and timeline for coordinated capital improvements needed to develop a successful multimodal transportation network.

Figure 9: Growth & Preservation Concept Map



- |                |                      |                       |  |
|----------------|----------------------|-----------------------|--|
| <b>Centers</b> | <b>Green network</b> | <b>Neighborhood</b>   | <b>High capacity transit corridors</b> |
| ● Tier One     | ● Open space anchor  | ■ Transition          | — Immediate need                       |
| ● Tier Two     | ● Missing an anchor  | ● Special impact area | — Long-term need                       |
| ● Tier Three   |                      |                       | ← Regional connection                  |

## Access Nashville's Transportation Vision

Access Nashville's transportation vision guides our city's decisions in creating a multimodal transportation network focused on providing access.

*By 2040, efficient land use policies and strategic investments in Nashville's transportation network will link all road users, regardless of their mode of transportation, with meaningful access to social and economic opportunities.*

To achieve this vision, eight Accessibility Principles guide transportation improvements, linking them with the rest of NashvilleNext.

### 1. Create a place with efficient community form and transportation choices.

One of Metro's largest publicly accessible assets and fiscal investments is our transportation network, including our streets, buses, sidewalks, multi-use paths, greenways, benches, bikeways, and many other components. The design of our streets should provide access to all users, be informed by local context, and improve our city's quality of life and aesthetics. To provide access for all road users, we must reconfigure our city streets to accommodate people who ride buses, bicycle, and walk. Increasing the number of different types of users on a street, improving walkability, creating neighborhoods with a mix of uses with higher densities at strategic locations, and designing streets for slower traffic speeds will result in better places, reduced traffic fatalities, improved health for our population, and a network that operates more efficiently than one dependent on a single transportation mode. Transportation choices across the lifespan that improve accessibility to needs will only improve the quality of life of all Nashvillians. As we age, we may need different travel choices.<sup>2</sup>



Thinking through how our environment allows people with mobility needs access opportunities is critical for Nashville's future.



Building placement with wide sidewalks are crucial to link people walking

<sup>2</sup> Todd Litman, 2010, *Evaluating Public Transportation Health Benefits for the American Public Transit Association* - [http://www.apta.com/resources/reportsandpublications/Documents/APTA\\_Health\\_Benefits\\_Litman.pdf](http://www.apta.com/resources/reportsandpublications/Documents/APTA_Health_Benefits_Litman.pdf); Dumbaugh, Eric and Rae, Robert (2009) 'Safe Urban Form: Revisiting the Relationship Between Community Design and Traffic Safety', *Journal of the American Planning Association*, 75: 3, 309 — 329 - <http://dx.doi.org/10.1080/01944360902950349>; US DOT, 2014, *Safer People Safer Streets: Summary of U.S. Department of Transportation Action Plan to Increase Walking and Biking and Reduce Pedestrian and Bicyclist Fatalities* - [http://www.dot.gov/sites/dot.gov/files/docs/safer\\_people\\_safer\\_streets\\_summary\\_doc\\_acc\\_v1-11-9.pdf](http://www.dot.gov/sites/dot.gov/files/docs/safer_people_safer_streets_summary_doc_acc_v1-11-9.pdf)

## 2. Offer meaningful transportation choices.

All components of the transportation network must be coordinated to create meaningful access and choice for Nashvillians as they meet their daily needs. For example, transit service is less viable when bus stops are not supported by a functional biking and walking network. Although the choice to take transit exists, it is not meaningful to nearby residents who are unable to access the bus stop, if sidewalks are missing. Currently, there is a significant gap in providing door-to-door service for older adults. Land use decisions and infrastructure investments must be coordinated between agencies to create meaningful access and choice. The individual components of the transportation network should be appropriate for each neighborhood and the users that they serve. Thoughtful decisions about how we grow in the future can impact quality of life, specifically one's income spent on transportation and housing and ease of access to daily needs.

## 3. Sustain and enhance the economy.

In the past, people believed that moving people and goods further and faster was the key to generating economic growth. In pursuit of this goal, governments poured money into expensive highway and road widening projects that they now struggle to maintain under current fiscal constraints. Today, we know that economic growth occurs when people have ready access to jobs and services. For our economic growth to have the broadest impact, all people need meaningful access to economic opportunities. Creating transportation choices creates better access, enhances the surrounding economy, and reduces transportation costs. For example, businesses near bikeshare stations see increased economic activity,<sup>3</sup> and strategic investments in permanent transit infrastructure spur development along corridors.<sup>4</sup> Furthermore, meaningful transportation options give households the freedom to choose how to use money that they might otherwise be forced to spend on transportation.

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3 Anderson, R. et. al, 2013, *Economic Impact and Operational Efficiency for Bikeshare Systems: Local, Domestic, and International Lessons* - <https://ralphbu.files.wordpress.com/2014/01/virginia-tech-capital-bikeshare-studio-report-2013-final.pdf>

4 Walter Hook, Stephanie Lotshaw, Annie Weinstock, *More Development for Your Transit Dollar: An Analysis of 21 North American Transit Corridors* (Institute of Transportation & Development Policy) - [https://www.itdp.org/wp-content/uploads/2013/11/More-Development-For-Your-Transit-Dollar\\_ITDP.pdf](https://www.itdp.org/wp-content/uploads/2013/11/More-Development-For-Your-Transit-Dollar_ITDP.pdf)



**Bikeshare provides another option for people taking the bus to complete trips or run errands.**



**Transportation can contribute a sense of place.**



**A bike painted white to remember a bicyclist killed on Old Hickory Boulevard.**

#### 4. Increase safety and resiliency.

Driving is the most dangerous activity that most Nashvillians engage in on any given day. The chances of dying from injuries in a motor vehicle crash are 1 in 112, higher lifetime odds than most other causes of death.<sup>5</sup> In 2013, 65 people died and 222 people were critically injured in reported crashes in Davidson County.<sup>6</sup> Those fatalities cost the city \$390 million in economic costs, or \$592 per resident.<sup>7</sup> Public health professionals now work with city planners to improve road safety and to reduce preventable illnesses and deaths by encouraging more people to walk and bike to their daily activities, supported by changes in the built environment. The agencies involved in designing, engineering, maintaining, and patrolling the transportation network must work together to eliminate preventable deaths and injuries on Nashville's streets and to improve health outcomes for all people.

In creating efficient community form and transportation choices, street design will be different in an urban area of Nashville/Davidson County compared to a rural location. Policies, regulations, and programs may need to be adjusted based on the area's context, surrounding land uses, and type of street. Speed limits along city streets are one example. Evidence strongly supports reducing speed limits with traffic enforcement and designing city streets for slower speeds given the mixture of land uses, access points, and types of people moving on the street. Unsigned residential streets have a speed limit of 30 mph in Nashville/Davidson County. The injury severity of people walking hit by cars is often related to their age—older adults who are hit by a car are more likely to be severely injured or die—and the speed of the vehicle that hit the person walking. Reducing the speed limit to 25 mph with traffic enforcement and street design that encourages slower speeds can reduce the injury severity of people hit by a car. Slower speeds also benefit people driving in reducing their injury severity and amount of property damage, too.

Emergency responders also depend on Nashville's transportation network to assist people in need. In addition to considering the design of streets, Fire and EMS need alternate routes to reduce response time and assist people when main corridors are congested. During the flood of 2010, blocked streets in areas with limited street connectivity made it difficult for emergency personnel to protect lives and property. Increased street connectivity would give first responders multiple routes to an emergency

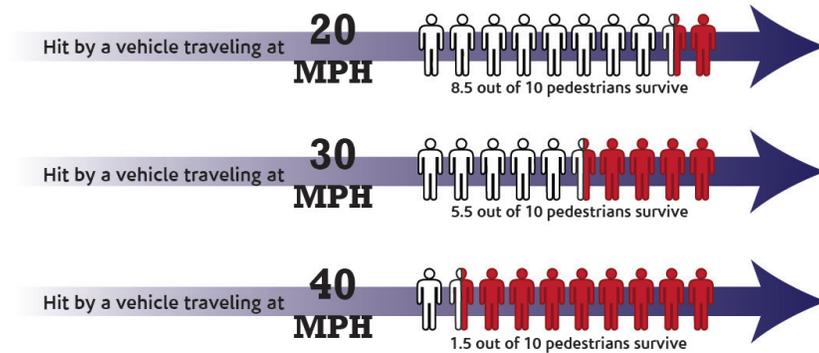
5 National Safety Council, *Injury Facts: Odds* [http://www.nsc.org/NSCDocuments\\_Corporate/2014-Injury-Facts-Odds-Dying-43.pdf](http://www.nsc.org/NSCDocuments_Corporate/2014-Injury-Facts-Odds-Dying-43.pdf)

6 Tennessee Department of Safety & Homeland Security, 2014 <http://www.tn.gov/safety/stats/CrashData/default.shtml>

7 Calculated by staff based upon AAA Study *Crashes Vs. Congestion: What's the cost to Society?* By Cambridge Systematics, November 2011 - [http://www.camsys.com/pubs/2011\\_AAA\\_CrashvCongUpd.pdf](http://www.camsys.com/pubs/2011_AAA_CrashvCongUpd.pdf)

site. In response to climate change and extreme weather events like the 2010 flood, Nashville must prioritize investments that make our transportation network more resilient and safe.

### Vehicle Speed Impacts Injury Severity



Cause of Death	Odds of Dying
Heart Disease	1:7
Chronic Lower Respiratory Disease	1:29
Intentional Self-harm	1:103
<b>Motor Vehicle Crash</b>	<b>1:112</b>
Unintentional Poisoning By and Exposure to Noxious Substances	1:119
Fall	1:152
Assault by Firearm	1:356
<b>Pedestrian Incident</b>	<b>1:723</b>
<b>Motorcycle Rider Incident</b>	<b>1:922</b>
Unintentional Drowning or Submersion	1:1043
Exposure to Fire, Flames or Smoke	1:1,418
Choking from Inhalation and Ingestion of Food	1:3,649
<b>Pedacyclist Incident</b>	<b>1:4,974</b>
Firearms Discharge	1:6,509
Exposure to Excessive Natural Heat	1: 8,321

**Figure 10: Odds of dying, from the National Safety Council. Highlighted causes of death are those that involve transportation.**

## What are the benefits of walking on health?

- » Reduce the risk of heart disease
- » Improve blood pressure and blood sugar levels
- » Maintain body weight and lower the risk of obesity
- » Enhance mental health
- » Reduce the risk of osteoporosis
- » Reduce the risk of breast and colon cancer
- » Reduce the risk of type-2 diabetes<sup>1</sup>

<sup>1</sup> *The Benefits of Walking, American Heart Association*  
- [http://www.startwalkingnow.org/whystart\\_benefits\\_walking.jsp](http://www.startwalkingnow.org/whystart_benefits_walking.jsp)

## 5. Improve human health and the environment.

Different transportation options present both positive and negative impacts on human health and the environment. When people can choose to walk, bike, or take transit, they are able to improve their health and reduce the impact of environmental pollution associated with driving. Public health professionals recognize that a city's urban fabric – its buildings and street layout – can positively contribute to increased physical activity. People who live and work in walkable neighborhoods spend more time being physically active, spend less time driving, are more physically fit, and live lives that emit less pollution.<sup>8</sup>



**Greenways provide a buffer between development and streams which improves water quality and decreases flooding risks. They are used for recreation but are also a link in today's transportation system.**

## 6. Ensure financial responsibility.

Installing and maintaining transportation infrastructure is costly, and opportunities to increase transportation budgets are limited. Moving forward, all levels of government must work within existing budgets to maintain transportation assets much more efficiently. Because our region's street and highway network is mostly built, our top investment priorities are maintaining existing facilities and increasing meaningful access to different transportation modes.

<sup>8</sup> *Landstreet, Julia, Dr. Bill Paul, and Food Policy Council, NashvilleNext Health, Livability, and the Built Environment Background Report (March 2013)* <http://www.nashville.gov/Portals/0/SiteContent/Planning/docs/NashvilleNext/next-report-Health-Livability-BuiltEnvironment.pdf>

## 7. Make decisions equitably.

In an equitable transportation system, all residents share in the costs and benefits associated with transportation investments within the overall system in a way that is fair and transparent. Major infrastructure investments that serve the greater good should not unduly burden any particular person or group with environmental or economic costs. All Nashvillians benefit when neighborhoods that have unfairly shouldered the costs or been excluded from the benefits of past infrastructure investments are revitalized with equitable investments that support today's needs.

In some instances, difficult decisions will be made about how we move our transportation network forward. Streets that have not been reassessed for today's transportation needs have potential to improve accessibility. Street space can be reorganized for people taking transit, walking, and biking, and new street connections can be established. Transportation projects are sometimes overwhelming and scary because they can change who can access an area and how one might quickly get from one destination to another. Saying no to proposed solutions also means that we are saying yes to our inaction. If we decide to not build dedicated transit lanes, we should expect that some people will not be able to conveniently access an area and traffic congestion will remain unchanged. If we oppose street connections, we must anticipate that some residents will bear a greater burden of traffic on adjacent streets, major streets will be more clogged with vehicles, and our time to get to destinations will increase. If we keep transportation budgets as they are today, many Nashville neighborhoods will not have sidewalks, and we will spend most of our budget on maintaining our street system.

Tough decisions will be made that benefit the entire transportation network. In making those decisions, Metro must actively seek and value the input of its residents while exploring funding opportunities and before making significant transportation investments. This challenging task requires transparency early and often as transportation investments are planned, prioritized, funded, constructed, and maintained.

### **Benefits of a Multimodal Transportation Network:**

1. More transportation choices – options will improve access for all people
2. Less street maintenance – roads are a significant maintenance burden on public resources
3. Improved safety – mass transit is a safer form of travel
4. Increased savings – less money devoted to fuel and car maintenance
5. Less parking – subsidized car storage takes up significant city space and resources
6. Reduced air pollution – sharing trips means fewer carbon emissions
7. Reduced energy use – less fuel is used
8. Improved health – walking and biking improve fitness
9. Less congestion – options open up access to more people

### **8. Address transportation from a regional perspective.**

Nashville is Middle Tennessee’s major employment center and will continue to occupy that role in the future. Providing access to jobs within Davidson County and across the region is crucial. Middle Tennesseans may live in one county, but come into Nashville to work and support local businesses and our tax base. Regional commuting patterns pose challenges to be solved by working together on regional solutions. The ways that people move around Middle Tennessee must continue to evolve within the context of a street network that is mostly built. Nashville must work closely with surrounding cities and counties to improve the operation of our existing transportation infrastructure and the creation of the multimodal network of the future.

## Complete Streets

One strategy to achieve the Accessibility Principles is through our commitment to creating Complete Streets. Complete Streets are safe, comfortable, and convenient for all road users, no matter who they are or how they travel. They give people meaningful choices in how they access social and economic activities around Nashville. In recent years, Nashville has worked to adopt policies that will ensure that our streets are planned, designed, constructed, operated, and maintained to provide safe access for all people. The adjacent graphic outlines how we should be thinking of Nashville's streets in the future.

**Nashville's roads are built, but they are not complete. We must ensure we can Complete the Trip.**

To complete the trip, we need Complete Streets with the appropriate infrastructure for people walking, biking, and taking transit. Because all people walk at some point in their trip, and because Nashvillians have expressed a preference for more transportation choices, we must design our transportation system to meet Nashvillians' needs at each stage of their trip.

### Metro Complete Streets Policy

On October 6, 2010, Nashville's Mayor Karl Dean signed Executive Order No. 40, a Complete Streets Policy for Metropolitan Government. The order directs all departments, boards, and commissions of the Metropolitan Government to give full consideration to the accommodation of the transportation needs of all users, regardless of age or ability, including those traveling by private vehicle, mass transit, foot, and bicycle. All current plans, guides, regulations, and standard drawings must comply with the Executive Order. The order is not intended to guide just one-time projects or require immediate retrofits, but instead to direct everyday decision making that will produce long-term results.

## Nashville Puts People First to Complete the Trip

- 1 Pedestrians**  
all people 
- 2 Bicycling**  
people using bikes and bikeshare 
- 3 Transit**  
people using transit 
- 4 Moving goods**  
people transporting goods 
- 5 Car sharing**  
people carpooling 
- 6 Personal car**  
people driving themselves 

**Figure 11: Complete Streets place the pedestrian at the highest priority**

## Completing the Trip Stories

On a Complete Street, Jennifer walks to the bus stop along appropriately wide, well maintained, and well-lit sidewalks along Dickerson Pike that are accessible to people walking of all ages and abilities. A signalized mid-block crosswalk near Dellway Avenue helps her safely and comfortably cross five lanes of traffic to the bus stop even with children or groceries in tow. A signed bus shelter provides arrival time information for the next bus, route information, and protection from the elements. Sidewalks connect to destinations along Dickerson Pike to allow her and her neighbors complete the trip.

Leslie chooses to bike up South Hamilton Road to the bus stop at Clarksville Pike each morning for work. She owns a car but will bike and bus a couple of times each week to reduce her maintenance costs and get some exercise. She uses the bike rack on the front of the bus to carry her bicycle and a bike locker at her destination stop near Music City Central to securely stow her ride. An app on her smartphone tracks where the bus is located in real-time, helping her determine the best time to leave her house on Doak Avenue each morning. She rides along low-speed streets in her neighborhood to a connected network of protected bikeways along South Hamilton Road that allow her to bike to the bus stop and other common destinations along Clarksville Pike safely and comfortably. Shower and locker facilities at her workplace allow her to change into business attire and complete the trip.

Tomas drives his car to the Stones River Greenway trailhead in Hermitage to bike

to work in East Nashville. The traffic signals are synchronized along Lebanon Pike to move automobile traffic efficiently during rush hour and good signage indicates the trailhead access point from Lebanon Pike. He enjoys his leisurely ride to work along the greenway over to Shelby Bottoms, knowing that well signed and maintained bike lanes await him on major streets to his office on Woodland Street. His workplace has a conveniently located bike rack and changing facilities to complete his trip each day.

Alexus's employer provides an EasyRide pass as a benefit through MTA's commuter program in which employers pay for transit rides to work. Alexis walks to Charlotte Pike where a new Neighborhood Mini-Hub was built near the West Police Precinct. Before the new Neighborhood Mini-Hub was built, she would take the bus into downtown along Charlotte Pike and out on Hillsboro Road to Green Hills which took an hour each morning. Now her commute is 20-25 minutes. At this Neighborhood Mini-Hub, buses link to Green Hills, West Nashville, Downtown, and TSU using White Bridge Pike as a crosstown connector. She scans her EasyRide pass when boarding the bus and puts her headphones on while checking the latest news on her smartphone. She arrives in Green Hills each day stress-free and ready to work in Burton Hills. Sidewalks along Hillsboro Pike link to her office to complete her trip.

Michael uses a walking cane for support while walking downtown during his lunch break. A driver across Deaderick Street waits for him because he has already requested to be picked up on his smartphone. The

driver pulls up and waits as he crosses the street. The pedestrian signal has been timed for people of all abilities and a generous median gives him a safe place to wait in case he cannot make it across during one signal phase. Once across the street, the driver helps him into his car. Good crossing infrastructure was significant in helping him complete his trip.

Finally, Sofia drives to work each day from Antioch to downtown. Her employer does not provide parking, and there is a major convention generating more traffic in downtown today. People are being encouraged to park and take shuttles into downtown, so she will not be able to park in her usual location. Instead of getting frustrated, she uses her smartphone to look up other parking facilities, rates, and spaces currently available. Meanwhile, specialists in a transportation center monitor congestion on the streets she drives. They actively manage traffic signals to move her and other drivers more efficiently. She is routed around temporary detours to a parking spot using her smartphone's GPS. When she gets to her spot, she pays from her phone rather than searching for loose change for the meter. Sidewalks, crosswalks, and pedestrian signals help her complete her trip to work. At lunch, she uses her smartphone app to see that the bikeshare location down the street has several bicycles available, and she checks out a bike to meet her partner for lunch.

## Achieving Complete Trips

Technology, small changes to streets, investments in walking and transit facilities and accommodations at destinations give Nashvillians meaningful transportation choices and expand access to social and economic opportunities. Like all major cities, it will take time for Nashville to fully implement a Complete Streets strategy that completes the trip. The process requires many Metro departments to work together with community partners as they plan and design streets differently whenever improvements to the existing transportation network are made.

An example of this effort to incorporate Complete Streets was the 2011 update to the *Major and Collector Street Plan* (MCSP) entitled *Implementing Complete Streets*. This was the first comprehensive effort between Metro departments to integrate Complete Street concepts into guidance for future development. The MCSP lays out required street dimensions and has been critical in connecting land use plans to the city's various transportation plan components to ensure good urban form that does not discourage people from walking and biking. The MCSP assists in establishing a building setback based upon the zoning that is appropriate for the envisioned street character. In some cases, bikeway components and increased sidewalk widths with adjacent street trees are guided by the MCSP with redevelopment.

Metro also uses the MCSP to assess needs for road users on Metro-led street projects. The public-sector pace of implementation is limited by financial constraints that can be frustrating to residents. Moving forward, city and state officials must explore funding opportunities and make equitable conclusions by proactively engaging residents in the decision-making process. Critical decisions regarding design solutions and funding choices must be transparent and fair.

The NashvilleNext policies and action items reinforce that Metro Government will uphold Complete Streets as the standard to complete the trip. Transportation investments will serve all people who use our streets. Projects will meet needs voiced by the community and trends Nashville is facing. Transportation planning and urban design will strive to make streets more livable by encouraging more social interaction, mixing together a variety of land uses to serve a broader range of daily needs, and balancing access to those needs. Our streets are used for more than just moving vehicles – they must contribute to Nashville's quality of life by



**Upgrading outdated traffic signals can increase mobility.**



**Providing detour information for people biking and walking is crucial in a multimodal transportation network.**

## What is a Leading Pedestrian Interval?

A Leading Pedestrian Interval (LPI) gives pedestrians a 3 to 7 second walk signal to begin crossing the street before drivers may proceed through an intersection. LPIs enhance the visibility of people on foot and reinforce their right-of-way over turning vehicles. Applying this strategy to signals within Downtown and Centers is critical to improving walkability and safety in the future.



Portions of Gallatin Pike need sidewalks for people to get to their destination.

## What is a bikeshare network?

Bikeshare is a form of public transportation that gives people access to a fleet of shared bicycles. Bikes can be checked out from a bikeshare station for short-term trips and returned at any station in the bikeshare network. In Nashville, the network is called Nashville B-cycle. Residents and visitors can take part in the system with daily, weekly, monthly, or in annual memberships. Like most major bikeshare systems in the United States, a credit card is required to use the network. As the network evolves and technology changes, Nashville must improve access to the network for all people in order to achieve the Access Nashville vision.

enhancing access, prosperity, equity, health, and safety. By putting people first to complete the trip, Nashville's Complete Streets will create a livable, vibrant city with meaningful transportation choices.

## People walking

All people are pedestrians at some point during their trip. Walking is the most economical, environmentally friendly, and healthy form of transportation. However, on many of our city's streets, people walking are exposed to more hazards than other users of the transportation network. Nashville's transportation investments must promote safe pedestrian access for people of all ages and abilities. For example, intersections must be improved to allow safe crossing for all people and streetscapes should be maintained with street trees and benches to increase pedestrian safety and comfort. As density increases, redevelopment should include wider sidewalks to handle increased pedestrian traffic. Because Nashvillians have expressed that walkability is one of their top priorities, the city should pursue all feasible opportunities to expand our sidewalk network. The essential component of Nashville's built environment should be complete streets that put people first.

## People bicycling or using bikeshare

Many Nashvillians enjoy riding a bicycle for transportation and recreation. Younger generations in particular are increasingly embracing active transportation and reducing the costs associated with owning and maintaining a car.<sup>9</sup> Over the past decade, the city has dramatically expanded its network of bikeways and greenways, installed bike racks on all city buses, implemented a bike share system, and most recently passed a bike parking ordinance that requires many new developments to include secure bicycle parking. As a result, Nashville was designated as a bronze-level Bicycle Friendly Community by the League of American Bicyclists in 2012 and is currently working to obtain silver-level status.

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9 *Millennials in Motion: Changing Travel Habits of Young Americans and the Implications for Public Policy* by Tony Dutzik, Jeff Inglis, Phineas Baxandall for the U.S. Public Interest Research Group Education Fund – October 14, 2014 <http://www.uspirg.org/reports/usp/millennials-motion>; Benjamin Davis and Tony Dutzik, *Frontier Group*; Phineas Baxandall, *U.S. PIRG Education Fund Transportation and the New Generation: Why Young People Are Driving Less and What It Means for Transportation Policy*, April 2012 - <http://www.frontiergroup.org/reports/fg/transportation-and-new-generation>

Moving forward, Nashville must increase access to bicycling by creating strategic connections between existing bikeways and installing 21<sup>st</sup>-century bicycle infrastructure that increases safety and comfort for all road users. Nashville needs to encourage bicycle-friendly corridors that allow all residents to bike safely. Bicycles help people access social and economic opportunities, be healthy, protect the environment, reduce congestion, save money, and have fun. Over the next 25 years, our transportation network will evolve to give all Nashvillians meaningful opportunities to realize these benefits.

## People taking transit

Nashville's public transportation system is comprised of local bus and paratransit service operated by the Metropolitan Transit Authority (MTA). Additionally, the Middle Tennessee Regional Transportation Authority (RTA) operates the Music City Star commuter rail line and bus routes that connect to adjacent counties. To achieve the Access Nashville vision, NashvilleNext calls for a more robust rapid transit network with adequate levels of frequent transit service between areas that will undergo the most growth. In order to create meaningful transportation choices, Nashville's mass transit system must be further integrated with other transportation modes by adding complete sidewalk networks around transit stops, additional bike parking and bikeshare stations, park and ride lots, and more frequent connections to long range transportation services. Technological innovations like Transit Signal Priority, which gives buses the ability to prolong a green traffic signal along a route to stay on schedule, will continue to be implemented and allow for more efficient service. In order to achieve rapid transit service, Nashville's corridors must be reconfigured with dedicated transit right-of-way that provides quicker and more efficient bus service, queue jump lanes at intersections, or even a dedicated lane BRT or light rail corridor linking Nashville's centers. Mass transit that meets the needs of Nashville's residents and visitors is our city's best tool for managing congestion and operating our existing transportation network more efficiently.

## Moving goods

The movement of freight into and through Nashville is critical for the economic prosperity of our region and the Southeastern United States, as well as for meeting the daily needs of our residents and businesses. Access Nashville balances the needs of freight carriers and other road users. There are tradeoffs in providing quick access for trucks through

### What is a park and ride lot?

People park their cars in park and ride lots around the city to catch mass transit, bicycle, or check out a bikeshare to get to their final destination. Currently, Nashville MTA and RTA maintain signed park and ride lots for catching a bus into town.

### What is paratransit?

Paratransit is a door-to-door transit service for people with temporary or permanent disabilities who are not able to ride fixed-route mass transit. People who are unable to independently ride a bus, unable to get on or off a bus, or unable to get to or from a bus stop qualify for paratransit service. Nashville MTA provides paratransit service called AccessRide as a supplement to the fixed route network. Rides must be reserved and can be scheduled one to seven days in advance.

### What is a Bicycle Courier Service?

Even in today's highly connected, digital age, there is a need for the quick delivery of tangible goods such as court documents, publications, packages, or even lunch. In congested areas, bicycles may be the most size-appropriate vehicle to make these types of delivery.

In Nashville, multiple entrepreneurs have opened bicycle courier services, and business owners have embraced these services because they are fast, reliable, and affordable. Using size-appropriate vehicles like bicycles for urban deliveries creates more room on the road for people who use other modes.



**Moving goods through Middle Tennessee is more difficult on urban interstates.**

a city especially on surface streets or in-town interstates. Oftentimes strategies that improve truck access can negate efforts to make an area more walkable. A freight movement plan between Metro Planning, Metro Public Works, TDOT, and the Nashville Area MPO is needed to outline the best routes and street design regionally for moving goods. To operate our transportation network most efficiently, freight that is not destined for Nashville should bypass the city on high volume roads like State Route 840, rather than contributing to congestion on urban freeways. For local deliveries, freight carriers can increase the efficiency and economy of their service with fleets of vehicles that are size-appropriate for constrained city streets. Industrial sites and other businesses that depend on large volumes of freight movement should be located in areas where interstate connections and wider streets provide easier access for people driving trucks and railroad connections give businesses the opportunity to move goods without adding to congestion on our roads. To prevent conflicts, these areas should not overlap with denser, more walkable types of development. Nashville can operate its transportation network more intelligently to allow for efficient and cost-effective freight movement in our region without negatively impacting other road users.

### **What is carsharing?**

Carsharing is where people rent vehicles for a short period of time, often by the hour and for short trips. They are attractive for those that need the occasional use of a vehicle but don't want the cost of owning a car. Carsharing encourages members to drive less often and use other modes of transportation. ZipCar, a carsharing company, locations are currently accessible near Vanderbilt University's campus and at the Nashville International Airport.

### **People driving in carpools, vanpools, or ridesharing**

Carpools, vanpools, rideshares, and carshares are programs that maximize efficiency by moving more people in one vehicle at a time. Carpooling often involves commuters sharing rides to work with their neighbors or families coordinating school pick up and drop off with classmates. Carpooling networks have been established to link people headed to the same destination or to address gaps in which mass transit cannot fulfill. Carpooling often reduces transportation operating costs for car owners, and high occupancy vehicle (HOV) lanes along I-40, I-65, and I-24 can be utilized to speed up commutes, reduce congestion, and improve air quality. More recently, the carpooling concept has evolved with technology to connect riders in real-time. The various forms of carpooling increase access, create choice, improve efficiency, and contribute to greater public interaction than driving alone.

### **People driving in single occupant cars**

For most of the 20<sup>th</sup> century, transportation planners and engineers built and designed street networks primarily for people driving cars. Under current fiscal constraints, governments across the country are struggling to maintain the many miles of infrastructure developed to support car

traffic. Even if revenue was available, we could not solve Nashville's congestion problems by building or widening roads.<sup>10</sup>

Congestion on our city streets is likely to not simply disappear because the car is still the primary transportation choice for many Nashvillians and we are a growing city. Despite its frustration, road congestion is a strong indicator of a vibrant corridor because people often want to be in a place around the same time, accessing similar services, or commuting to significant employment centers. Widening roads is costly and tends to only temporarily relieve congestion. When street capacity is increased to support more cars, surrounding land uses sprawl out with car-centric development patterns and soon the additional capacity is clogged by more single-occupancy-vehicle trips. This is the phenomenon called induced demand, or latent demand, where after a supply increases more of a good is consumed. While the new lanes may provide temporary congestion relief, they also add a permanent maintenance burden. At some point, many drivers look to alternate routes or another mode of transportation.

Future transportation investments must focus on maintaining existing infrastructure and operating our current system more efficiently by expanding access to additional transportation modes and in some instances reducing street capacity. A more efficient system developed within the constraints of the existing street network can work better for drivers, too. Efficiencies are achieved while reconfiguring streets for additional transportation modes and implementing elements that can improve traffic flow through traffic signal coordination and smart signal systems, reallocating travel lanes to respond to changing land uses, reconfiguring lanes for other travel modes, or reducing congestion related to crashes.

Encouraging a mixture of land uses, improving accessibility, and developing transportation choices for more people to access an area is needed with less emphasis on driving alone in the future. These objectives have multiple benefits including less street maintenance, improved health, more disposable income, and reduced impact on the environment.

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<sup>10</sup> Todd Litman, *Generated Traffic and Induced Travel: Implications for Transport Planning* <http://www.vtpi.org/gentraf.pdf>; Gilles Duranton and Matthew A. Turner, *The Fundamental Law of Road Congestion: Evidence from U.S. Cities*, National Bureau of Economic Research Working Paper No. 15376, September 2009 - <http://www.nber.org/papers/w15376.pdf>

## How do Green Streets make a more complete street?

Streets are a major source of stormwater runoff that contributes to flooding and pollutants that end up in our streams and rivers – the source of our drinking water. Green Streets use flexible design guidelines to allow stormwater runoff to percolate into rain gardens or swales that improve stream quality, reduce flooding, and decrease construction costs for the city and private homeowners.



**Deaderick Street was Nashville's first green street.**



**The 28<sup>th</sup>-31<sup>st</sup> Avenue Connector includes green infrastructure.**

## Green Streets are More Complete

After a rainfall, water is either absorbed into the ground (percolation) or flows into waterways (runoff). Percolation helps to improve stream health, lessen flooding, and increase water uptake by plants. Often, structures and surfaces associated with development, such as streets, parking lots, and rooftops, are impervious. Impervious surfaces prevent rainwater from percolating into the soil and also increase the rate and volume of runoff, causing stream pollution, downstream flooding issues, erosion, and other negative consequences. Nashville's existing street network is a significant contributor to stormwater runoff. Roadside curbs funnel water into storm drains connected to pipes that transport the rainwater to nearby creeks and streams faster than when rainwater soaks into the ground. While these methods are efficient in removing stormwater from the roadway, they can negatively impact the natural water cycle, cause flooding in overburdened streams, contribute to polluted waterways, and erode stream banks. After particularly intense storm events, the stormwater system in some parts of our city may overflow into a combined sewer, which can result in raw sewage draining into the Cumberland River.

Green Streets use innovative infrastructure to work with the natural water cycle during storm events, lessening negative environmental impacts. Stormwater can be directed into rain gardens to percolate into the ground. Systems can also be designed to reuse the water for other purposes such as irrigation or plumbing. Instead of traditional asphalt, pervious pavement can also be utilized to filter water more directly into the ground. There are now numerous public and private-sector examples in Nashville of pervious pavers used in parking lots. Metro Water Services created a Low Impact Development (LID) Manual that outlines the different techniques to handle stormwater that can be applied on private development and utilized on Metro's public sector investments, and Metro Public Works has green street standards that can be used in subdivisions and on Metro street projects. Green Streets concepts can help a street be more complete, but they may also require a different approach to infrastructure maintenance.

Metro Public Works has recently completed three major public sector Green Streets investments. Downtown Nashville's Deaderick Street is Nashville's first Green Street project and employs a myriad of Green Streets concepts and walkability improvements. A median of plants separate the car lanes, while rain gardens and pervious concrete absorb and properly drain rainwater. New LED traffic lights were installed, as well

as LED pedestrian signals and solar-powered parking meters. There are 360-degree safety lighting kiosks on wide sidewalks. The city also employed Green Streets concepts on the 28<sup>th</sup>-31<sup>st</sup> Avenue Connector and the extension of Korean Veterans Boulevard. Significant public investments of this nature should utilize Green Streets concepts in addition to meeting Complete Streets objectives.

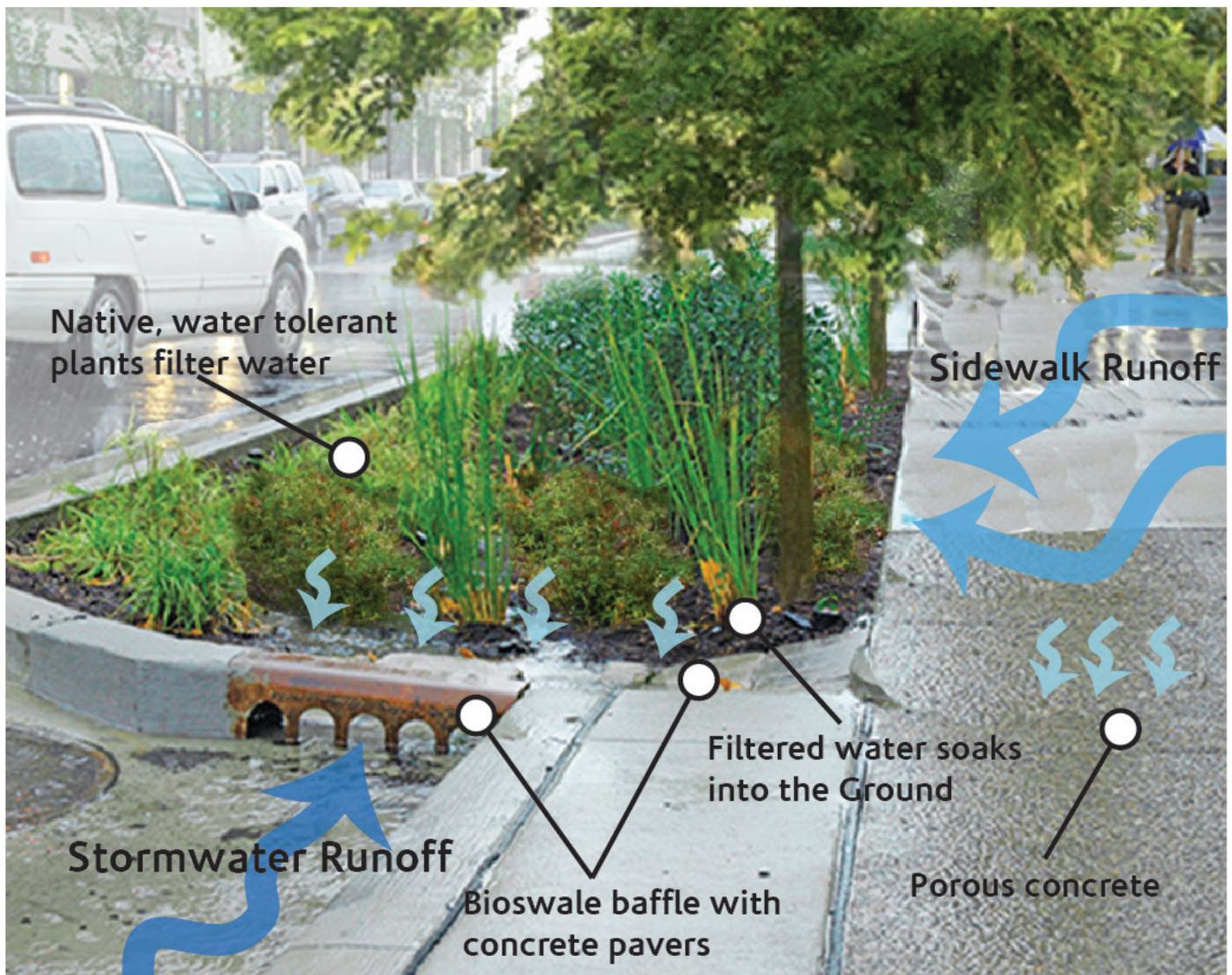


Figure 12: Green Street elements demonstrated on Deaderick Street

## What is placemaking?

Using arts, culture and creativity to build street character and quality of place.

## Complete Streets have Many Functions

The primary function of our transportation network is to provide all road users with meaningful access to economic and social activities. In Nashville, many of our streets act as places for people to congregate, celebrate, play, and interact. Broadway is a vital transportation corridor, and it is also the outdoor venue for Nashville’s renowned Fourth of July and New Year’s Eve celebrations, among other events. Neighborhood streets and sidewalks allow residents convenient access to the larger transportation network, and they also host block parties or provide recreational opportunities for Nashvillians young and old. Complete Streets are designed to embrace the many functions of our transportation network—Nashville’s most extensive and accessible public space. The idea that streets can move people—walking, biking, taking transit, and driving—and serve as public gathering places has led the city to think of new kinds of streets and alleyway designs to meet the community’s needs.

### *Living Alleys*

Living Alleys integrate Green Streets concepts with placemaking objectives. In Living Alleys, landscaping and active uses reclaim an often-overlooked piece of the built environment for people with the features of the alley tailored to the space available and the needs of the community and the alley’s needs. Living Alleys can reduce stormwater runoff through pervious pavement and also improve aesthetics, elevating the alley from its traditional role as a place for trash pickup and backdoor deliveries. Programming strategies may encourage city or neighborhood life to take place in the alley, or residents may simply embrace the alley as a low stress corridor for walking dogs or meeting neighbors. Printers Alley and the Ryman Alley are examples of Living Alleys in Nashville. More Living Alleys should be developed in the future in both urban and neighborhood contexts.



**Grand Avenue is an example of a bike boulevard as a low-stress connector.**

### *Bike Boulevards*

Bike Boulevards are strategically identified local street corridors that are outfitted with traffic calming measures to maintain access for all road users while prioritizing local and active transportation and accommodating recreational uses. Bike Boulevards can be implemented with curb extensions, road reconfigurations, diverters, roundabouts, and many other infrastructure components that permit access while discouraging non-local

automobile traffic from using the corridor as a cut through. Edgehill's Grand Avenue is an example of the Bike Boulevard concept. A plaza and a park along the corridor allow for the unimpeded movement of cyclists and pedestrians and also host a neighborhood playground. The street cannot be used as a cut through, but all road users can still access all houses along the corridor, regardless of their mode of travel. Nashville should embrace the Bike Boulevard concept to implement strategic, low-stress connections between existing bikeways, make neighborhoods safer and more desirable for all users, and more efficiently operate our existing transportation network.

### *Festival Streets*

Festival Streets operate like any other street in the transportation network—except that they can be easily closed to automobile traffic regularly to host concerts, performances, and other community events. Examples of Festival Streets in Nashville include 5<sup>th</sup> Avenue South between Broadway and Korean Veterans Boulevard and Jackson Street between 3<sup>rd</sup> and 4<sup>th</sup> Avenues North. These streets build community by providing opportunities for Nashvillians to interact with one another and participate in cultural activities. Nashville should upgrade streets like Broadway that are commonly closed for community events to function as Festival Streets. Anticipating all uses of a street in its design will increase safety for all road users, create economic opportunities, and allow for the more efficient operation of our transportation network during special events.

### *Parklets and Plazas*

For most of the 20<sup>th</sup> Century, Nashville's transportation network was expanded to increase mobility for people driving cars, and many urban streets were widened. In some cases, current automobile traffic volumes do not warrant the expanded lane widths as development patterns change and more urban residents walk, bike, or use transit. When extra right-of-way exists in neighborhoods that have little access to parks and open space, the city can repurpose part of the roadway into a public plaza by adding planters, seating, and other affordable and aesthetically pleasing improvements. These Parklets and Plazas put people first by providing attractive public spaces for residents to be outdoors and engage in social activities. The reconfigured roadways are also safer, as drivers behave more cautiously in narrow lanes. Nearby businesses also benefit from the



**5th Avenue is an example of a festival street without curbs to encourage people walking and slow traffic.**



**A temporary parklet on Broadway during Park(ing) Day.**

## Why are there no sidewalks in my neighborhood?

Suburban neighborhoods in Nashville were rapidly built from the 1950s to the 1980s when planners focused on driving as the primary mode of transportation and land uses were often separated with commercial districts kept apart from residential areas. As the suburbs developed rapidly, Nashville could not always afford to expand necessary infrastructure to new parts of town, resulting in large lots to accommodate septic tanks and roadside ditches to manage stormwater. Constructing sidewalks with new streets was not required. These solutions saved money in the short term, but created long term barriers to walkability.

Beginning in the early 1990s, city planning philosophies evolved to de-emphasize the separation of land uses, require pedestrian infrastructure, and promote appropriate density. Planners now recognize that many residents cannot afford to own a car, are unable to drive, or simply desire transportation options instead of being required to drive for every trip. To improve quality of life and expand access to transportation choices, Nashville has budgeted more than \$100 million to fix and expand Nashville's sidewalks network since 2004, and many additional miles of sidewalk have been replaced or installed by the private sector through redevelopment.

Still many neighborhoods lack basic pedestrian infrastructure and additional resources are needed to construct sidewalks in areas across the city, so people can safely walk to transit, services, social opportunities, and other daily needs. Portions of Clarksville Pike, Dickerson Pike, Charlotte Pike, and Hillsboro Pike, which are identified as High Capacity Transit Corridors, are examples where sidewalks are lacking along major corridors with existing mass transit service. Retrofitting all streets in Nashville with sidewalks is costly because sidewalk construction usually means much more than laying down a strip of concrete. It requires implementing curb and gutter to handle stormwater and potentially acquiring right-of-way from property owners. Not addressing sidewalks more comprehensively will be much costlier and shift the burden onto future generations of Nashvillians. In communities without complete sidewalk networks, transit is less viable and more expensive to implement, household transportation and healthcare costs are higher, pedestrian injuries and deaths are more frequent, and people who are unable to drive are socially isolated.

Compared to many challenges that a city faces, building sidewalks is not a particularly divisive issue. Securing adequate funding for sidewalk construction, on the other hand, historically has been challenging for Nashville and other governments that developed with a suburban character. Nashvillians have expressed a strong preference for walkable communities. Local leaders should respond by making sidewalk funding a higher priority in Nashville's annual budget.

streetscape improvements and more pedestrian activity. Nashville should repurpose surplus street right-of-way in areas with limited access to parks and open space to benefit all road users.

## *Open Streets Events*

During Open Streets, sections of streets which regularly handle traffic are closed to vehicles and opened up to carefree walking, biking, and other active uses. Programmed activities, cultural activities, and vendors are encouraged to participate. The Tomato Arts Festival and Sevier Park Fest are types of Open Streets events organized by private entities. Nashville will undoubtedly continue to host many types of Open Streets events, and the transportation network must be able to operate efficiently for all road users while prioritizing active uses during these events.

## *Road Reconfigurations*

Many roads carry fewer cars than they were designed to handle. These facilities can fail to provide safe places for walking and biking, transit, parking, or other uses. Overbuilt roads can be reconfigured into complete streets quickly and at a minimal cost by reallocating their extra capacity for turning lanes, bike lanes, or on-street parking. Belmont Boulevard and Magnolia Boulevard are examples of this type of Roadway Reconfiguration, also known as a "Road Diet." Across the country, communities are embracing roadway reconfigurations for their proven ability to reduce the frequency and severity of crashes. Roadway Reconfigurations typically do not significantly impact a street's level of service and may improve throughput by reducing left-turn queuing during peak hours. There are more than 180 miles of major streets in Davidson County that could potentially benefit from a Roadway Reconfiguration.

## Case Study: Dickerson Pike

Dickerson Pike is an arterial-boulevard maintained by TDOT with approximately 13,000 to 14,000 vehicles per day near Dellway Drive. The photo below shows existing conditions. Dickerson Pike was widened to five lanes north of Douglas Avenue decades ago. Most of this portion of the corridor has no sidewalks and people are often walking in ditches and through parking lots. The speed limit is 40 mph. The following figure shows a cross section of the existing conditions on Dickerson Pike. Traffic tends to peak at key intersections such as Trinity Lane for approximately 30 to 45 minutes in the morning going southbound to downtown and about an hour in the afternoon going northbound. Other times of the day, and along segments between intersections, the street is rarely congested with traffic. The 23 Dickerson route serves the corridor with weekday service about every 20 minutes. Busses are in mixed traffic, meaning they share the same lane as the cars.

Three cross sections are shown that depict how space on Dickerson Pike could be used differently within the existing pavement width. There are additional technical issues to think about in each concept, but they accommodate different people using the route. We should not assume that just because five lanes of traffic serve the needs of people driving for a couple hours each day, that the street must remain as-is.



12' Travel Lane with Sharrow

11' Travel Lane

11' Turn Lane

11' Travel Lane

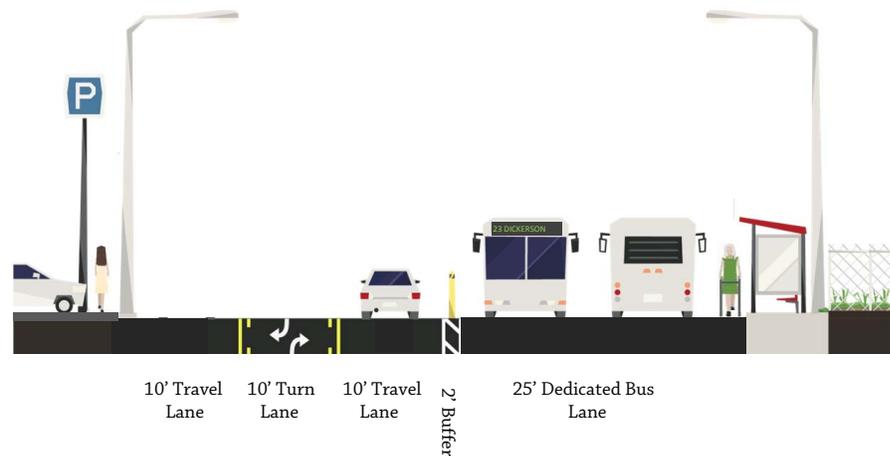
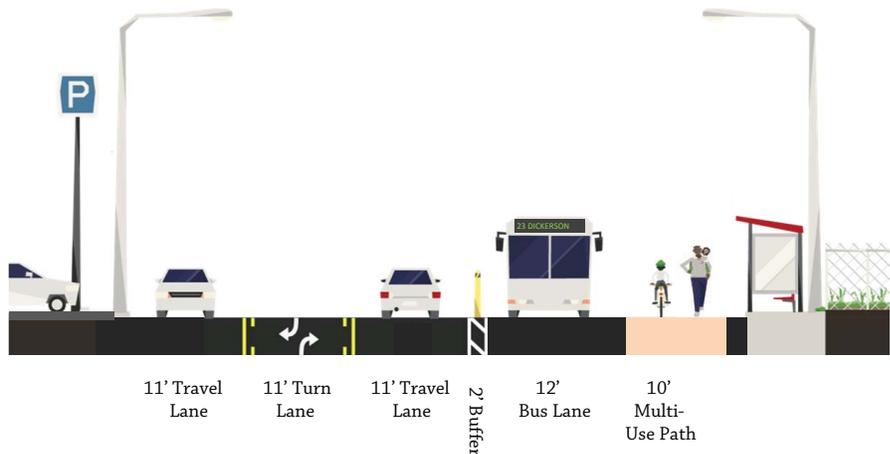
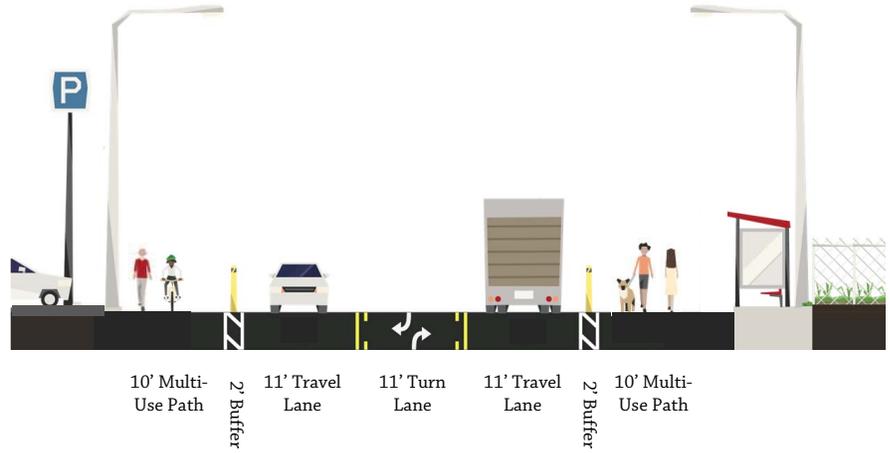
12' Travel Lane with Sharrow

In the first concept, a multi-use path is added on both sides by providing a protected buffer to those walking and biking. Dickerson is a high ridership route within MTA's system and often people are seen walking next to traffic in ditches or dodging in and out of the travel lane. This concept would provide the needed dedicated space for people walking and biking without the tremendous expense of constructing sidewalks.

In the second concept, a shared space is created for busses and people walking and biking. This use of space would have other issues that MTA drivers would need to carefully monitor, but a concept like this could be explored to get busses through congested intersections quicker while also providing needed space for people walking and biking.

Finally, the last concept shows space for busses only. It does not provide sidewalks, though, so pedestrian infrastructure would still be needed within the 80' of right-of-way that is there or acquired through additional purchasing. This concept would promote more frequent bus service and would rely on significant investment in sidewalks and stormwater infrastructure.

These concepts are not engineered, but they illustrate some different ways we can think about our street space in Nashville with limited costs. In each one, there are issues to discuss such as driveway access points and improving signaling, but the majority of the changes are occurring within today's street pavement width with pavement markings and flexible barriers.



## Access Management

One factor impacting accessibility is limiting the access to adjacent properties for certain modes of transportation. This is often utilized on interstates where speed and mobility are prioritized over access. Cars are only allowed to access streets at certain interchanges, and pedestrians and bicyclists are prohibited by law.

Most city streets should prioritize access over speed while emphasizing completing the trip for people walking. Access on city streets should be carefully planned at strategic locations, but it can be difficult to limit access points where they exist today because transportation agencies have usually been lenient in granting access at individual properties. Metro has some control over driveway access when property owners subdivide property on Collector-Avenues and Arterial-Boulevards which may require consolidation of residential driveways, while arterials like Gallatin Pike and Nolensville Pike have numerous access points for parking lots creating stop-and-go traffic and conflicts.

Managing access by consolidating driveways, constructing landscaped medians, and restricting turning movements reduces stop-and-go traffic, reduces conflicts between people turning, and creates a more walkable and bikeable environment conducive to people taking transit along Nashville's arterials. Access Nashville proposes corridor projects along the arterial pikes through coordinated capital improvements that help our residents complete the trip. Consolidating access points, constructing medians, and discouraging left-hand turns from properties while constructing sidewalks, bikeways, and other infrastructure can greatly improve the conditions for people biking and walking, while simultaneously improving traffic flow for people using other modes.

## Utilities and Construction

Although we primarily think of our streets and sidewalks as transportation infrastructure, these facilities serve many other practical purposes. For example, much of our sewer system, electrical grid, and other utilities exist underneath or alongside our transportation infrastructure. A complete street incorporates all of these components in a cohesive way, allowing for the provision and maintenance of essential utilities without negatively impacting road users.



**Dickerson Pike is a corridor where access can be improved. Today, there are no sidewalks. This is an example where the street pavement leads directly into a parking lot.**



**As new sidewalks are constructed, coordination with utilities is needed to prevent repeating past mistakes.**



**A good example of providing continued accessibility for pedestrians along a construction site near Music Row.**

Maintenance and installation of utilities, as well as longer-term construction projects, can interrupt access. Involved agencies must balance the accessibility and safety needs of all road users when sections of streets are closed for utility work or detours are posted for construction projects. Primary accommodations should be made for Nashvillians who are disabled; whose mobility is impaired; or who walk, bike, or use transit, since these road users are most negatively impacted by detours and unsafe construction site conditions. On a complete street, utilities located in the pedestrian travelway do not impede access. Existing utilities may need to be relocated to improve access as Nashville's streets are completed.

## **Implementing Access Nashville**

Access Nashville 2040 sets long-term transportation priorities. Metro departments must incorporate the city's Accessibility Principles and Strategic Initiatives into their plans, and officials must work with residents to secure adequate funding to meet these needs.

### **Who is responsible for Nashville's Transportation Network?**

Nashvillians want to be able to get around the region, conveniently, safely, and affordably. However, governments and Metro departments divide responsibility for different parts of the transportation system in complex ways, sometimes for pragmatic reasons and sometimes for historical reasons. Achieving the public's vision for the future can be hampered when communication and collaboration across departments and agencies is limited. Sometimes the implementing agency may be unaware of future plans or land use decisions that will drastically impact how a street should be designed. One agency might maintain different forms of transportation or only certain parts of the system. Operationally, one agency may not anticipate the impact of road closures on a bus network or on a parallel neighborhood street.

The average Nashvillian may be unaware of these complexities. For example, buses operated by Nashville MTA depend on the timing of the traffic signals maintained by Metro Public Works to remain on-time with their routes. A portion of the corridor is a local arterial street with paving and striping maintained by Metro Public Works, while another portion is a state highway with paving and striping maintained by TDOT. Nashville Electric Service maintains street lighting. The Metro Planning Department creates land use policies and zoning tools that determine how close a building may be to the corridor and the type of streetscaping needed along the property. Street trees may be required that grow into the utility lines posing issues for tree maintenance and utilities. Unmistakably, one street has many stakeholders that need to be on the same page about its function and character.

While each agency creates short-term strategic plans that guide their specific work for about five years, Access Nashville provides a coordinated roadmap for the development of the entire transportation network over the next 25 years. It provides a set of accessibility principles, implementation strategies, strategic initiatives, and a shared evaluation framework that allow the agencies to collaborate and coordinate around the community's desired transportation vision. By linking

each department's implementation plan to Access Nashville's common framework, each entity is able to contribute to the collective impact.

To accomplish this task, the Metro departments involved must first incorporate relevant components of NashvilleNext, specifically Access Nashville concepts, into their plans. Next, the Mayor and members of the Metropolitan Council must use their leadership to identify funding for these components as part of the city's capital budgeting process or through other available mechanisms like state and federal grants. As city leaders take NashvilleNext from vision to implementation, they must provide meaningful opportunities for public input and participation each step of the way.

### *Planning and Implementation from a Regional Perspective*

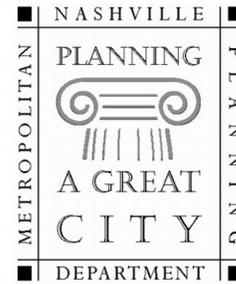
Regional agencies coordinate with Metro in developing Middle Tennessee's multimodal transportation network. The *Nashville Area Metropolitan Planning Organization* (MPO) facilitates the strategic planning of this network. The MPO is the federally-designated transportation planning agency for Davidson, Maury, Robertson, Rutherford, Sumner, Williamson, and Wilson counties. The MPO leads in the development of the long-range Regional Transportation Plan (RTP) and the short-range Transportation Improvement Program (TIP). Transportation projects, including Metro street improvements, transit projects, and Tennessee Department of Transportation (TDOT)-maintained highways with federal funding, are prioritized through the MPO's planning process. In addition to the Nashville Area MPO, the *Clarksville Urbanized Area MPO* performs similar planning functions for Montgomery County and adjoining portions of Christian County, Kentucky.



TDOT provides planning support for the state-maintained highway system in Middle Tennessee by partnering with the Nashville and Clarksville MPOs through TDOT's Office of Community Transportation within its Long Range Planning Division. TDOT helped establish a rural transportation planning framework for counties outside of MPO jurisdictions called Rural Planning Organizations (RPO). The Middle Tennessee RPO housed at the *Mid-Cumberland Human Resource Agency* covers nearby Cheatham and Dickson counties. The *Federal Highway Administration* (FHWA) acts as the conduit to State DOTs and MPOs for policies, programming, and guidance using federal transportation funds.

### *Integrating Land Use and Transportation Decisions*

The link between land use and transportation planning is critical. The *Metro Planning Department* connects land use plans, street right-of-way requirements, and transportation plans. *Metro Public Works* builds and maintains the city's transportation investments; *TDOT* does the same for state-maintained routes. Outside of Davidson County, the MPO often works with local community planners, traffic engineers, or public works officials. The *Greater Nashville Regional Council* also provides technical assistance to smaller communities in the region with land use planning activities.



Understanding the link between land use and transportation is critical. Future land use planning and changing development patterns are a key strategy to addressing congestion and providing accessibility. A mixture of land uses and redevelopment create centers where people can meet more of their daily needs (school, work, shopping, and play) by walking or biking. By intensifying strategic locations with more density, corridors are more viable for frequent transit service.

### *Expanding Nashville's Sidewalk Network*

In Middle Tennessee, local government agencies are the primary responsible parties for expanding our network of sidewalks, greenways, and multi-use paths. *Metro Public Works* maintains and expands the sidewalk network as directed by the Strategic Plan for Sidewalks and Bikeways; Metro Planning secures sidewalks as properties increase development rights through the requirements of the MCSP; and *Metro Parks* maintains and expands the greenway network according to the Metropolitan Parks and Greenways Master Plan. Additionally, Nashville MTA maintains bus stops, benches, and related facilities in the pedestrian right-of-way and coordinates with Metro Public Works to construct sidewalk connections to bus stops. The Strategic Transit Master Plan guides short-term implementation of transit facility improvements.

***Metro Nashville***  
***Public Works***

Private sector development is often the best opportunity for sidewalks to be constructed given limited city budgets. Much of Nashville's pedestrian infrastructure has been constructed by the private sector during development. Sidewalks in older areas of town may have been constructed before Nashville's city and county governments consolidated. Most new larger developments are required to build sidewalks because of changes

to Nashville’s subdivision regulations since 1991. Metro Planning reviews redevelopment proposals to ensure that wide sidewalks and street trees are installed according to the Major and Collector Street Plan. When it is impossible or impractical to furnish sidewalks during redevelopment, developers may petition to pay an in-lieu fee into Metro Public Works’ Sidewalk Fund, to be used to expand pedestrian infrastructure in the area near the development site.

### *Building a More Bikeable Nashville*

Like Nashville’s network of sidewalks, *Metro Public Works* maintains and expands our bikeways (bike lanes and bike routes) network according to the *Strategic Plan for Sidewalks and Bikeways*, and *Metro Parks* maintains and expands greenways according to the *Metropolitan Parks and Greenways Master Plan*. Additionally, *TDOT* creates and maintains bike lanes and bike routes along state roads. Bicycle racks located within the public right-of-way are typically maintained and installed by Metro Public Works, while individual property owners provide racks located on private property. The *Metro Arts Commission* has also expanded bike parking options through the installation of arts bike racks. *Nashville MTA* maintains bike racks at many of their stations and provides two bike racks on all MTA buses to allow convenient multimodal trips.



Private-sector development also contributes to the biking infrastructure network in Nashville, through voluntary measures and, in some parts of the county, as required by ordinance. *Metro Planning* and *Metro Codes* work during the development process to accommodate bicycle parking spaces. Additionally, new bikeshare stations have been proposed and funded by private developments to expand the bikeshare network.

*Nashville B-cycle* launched in 2012. Nashville B-cycle is a bikeshare network that allows users to purchase a 24-hour, weekly, monthly, or annual membership. During that period members can check out bikes at stations located around town and dock them back at stations when a trip is complete. A nonprofit organization called *The Nashville Downtown Partnership* houses Nashville B-cycle. The service area for B-cycle has focused on Downtown and Midtown with its initial launch, but future expansions are anticipated as funding permits.

### *Improving Regional Mass Transit*

The *Nashville MTA* is the primary transit operator in Nashville. It provides local bus service, express bus, BRT Lite, and local on-demand transit or paratransit. The Music City Circuit is Downtown Nashville’s free circulator bus serving trips within the central business district. Bus rapid transit lite (BRT Lite) is an express local service, providing more frequent service along corridors with permanent stations and vehicle arrival information. As of January 2015, there are 41 local bus routes in the MTA system.

The *RTA* operates the Music City Star commuter rail service between Downtown Nashville and Lebanon and 10 regional bus routes between Downtown Nashville and the following cities: Brentwood, Clarksville, Dickson, Franklin, Gallatin, Hendersonville, LaVergne, Murfreesboro, Smyrna, Springfield, Spring Hill, and Thompson’s Station.

Other transit operators in the Middle Tennessee region include *Franklin Transit* operated by the *TMA Group* for the City of Franklin and *Rover* in the *City of Murfreesboro*. The *Mid-Cumberland Human Resource Agency* operates a regional paratransit service outside of Davidson County.

### *Moving Freight and Goods around Nashville*

Nashville is strategically located within 650 miles of half of the United States population. Nashville has an excellent distribution network with highway, rail, air, and barge facilities all readily available. Nashville also has three cross-country interstates that connect in the region. I-40 runs east-west across the United States beginning in Wilmington, North Carolina and ending in Barstow, California. I-65 connects cities north and south of Tennessee from Gary, Indiana, just southeast of Chicago, Illinois, to Mobile, Alabama. I-24 connects Southern Illinois near Marion with Chattanooga, Tennessee. Middle Tennessee is served by numerous freight carriers with terminal locations throughout the metropolitan area and beyond.

In 2010, the Nashville Area MPO forecasts a 35 percent increase in the tonnage of freight moved to, from, within, or through the Nashville region by 2035. Approximately 85 percent, or an additional 89 million tons, of this freight increase is expected to be truck freight. The high volumes of freight moving to, from, within, and through the Nashville region creates many challenges in terms of both maintaining the transportation network and preparing for the continuing growth of freight volumes. The increase

### **What is intercity or long-haul bus service?**

Intercity (or long-haul) bus service uses coach buses to carry passengers between cities. Greyhound is familiar to most people and is an example of an intercity bus service. MegaBus is another example that began service in Nashville in 2012. Other services like Tornado Bus Company transport passengers who are more likely to be immigrants to Nashville between southern U.S. cities and cities in Mexico.





### What is a guaranteed ride home program?

A guaranteed ride home program provides commuters who regularly take transit, vanpool, or carpool with a ride home when one of life's unexpected emergencies arises. The ride is free through a voucher for those that have registered with the Emergency Ride system. This program has not been expanded to include those that bicycle or walk to work in Nashville.

in freight is anticipated to impact travel times, reduce transportation network reliability, impact noise, air and water, and create additional traffic incidents.

The Cumberland River provides full river barge access to the Mississippi River system and the Gulf of Mexico. Ingram Barge Company is headquartered in Nashville and is a leading carrier of bulk commodities on America's inland waterways.

One Class I (*CSX Transportation*) and two Class II (*The Nashville & Eastern Railroad Corporation* and *The Nashville and Western Railroad Corporation*) rail carriers operate within the region along with a major classification yard, an intermodal ramp, an automotive ramp, and bulk and break bulk terminals.<sup>11</sup>

### *Carpooling Culture in Nashville*

Carpooling in Nashville has typically involved commuters finding others that work and live nearby to share rides to and from work during the work week. Both the *RTA* and *TMA Group* operate services to promote carpooling like utilizing vans to commute to and from work through vanpools. They also offer ride matching services to find commuters with similar schedules and emergency ride home programs encourage carpooling and reduce the amount of traffic on area roadways.

Recently, other ridesharing methods have evolved to include apps available on smartphones. *Lyft* and *Uber* started as a way to connect people who were driving to pick up those that may need a ride. These technology based companies have evolved to compete with taxi companies posing challenges in many cities that more heavily regulate taxi cab companies through a regular licensing process. In December 2014, Metro Council passed an ordinance to require ridesharing drivers to go through a background check, to be insured by a commercial liability insurance policy, and to regularly be inspected.

### *Filling in the Transportation Gaps*

Transportation networking companies like *Lyft* and *Uber* fill in gaps in the transportation network that public-sector mass transit cannot fulfill. There are other gaps in the network that rely on supplemental transportation programs. These programs often address the needs of older adults and

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<sup>11</sup> *Nashville Regional Freight & Goods Movement Study, Technical Memo #3 Existing Trends and Conditions, May 2010, Nashville Area MPO, [http://www.nashvillempo.org/docs/Freight\\_Study\\_Phase\\_II\\_Full\\_Report.pdf](http://www.nashvillempo.org/docs/Freight_Study_Phase_II_Full_Report.pdf)*

those with disabilities. Several organizations operate supplemental transportation programs in the area that serve a variety of needs including the *American Cancer Society* curb-to-curb service for cancer-related treatments and appointments; the *National Council of Jewish Women's Buzz-A-Bus* which provides transportation for older adults door-to-door; the *Jefferson Street United Merchants Partnership (J.U.M.P) Senior Shuttle* that transports older adults to services in North Nashville; and *Fifty Forward's* transportation program that brings older adults to their centers.



According to the Greater Nashville Regional Council, the age of people 65 and older are projected to grow by nearly 44,000 people in Nashville/ Davidson County by 2025. The Council on Aging of Greater Nashville conducted a survey in 2006 of older residents and found that 49 percent do not drive themselves anywhere, 63 percent do not have family to drive them, 76 percent do not have friends to drive them, and 82 percent do not use the bus. Mayor Dean's Nashville Livability Project also identified the need for mobility in this age group and recommended supplemental transportation programs. The lack of transportation options for older adults door-to-door leads to a higher risk of poor health, isolation, loneliness, and depression. Currently, there is a significant gap in Nashville/Davidson County in meeting the accessibility needs of older adults who are healthy but unable to safely drive. A new coalition of agencies will be assessing various models to implement in Nashville/ Davidson County in 2015-2016 to address this gap in the transportation network.



U B E R

### *Maintaining Nashville Streets and Highways*

The maintenance and operations of Nashville's streets and highways are primarily divided into state and local maintenance. *TDOT* is responsible for maintenance of federal-highway and state-designated routes running through Davidson County. These include the interstates and freeway-type facilities like Briley Parkway and Arterial-Boulevards like Murfreesboro Pike and Charlotte Pike. Local streets are maintained by Metro Public Works. Typically TDOT has left most traffic signal operations in Davidson County to *Metro Public Works*.

***Metro Nashville  
Public Works***





### *Using Technology to Make City Streets More Efficient*

TDOT maintains ITS (Intelligent Transportation System) components including traffic cameras, dynamic message signs, and the sensors in pavement that determine road surface conditions. These components are located on State maintained facilities to manage traffic congestion. They help TDOT monitor conditions, warn of traffic issues, and recommend alternate routes. TDOT also supplies this information to local media outlets, online, and through the Smartway app for smartphones. Anyone can access the cameras, dynamic message boards, and road conditions at any time before driving. Additionally, *Metro Public Works* equips most traffic signals with cameras or other sensors that detect vehicles and have developed signal timing plans for major arterials through Davidson County. These signal timing plans are updated every few years as land use and traffic conditions change. Other cities like Franklin and Murfreesboro also provide traffic camera information online to be accessed by anyone.

Technology is also moving into the transit system with BRT Lite routes indicating arrival times at station locations. *MTA* is also developing a smartphone app to deliver transit users information on the location of buses, so the transit system information is delivered in real-time and can be used to determine when the next bus will arrive.

Today, the ITS components managed by the agencies in Nashville are mostly basic elements to monitor existing conditions and have not been used to actively manage traffic congestion. In the future, there is tremendous potential to expand ITS components as part of a smart infrastructure system to manage lanes during peak travel times, establish variable speed limits according to the road conditions, synchronize signals to maintain calmer traffic speeds with green lights along a corridor, and detour traffic to arterial streets as needed. Transit signal priority can be expanded to more routes where traffic signals detect the approach of transit vehicles and prolong the green signal to keep the bus on schedule. As cars become equipped with more technology, communication between smart infrastructure components can make mobility more efficient and connect to other municipal infrastructure. The data that is collected as part of these infrastructure systems should be open so transportation users can make informed decisions about their routes.

## *Improving Safety and Resiliency of Nashville's Transportation Network*

Traffic crashes are a major public health issue in the United States. Improvements have been made to reduce the number of deaths and injuries of those driving on American roadways despite increases in population and historical increases in the number of vehicles miles traveled. However deaths involving people walking and biking have increased.<sup>12</sup> The *National Highway Traffic Safety Administration* (NHTSA) focuses on improving the crash worthiness of cars and reducing fatalities involving driver behavior such as drinking and driving or not wearing seat belts. These national priorities established by NHTSA have helped to reduce the total number of deaths and injuries on roads. The *Federal Highway Administration* (FHWA) also works on roadway infrastructure design strategies that reduce deaths and injuries on streets. National priorities and strategies are typically funneled down to states and are administered in Tennessee through the *Governor's Highway Safety Office* and *TDOT*. The GHSO works with the *Tennessee State Highway Patrol*, local police departments (including *Metro Nashville Police*), and other partners to conduct education campaigns to coincide with traffic enforcement.

Public health professionals are also invested in road safety and promoting active transportation. The Metro Public Health Department regularly tracks crash rates and diseases among vulnerable populations. Public health professionals are more engaged in built environment decisions that can impact health. *NashVitality* and *Moving in Harmony* campaigns encourage safe walking and biking and were guided by the Health Department.

TDOT regularly administers Road Safety Audit Reviews of identified high crash locations looking for safety improvements along streets such as along Nolensville Road near Harding Place in South Nashville and Division Street near 19<sup>th</sup> Avenue in Midtown. The RSARs typically recommend such improvements as additional signage, replacing and clarifying existing signage, improving lighting, and updating pavement markings. These improvements are mostly low-cost design treatments to improve safety on streets. Numerous grants and funding opportunities are available to address safety issues through education, enforcement, and engineering/design strategies at the state and local levels.



**Metro Public Health Dept**  
Nashville/Davidson County  
Promoting and Protecting Health



<sup>12</sup> Tennessee Department of Safety & Homeland Security, 2014 <http://www.tn.gov/safety/stats/CrashData/default.shtml>

## Can reducing parking requirements improve accessibility?

Parking requirements vary greatly among cities which typically require minimum parking requirements based on observations of land uses. In the United States, cities have relied on their peers for parking ordinances to model or consulted the Institute for Transportation Engineers handbooks. In instances where no parking is required, private developers usually decide to meet parking demand based on what they think is appropriate for their needs. Structured parking can greatly increase the cost of development further driving up the cost of housing, goods, and services. Removing parking from the responsibility of individual building owners and treating it like a utility that is managed within a district can reduce the cost of residential units, free up property space for other activities, make some development much more profitable, and support walkability and transit use. Reducing development costs increases people's access to a variety of housing options and goods.<sup>1</sup>

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<sup>1</sup> Reference three sentences in sidebar on parking: *The Trouble with Minimum Parking Requirements* by Donal C. Shoup in *Transportation Research Part A* 33 (1999) 549-547 <http://shoup.bol.ucla.edu/Trouble.pdf>

## *Managing Nashville's Parking Issues*

Parking poses multiple problems for affordable, walkable neighborhoods. First, providing on-site parking can be a significant cost, particularly when shifting from surface parking to structured or underground parking. That cost is exacerbated when regulations require building half a parking deck—developers must either overbuild for parking or seek additional entitlements. Second, parking poses costs to the walkable urban form that Nashvillians desire, curb cuts, parking lot entrances, and surface lots make walking less safe and comfortable. Greater flexibility can allow for more off-site parking, better support for shared parking, better use of on-street parking, and an integrated residential parking program.

As Nashville grows, parking within downtown and neighborhood centers becomes more challenging. In the 1960s and 1970s, Metro's Zoning Code encouraged buildings to be set back from the street and to accommodate parking in front of the building, setting a minimum or maximum number of spaces. Today, regulations no longer require parking for downtown developments. Expanding uses on a site in Nashville's urban core may not need additional parking given the area's walkability and rich transit network. The change in downtown regulations and within the Urban Zoning Overlay (UZO), which is the area closely aligned with the original city limits of Nashville, has helped to promote mixed use, pedestrian-friendly development by reducing parking requirements and locating buildings directly behind wider sidewalks.

These changes have also spurred concerns over parking among Nashvillians living in or visiting downtown and other urban neighborhoods. In Metro Public Works' September 2014 Multimodal Mobility Study, 41 percent of survey respondents indicated that parking was the primary transportation challenge in downtown Nashville. However, that same study found that only 55 percent of downtown Nashville's more than 52,000 parking spaces are occupied during a typical weekday. Although The Metro Zoning Code and Subdivision Regulations should continually be examined and refined to address parking and transportation issues, other strategies like parking management programs and parking districts that support redeveloping centers with a toolbox to manage parking across the entire center will be more effective in addressing Nashville's parking challenges. These program can assess on-street parking rules and rates, privately or publicly maintained lots, residential parking programs, car-sharing access, and shared parking. In addition to managing parking demand, high-tech

strategies which allow payment of rates electronically and track the status of parking spaces/garages can reduce redundant traffic movements where vehicles are circling for parking locations.

Currently, the *Metro Traffic and Parking Commission* administered through *Metro Public Works* also helps to determine on-street parking requirements and manages the city's public garages. The Nashville Downtown Partnership has assisted in developing information on Downtown parking availability and encourages the use of shuttle to drop people off near their destination after parking in a lot.

### *Advocating for 21<sup>st</sup> Century Transportation Solutions*

There are advocates working to change Nashville by providing greater access to transportation options. Transportation advocates provide input on how to accommodate people walking, biking, and taking transit more effectively and safely.

The community planning process conducted by the Metro Planning Department has engaged these organizations over the years. Community Plans are typically updated every seven to 10 years. Residents have become accustomed to this process involving future land use visioning and tying these plans to transportation within their community plan area. In recent plan updates, transportation projects are presented for prioritization within Metro's Capital Improvements Budget (CIB). NashvilleNext has examined Countywide Critical Needs to align with the broader city vision and to work with those advocating for transportation solutions to further progressive infrastructure investments and projects.

*Walk/Bike Nashville* seeks to build a more walkable, bikeable, and livable Nashville by making active transportation an option for Nashvillians no matter where they live or where they are trying to go. Walk/Bike uses education and policy advocacy to improve walking and biking conditions and promote more people walking and biking. They provide bike valet parking at area events, organize bicycle commuter rides, provide guidance on walking and biking safety, and advocate for policy and infrastructure changes within Nashville. Walk/Bike is the key organizer of the annual Tour de Nash bike ride, Bike to Work Day, and Walk to School Day.

### **What is tactical urbanism?**

Tactical urbanism describes low-cost, temporary changes to a city's built environment that improve local neighborhoods and create civic gathering places. It can be utilized to advocate for change by demonstrating change on the ground. Park(ing) Day has been organized by the Nashville Civic Design Center since 2012. Parking spaces within the downtown core are transformed by volunteers into small pocket parks or parklets. Organizers encourage participants to be creative with activities and games. Parklets range from visionary examples of what a space could be like to practical uses of a parking space by providing additional seating or gathering space to share ideas and engage in the city.





The *Mayor's Bicycle and Pedestrian Advisory Committee (BPAC)* was established by an Executive Order of Mayor Karl Dean in 2008 to further Nashville's goal of becoming a bicycle and pedestrian friendly city. The BPAC focuses on increasing the safe usage of bicycle and pedestrian facilities as a significant and beneficial mode of transportation and recreation. The BPAC monitors walking and bicycling issues within Nashville and helps make connections between departments and champion Metro's actions to improve walking and biking.



*Greenways for Nashville (GFN)* is a non-profit member organization raising awareness of and private support of Nashville's greenways initiatives. GFN supports Metro Parks with greenways and open space to provide seed funds to leverage public funds, to build trails and enhancements, and acquire lands to preserve. GFN also educates citizens about Nashville's greenways and provides opportunities for everyone to get involved in building a stronger greenways network.



*Transit Now Nashville* is a local grassroots organization whose mission is to raise awareness of the benefits of regional mass transit options. Transit Now educates residents on how to use transit and encourages Nashvillians to take the bus.



The *Transit Alliance of Middle Tennessee* is a non-profit organization with the mission of encouraging private sector and public sector support for new investments in mass transit in the ten county Middle Tennessee region. The Transit Alliance fosters education across the region concerning the economic value of mass transit investments. Dedicated revenues for mass transit investments will be a key item of advocacy in the years ahead.

The *Middle Tennessee Mayors Caucus* was formed in 2009 in order to provide leadership on important issues facing the rapidly changing landscape in Middle Tennessee. The conversation on creating a modern mass transit system served as the early catalyst in building a forum for sustaining relationships among mayors and helping local governments support each other on regional issues and proposed state legislation. The Mayors Caucus will continue the conversation on dedicated revenues for mass transit investments.

The *Metropolitan Council* is the legislative authority of the Metropolitan Government of Nashville and Davidson County created in 1963. The Council is a 40-member body of elected representatives of which 35 are elected by district and five are elected at-large, or county-wide. The presiding officer is the Vice Mayor. Advocates must work with their Metro Council Member and voice transportation concerns and ideas. A Council Member can assist them with the appropriate Metro agency contact and reflecting concerns during development of the Capital Improvements Budget. Metro Council Members play a role in listening to concerns at community meetings about zone changes which can increase development entitlements and Metro-implemented transportation projects. Developing a good working relationship between neighborhoods, their Metro Council Members, and Metro departments are essential to concerns being addressed and the implementation of NashvilleNext.

### *Working with Additional Partners*

There are many other groups who help shape decisions related to our transportation network, even though they are not solely focused on transportation. Neighborhood associations, professional organizations, business groups, and even individual residents and business owners contribute to our transportation network- not just the departments that maintain our streets. Multiple public and private agencies must communicate and collaborate with one another, residents, and elected officials alike.

The private sector plays a significant role in the city's transportation network. One example of this contribution is the construction of sidewalks through redevelopment. This process frees up Metro resources for other civic needs and accomplishes a significant infrastructure investment. Businesses are also important in completing the trip when customers or employees arrive at their destination. For example, Nashville has

several Bicycle Friendly Businesses recognized by the League of American Bicyclists for providing amenities like bicycle parking and showers for employees. These amenities encourage their employees to bicycle to work. The private sector also fulfills transportation needs that are difficult for public sector mass transit to accommodate in a cost-effective manner.

Metro must fairly and transparently balance the interests of the many groups that have an interest in our transportation network, collaboratively lead by connecting the dots between the various stakeholders' transportation roles, and adapt organizational structures, policies, programs, and administrative and decision-making processes to remove barriers to achieving Nashvillians' future multimodal transportation network.

## How a Transportation Project Moves from Idea to Implementation

Because advocates, residents, elected officials, land use planners, transportation agencies, and other stakeholders must work together to provide guidance on future transportation projects, it is crucial that all stakeholders understand the planning, funding, and implementation phases of transportation projects so they can most effectively provide public input to shape project outcomes. With any major public investment, different groups and individuals will have differing opinions about the need for a particular project. Nevertheless, Metro must always work to ensure that all residents share in the costs and benefits associated with transportation investments within the overall system in a way that is fair and transparent. Major infrastructure investments that serve the greater good should not unduly burden any particular person or group with environmental or economic costs. Meaningful public involvement before and during the process of investing in the transportation network is crucial to ensure this outcome.

The following graphic tracks a typical process for transportation ideas from planning, to potential funding allocations, and finally to implementation. The numbered steps below align with the numbers in the graphic, and public input opportunities are denoted in the process. It is always best to involve the public in plans early and often.

### 1. The project is included in the appropriate Community Plan or related study.

A transportation need is expressed, studied, analyzed, and weighed with other community and transportation needs during the NashvilleNext or Community Plan update process by residents, groups, elected officials, or transportation planners. During this time, there are opportunities to provide feedback to Metro planners and other department staff at meetings, online, through

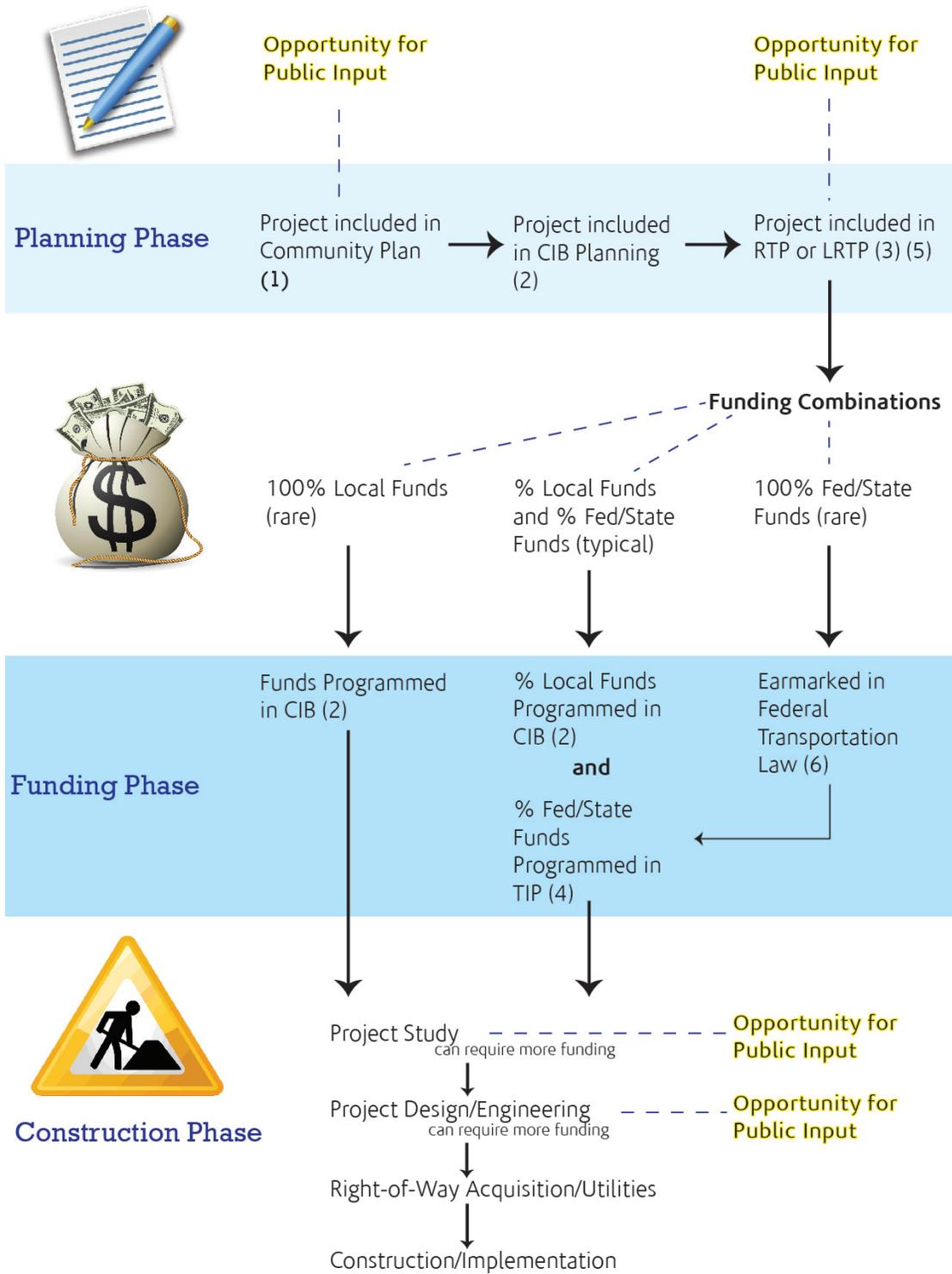
e-mails, and other forums. A Public Hearing is held before the Metro Planning Commission to consider adoption of the Community Plan or NashvilleNext update. Before the update is adopted, there is a Public Hearing before the Metro Planning Commission to hear concerns from the community. A project is then outlined in the adopted Community Plan. This indicates that the project has been vetted with residents and stakeholders in that area. Some transportation needs might be the result of other community planning processes during a corridor planning study, neighborhood study, or area mobility study. Those studies may have specific public outreach components.

### 2. The project is identified as a priority within the Metro Capital Improvements Budget (CIB).

Metro departments consult the adopted NashvilleNext plan, Community Plans, and related studies to identify projects for local funding to submit for prioritization in achieving the NashvilleNext Guiding Principles. Elected officials may also request that projects be added to the CIB based on concerns that they hear from their constituents. The Mayor will recommend projects that should move forward in the Capital Spending Plan. Projects that receive local funds, including a local match for projects securing federal/state funds, should be reflected in the CIB and related Capital Spending Plan. Metro Council reviews, debates, and approves the CIB and the Mayor's Capital Spending Plan. Both the mayor and the council hold budget hearings with the individual departments that are open to the public. The council also holds a public hearing, allowing members of the Nashville community to comment on the recommended budget.

### 3. If the project utilizes federal/state funds, it must be identified in the Nashville Area Metropolitan Planning Organization's adopted Regional Transportation Plan (RTP).

# How A Transportation Project Moves From Idea to Implementation



CIB = Capital Improvement Budget  
 RTP = Regional Transportation Plan  
 LRTP = Long Range Transportation Plan  
 TIP = Transportation Improvement Program

Inclusion in the MPO's RTP shows regional support for a project and that its implementation is within the anticipated fiscal constraints of money that the region anticipates having in the future. The MPO has outreach opportunities while developing the RTP, and a Public Hearing before their Technical Coordinating Committee and Executive Board meetings.

**4. Once the project is included in RTP, any federal/state funds programmed to the project must be reflected in the MPO's adopted Transportation Improvement Program (TIP).**

The TIP contains projects that have been identified in the RTP which have funds programmed on project phases. With any amendments to the TIP, the MPO holds a Public Hearing at their Technical Coordinating Committee and Executive Board meetings. Programmed phases can include Study, Design, Engineering, Right-of-Way Acquisition, Utility Relocation, and Construction/Implementation. The phases can vary depending upon the type of transportation project. For example, a road widening project would likely include each phase and may have several iterations of funding before construction, while a project that expands arterial traffic signal management might only have funds for implementation since a regional study was already completed. Projects that include Study and Design phases typically have multiple opportunities for public input before proceeding into Right-of-Way Acquisition.

**5. If the project is located on a state highway, it helps to have the project within TDOT's Long Range Transportation Plan (LRTP).**

TDOT disperses and manages a number of funding opportunities and grants involving federal monies. These often require a local funding match, which is typically

programmed in the CIB and then reflected in the MPO's TIP. TDOT usually incorporates the MPO priorities in the TIP as part of the State Transportation Improvement Program (STIP). A local priority on a state highway in TDOT's LRTP will raise the priority-level among other statewide priorities, but it is not necessary.

**6. Some major transportation projects are earmarked as part of federal transportation legislation.**

President Obama signed into law MAP-21, the Moving Ahead for Progress in the 21<sup>st</sup> Century Act, in 2012. This law authorizes much of the federal spending money involving surface transportation, including highway, transit, bike, and pedestrian programs and policies administered by the Federal Highway Administration (FHWA) and other agencies of the United States Department of Transportation. Previous federal transportation laws included earmarks, or a listing of projects that would use federal money requiring no local match. MAP-21 eliminated earmarks, so the inclusion of local projects as earmarks is unlikely in the future.

**7. After a project is funded, it will move into various phases before construction/implementation**

The type of transportation project, amount of funding, and potential impact can affect how a project moves forward. Some projects will be incrementally funded with Design or Right-of-Way Acquisition. A project of this nature would then need to secure funds for Construction. This sometimes can take up to a decade or longer to achieve. Other projects that are smaller scale in nature rely on less funds and will usually move quicker from Study to Implementation. At any point, however, if the project changes scope or dramatically changes in cost can require the project to seek out additional funding.

# ACCESS NASHVILLE REPORT CARD

Linking land use decisions to transportation investments is critical in meeting the NashvilleNext Guiding Principles and goals. Regularly monitoring and assessing the city's progress from multiple perspectives and experiences of transportation users are essential to properly discern progress. Metrics that depict overall mode share (what percentage of trips are made by different transportation modes), walking, biking, mass transit, health, freight, safety, placemaking, and maintenance record this progress.

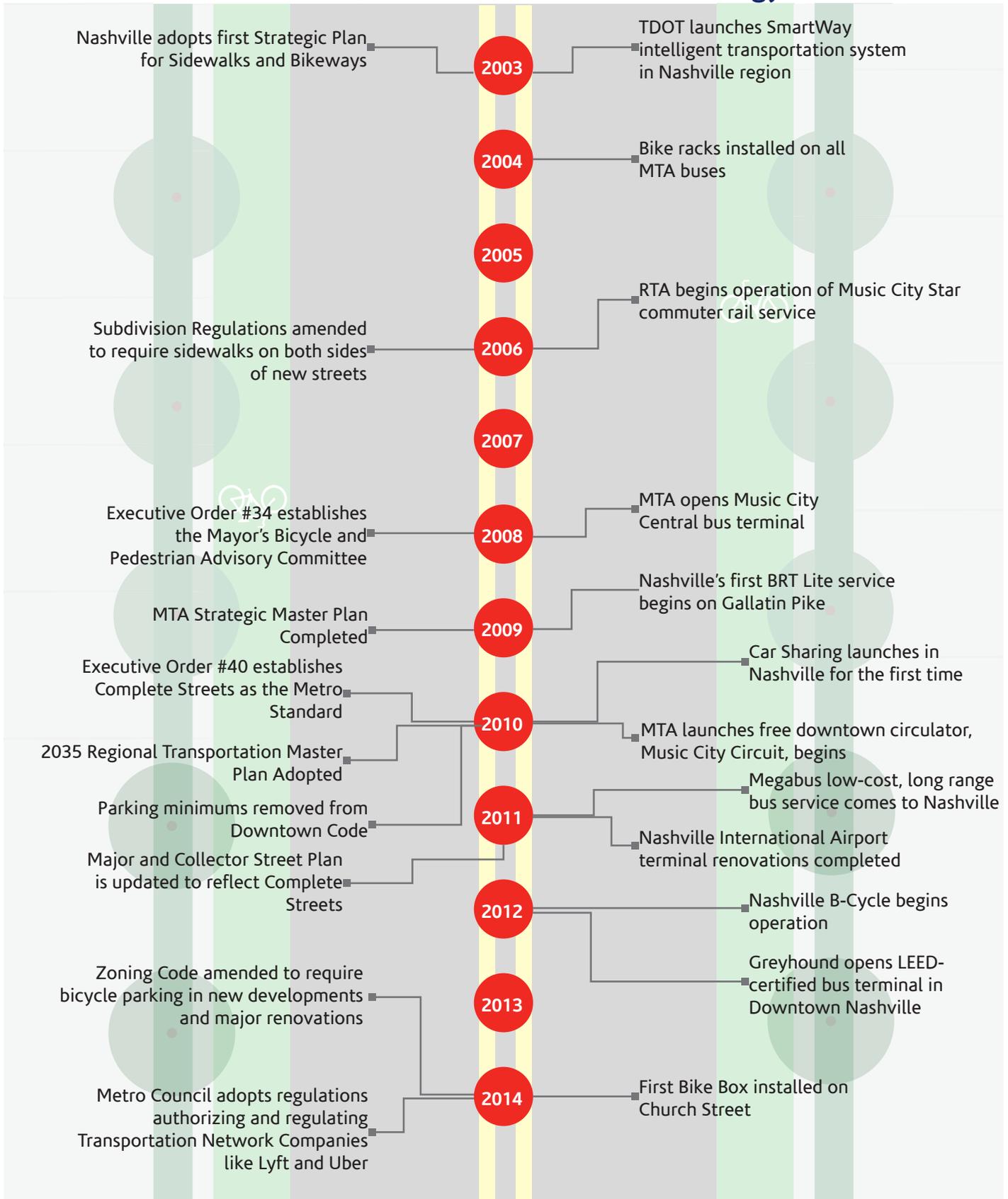
Since Nashville/Davidson County is a consolidated city-county government, some metrics that compare the city to other peer cities can be skewed since Davidson County has rural, suburban, urban, and downtown environments. Where feasible, some information is presented relative to the Urban Zoning Overlay boundary, which closely relates to the original city limits of Nashville and may provide a more reasonable comparison to comparable cities that have solely urban or urban and suburban environments.

The following are basic indicators to assess Nashville's multimodal transportation network. These are presented to start discussion within the community about priorities and progress involving transportation. This data will continue to be analyzed and presented regularly to inform policy and decision making.

# ACCESS TIMELINE

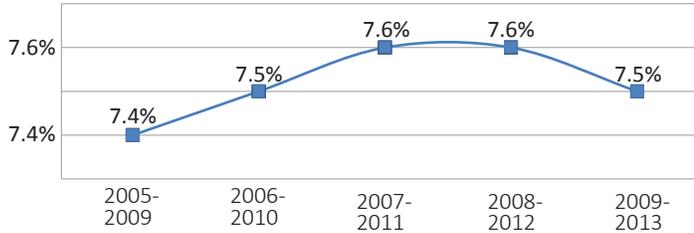
## Changes in transportation policy

## Implementation of new technology

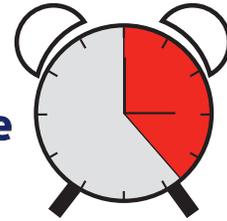


# EVALUATING ACCESS

Davidson County households without access to a motor vehicle:

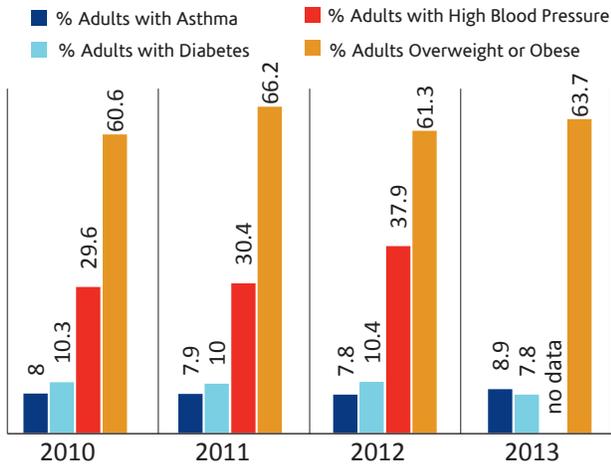


Average Commute Time:

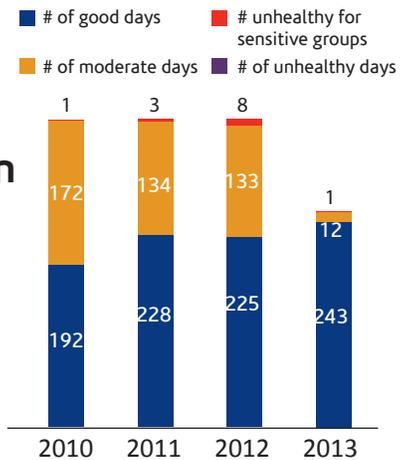


**23.3**  
Minutes

## Diseases and rates of occurrence related to transportation



## Air Quality is negatively impacted by transportation



Households are considered "cost burdened" when they spend more than

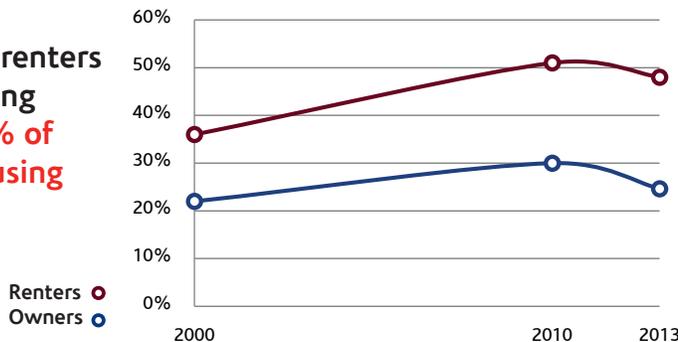


OR



**86%**  
of Nashvillians live within **two** miles of a greenway

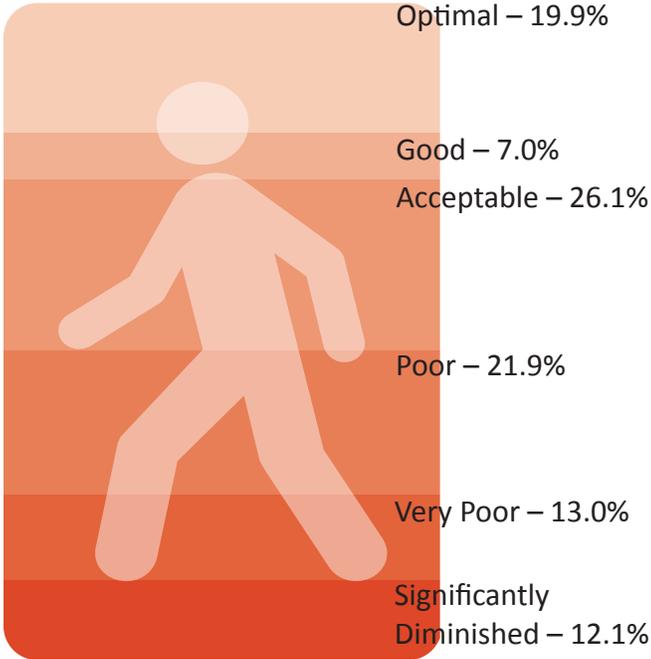
Percentage of renters & owners paying more than 30% of income on housing



**60%**  
of Nashvillians live within **one** mile of a greenway

# WALKING

## 2014 Pedestrian Level of Service along Major Streets



## Walking to work by council district

Darker color= more bikers

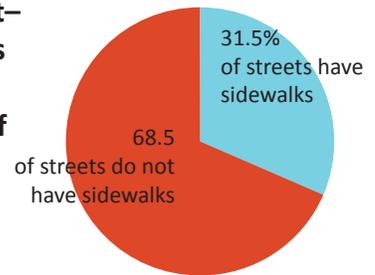


**2.2%**  
of people in Davidson County walk to work.

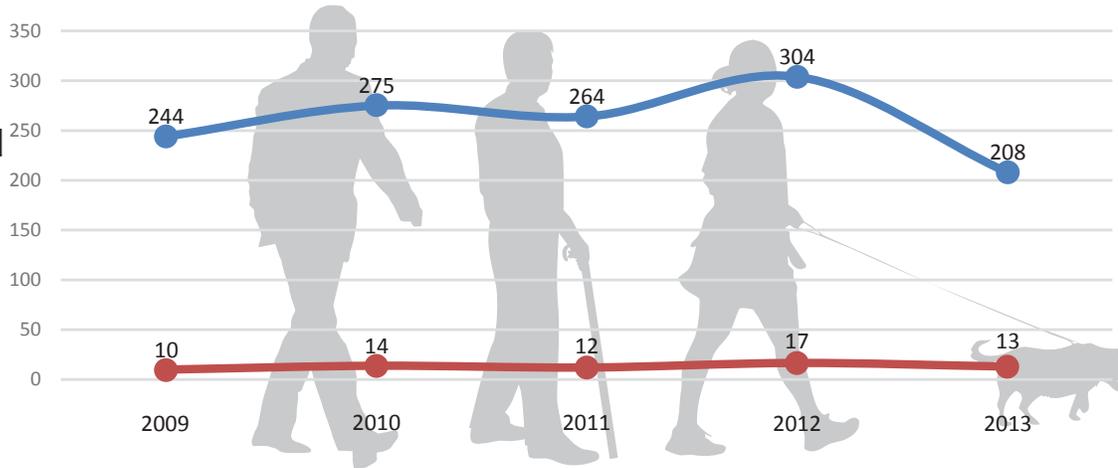
**6.4%**  
of people living in the Urban Zoning Overlay (old city limits) walk to work



Walking to transit—how many streets have sidewalks within 1/4 mile of transit stops?

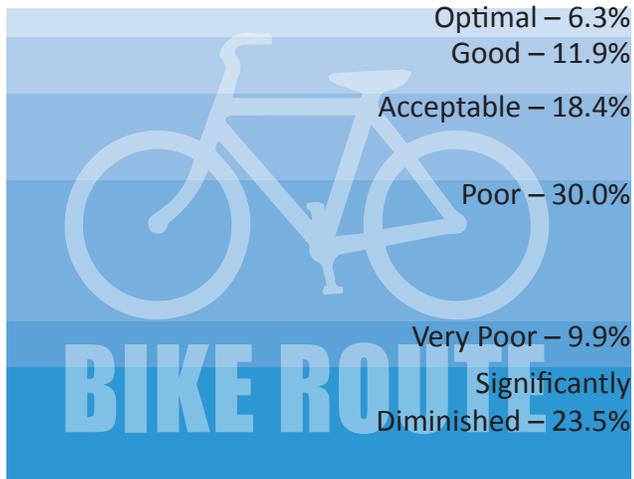


## Pedestrian-involved crashes and deaths



# BIKING

## 2014 Bicycle Level of Service along Major Streets



## Bicycling to work by council district

Darker color= more bikers

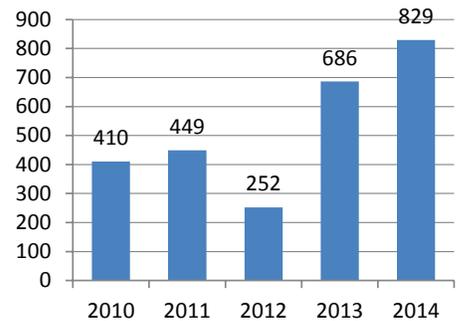


**0.3%**  
of people in Davidson County bike to work.

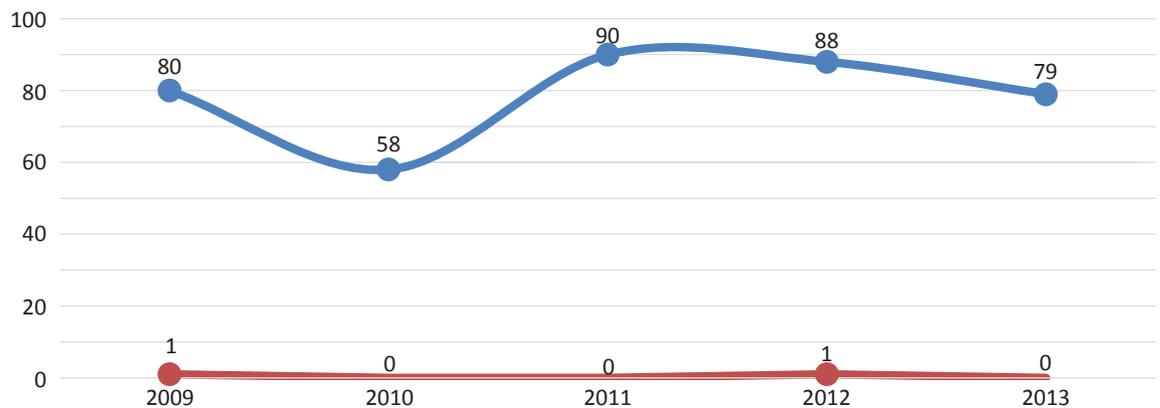
**1.1%**  
of people living in the Urban Zoning Overlay (old city limits) bike to work



Storm grates replaced with bike-friendly grates



## Cyclist-involved crashes and deaths



# TRANSIT



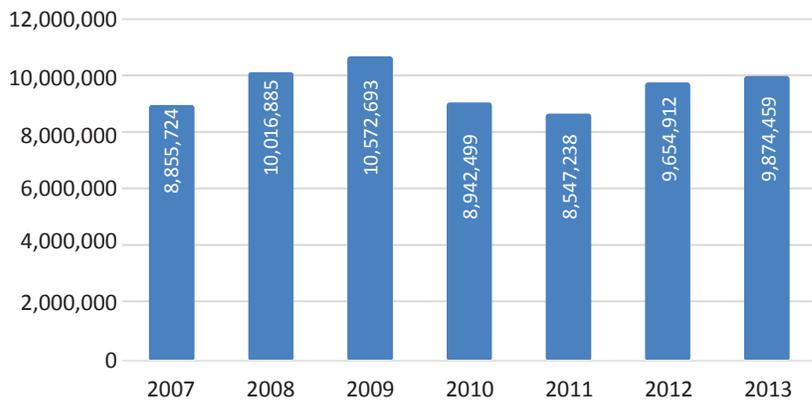
The **Nashville MTA** is responsible for transit options within Nashville/ Davidson County.

The **Regional Transportation Authority of Middle Tennessee (RTA)** covers connecting Davidson County with the surrounding counties of Cheatham, Dickson, Montgomery, Robertson, Rutherford, Sumner, Wilson, and Williamson.

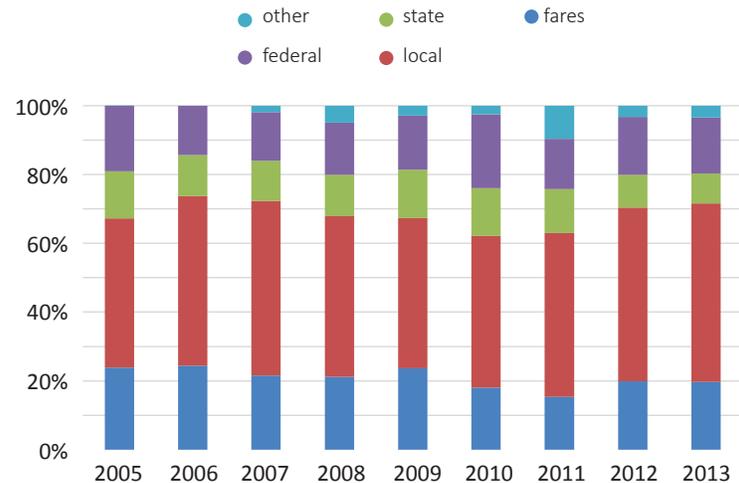
## Frequency of MTA Routes (as of April 2015)



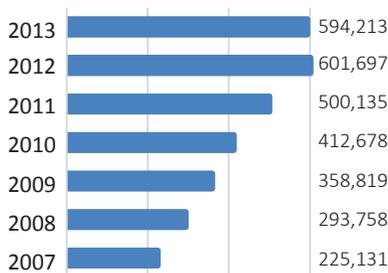
## MTA Annual Ridership



## MTA Annual Operating Funds



## RTA Annual Ridership



2005— \$30,240,806      2008— \$43,831,437      2011— \$50,626,120  
 2006— \$34,671,612      2009— \$44,397,590      2012— \$54,885,308  
 2007— \$36,440,846      2010— \$50,397,263      2013— \$60,541,090

## 81.3%

of people commuting in Davidson County  
drive alone

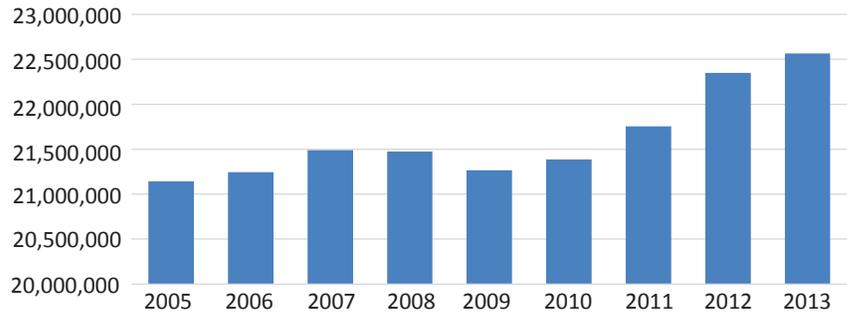


There is a crash every

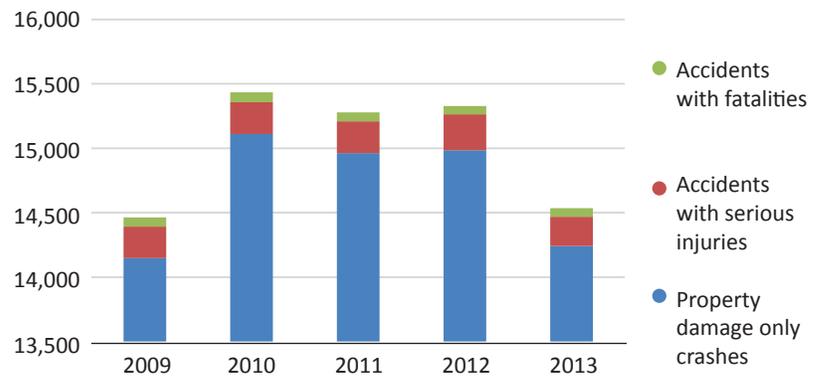
## 26

Minutes  
in Davidson County

### Daily Vehicle Miles Traveled in Davidson County



### Vehicular Accidents In Davidson County



Households without access to motor vehicle: *Access to Greenways: Greenways for Nashville*  
 Average Commute time: *Census Bureau American Community Survey, 2013*  
 Illnesses impacted by transportation: *Healthy Nashville Portal*  
 Air Quality: *EPA Air Quality Index; www.epa.gov/airdata*  
 Cost burdened households:  
 Access to Greenways: *Greenways for Nashville*  
 2014 Pedestrian level of service: *Nashville Area MPO*  
 People walking to work: *United States Census Bureau*  
 Sidewalk status: *Metro Public Works*  
 Sidewalks near transit: *Metro Planning*  
 Traffic Accidents; Pedestrians, Cyclists, and Vehicles: *Tennessee Department of Safety*

2014 Bicycle level of service: *Nashville Area MPO*  
 People Biking to work: *United States Census Bureau*  
 Bike Lanes: *Metro Public Works*  
 Storm grate replacement: *Metro Public Works, Metro Water Services*  
 MTA Ridership: *National Transit Database*  
 RTA Ridership: *National Transit Database*  
 MTA Operating Funds: *MTA*  
 Solo Drivers in Davidson County: *Census Bureau*  
 Vehicle Miles Traveled in Davidson County: *Tennessee Department of Transportation*  
 Vehicular Accidents: *Nashville Area MPO*



## 21st Century City Transportation Solutions

There are a number of critical transportation strategies that improve accessibility and achieve components of the city’s future vision for land use and transportation. Each of these initiatives can impact the basic transportation indicators just presented.

		Accessibility Principles							
		Create a place with choices.	Offer meaningful choices.	Sustain & enhance economy.	Improve safety & resiliency.	Improve health & environment.	Ensure financial responsibility.	Make decision equitably.	Address transport regionally.
Strategic Initiatives	Develop an exceptional walking environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Create a robust biking network.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
	Create dedicated mass transit lanes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Manage travel lanes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Complete strategic connections.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	
	Maintain existing transportation infrastructure.			<input type="radio"/>	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Achieve zero deaths on Nashville streets.			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

## Why developing an exceptional walking environment is important

Nashvillians continue to express a strong desire to improve walking conditions in the places where they live, work, and play. Nashville has existing regulations that ensure sidewalks are constructed alongside many kinds of development, as well as publicly funded sidewalks program that has been repairing and constructing sidewalks in Nashville since 2003.

In response to strong community preference for walkable communities, Nashville's current sidewalk regulations should be strengthened and the sidewalks program should be expanded in scope and adequately funded to meet identified needs. Elected officials and Metro representatives should actively and openly engage with residents as these options are pursued to ensure that all Nashvillians fairly share the costs and benefits of sidewalk construction.

During the latter part of the 20<sup>th</sup> Century, most roads in Davidson County were engineered to prioritize automobile traffic, and many neighborhoods developed without sidewalks. Where sidewalks were built, they were often squeezed within existing constrained right-of-way. Although automobiles will always be an important part of Nashville's transportation network, many people express a desire for improved walking infrastructure. Today, Nashville must respond to community preference for exceptional walking environments.

The Americans with Disabilities Act (ADA) establishes minimum standards for accessible sidewalks for people walking of all ages and abilities. Nashville's sidewalk standards should always go above and beyond these established minimums. Street trees or a landscaped planting strip should buffer sidewalks from roadways. Sidewalk widths should be appropriate for the surrounding context and existing or planned land uses. Dense, walkable areas with taller buildings should dedicate more space for wide, shaded sidewalks. On neighborhood streets and urban areas with high volumes of pedestrian traffic, vehicular lanes should be narrow to reduce speed and increase safety. Curb extensions and crosswalks can be added to improve the safety of street crossings. Utilities, signs, and other objects should not obstruct pedestrian paths. New sidewalks should be intentionally tied to the High Capacity Transit Corridors and Centers depicted on the NashvilleNext Growth and Preservation Concept Map. Linking these corridors with good sidewalks is critical at improving access in Nashville.

## Key steps to developing an exceptional walking environment:

### Funding

- » Metro Government should explore all available funding mechanisms for walking facilities in a transparent conversation with residents and create a plan that meets the needs and desires of the community.
- » Ensure adequate funding is available for regular maintenance of existing sidewalks.

### Outreach

- » Metro should start with the Countywide Critical Needs and Community Priorities identified in NashvilleNext to review potential walking projects with the community for feedback annually as the Capital Improvements Budget is developed. This process should include a public information campaign about the current sidewalk budget and how it relates to other community needs.
- » Develop transparent priorities for sidewalk implementation based on updated community feedback.
- » Improve public information systems to clearly indicate where sidewalk construction will happen in the short-term.
- » Continue the “Moving in Harmony” public outreach that encourages sharing the road with all people.

### Prioritization

- » Use the Countywide Critical Needs and Community Priorities identified in NashvilleNext to connect people walking along and to the High Capacity Transit Corridors on the NashvilleNext Growth and Preservation Concept Map to improve transportation options and accessibility.
- » Update the *Strategic Plan for Sidewalks and Bikeways* to reflect the Countywide Critical Needs and Community Priorities established in NashvilleNext, as well as the changing character of development in Nashville. Emphasize sidewalk construction where

there are barriers to walking along heavily trafficked streets in identified Centers and High Capacity Transit Corridors to assist people accessing their daily needs and health goals. Connectivity projects that link neighborhoods to parks and commercial districts should also be emphasized. Streets serving primarily less dense areas and less intense uses should rank lower in the prioritization process to make the best use of limited funds.

### Design

- » Metro Public Works, TDOT, and Metro Planning should review sidewalk standards and adjust design to correspond with the city’s adopted Major and Collector Street Plan using design guidelines which implement the Mayor’s Complete Streets Executive Order.
- » Ensure utilities and other fixed objects do not impede pedestrian access by enforcing appropriate siting of new utilities and relocating existing utilities that obstruct pedestrian travel.
- » Regularly implement innovative infrastructure components such as bioswales and multi-use paths that increase the functionality and performance of sidewalks for both people walking and biking.
- » Strengthen requirements for wide sidewalks with street trees alongside new development, especially in Centers and along High Capacity Transit Corridors.
- » Integrate asphalt multi-use paths for walking and biking with the city’s greenway network where appropriate.
- » Explore “slow zones” where speed limits might be reduced to 25 mph with targeted traffic enforcement to encourage walking and reduce the severity of injury in vehicle-pedestrian crashes. Slower vehicular speeds on city streets through traffic enforcement and street design can greatly reduce injury severity with older adults in crashes and will also reduce the injury severity of all people driving in car collisions.

*Example components in developing an exceptional walking environment:*

- » Wide sidewalks buffered from the road by street trees
- » Curb extensions
- » Crosswalks
- » Countdown pedestrian timers
- » Cafes, outdoor plaza space, and active uses on bottom floors of buildings
- » Neighborhood sidewalks
- » Pedestrian scale wayfinding and lighting
- » Transit station benches or shelters
- » Pedestrian island or medians
- » Trash and recycling bins
- » Accessibility features that fully accommodate pedestrians of all ages and abilities
- » Utility poles and other objects do not obstruct pedestrian movement
- » Safe, accessible alternative routes provided when sidewalks are closed
- » Traffic enforcement
- » Transportation safety messaging through campaigns and educational materials

**What is the “Moving in Harmony” campaign?**



**MUSIC CITY SHARES THE ROAD**

Moving in Harmony is a public outreach campaign developed by the Metro Health Department to encourage sharing the road with all people. Messages are crafted towards people driving to share the road with people biking and walking. These campaign materials should be used by Metro and its partners to keep a consistent and repetitive message about the importance of sharing the road with all people.



**A crosswalk and on-street parking create a more comfortable walking environment along Belmont Boulevard.**



**Crosswalks, outdoor cafe tables, and retail uses in buildings at the street along Eastland Avenue.**



**The NashVitality app helps Nashvillians find places to walk and bike.**

## Why creating a robust biking network is important:

In just over a decade, Nashville has become much more welcoming to bicyclists at minimal cost. Nashville has diligently developed an extensive greenway network adjacent to rivers and streams, created bike lanes as repaving of streets occurs, implemented innovative treatments like buffered bike lanes and bike boxes, and expanded its bikeshare system. Still, much work remains to ensure that bicycling in Nashville is safe, convenient, and fun for people of all ages and abilities.

The low-stress, safe environment and natural setting of Nashville's greenway network is appealing to a diverse group of bicyclists as a venue for social interaction, recreation, fitness, and some utilitarian trips. Many Nashvillians express a desire for on-street bicycle facilities that mimic the low-stress environment of our greenways in order to expand their access to jobs, shopping, educational opportunities, housing and other utilitarian destinations.

The Access Nashville Bikeways Map outlines essential connections between Nashville's neighborhoods and the areas of Nashville/Davidson County anticipated to have the highest concentrations of housing, jobs, and economic activity over the next 25 years. The vision consists of denser, bikeable hubs connected by low-stress corridors, or spokes, that use protected facilities, multi-use paths, or even greenways to improve comfort and safety of all road users. The spokes are then connected to one another through additional bicycle friendly routes in neighborhoods and other perimeters of the city like the rim of a wheel.

Bikeway design has undergone major technical revisions since Nashville first began implementing this type of infrastructure in the late 1990s. Today, protected bikeways that appeal to a broad range of users are standard in many parts of the United States. Providing

a range of context sensitive infrastructure solutions that make bicycling feel safer and more comfortable will increase the number of people who have a meaningful option to ride a bike for non-recreational purposes, helping to manage congestion, improving the health of our environment and our people, increasing the safety of our roadways, and enhancing our economy as households realize transportation savings. Nashville should lead among cities in the Southeastern United States in implementing state of the art bicycling infrastructure as a cost effective solution to many of the city's interrelated transportation, environment, and health issues.

### *Key steps to creating a robust biking network:*

#### *Funding*

- » Ensure adequate funding is available for regular maintenance of greenways, bike lanes, multi-use paths, bikeshare stations, and for the construction of new bikeways.
- » Ensure the Countywide Critical Needs and Community Priorities identified in NashvilleNext are included within the constraints of the Capital Improvements Budget in a transparent manner.
- » Invest in high priority bikeway connections outside of the traditional paving cycle to link together existing routes

#### *Outreach*

- » Select bikeshare locations based on community feedback, so the expansion of the network happens like other transportation infrastructure in a transparent, equitable manner.
- » Continue the "Moving in Harmony" public outreach that encourages sharing the road with all people.

### *Prioritization*

- » Prioritize connections that connect across significant barriers in the bikeway network.
  - » Saturate the existing B-cycle bikeshare network with additional stations and expand the network to include areas with multiple stations to promote biking within Tier One Centers like Green Hills commercial area, East Nashville, Madison, Rivergate, West Nashville, and Antioch.
  - » Connect Tier One Centers and Open Space Anchors with a network of low-stress greenways, multi-use paths, and protected bicycle lanes to allow cyclists of all ages and bicycling abilities meaningful access to jobs, housing, and social and economic opportunities.
- » Explore “slow zones” where speed limits might be reduced to 25 mph with targeted traffic enforcement to encourage bicycling and reduce the severity of injury in vehicle-bicycle crashes. Slower vehicular speeds on city streets through traffic enforcement and street design will also reduce the injury severity of all people driving in car collisions.
  - » Create appropriate incentives to encourage the provisions of showers, lockers, and other end of trip facilities as development occurs.
  - » Prioritize bikeway investments within the constraints of the Capital Improvements Budget in a transparent manner.

### *Design*

- » Update the *Strategic Plan for Sidewalks and Bikeways* to include state-of-the-art infrastructure components for bicycle friendly corridors that have been proven effective in other cities.
- » Develop and fund several key pilot projects to explore bicycling facilities that are uncommon in Nashville, including barrier protected bike lanes, bike signals, bikeways connected to BRT stations, on-street bike corrals, painted bike lanes, and more.
- » Implement successful pilot projects on a broader scale within the biking network.
- » Identify existing parking lot locations to potentially establish Park and Ride lots for mass transit and bikeshare.

### *Policy*

- » Analyze the bikeways proposed in the *Strategic Plan for Sidewalks and Bikeways* and the greenways proposed in the *Metropolitan Parks and Greenways Master Plan* together to achieve a seamless bikeways network of on-road, separated, and off-road biking facilities. Ensure the Countywide Critical Needs and Community Priorities identified in NashvilleNext are carried forward within those plans.

*Example components in creating a robust biking network:*

- » Buffered bike lanes
- » B-cycle stations
- » Bike racks and corrals
- » Multi-use paths or greenways
- » Bike boxes
- » Bike signals
- » Bike boulevards
- » Cycle tracks
- » Colored bike lanes
- » Bike route wayfinding system
- » Regular maintenance and sweeping of bikeway facilities
- » End of trip facilities such as showers and lockers
- » Bicycle maps, pumps, and basic tools available at community centers
- » Bicycle educational courses to teach riders of all ages and abilities to safely bike
- » Traffic enforcement
- » Transportation safety messaging through campaigns and educational materials



**Bike racks at neighborhood businesses**



**Bike rack provide a secure place to lock bicycles along 1<sup>st</sup> Avenue**



**A bike box along Church Street.**

## Why creating dedicated mass transit lanes is important:

Transit ridership has continued to increase while vehicle miles traveled has leveled or declined throughout the United States and in the Nashville area. Metro and TDOT have limited ability to expand right-of-way because of financial constraints, and widening of roadways is shown to only add to more congestion. Most Nashville streets typically have peak traffic congestion centered around a few hours in during the morning and afternoon commutes. During other times, there is additional space on streets that is not being utilized. Transit can add to the transportation network's efficiency when it is competitive with auto travel meaning that a transit rider can expect to make the trip in roughly the same amount of time that she would in her own vehicle. Utilizing this extra space on Nashville's streets is an opportunity to make transit competitive. Redesigning a corridor for transit lanes is also an opportunity to improve performance of other transportation modes by organizing the right-of-way so the modes work seamlessly and efficiently. Studying current traffic trends related to recent redevelopment while also accommodating transit riders will make cars move more efficiently too by retiming traffic signals and upgrading technology with the other corridor improvements. Transit also can meet the mobility needs of those that cannot drive for medical or age reasons, those that cannot afford a car, and those that chose to not own a car. It also provides a choice for those that own a car to reduce their maintenance costs, reduce their gas expenses, improve their environmental impact, improve their health and safety, or use time for other activities such as working or checking e-mail while commuting.

Additional studies of corridors are needed to assess which mode types, such as BRT, Light Rail, Commuter Rail, or Streetcar, are the most appropriate and financially-feasible for each corridor. Getting additional dedicated lanes for mass transit is needed to address increasing peak time congestion and improving accessibility by providing choices that are needed by Nashvillians. Nashville should move forward with its mass transit vision in MTA's *Strategic Transit Master Plan* as Centers and High Capacity Transit Corridors evolve to provide these choices.

## What is a road reconfiguration?

Many major arterials carry fewer vehicles in a day than they are designed to support. Examples include Dickerson Pike and Franklin Pike. During a road reconfiguration or road diet, excess capacity in the road is reallocated for turning lanes, on-street parking, bike lanes, or dedicated space for transit. The Federal Highway Administration and TDOT have embraced roadway reconfigurations for their ability to reduce the frequency and severity of crashes, improve street operations, and offer meaningful transportation choices. Nashville has more than 180 miles of major roads that could potentially be suitable for a roadway reconfiguration. The Church Street Viaduct over 11th Avenue, Demonbreun Street, Magnolia Boulevard, Belmont Boulevard, Hillsboro Circle, Cleghorn Avenue, and Crestmoor Road have been improved in recent years through a roadway reconfiguration.



**The Music City Star is one leg of commuter rail that runs from downtown Nashville to Lebanon, TN.**

## *Key steps to developing dedicated mass transit lanes:*

### *Funding*

- » Assess and recommend a funding mechanism to improve the regional mass transit system.

### *Outreach*

- » Develop off-site examples or mock-ups of transit components that may be implemented like BRT and Light Rail for the community to see firsthand, explore, and discuss. Use these educational opportunities to reinforce the regional mass transit vision adopted by the Nashville Area MPO and the transit priorities contained within the updated *MTA Strategic Transit Master Plan*.
- » Continue the Moving in Harmony public outreach that encourages sharing the road with all people.

### *Prioritization*

- » Prioritize corridors and implementation of transit upgrades during a transparent planning process that explores the transit system's limited budget and implements the most important community needs.
- » Update MTA's *Strategic Transit Master Plan* and the Nashville Area MPO's *Regional Transportation Plan* to closely align with the vision of NashvilleNext for land use and redevelopment of Centers and Corridors.

### *Design*

- » Identify existing parking lot locations to potentially establish Park and Ride lots for mass transit and bikeshare.
- » Continue to study regional and local corridors to assess feasible transit modes and costs for implementation and operation. |

### *Policy*

- » Connect BRT Lite stations and high capacity transit modes with walking and biking infrastructure.

*Example components in creating dedicated mass transit lanes:*

- » BRT Lite stations and buses
- » Commuter rail
- » Light rail
- » Bus on shoulder applications
- » Accessible shelters at stops with real time information displays
- » Integrated payment methods with mass transit, bikeshare, and other components of the city's transportation system that can be made off of vehicle
- » Safe crossing facilities near stops
- » Complete sidewalk network around transit stops
- » High level of frequency and reliability
- » Easy wayfinding for regular transit riders and tourists
- » Transportation safety messaging through campaigns and educational materials
- » Pilot examples of transit infrastructure before implementation



**A BRT Lite shelter on Gallatin Pike.**



**Currently, BRT Lite service along Gallatin Pike runs in mixed traffic. Dedicated lanes or queue jump lanes would keep the bus on time.**



**A new transit shelter along the 28<sup>th</sup>-31<sup>st</sup> Avenue connector incorporates public art, bike racks, trash receptacles, and wide sidewalks.**



**An example of a multi-use path linked to a transit shelter in suburban Kansas City.**

## Why managing travel lanes is important:

Widening highways is very costly, exacerbates congestion, and promotes speeding. Within the existing highway and street networks, there are ways to manage traffic and other modes of transportation that move more people and broaden the access a highway or street can provide. Management of highway lanes requires coordination between local and state police to keep stopped traffic off shoulders, so buses can utilize the shoulder during peak congestion. It also requires a robust intelligent transportation system (ITS) to monitor traffic conditions and alert agencies and motorists to issues. Managed lanes can be more successful with additional restrictions such as the number of occupants or varying tolls during peak uses. Within the street network, managed lanes may include reversible lanes on arterials to handle peak traffic congestion or accommodating transit vehicles at intersections with queue jump lanes to let people taking transit through the intersection first.

### *Key steps to managing travel lanes:*

#### *Funding*

- » Ensure adequate funding is provided at the state and local level to operate traffic management centers, law enforcement, and motorist assist programs.

#### *Outreach*

- » Develop a real-time, automated, centralized reporting system for closures and detours for all modes of transportation, including a publicly accessible website and a machine readable data feed with real-time information for application developers.

#### *Prioritization*

- » Conduct a study with the Nashville Area MPO, TDOT, Metro Public Works, Nashville MTA, RTA, and Metro Planning to assess regional corridors for managed highway lane concepts that include HOV lanes, reversible lanes, high occupant toll (HOT) lanes, and ramp metering that would be most effective and feasible. Also explore concepts for transit to utilize bus-on-shoulder applications on highways and queue jumps lanes with transit signal prioritization at specific intersections on arterial streets.

- » Assess and prioritize streets appropriate for Road Reconfigurations and transitions into Complete Streets to incorporate turning lanes, bike lanes, on-street parking, transit accommodations, parklets, plazas, and other spaces for all transportation modes. Actively work with neighborhoods and residents to determine potential strategies for implementation within the public right-of-way.
- » Enhance highways and arterials with additional ITS components to assess traffic conditions, pavement conditions, adjust signal phasing and timing, inform motorists of conditions, and direct motorists to alternate routes in real time. Coordinate traffic signals across major corridors and during high traffic events. Consider smart components to integrate infrastructure systems.

### *Design*

- » Assess special event impacts upon walking, biking, transit, and traffic through a study of the downtown core while major events or festivals are taking place at the arena, ballpark, convention center, and amphitheater and provide recommendations that balance all modes of transportation to improve people's access to downtown during major events.
- » Assess with the Nashville Area MPO, TDOT, Metro Public Works, Metro Planning, and adjacent counties, a Freight Movement Plan that identifies routes for trucks traveling through Nashville to other destinations and routes for trucks with their destination within the city.

### *Policy*

- » Establish a Department of Transportation to implement and manage a comprehensive transportation management system that considers and serves all modes.
- » Adjust permit fees to incentivize street closures to primarily occur on festival streets. Establish standard, consistent alternative traffic patterns and bus detours for festival closures.

*Example components that manage travel lanes:*

- » Reversible lanes
- » Bus on shoulder applications
- » HOV lanes
- » HOT lanes
- » Reversible highway lanes
- » Ramp metering



**Ramp metering on I-94 in Milwaukee**

source: By Patriarca/2 (own work) via wikipedia commons.



**An example of buses using the shoulder in Minneapolis to bypass congestion.**

Source: Metrotransit, Minneapolis



**Hermitage Avenue has reversible lanes to handle peak traffic hours.**

## Why completing strategic connections is important:

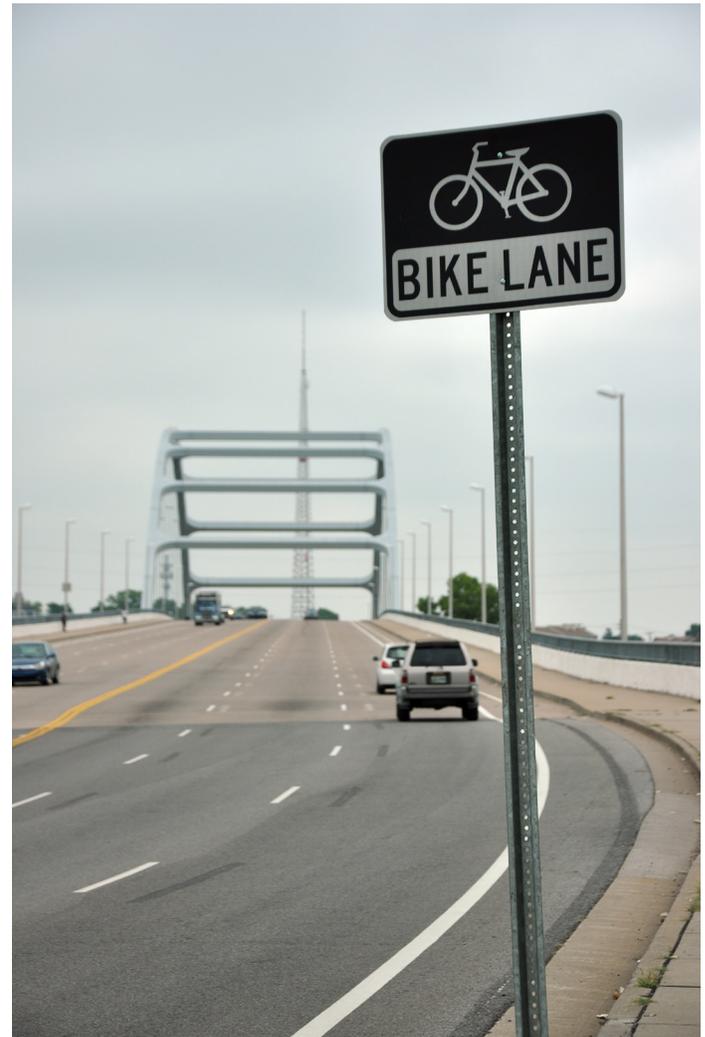
The street network within Nashville/Davidson County and Middle Tennessee is mostly built. However, there are missing, but strategic connections that could provide additional access between areas and safer access for other transportation modes. One recent street example connects North Nashville to Midtown via the 28<sup>th</sup>-31<sup>st</sup> Avenue Connector Bridge, which includes protected bike lanes, sidewalks, and bus shelters. Another proposed project is the planned extension of Division Street across the railroad to connect SoBro with the Gulch. A non-motorized connectivity example is the greenway bridge over the Cumberland River connecting Shelby Bottoms to Two Rivers. Other strategic connections for cars, pedestrians, and bicyclists are identified in Green Hills, Antioch, and Madison that could have tremendous impact in improving access and generating economic development.

### *Key steps to completing strategic connections:*

- » Consult the prioritized list of strategic connections in NashvilleNext as funding and redevelopment opportunities arise. Work through public-private partnerships as necessary to complete connections. Regularly review projects with the community for feedback and inclusion in the Capital Improvements Budget and MPO's *Regional Transportation Plan* for funding.
- » Secure funding so strategic connections can be completed as properties redevelop in Centers through land readjustment. Coordinate with redevelopment plans to provide these connections and balance surrounding property owner concerns with overall community transportation needs.
- » Incorporate walking, biking, and transit components within new strategic connections.

*Examples where completing strategic connections have been important:*

- » KVB extension
- » Division Street extension concepts
- » 28<sup>th</sup>-31<sup>st</sup> Avenue Connector Bridge
- » Greenway bridge over Cumberland River



**The Gateway Bridge and Korean Veterans Boulevard has been a strategic connection into downtown Nashville. Buffered bike lanes were recently installed on the bridge.**

## Why maintaining existing transportation infrastructure is important:

Metro Nashville, the State of Tennessee, and the United States have made large investments in the region's transportation infrastructure. As funding remains stagnant, maintenance of the existing street and transportation networks is critical. Enhancing these networks with other modes also capitalizes on the investments that have already taken place. For example, reinvesting along an arterial by constructing sidewalks to connect transit riders to bus stops provides additional transportation choices in a safer manner. Resurfacing streets and reconstructing structurally deficient bridges is essential to keep the region's economy vibrant.

### *Key steps to maintaining existing transportation infrastructure:*

#### *Funding*

- » Ensure adequate funding is available for regular maintenance and operations of components in the transportation network.

#### *Outreach*

- » Work with Metro Public Works and TDOT to regularly monitor infrastructure conditions. Explain to the community through a transparent process, the budget for transportation maintenance and the need to identify and prioritize investments.

#### *Prioritization*

- » Enhance highways and arterials with additional ITS components to assess traffic conditions, pavement conditions, inform motorists of conditions, and direct motorists to alternate routes. Consider smart components to integrate infrastructure systems.

#### *Policy*

- » When possible, use cost-efficient preventative maintenance or rehabilitation techniques that extend the life of transportation facilities instead of reconstruction

#### *Examples of issues related to maintaining transportation infrastructure:*

- » Pavement potholes
- » Interstate cameras or highway message boards
- » Deficient bridge
- » Constructing sidewalks along a street
- » Asphalt damaged through trucks, braking, etc.



**Street maintenance is important to Nashville's economy.**



**Large road structures are a significant maintenance issue over time.**

## Why achieving zero deaths on Nashville streets is important:

On average from 2009-2013, Nashville reported 69 deaths annually on its streets.<sup>13</sup> In the United States, we have become accustomed to thinking that traffic fatalities are an inevitable occurrence, but there are a number of opportunities working together that makes zero deaths possible:

- » Vehicle miles traveled (VMT) per capita, a measure of how much people are driving, continues to decrease despite increases in population.<sup>14</sup> Two examples describe how our culture has changed reducing our reliance on automobiles—computer technology and redevelopment with a mixture of land uses. The Internet reduced the need for people to drive to access some goods and services. Communications between colleagues can now take place through virtual technologies. Previously, people would make trips to the grocery store or overnight trips for work activities mostly by car. Today's land use planning concepts focus on encouraging a mixture of land uses closer to one another meaning more people can walk, bike, and take transit for their goods and services. Land uses are not segregated as much by type which promotes automobile dependence. As people drive less, they reduce their exposure or odds of being involved in a fatal crash.
- » Reducing behaviors that cause fatal crashes has been a goal of safety advocates in the United States. Educational campaigns tied with strategic traffic enforcement that enforces traffic laws such as buckling up while people drive and only driving while sober continue to reduce risky behavioral choices.
- » As transit ridership increases,<sup>15</sup> people are putting themselves in a vehicle with others that is operated by a professional whose job is to get people to their destinations safely. Transit travel has about a tenth the casualty (death or injury) rate as car travel, and residents of transit-oriented developments have about a fifth the per capita casualty rate as in car-oriented communities.<sup>16</sup> Riding transit is one of the safer forms of surface transportation, especially compared to driving.
- » State DOTs have more comprehensive and timely datasets about crashes which informs their implementation of safety



**Metro Nashville Police Department has a unit that investigates the causes of crashes.**

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13 Tennessee Department of Safety and Homeland Security, 2014 Calculated by Planning Department

14 *Transportation in Transition: A Look at Changing Travel Patterns in America's Biggest Cities* by Benjamin Davis, Frontier Group, and Phineas Baxandall, U.S. PIRG Education Fund - <http://www.frontiergroup.org/reports/fg/transportation-transition>; *Our Nation's Highways: 2011*, by FHWA Office of Highway Policy Information - <http://www.fhwa.dot.gov/policyinformation/pubs/hf/pl11028/chapter4.cfm>

15 *The Nashville MTA Connection, Jan-Feb 2013* <http://www.nashvillemta.org/news/pub148.pdf>

16 Todd Litman <http://www.vtpi.org/safer.pdf> *Safer Than You Think! Revising the Transit Safety Narrative* December 2014

countermeasures.<sup>17</sup> They analyze crash data regularly and identify traffic safety hot spots to review during interdisciplinary road safety audits.<sup>18</sup> Proactive safety improvements along with comprehensive improvements through regular maintenance such as rumble stripes and guardrail replacement make strides in reducing fatalities.

- » Vehicle safety technology that alerts drivers to hazards have improved safety. As vehicles become more autonomous, technology is likely to alert drivers to hazards that may have been missed. Technology changes that improve a person's driving performance is likely to further reduce fatal crashes.
- » Response to crashes is critical in getting injured people stabilized and to hospital facilities. Nashville has good emergency care coverage with hospitals throughout Davidson County and Vanderbilt University Medical Center designation as a Level OneTrauma Center for the region.

#### *Key steps to achieving zero deaths on Nashville streets:*

##### *Funding*

- » Adequately fund the maintenance of existing transportation infrastructure and address proven safety issues first within the multimodal transportation network.

##### *Outreach*

- » Continue the “Moving in Harmony” public outreach that encourages sharing the road with all people.
- » As part of Access Nashville’s future reporting mechanism, track fatality and disabling injury trends on Nashville streets.

##### *Prioritization*

- » Metro along with the Nashville Area MPO, Nashville MTA, and TDOT should take the lead to assess

crash data on local streets, generate a list of high crash locations for public review and comment, assess potential multimodal conditions, and implement low-cost safety improvements. Work with residents and local stakeholders on determining the appropriate solutions.

- » Create a forum for interdisciplinary dialogue on transportation safety in the region to include professionals from transportation planning, traffic engineering, safety education, public health, emergency response, and traffic enforcement.

##### *Design*

- » Consult the key recommendations for developing an exceptional walking environment, creating a robust biking network, and creating dedicated mass transit lanes, which support expanding transportation choices to encourage people walking, biking, and taking transit.
- » Assess transportation safety methods in other cities that may be appropriate to utilize in Nashville.

##### *Policy*

- » Explore “slow zones” where speed limits might be reduced to 25 mph with targeted traffic enforcement to encourage walking, biking, and transit use while reducing the severity of injury in crashes.

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<sup>17</sup> State of Tennessee Strategic Highway Safety Plan <http://www.tdot.state.tn.us/incident/StrategicHighwayplan09.pdf>

<sup>18</sup> Tennessee Department of Transportation Road Safety Audit Website Accessed February 6, 2015 <http://www.tdot.state.tn.us/projectplanning/ras.htm>

*Examples of issues related to achieving zero deaths on Nashville streets:*

- » Traffic enforcements
- » Vehicle improvements such as airbags, safety restraints, and autonomous technologies
- » Transportation safety messaging through campaigns and educational materials
- » Using transit and ridesharing trips to replace single occupancy vehicle trips



Traffic enforcement can be an effective tool to reduce injuries and deaths on Nashville streets. This is an example of educating parents on proper child safety seat restraints.



A highway message sign encourages motorists and passengers to buckle up along I-440.



Transit is a safer form of travel compared to driving a car.



## **Nashville’s 21st Century Transportation Framework Plan**

A multimodal transportation system can promote economic prosperity while encouraging sustainable growth and development practices, and protecting and preserving valuable community and natural assets. The key recommendations highlighted below are essential to balance these objectives, improve accessibility, and achieve the vision laid out in NashvilleNext. Additional projects and concepts described and details of projects will need to be thoughtfully examined for older adults’ needs and for people of all ages and abilities to complete the trip.

A prior section describes research, assessment, policy, planning and budgeting actions to create an exceptional walking environment. The following maps and concepts depict the backbone of sidewalks, streets, transit, and bikeway networks for the city as well as specific design techniques to meet Access Nashville Accessibility Principles. Countywide Critical Needs and Community Priorities are presented based on the outlined criteria for each transportation mode. The Countywide Critical Needs that meet the strategic transportation initiatives are listed for each transportation mode. Not every sidewalk, bikeway, and street project are included, however, compared to the many important projects not included below, the Countywide Critical Needs significantly implement the NashvilleNext vision for improving accessibility and generally meet broader transportation objectives beyond one Community Plan area. The Community Priorities are often transportation projects important within the appropriate Community Plan area. All of the priorities from each community are weighed with the NashvilleNext Guiding Principles to implement NashvilleNext.

### **Walking Network**

All people are pedestrians at some point during their trip, whether they are walking to work, school, or shopping, to a bus stop, or through a parking lot from their car. Nashville’s streets offer mobility to people traveling through and across the region. They must also provide access to people walking or using a mobility device. In balancing these functions, Nashville should begin by providing safe and comfortable accommodations for the people who are most exposed to traffic hazards—pedestrians. Walking is often the first and last components of trips, or *completing the trip*.

Understanding the history of Nashville’s evolution is critical to grasp where sidewalk needs are most urgent in Nashville/Davidson County. Nashville’s major arterial streets, or pikes, connect to downtown in a spoke pattern and have functioned as the foundation for the city’s transit network since the first streetcar lines were established. These pikes – Clarksville, Gallatin, Dickerson, Nolensville, Charlotte, 21<sup>st</sup> Avenue/Hillsboro, West End/Harding, Franklin, Lebanon, and Murfreesboro – connected the city’s first neighborhoods. Neighborhoods like Lockland Springs, Cleveland Park, Sunnyside, Hillsboro-West End, Buena Vista Heights and Jefferson Street thrived as a result of their connectivity and closeness to jobs in downtown. Markets, schools, and libraries were nearby, and people could walk or take a streetcar to access daily needs. As more people obtained cars, Nashville’s streetcar system was phased out, and the pikes were widened in anticipation of increased vehicular traffic. New housing was built with cars in mind. The sidewalk systems in these inner ring neighborhoods and areas along the pikes closer to downtown are largely intact today.

The role of the arterial pikes began to change as their increased auto capacity encouraged more residents to drive to meet their daily needs. The streets were intended to move cars quickly and sidewalks were excluded. Dickerson Pike north of Douglas Avenue, Gallatin Pike through the Rivergate area, Charlotte Pike west of White Bridge Road, Murfreesboro Pike near Nashboro Village, and Lebanon Pike through Donelson are examples of this evolution. These corridors typically have large gaps in the sidewalk network despite being the heart of today’s mass transit system. Small cottage neighborhoods in Woodbine, Madison, and Bordeaux transitioned into neighborhoods of ranch homes on large lots near Donelson, Goodlettsville, Green Hills, West Meade, and Bellevue. Most people living in these areas drove to services and jobs, and neighborhoods were often built without sidewalks. Many of these neighborhoods, built between the mid-1940s and the 1980s, still lack complete sidewalk networks. Today, as residents place a greater emphasis on transit and walkability, these corridors struggle to provide the safe walking environment attractive for taking mass transit.

Because Nashville does not have an extensive network of sidewalks beyond the urban core, identifying a large number of streets with future sidewalk needs is not helpful without adequate funding to make improvements. The *Strategic Plan for Sidewalks and Bikeways* has been the planning framework for implementation decisions involving sidewalks. NashvilleNext supports the implementation of sidewalks where people walking currently lack accommodations along Arterial-Boulevards with mass transit service.



**Dickerson Pike was one of the first routes into Nashville. Its role has changed and needs sidewalks to link transit stops.**



**Hillsboro Pike has changed over the years from a rural country road to a major urban street.**

Sidewalks along these corridors will provide an immediate accessibility need and also help generate economic development potential by supporting more mixed use along corridors and walkable centers. With limited funds, Metro should consult the Countywide Critical Needs and Community Priorities identified in the Community Plans for guidance on implementing walking infrastructure tied to other transportation modes and that improve community-wide accessibility.

Below are infrastructure design strategies that create a more exceptional walking environment and address the demand for walkability that has been a common refrain during the NashvilleNext process. These design strategies should be applied comprehensively by Metro and private sector development:

#### *Raised intersections*

Raised intersections create a safe, slow-speed crossing and public space at minor intersections. They reinforce slow speeds and encourage people driving to yield to people walking at the crosswalk.<sup>19</sup>

#### *Wide sidewalks with street trees*

The sidewalk is the area where people interact with both one another and with businesses and houses in an urban environment. Numerous studies have shown that good walking network connectivity and conditions have a positive impact on land values. Nashville's sidewalk standards require a landscape buffer and sidewalk unless significant constraints exist, and these standards recognize increased pedestrian demand by widening the sidewalk. Pedestrians and businesses thrive where sidewalks have been designed to match the scale and use of surrounding buildings, with sufficient lighting, shade, and street-level activity. These considerations are especially important for streets with higher traffic speeds and volumes, where people who are walking may otherwise feel unsafe. Relocation of fixed objects, such as utility poles, light fixtures, and other street furniture should not impinge on or restrict the adjacent walkway. Walkways must be clear of fixed objects in coordination with ADA accessibility guidelines.<sup>24</sup>



**A new development along Woodland Street rebuilt the sidewalks to include street trees.**

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<sup>19</sup> NACTO Urban Street Design Guide

### *Curb extensions*

Curb extensions visually and physically narrow the roadway, creating safer and shorter crossings for people walking, particularly older adults and those with mobility devices, while increasing the available space for street furniture, benches, plantings, and street trees. Curb extensions increase the overall visibility of those walking by aligning them with the parking lane and reducing the crossing distance for them. Curb extensions tighten intersection curb radii and encourage slower turning speeds.<sup>20</sup>

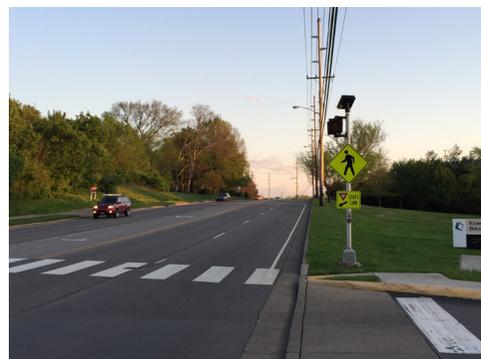
Nashville has successfully improved the comfort and safety walking environments in both urban and neighborhood settings by installing curb extensions. Moving forward, curb extensions should be installed as standard treatments on roads with on-street parking unless significant constraints exist. Curb extensions have existed along portions of Lower Broadway for many years.

### *Crosswalks*

Safe and frequent crosswalks support a walkable environment. They should be applied where walking is anticipated and encouraged. While application of crosswalk markings alone is not a viable safety measure in all situations, crosswalks benefit and guide pedestrians, while reinforcing their right-of-way at intersections. Designers should take into account both existing as well as projected pedestrian crossing demand. Judgment on the application of a crosswalk should be based on multiple factors, including land uses, present and future demand, pedestrian compliance, speed, safety, and crash history. Volumes alone are not enough to determine whether or not a particular device should be used. The practice of discouraging people crossing streets by leaving uncontrolled crossings unmarked is not a valid safety measure. Instead, it encourages unsafe, risk-taking behavior and discourages walking citywide. Efforts should be made to enhance or highlight desired crossings wherever practicable. Hybrid beacons, rapid flashing beacons, raised crossings, medians, and other safety counter-measures may be suitable and less expensive than full signalization. These should all be considered before leaving an uncontrolled crossing.<sup>21</sup> Furthermore motorists should be educated that every intersection is an unmarked crosswalk and to expect people crossing.



**Korean Veterans Boulevard is an example of a street that uses curb extensions and a planted median to help people crossing the wide street.**

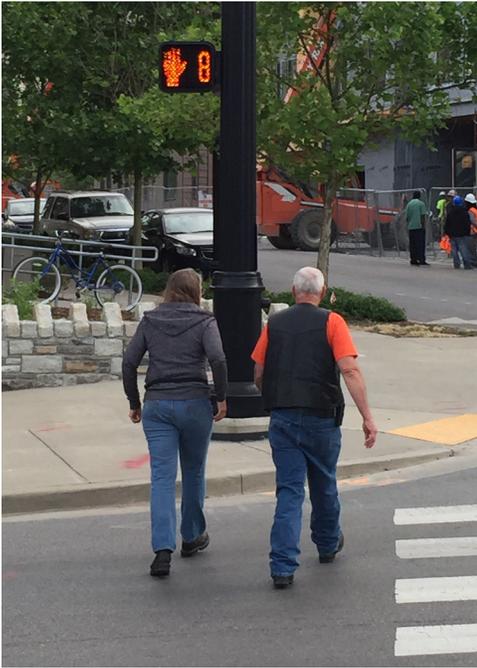


**An activated crosswalk helps pedestrians cross Edmondson Pike near the library.**

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**Pedestrian countdown signals indicate how much time one has to cross the street.**

### *Pedestrian countdown timers*

Pedestrian countdown timers provide a numeric display that indicate the number of seconds remaining to walk across a street. Metro currently replaces older pedestrian signals with countdown timers. Countdown timers should be timed to allow people crossing of all ages and abilities to safely walk across the street. New timer installations should include both audible and tactile feedback as standard accessibility features.

### *Leading pedestrian interval*

A Leading Pedestrian Interval (LPI) typically gives pedestrians a 3–7 second head start when entering an intersection with a corresponding green signal in the same direction of travel. LPIs enhance the visibility of people walking in the intersection and reinforce their right-of-way over turning vehicles, especially in locations with a history of conflict. To increase the effectiveness of a LPI and improve visibility of those walking at high-conflict intersections, install a curb extension at the intersection.<sup>22</sup>

### *Corner radii*

Corner radii directly impact vehicle turning speeds and pedestrian crossing distances. Minimizing the size of a corner radius is critical to creating compact intersections with slower, safe turning speeds. In urban settings, smaller corner radii are preferred and actual corner radii exceeding 15 feet should be the exception. A large corner radius should not be used to facilitate a truck turning from the right lane into the right lane.<sup>23</sup>

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<sup>22</sup> NACTO Urban Street Design Guide

<sup>23</sup> NACTO Urban Street Design Guide

## Walking Priorities Criteria

There are thousands of miles of street without sidewalks in Nashville/ Davidson County, but funding for projects is limited. Countywide Critical Needs and Community Priorities are identified below and should be incorporated into any update of the *Strategic Plan for Sidewalks and Bikeways*. The following criteria, in no particular order, helped establish these projects:

- » Estimated Cost – rough planning estimate based on project’s scope
- » Number and Complexity of Environmental Constraints – assessment of project’s impact on streams, floodplains, and slopes
- » Number of Historical Constraints – assessment on project’s impact on cultural assets
- » Link to a Tier One Center – project strongly ties to planned growth areas
- » Link to Other Centers – project ties to other planned growth areas
- » Location Along a High Capacity Transit Corridor with Immediate Need – project strongly ties to future mass transit
- » Link to Existing Services – project connects to a school, civic building, park, senior facility, or hospital
- » Functional Design of the Street – projects along Arterial-Boulevards and Collector-Avenues are higher priority because those streets carry more traffic
- » Volume and Speed of Vehicles on the Street – the amount traffic and the speed of traffic impacts walking conditions
- » Existing Character of Street Compared to Future Character of Street – assessment on how the project ties to future land use objectives of the corridor
- » Pedestrian Level of Service (PLOS) – the existing walking conditions of a street
- » Latent Pedestrian Demand (LPD) – the potential for walking activity
- » Pedestrian Generator Index (PGI) – another assessment on the potential for walking activity
- » Sidewalk Priority Index (SPI) Greater than 20 – need for sidewalk infrastructure based on existing conditions
- » High Health Impact Area – the project is located in an area with identified health disparities
- » Crashes – the amount of crashes involving pedestrians
- » Perceived Safety Need – the project addresses concerns voiced by residents
- » Need for Public Investment – the level that the project addresses maintenance needs or areas overlooked in the past
- » Need for Interdepartmental Collaboration – coordinated projects may be more difficult but will likely have larger benefits
- » Community Support – has the community identified this need?
- » Elected Official Support – has a Council Member or other elected official identified this need?
- » Anticipated Population Density – the project connects to planned growth area with housing

## *Walking Priorities*

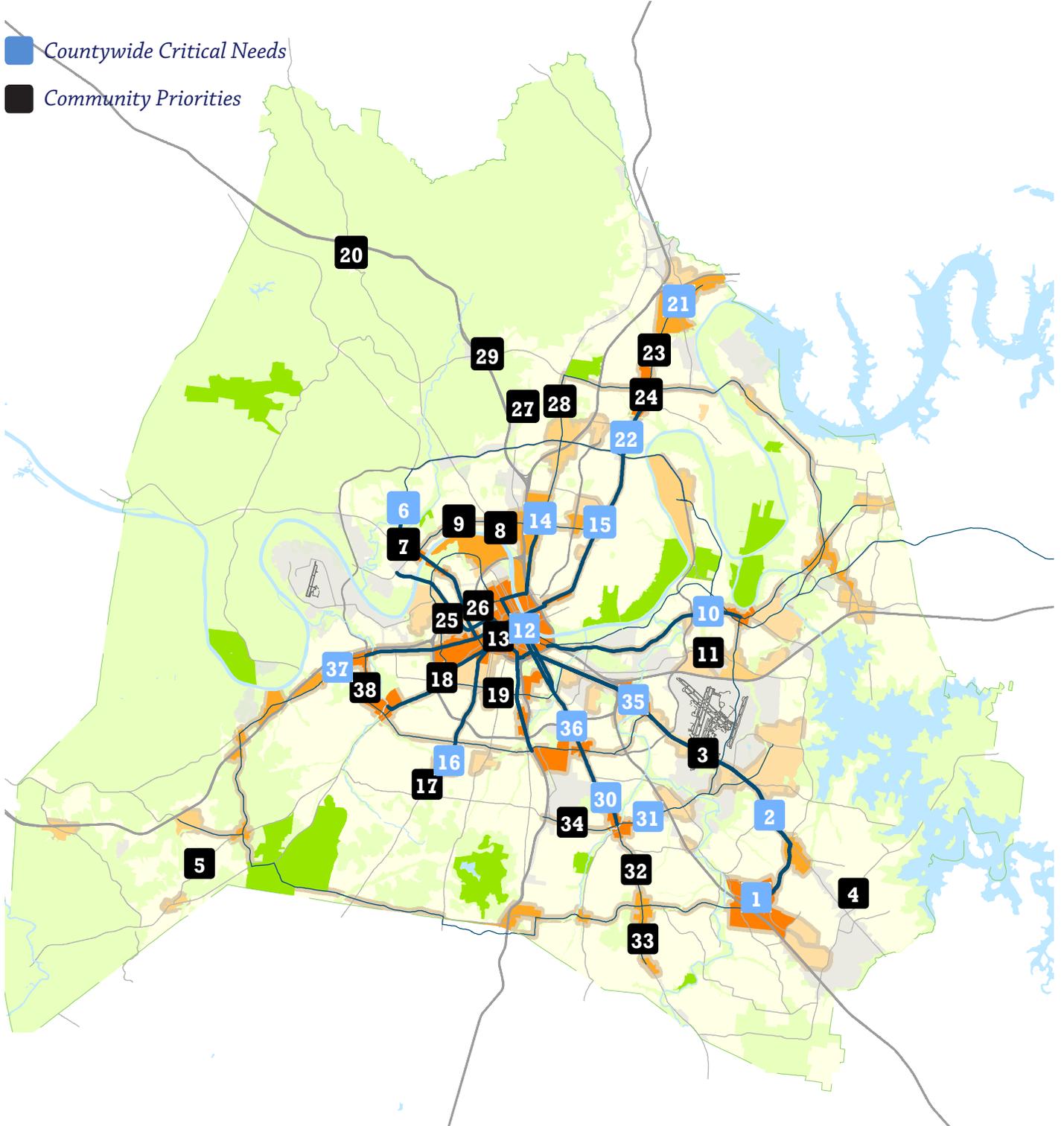
Walking priorities are numbered on the Access Nashville Walking Priorities Map and include sidewalks, studies for walking improvements related to complete streets, and other new pedestrian facilities. Needs far outweigh financial constraints, but projects identified best meet the criteria analyzed related to the Nashville Next Growth and Preservation Concept Plan and Community Plans.

Countywide Critical Needs are denoted in light blue that substantially improve access for those living, working, or visiting an area and closely correlate to the Tier One Centers and Immediate Need High Capacity Transit Corridors in NashvilleNext, which improves city-wide accessibility. This list should be consulted by Metro during the development of the Capital Improvements Budget and Capital Spending Plan each year, the Tennessee Department of Transportation's Three Year Improvement Plan, and the Nashville Area MPO's *Regional Transportation Plan* and related Transportation Improvement Program. Each project is described below. For additional discussion regarding the projects priorities, consult each Community Plan, found in Volume III.

## *List of Walking Projects*

1. Hickory Hollow Area Sidewalks
2. Nashboro Village Area Complete Streets
3. Airport Area Complete Streets
4. Antioch Cluster Sidewalk Connections
5. Old Harding Pike Sidewalks
6. Bordeaux Area Sidewalks
7. Bordeaux Area Civic Sidewalks
8. Baptist World Center Drive Sidewalks
9. West Trinity Lane Walking Improvements
10. Gateway to Donelson
11. Elm Hill Pike Sidewalks
12. Lower Broadway Walking Improvements
13. James Robertson Viaduct Retrofit Study
14. Dickerson Pike Complete Streets
15. Gallatin Pike Complete Streets
16. Gateway to Green Hills
17. South Green Hills Sidewalks
18. Midtown Walking Improvements
19. Edgehill Walking Improvements
20. Downtown Joelton Civic Sidewalks
21. Rivergate Area Complete Streets
22. South Madison Complete Streets
23. Madison to Rivergate Complete Streets
24. Downtown Madison Walking Improvements
25. North Nashville Bridge Replacement
26. Gateway to Heritage Walking Improvements
27. Brick Church Pike Sidewalks
28. Skyline to Bellshire Sidewalks
29. Old Hickory Boulevard Walking Improvements
30. Paragon Hills Area Complete Streets
31. Harding Place East Sidewalks
32. Tusculum Area Complete Streets
33. South Nolensville Pike Sidewalks
34. Harding Place West Sidewalks
35. Murfreesboro Pike Complete Streets
36. Woodbine Area Walking Improvements
37. Charlotte Pike Sidewalks
38. White Bridge Pike Walking Improvements

Figure 14: Countywide priority walking projects



## Antioch-Priest Lake

*Access Nashville Walking Project #1*

**Hickory Hollow Area Sidewalks**—Construct sidewalks along Bell Road, Mt. View Road, and Rural Hill Road in the Hickory Hollow area. (see related *Street Project #1: Gateway to Antioch*)

*Access Nashville Walking Project #2*

**Nashboro Village Area Complete Streets**—Study opportunities to implement complete street components with sidewalks, protected bikeways, transit improvements, street crossings, and streetscaping along Murfreesboro Pike from Smith Springs Road to Bell Road.

*Access Nashville Walking Project #3*

**Airport Area Complete Streets**—Study opportunities to implement complete street components with sidewalks, protected bikeways, transit improvements, street crossings, and streetscaping along Murfreesboro Pike from Briley Parkway to Smith Springs Road.

*Access Nashville Walking Project #4*

**Antioch Cluster Sidewalk Connections**—Construct sidewalks and improve street crossings along Hobson Pike and Pinhook Road between Kennedy Middle School, Antioch High School, and Mt. View Elementary School.

## Bellevue

*Access Nashville Walking Project #5*

**Old Harding Pike Sidewalks**—Construct sidewalks along Old Harding Pike in Bellevue from Highway 70S to Learning Lane.

## Bordeaux-Whites Creek

*Access Nashville Walking Project #6*

**Bordeaux Area Sidewalks**—Construct sidewalks along Clarksville Pike between Ashland City Highway and Briley Parkway. (see related *Street Project #4: Clarksville Pike Widening*)

*Access Nashville Walking Project #7*

**Bordeaux Area Civic Sidewalks**—Construct sidewalks and improve street crossings near the Northwest YMCA to nearby senior center on John Mallette Drive.

*Access Nashville Walking Project #8*

**Baptist World Center Drive Sidewalks**—Complete the sidewalk network along Baptist World Center Drive from Vashti Street to Trinity Lane.

*Access Nashville Walking Project #9*

**West Trinity Lane Walking Improvements**—Improve street crossings on West Trinity Lane from Clarksville Pike to Brick Church Pike as redevelopment occurs.

## Donelson-Hermitage-Old Hickory

*Access Nashville Walking Project #10*

**Gateway to Donelson**—Construct sidewalks, streetscaping, and gateway features along Old Lebanon Road and Lebanon Pike from Briley Parkway to Donelson Pike.

*Access Nashville Walking Project #11*

**Elm Hill Pike Sidewalks**—Construct sidewalks along Elm Hill Pike from Briley Parkway to Donelson Pike.

## Downtown

*Access Nashville Walking Project #12*

**Lower Broadway Walking Improvements**—Implement wider sidewalks, public space features, and streetscaping improvements along Broadway between First Avenue and Fifth Avenue that support a transition to a festival street (a street that can easily be closed to vehicular traffic to host concerts, performances, and other community events).

*Access Nashville Walking Project #13*

**James Robertson Viaduct Retrofit Study**—Study how to retrofit the James Robertson Parkway viaduct under Charlotte Pike with good walking and biking infrastructure.

## East Nashville

*Access Nashville Walking Project #14*

**Dickerson Pike Complete Streets**—Study opportunities to implement complete street components with sidewalks, protected bikeways, transit improvements, street crossings, and streetscaping from Douglas Avenue to Briley Parkway. Implement as coordinated capital improvements projects. (see related *Bicycling Project #18: East Nashville Bikeway*) As redevelopment occurs, consolidate access points to create a limited number of vehicular/pedestrian conflict points.

*Access Nashville Walking Project #15*

**Gallatin Pike Complete Streets**—Study opportunities to implement complete street components with sidewalks, protected bikeways, transit improvements, street crossings, and streetscaping from 5th Street to Briley Parkway. Implement as coordinated capital improvements projects. (see related *Bicycling Project #18: East Nashville Bikeway*) As redevelopment occurs, consolidate access points to create a limited number of vehicular/pedestrian conflict points.

## Green Hills-Midtown

*Access Nashville Walking Project #16*

**Gateway to Green Hills**—Fill in sidewalk gaps along Hillsboro Pike, improve street crossings and streetscaping, and limit vehicular access points with redevelopment from Crestmoor Road to Hobbs Road.

*Access Nashville Walking Project #17*

**South Green Hills Sidewalks**—Construct sidewalks along the west side of Hillsboro Pike from Harding Place to Hobbs Road.

*Access Nashville Walking Project #18*

**Midtown Walking Improvements**—As redevelopment occurs, secure wider sidewalks along the Broadway-West End corridor and adjacent streets, and limit vehicular

access points along the Broadway-West End corridor from downtown to White Bridge Road.

*Access Nashville Walking Project #19*

**Edgehill Walking Improvements**—Improve street crossings along 12th Avenue South from the Gulch near I-40 to Ashwood Avenue in 12South.

## Joelton

*Access Nashville Walking Project #20*

**Downtown Joelton Civic Sidewalks**—Construct sidewalks along Whites Creek Pike from Old Clarksville Pike to I-24, and develop walking connections between the Joelton Community Club Park and schools to Whites Creek Pike.

## Madison

*Access Nashville Walking Project #21*

**Rivergate Area Complete Streets**—Study opportunities to implement complete street components along Gallatin Pike with sidewalks, protected bikeways, transit improvements, street crossings, and streetscaping from Alta Loma Road to Riverchase Boulevard. Implement as coordinated capital improvements projects. As redevelopment occurs, consolidate access points to create a limited number of vehicular/pedestrian conflict points. (see related *Bicycling Project #26: Rivergate Multi-Use Path*)

*Access Nashville Walking Project #22*

**South Madison Complete Streets**—Study opportunities to implement complete street components along Gallatin Pike with sidewalks, protected bikeways, transit improvements, street crossings, and streetscaping from Walton Lane to Due West Avenue. Implement as coordinated capital improvements projects. As redevelopment occurs, consolidate access points to create a limited number of vehicular/pedestrian conflict points.

*Access Nashville Walking Project #23*

**Madison to Rivergate Complete Streets**—Study opportunities to implement complete street components along Gallatin Pike with sidewalks, protected bikeways, transit improvements, street crossings, and streetscaping from One Mile Parkway to Alta Loma Road. Implement as coordinated capital improvements projects. As redevelopment occurs, consolidate access points to create a limited number of vehicular/pedestrian conflict points.

*Access Nashville Walking Project #24*

**Downtown Madison Walking Improvements**—Assess street crossings along Gallatin Pike from Due West Avenue to Anderson Road for walking improvements.

## North Nashville

*Access Nashville Walking Project #25*

**North Nashville Bridge Replacement**—Replace bridge overpasses to improve safety and provide access to those walking along Alameda Street, Meharry Boulevard, and Albion Street. This project would also improve the likelihood of future commuter rail access to Clarksville along this route.

*Access Nashville Walking Project #26*

**Gateway to Heritage Walking Improvements**—Assess walking conditions across bridges that span I-40 along Jefferson Street at 12th Avenue North and I-40 at D.B. Todd Boulevard, so they function as gateways linking the community, reducing vehicular speeds, and increasing safety for people walking.

## Parkwood-Union Hill

*Access Nashville Walking Project #27*

**Brick Church Pike Sidewalks**—Construct sidewalks along Brick Church Pike from Briley Parkway to Bellshire Drive.

*Access Nashville Walking Project #28*

**Skyline to Bellshire Sidewalks**—Fill in sidewalk gaps and improve street crossings along Dickerson Pike between Briley Parkway and Old Hickory Boulevard.

*Access Nashville Walking Project #29*

**Old Hickory Boulevard Walking Improvements**—Improve street crossings on Old Hickory Boulevard near Mt. Zion Baptist Church.

## Southeast

*Access Nashville Walking Project #30*

**Paragon Hills Area Complete Streets**—Study opportunities to implement complete street components with sidewalks, bikeways, transit improvements, street crossings, and streetscaping on Nolensville Pike from Zoo Road to Edmondson Pike. Implement as coordinated capital improvements projects.

*Access Nashville Walking Project #31*

**Harding Place East Sidewalks**—Construct sidewalks and improve street crossings from I-24 to Nolensville Pike.

*Access Nashville Walking Project #32*

**Tusculum Area Complete Streets**—Study opportunities to implement complete street components with sidewalks, bikeways, transit improvements, street crossings, and streetscaping on Nolensville Pike from Edmondson Pike to Old Hickory Boulevard. Implement as coordinated capital improvements projects.

*Access Nashville Walking Project #33*

**South Nolensville Pike Sidewalks**—Construct sidewalks and improve street crossings along Nolensville Pike between Old Hickory Boulevard and Lenox Village. (see related Street Project #23: Nolensville Pike Widening)

*Access Nashville Walking Project #34*

**Harding Place West Sidewalks**—Construct sidewalks and improve street crossings from Nolensville Pike to I-65.

## South Nashville

*Access Nashville Walking Project #35*

**Murfreesboro Pike Complete Streets**—Study opportunities to implement complete street components with sidewalks, protected bikeways, transit improvements, street crossings, and streetscaping from Spence Lane to East Thompson Lane. Implement as coordinated capital improvements projects and as redevelopment occurs.

*Access Nashville Walking Project #36*

**Woodbine Area Walking Improvements**—Improve street crossings along Nolensville Pike from Craighead Street to Zoo Road.

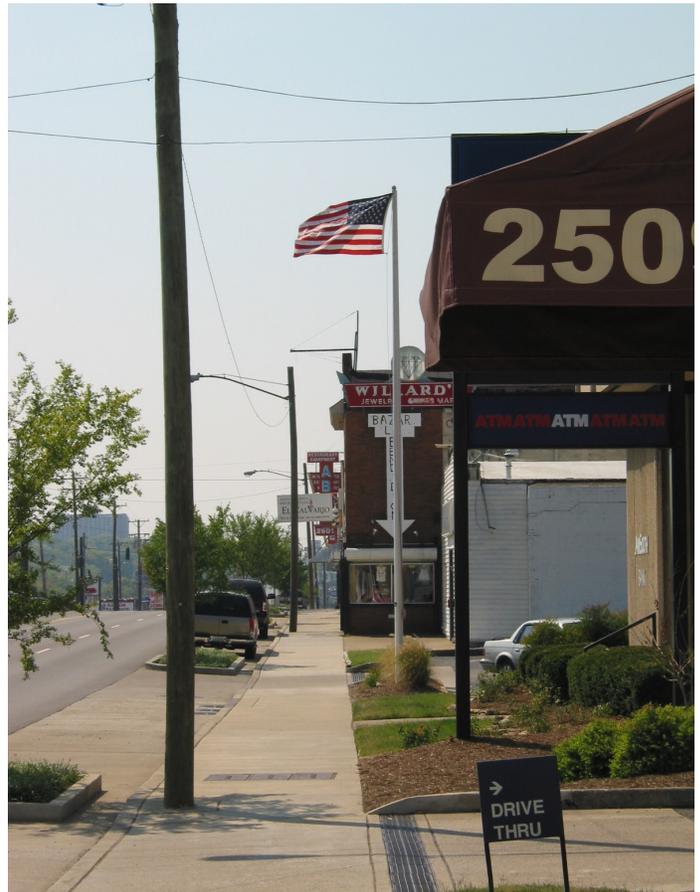
## West Nashville

*Access Nashville Walking Project #37*

**Charlotte Pike Sidewalks**—Construct sidewalks along Charlotte Pike from White Bridge Road to Annex Avenue. (see related Street Project #27: Charlotte Pike Widening)

*Access Nashville Walking Project #38*

**White Bridge Pike Walking Improvements**—Improve street crossings on White Bridge Pike at Fountain Place and Brookwood Terrace.



Improving street crossings along Nolensville Pike in Woodbine is identified as a Countywide Critical Need.

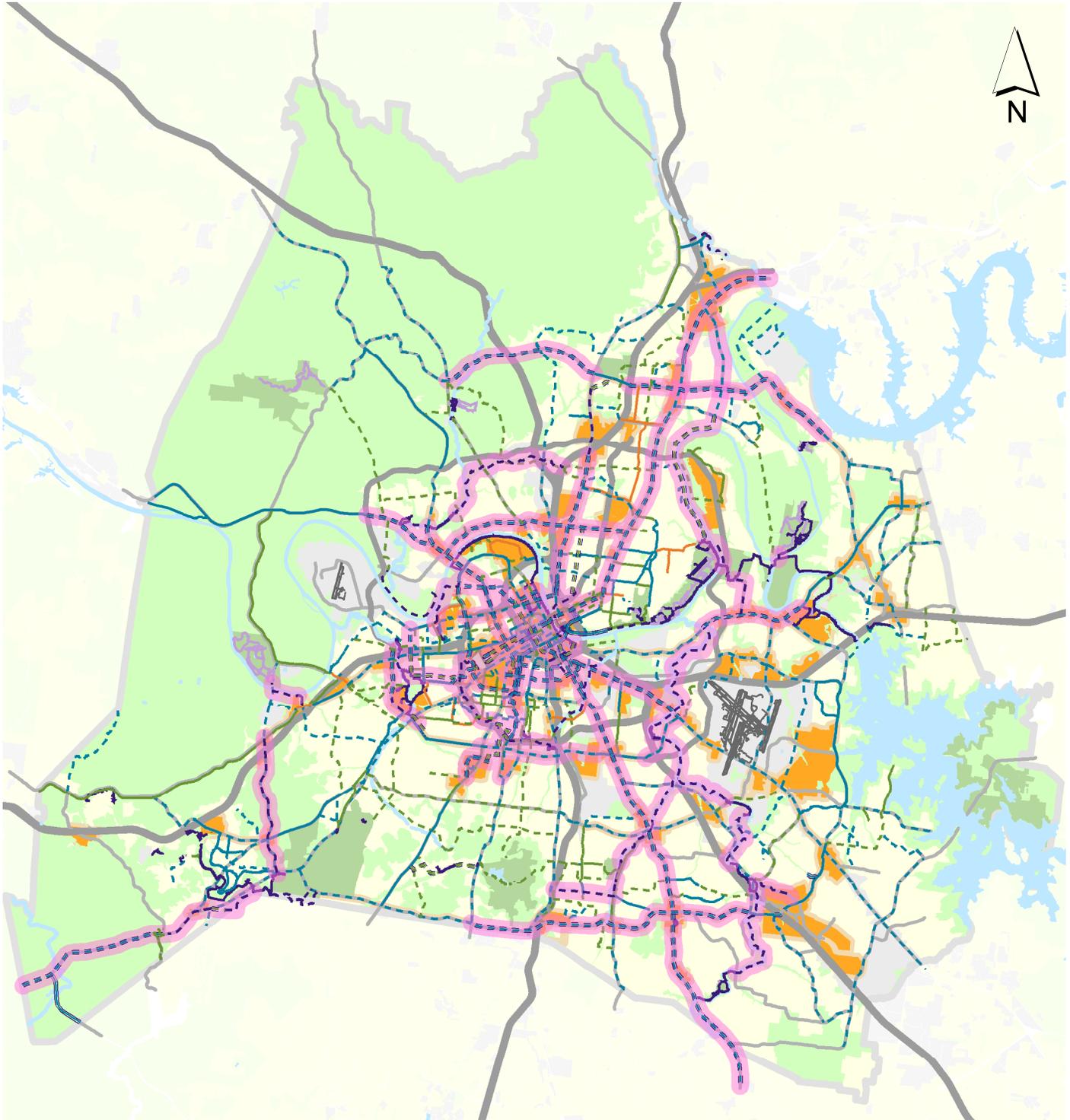
## Bicycling Network

The Bikeways Network Map shows a framework that strives to create a more seamless spoke-wheel system by integrating existing and planned greenways, bike lanes, multi-use paths, strategic connections, and pockets of bikeability, while also encouraging bikeshare expansion. These low-stress, foundational facilities warrant individual inclusion in the Capital Improvements Budget. The *Strategic Plan for Sidewalks and Bikeways* and *Metropolitan Parks and Greenways Master Plan* should build upon this spoke-wheel framework to establish a robust biking network for a range of bicyclists. In addition to these bikeways, other bike lanes and greenways have been identified in previous planning efforts, so previous versions of these plans may be consulted to fill in additional gaps until they are updated. Nashville B-cycle should also refer to this framework for expansion plans to more closely tie to anticipated redevelopment.

The following criteria, in no particular order, are used to determine the priority projects that are part of the Bikeways Network Map:

- » Estimated Cost – planning estimate based on project’s scope
- » Number and Complexity of Environmental Constraints – assessment of project’s impact on streams, floodplains, and slopes
- » Number of Historical Constraints – assessment on project’s impact on cultural assets
- » Link to a Tier One Center – project strongly ties to planned growth areas
- » Link to Other Centers – project ties to other planned growth areas
- » Location Along a High Capacity Transit Corridor with Immediate Need – project strongly ties to future mass transit
- » Assumptions about Right-of-Way Needs – will more right-of-way be needed to achieve the project?
- » Link to Existing Services – project connects to a school, civic building, park, senior facility, or hospital
- » Functional Design of the Street – projects along Arterial-Boulevards and Collector-Avenues are higher priority because those streets carry more traffic
- » Volume and Speed of Vehicles on the Street – the amount traffic and the speed of traffic impacts walking conditions
- » Existing Character of Street Compared to Future Character of Street – assessment on how the project ties to future land use objectives of the corridor
- » Bicycle Level of Service (BLOS) – the existing biking conditions of a streets
- » High Health Impact Area – the project is located in an area with identified health disparities
- » Crashes – the amount of crashes involving bicyclists
- » Perceived Safety Need – the project addresses concerns voiced by residents
- » Need for Public Investment – the level that the project addresses maintenance needs or areas overlooked in the past
- » Need for Interdepartmental Collaboration – coordinated projects may be more difficult but will likely have larger benefits
- » Community Support – has the community identified this need?
- » Elected Official Support – has a Council Member or other elected official identified this need?
- » Anticipated Population Density – the project connects to planned growth area with housing

Figure 15: Bikeways Network Map



**Planned Facilities**

- ▬▬▬▬ Protected Bikeway
- ▬▬▬▬ Bike Lane
- ▬▬▬▬ Signed Shared Route
- ▬▬▬▬ Bike Boulevard
- ▬▬▬▬ Greenway or Multi-Use Path

**Existing Facilities**

- ▬ Buffered Bike Lane
- ▬ Bike Lane
- ▬ Signed Shared Route
- ▬ Wide Outside Lane
- ▬ Greenway, Paved

- ▬ Greenway, Unpaved
- ▬ Priority Bikeway Projects
- ▬ Anchor Park
- ▬ Green network
- ▬ Centers

Based on the Bikeways Network Map, the following changes are needed in re-adoption of the MCSP:

1. *Update right-of-way widths for streets identified in the Bikeways Network Map that include a planned bikeway facility (adjacent multi-use path, protected bikeway facility, or bike lanes).*

Currently, the MCSP includes an additional right-of-way amount for multi-use paths in streets identified as Rural (T2). The updated right-of-way amounts will reflect the adjacent multi-use paths identified in the Bikeways Network Map. Additionally, protected bikeways identified in NashvilleNext will be indicated in the Major and Collector Street Plan with a “Protected Bikeway Planned” designation. Bike lanes newly identified in NashvilleNext will also be added to the MCSP designations as needed. Right-of-way widths will be updated to accommodate changes in the planned bikeway facilities

#### *Bicycling Priorities:*

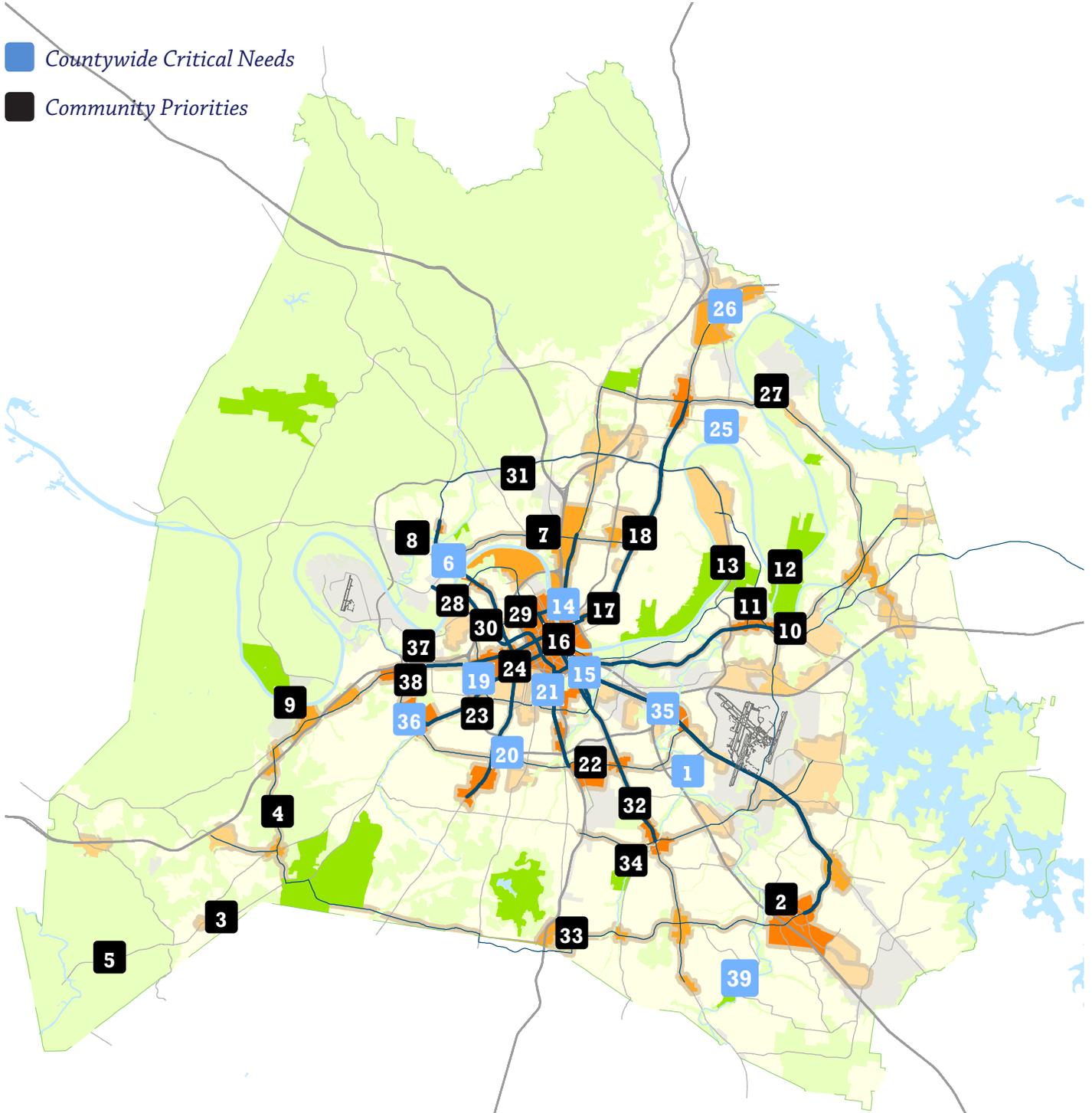
Bicycling priorities are numbered on the map and include studies for appropriate biking accommodations, bicycle boulevards, multi-use paths, greenways, and bikeway connections. Projects that are listed multiple times span more than one Community Plan area. Needs far outweigh financial constraints, but projects identified as Countywide Critical Needs and Community Priorities best meet the criteria analyzed related to the Nashville Next Growth and Preservation Concept Map and Community Plans.

Countywide Critical Needs are denoted in light blue that substantially improve access for those living, working, or visiting an area and closely correlate to the Centers and High Capacity Transit Corridors in NashvilleNext, which improves city-wide accessibility. This list should be consulted by Metro during the development of the Capital Improvements Budget and Capital Spending Plan each year, the Tennessee Department of Transportation’s Three Year Improvement Plan, and the Nashville Area MPO’s *Regional Transportation Plan* and related Transportation Improvement Program. Each project is described below. For additional discussion regarding the projects priorities, consult each Community Plan, found in Volume III.

### *List of Bicycling Projects*

1. [Mill Creek Greenway](#)
2. Mt. View Road Multi-Use Path
3. The Trace Connector
4. Old Hickory Boulevard Multi-Use Path
5. Highway 100 Connector
6. [North Nashville Protected Bikeway](#)
7. Trinity Lane Protected Bikeway
8. Ashland City Highway Bike Lanes
9. Bells Bend Greenway Bridge
10. Lebanon Pike Protected Bikeway
11. McGavock Pike Multi-Use Path
12. Peeler Park Greenway Bridge
13. Opry Mills Connector
14. [East Nashville Protected Connections](#)
15. [Gateway to Downtown](#)
16. Downtown North-South Connectors:
  - a. 6<sup>th</sup> Ave South Protected Bikeway
  - b. 3<sup>rd</sup> Ave Bikeway
  - c. 10<sup>th</sup> Ave Bike Boulevard
17. Five Points to Downtown Protected Bikeway
18. East Nashville Bikeway
19. [Richland Park to Downtown Bike Boulevard](#)
20. [Green Hills to Downtown Bike Boulevard/Protected Bikeway](#)
21. [Edgehill Avenue Protected Bikeway](#)
22. Woodmont-Thompson Lane Bike Lanes
23. I-440 Multi-Use Path
24. West End Bike Safety Improvements
25. [Madison Bike Boulevard](#)
26. [Rivergate Multi-Use Path](#)
27. Old Hickory Boulevard North Multi-Use Path
28. TSU Cumberland River Greenway Connector
29. Buena Vista Protected Bikeway
30. Jefferson Street Bike Lanes
31. Ewing Creek Greenway
32. Nolensville Pike Protected Bikeway
33. Old Hickory Boulevard South Multi-Use Path
34. Seven Mile Creek Greenway
35. Murfreesboro Pike Multi-Use Path
36. [White Bridge Pike Multi-Use Path](#)
37. 51<sup>st</sup> Avenue Protected Bikeway
38. England Park Greenway Connector
39. [Mill Creek Greenway, Southeast](#)

Figure 16: Countywide priority biking projects



## Antioch-Priest Lake

*Access Nashville Bicycling Project #1*

**Mill Creek Greenway**—Complete the Mill Creek Greenway from the Antioch-Hickory Hollow area to the Donelson area.

*Access Nashville Bicycling Project #2*

**Mt. View Road Multi-Use Path**—Develop a multi-use path adjacent to Mt. View Road from Una Antioch Pike to Rural Hill Road at the Southeast Community Center and Library.

## Bellevue

*Access Nashville Bicycling Project #3*

**The Trace Connector**—Develop a multi-use path adjacent to Highway 100 from the Natchez Trace Parkway to Warner Parks and designate as a United States Bicycle Route (USBR) 23 Spur. (see related Street Project #3: Highway 100 Widening)

*Access Nashville Bicycling Project #4*

**Old Hickory Boulevard Multi-Use Path**—Develop a multi-use path adjacent to Old Hickory Boulevard from Edwin Warner Park to Charlotte Pike.

*Access Nashville Bicycling Project #5*

**Highway 100 Connector**—Implement a buffered bike lane on Highway 100 from the Williamson County Line to the Natchez Trace Parkway.

## Bordeaux-Whites Creek

*Access Nashville Bicycling Project #6*

**North Nashville Protected Bikeway**—Implement a protected bikeway along Clarksville Pike from the Whites Creek Greenway, across the MLK Bridge, along D.B. Todd Boulevard, over Jubilee Bridge to Jo Johnston Avenue. (see related Street Project #4: Clarksville Pike Widening)

*Access Nashville Bicycling Project #7*

**Trinity Lane Protected Bikeway**—Implement a protected bikeway along Trinity Lane from Clarksville Pike to Gallatin Pike.

*Access Nashville Bicycling Project #8*

**Ashland City Highway Bike Lanes**—Connect the existing bike lanes north of Briley Parkway to Clarksville Pike.

*Access Nashville Bicycling Project #9*

**Bells Bend Greenway Bridge**—Connect people walking and biking with a bridge over the Cumberland River from West Nashville to Bells Bend.

## Donelson-Hermitage-Old Hickory

*Access Nashville Bicycling Project #1*

**Mill Creek Greenway**—Complete the Mill Creek Greenway from the Antioch-Hickory Hollow area to the Donelson area.

*Access Nashville Bicycling Project #10*

**Lebanon Pike Protected Bikeway**—Implement a protected bikeway along Lebanon Pike from the Mill Creek Greenway to the Donelson YMCA.

*Access Nashville Bicycling Project #11*

**McGavock Pike Multi-Use Path**—Develop a multi-use path adjacent to McGavock Pike from Lebanon Pike to the Stones River Greenway.

*Access Nashville Bicycling Project #12*

**Peeler Park Greenway Bridge**—Connect people walking and biking with a bridge over the Cumberland River from the Stones River Greenway to Peeler Park.

*Access Nashville Bicycling Project #13*

**Opry Mills Connector**—Create a direct bicycle and pedestrian connection between the Stones River Greenway and Opry Mills.

## Downtown

*Access Nashville Bicycling Project #14*

**East Nashville Protected Connections**—Implement protected bikeways along the Woodland Street Bridge, the Jefferson Street Bridge, and under Interstate overpasses that connect Edgefield and McFerrin Park to the East Bank and downtown.

*Access Nashville Bicycling Project #15*

**Gateway to Downtown**—Implement complete street components such as protected bikeways, transit improvements, streetscaping, public art, and gateway features along Lafayette Street from Chestnut Hill through SoBro.

*Access Nashville Bicycling Project #16*

### **Downtown North-South Connectors:**

- » a. 6th Ave South Protected Bikeway - Implement from Demonbreun Street in downtown to Oak Street south of downtown near the Nashville City Cemetery.
- » b. 3rd Ave Bikeway - Implement from Madison Street in Germantown to Lindsley Avenue in Lafayette and Rutledge Hill.
- » c. 10th Ave Bike Boulevard - Implement from Monroe Street in Germantown to 8th Avenue.

## East Nashville

*Access Nashville Bicycling Project #14*

**East Nashville Protected Connections**—Implement protected bikeways along the Woodland Street Bridge, the Jefferson Street Bridge, and under Interstate overpasses that connect Edgefield and McFerrin Park to the East Bank and downtown.

*Access Nashville Bicycling Project #17*

### **Five Points to Downtown Protected Bikeway**—

Implement a protected bikeway from Five Points to the East Bank parallel to Woodland Street.

*Access Nashville Bicycling Project #18*

**East Nashville Bikeway**—Study the appropriate protected or separated facilities for people biking along Dickerson Pike and Gallatin Pike where roadway right of way and buildings constrain the corridors. (*see related Walking Project #14: Dickerson Pike Complete Streets and Walking Project #15: Gallatin Pike Complete Streets*)

*Access Nashville Bicycling Project #7*

**Trinity Lane Protected Bikeway**—Implement a protected bikeway along Trinity Lane from Clarksville Pike to Gallatin Pike.

## Green Hills-Midtown

*Access Nashville Bicycling Project #19*

### **Richland Park to Downtown Bike Boulevard**—

Implement a Bike Boulevard along Nebraska Avenue, Long Boulevard, and Patterson Street from Richland Park through Centennial Park to Church Street.

*Access Nashville Bicycling Project #20*

### **Green Hills to Downtown Bike Boulevard/Protected**

**Bikeway**—Implement a Bike Boulevard connecting Green Hills Mall to protected bikeways on Belmont, Music Row, and Demonbreun Street through Midtown to the Riverfront.

*Access Nashville Bicycling Project #21*

**Edgehill Avenue Protected Bikeway**—Implement a protected bikeway on Edgehill Avenue from 21st Avenue South to Chestnut Street.

*Access Nashville Bicycling Project #22*

**Woodmont-Thompson Lane Bike Lanes**—Complete connectivity gaps between existing bike lanes along Woodmont Boulevard and Thompson Lane.

*Access Nashville Bicycling Project #23*

**I-440 Multi-Use Path**—Develop a multi-use path generally parallel to I-440 connecting North Nashville to Woodbine.

*Access Nashville Bicycling Project #24*

**West End Bike Safety Improvements**–Develop bike friendly crossings across West End at 18th Avenue and 28th Avenue.

## Joelton

No immediate priorities identified.

## Madison

*Access Nashville Bicycling Project #25*

**Madison Bike Boulevard**–Implement a Bike Boulevard that connects street stubs in Madison from Shelby Bottoms to the Rivergate area adjacent to the Cumberland River.

*Access Nashville Bicycling Project #26*

**Rivergate Multi-Use Path**–Develop a multi-use path adjacent to Gallatin Pike between Madison and Rivergate. (see related Walking Project #21: Rivergate Area Complete Streets)

*Access Nashville Bicycling Project #27*

**Old Hickory Boulevard North Multi-Use Path**–Develop a multi-use path adjacent to Old Hickory Boulevard and State Route 45 between Old Hickory and Cedar Hill Park.

*Access Nashville Bicycling Project #12*

**Peeler Park Greenway Bridge**–Connect people walking and biking with a bridge over the Cumberland River from the Stones River Greenway to Peeler Park.

## North Nashville

*Access Nashville Bicycling Project #6*

**North Nashville Protected Bikeway**–Implement a protected bikeway along Clarksville Pike from the Whites Creek Greenway, across the MLK Bridge, along D.B. Todd Boulevard, over Jubilee Bridge to Jo Johnston Avenue. (see related Street Project #4: Clarksville Pike Widening)

*Access Nashville Bicycling Project #28*

**TSU Cumberland River Greenway Connector**–Complete connecting Tennessee State University to the Cumberland River Greenway.

*Access Nashville Bicycling Project #29*

**Buena Vista Protected Bikeway**–Implement a protected bikeway along Buchanan Street, Arthur Avenue, and Monroe Street through Buena Vista.

*Access Nashville Bicycling Project #30*

**Jefferson Street Bike Lanes**–Implement bike lanes along Jefferson Street.

## Parkwood-Union Hill

*Access Nashville Bicycling Project #27*

**Old Hickory Boulevard North Multi-Use Path**–Develop a multi-use path adjacent to Old Hickory Boulevard between Cedar Hill Park and Whites Creek.

*Access Nashville Bicycling Project #31*

**Ewing Creek Greenway**–Develop the Ewing Creek Greenway from the Whites Creek Greenway to East Nashville.

## Southeast

*Access Nashville Bicycling Project #1*

**Mill Creek Greenway**–Complete the Mill Creek Greenway from the Antioch-Hickory Hollow area to the Donelson area.

*Access Nashville Bicycling Project #32*

**Nolensville Pike Protected Bikeway**–Develop a protected bikeway adjacent to Nolensville Pike through South and Southeast Nashville. (see related Walking Project #30: Paragon Hills Area Complete Streets and Walking Project #32: Tusculum Area Complete Streets)

*Access Nashville Bicycling Project #33*

**Old Hickory Boulevard South Multi-Use Path**– Develop a protected bikeway adjacent to Old Hickory Boulevard from Antioch to Brentwood.

*Access Nashville Bicycling Project #34*

**Seven Mile Creek Greenway**–Connect Southeast Nashville to the Mill Creek Greenway with a connection along Seven Mile Creek.

*Access Nashville Bicycling Project #39*

**Mill Creek Greenway, Southeast**–Complete the Mill Creek Greenway from Mill Creek Park to the Antioch-Hickory Hollow area. (see related *Walking Project #33: South Nolensville Pike Sidewalks and Street Project #23: Nolensville Pike Widening*)

## South Nashville

*Access Nashville Bicycling Project #1*

**Mill Creek Greenway**–Complete the Mill Creek Greenway from the Antioch-Hickory Hollow area to the Donelson area.

*Access Nashville Bicycling Project #35*

**Murfreesboro Pike Multi-Use Path**–Construct a multi-use path adjacent to Murfreesboro Pike from Mill Creek Greenway to Lafayette Street.

*Access Nashville Bicycling Project #22*

**Woodmont-Thompson Lane Bike Lanes**–Complete connectivity gaps between existing bike lanes along Woodmont Boulevard and Thompson Lane.

*Access Nashville Bicycling Project #32*

**Nolensville Pike Protected Bikeway**–Develop a protected bikeway adjacent to Nolensville Pike through South and Southeast Nashville. (see related *Walking Project #30: Paragon Hills Area Complete Streets and Walking Project #32: Tusculum Area Complete Streets*)

## West Nashville

*Access Nashville Bicycling Project #19*

**Richland Park to Downtown Bike Boulevard**– Implement a Bike Boulevard along Nebraska Avenue, Long Boulevard, and Patterson Street from Richland Park through Centennial Park to Church Street.

*Access Nashville Bicycling Project #36*

**White Bridge Pike Bikeway**–Develop a bikeway from Robertson Avenue/Urbandale Avenue to Woodmont Boulevard along White Bridge Pike using a mixture of protected facility types.

*Access Nashville Bicycling Project #37*

**51st Avenue Protected Bikeway**–Implement a protected bikeway along 51st Avenue from Centennial Boulevard to Charlotte Pike.

*Access Nashville Bicycling Project #38*

**England Park Greenway Connector**–Develop a greenway connector between England Park and Richland Park.

*Access Nashville Bicycling Project #9*

**Bells Bend Greenway Bridge**–Connect people walking and biking with a bridge over the Cumberland River from West Nashville to Bells Bend.

## Mass Transit Network

The NashvilleNext Growth and Preservation Concept Map depicts the High Capacity Transit Corridors. Nashville MTA will assess and prioritize the High Capacity Transit Corridors and potential Neighborhood Mini-Hub locations in developing a long range transit plan in 2015 and 2016 that will help outline future transit investments. The map does not indicate transit mode, which will need to be determined with additional study, but it indicates where anticipated changes in land use to support more frequent transit service should occur. The High Capacity Transit Corridors are adopted as part of NashvilleNext. The following criteria, in no particular order, are used to determine the High Capacity Transit Corridors that are part of the NashvilleNext Growth and Preservation Concept Map:

- » Link to a Tier One Center – corridor strongly ties to planned growth areas
- » Link to Other Centers – corridor ties to other planned growth areas
- » MPO Regional Transit and Land Use Studies Completed, Underway, or Anticipated – is the region studying the need for transit along the corridor?
- » Existing Bus Service Routes – corridor has existing service that is viable
- » Bus Ridership – corridors with existing higher ridership are prioritized
- » Functional Design of the Street – corridors along Arterial-Boulevards and Collector-Avenues are higher priority because those streets carry more traffic
- » Input from Nashville MTA Professional Staff – planning staff has coordinated feedback with MTA staff to identify the most viable corridors
- » Feedback from Residents at Community Meetings and Other Forums – has the corridor been mentioned by residents?
- » Anticipated Population Density – the corridor connects to planned growth area with housing

*Based on the NashvilleNext Growth and Preservation Concept Map, the following changes are needed in readoption of the MCSP:*

1. *Adjust the Urban Multimodal (UM) and Regional Multimodal (RM) designations to use these designations on the High Capacity Transit Corridors identified.*

Currently, the UM and RM designations closely correlate to the Arterial-Boulevards or “pikes” that lead into downtown Nashville and existing

bus service. The intent of this change is to highlight the corridors that Nashville MTA might study in the future for High Capacity Transit and a need to achieve good building placement while providing optimal walking and biking infrastructure connections. These changes include crosstown connections that have not typically been identified as part of this Arterial-Boulevard network. Additionally, the designations are not carried all the way to the county line in every instance, but they may stop at Centers identified for growth in the NashvilleNext Growth and Preservation Concept Plan.

2. *Update right-of-way widths for streets identified in the Frequent Transit Network Map to reflect additional studies and conceptual plans.*

Building placement along these corridors is critical to provide space for future transit and other modes of travel. Urban design principles and zoning encourage the new development to be closer to the street. It is important to ensure that the new street character supports walking in those areas by getting building entrances closer to the street, managing access more strategically, while ensuring that there is enough room for an appropriate streetscape that includes wide sidewalks with street trees where possible. As portions of the transit network have conceptual plans and engineering completed, right-of-way amounts need to be updated to ensure enough room is left for future transit vehicles and pedestrians. Each of these additional corridor studies will need to be amended into the MCSP as they are completed.

*Mass Transit Priorities:*

Mass transit priorities will be included as Nashville MTA updates the *Strategic Transit Master Plan* in 2015-2016.



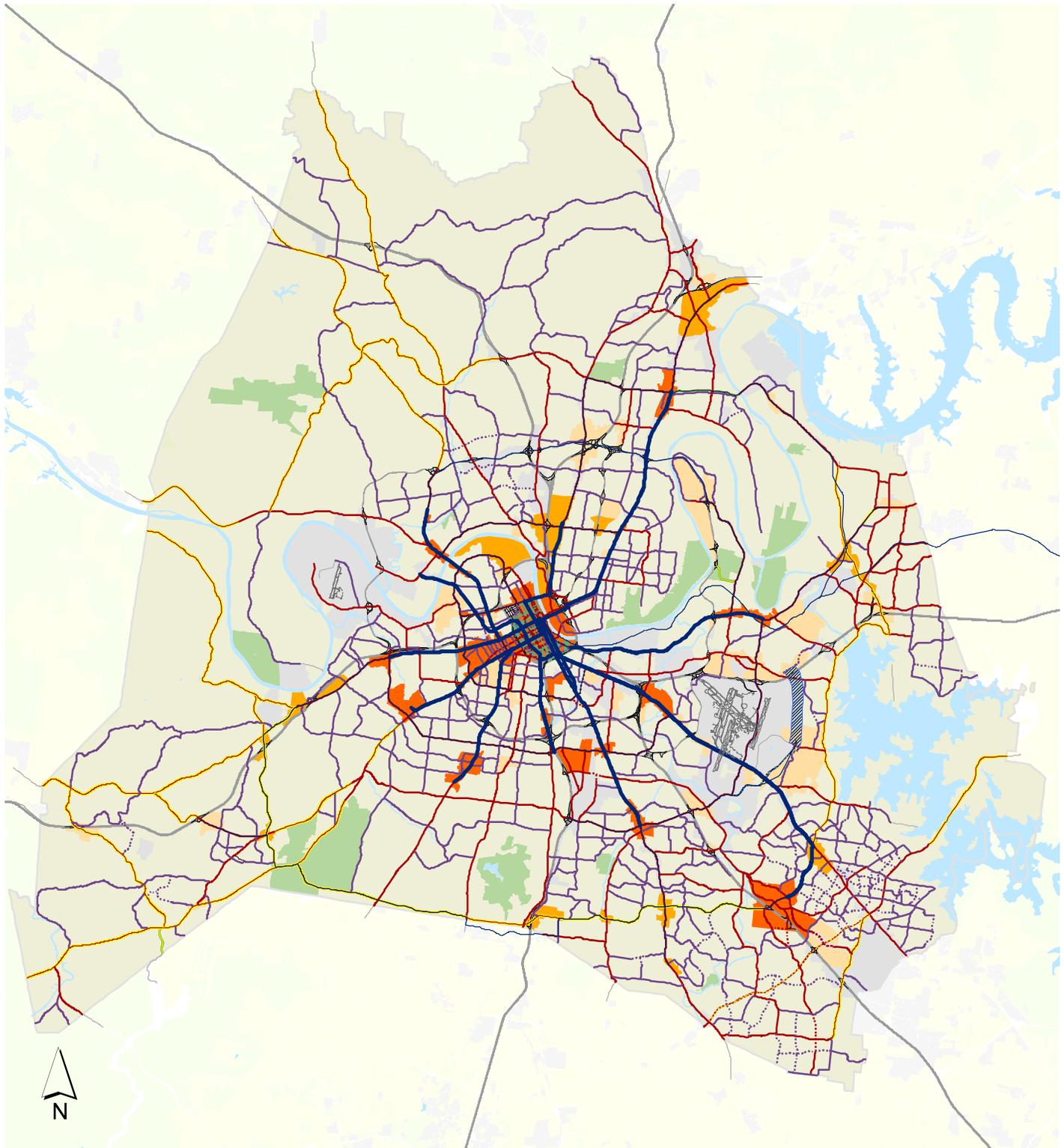
**Businesses along Jefferson Street contribute to Nashville's identity.**

## Streets Network

The Major and Collector Streets Plan (MCSP) Map indicates the Arterial-Boulevard, Collector-Avenue, and Arterial-Parkway network in Nashville/ Davidson County. The following criteria, in no particular order, are used to determine priority projects involving streets and strategic connections:

- » Estimated Cost – planning estimate based on project’s scope
- » Number and Complexity of Environmental Constraints – assessment of project’s impact on streams, floodplains, and slopes
- » Number of Historical Constraints – assessment on project’s impact on cultural assets
- » Historical Traffic Counts and Analyzing Average Daily Traffic at Locations – the amount that traffic has increased along the corridor
- » Future Traffic Projections – does the MPO’s travel demand model forecast increased traffic?
- » Completes a Strategic Connection – ties to an area lacking access
- » Existing Character of Street Compared to Future Character of Street – assessment on how the project ties to future land use objectives of the corridor
- » Need for Public Investment – the level that the project addresses maintenance needs or areas overlooked in the past
- » Community Support – has the community identified this need?
- » Elected Official Support – has a Council Member or other elected official identified this need?
- » Potential for Public-Private Partnership – assessment on the impacts to the private sector and potential to partner
- » Pedestrian Level of Service (PLOS) – the existing walking conditions of a street
- » Bicycle Level of Service (BLOS) – the existing biking conditions of a street
- » Completed Preliminary Engineering, Design, Utility Relocation, or Right-of- Way Acquisition Phases or Anticipated Imminent Funding – completed phases means there is already investment underway
- » MPO Regional Need – the region has identified the project as a need
- » Link to a Tier One Center – project strongly ties to planned growth areas
- » Link to Other Centers – project ties to other planned growth areas
- » Crashes – the amount of vehicular crashes
- » Perceived Safety Need – the project addresses concerns voiced by residents
- » Anticipated Population Density – the project connects to planned growth area with housing

**Figure 17: Major & Collector Street Plan**



**Major and Collector Street Legend**

 Potential Multimodal Freeway Corridor	 Planned Arterial-Boulevard	 Local Street	<b>Centers</b>	
 Planned Multimodal Freeway Corridor	 Collector-Avenue	 Planned Local Alley		 Tier 1
 Arterial-Parkway Scenic	 Planned Collector-Avenue	 Ramp		 Tier 2
 Arterial-Boulevard Scenic	 Downtown Local Street	 Planned Ramp	 Tier 3	
 Planned Arterial-Boulevard Scenic	 Planned Downtown Local Street			
 Arterial-Boulevard	 Planned Downtown Alley			



**The interchange at I-24 and Bell Road is identified for needed improvements for pedestrians and cyclists in the area.**

*Based on the criteria listed and the Major and Collector Street Plan Map, the MCSP is readopted with the following changes:*

*1. Change the designation of the Southeast Arterial Parkway to a Scenic Arterial-Boulevard.*

The Southeast Arterial Parkway has been proposed in southeast Davidson County connecting Nolensville Pike near Concord Road to Murfreesboro Pike near Hobson Pike. An interchange has been planned at I-24. Some alignment studies and conceptual analysis was done in the mid-1990s. The Interchange Justification Study (IJS) was completed in 1996 and has now expired. Since that time, some development has contributed to right-of-way for this corridor while another development was approved that prohibits the interchange connection as described in the 1996 study. There is still a need to make an east-west mobility connection across this portion of Davidson County, but it will be difficult given funding constraints, expiration of the IJS, development that is prohibiting a connection to I-24, and the fact this project is not a top priority for state officials. The Southeast Arterial Parkway should be downgraded from an Arterial Parkway to Scenic Arterial-Boulevard within the MCSP. It is much more likely for an Arterial-Boulevard street connection to be established as development occurs in the southeast portion of Davidson County than for state, federal, and local funding to come together to build this significant road project with limited access.

*2. Reflect existing travel lane conditions on one segment of Gallatin Pike.*

Along Gallatin Pike between Conference Drive and Myatt Drive, the MCSP indicated seven lanes in the future. The MCSP designation has been changed to indicate the five lanes that exists today. Traffic counts have stabilized and do not support the widening in this area. Focus in this area should be on improving transit access and providing infrastructure for other travel modes.

*3. Adjust the Arterial-Boulevards and Collector-Avenues in the Rural Transect (T2) to include potential multi-use paths and bikeways adjacent to the roadway.*

Currently, all Rural streets include dimensions for a multi-use path in their right-of-way calculations. The Rural streets will now be identified where specific greenway projects are planned and connected to the Access Nashville Bikeway Priorities Map.

4. *Update MCSP designations and right-of-way widths based on changes to the Transect and Land Use Policy that align with the NashvilleNext Growth and Preservation Concept Map.*

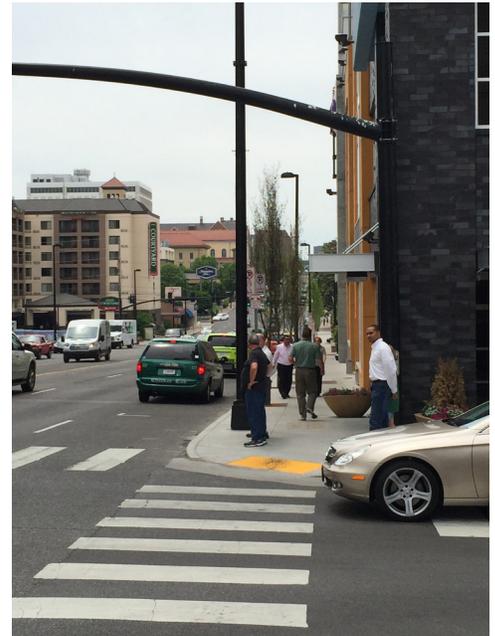
Some MCSP designations have had their Transect changed and a new right-of-way established reflecting their anticipated character as per NashvilleNext. Also, if land use policies were changed, some dimensions related to sidewalks and planting strips also change to reflect the future uses. In both cases, new right-of-way widths are proposed.

5. *Study with Metro Public Works appropriate constrained rights-of-way amounts and incorporate all local streets within the Downtown Code into the Major and Collector Street Plan as Downtown Local Streets with constrained right-of-ways.*

The urban form of redevelopment downtown is conducive to walkability and bikeability. Street functions in downtown are about providing access to those walking. Organizing streets per an Arterial-Boulevard and Collector-Avenue designation describes a street's movement of traffic in relation to the broader street network. Constrained rights-of-way on Downtown Local Streets will ensure the redeveloping urban fabric within downtown provides exceptional sidewalks improving access for pedestrians. These constrained rights-of-way are developed through guidance from the Downtown Code and assessing existing street character, future street character, and building program needs. Without a constrained right-of-way, anticipated street needs can overly burden building programs on smaller lots or sidewalk accommodations will often be narrowed to accommodate building program needs. Constrained rights-of-way balance building placement with street needs.

6. *Flag streets within the Major and Collector Street Plan for potential Roadway Reconfigurations.*

Roadway Reconfigurations, also known as road diets, which reorganize or reduce the number of vehicular travel lanes are conducted to dedicate more road space to other road users, slow traffic, and make a more livable, walkable street. The Major and Collector Street Plan should identify potential road diet locations that, with further evaluation, can be implemented as corridors redevelop into more walkable places. Engineering guidance published by the Federal Highway Administration indicates that four lane streets that carry fewer than 20,000 cars per day warrant further consideration for a Roadway Reconfiguration.



**A development approved prior to the MCSP was adopted, provides minimal sidewalks.**



**A development approved after the MCSP adoption addresses the street better with a wider sidewalk.**

7. *Update MCSP right-of-way widths to reflect planting strip dimensions in the Suburban (T3), Urban (T4), and Center Transects (T5) for improved street tree health, and reflect tree well dimensions outlined in the Downtown Code in the Downtown Transect (T6).*

Wider street tree area is needed to ensure longer term street tree health. Street trees have a direct impact on reducing warming in cities, improving aesthetics, and increasing property values. A wider dimension for trees to establish will also assist with regular maintenance,

8. *Remove suggested minimum dimensions for streetscaping in the MCSP.*

Although flexibility will still be needed based upon individual building program needs, minimum dimensions should not be utilized unless there is a specific site constraint prohibiting the standard dimensions. The deletion of minimums will reduce confusion on standards and assist with providing sidewalk dimensions in a more transparent manner.

9. *Remove the Planned Collector-Avenues identified north of I-24 in the Joelton community.*

NashvilleNext reaffirms that the area north of I-24 near Joelton should remain Rural (T2) in the future. A series of connecting streets are not needed in this area to correspond with the land use policies.

### *Street Priorities:*

Street Priorities are numbered on the Access Nashville Street Priorities Map and include street reconstruction, widening, and strategic connections. Future projects should be designed to meet complete streets objectives. Needs far outweigh financial constraints, but projects identified best meet the criteria analyzed related to the Nashville Next Growth and Preservation Concept Map as Countywide Critical Needs or Community Priorities.

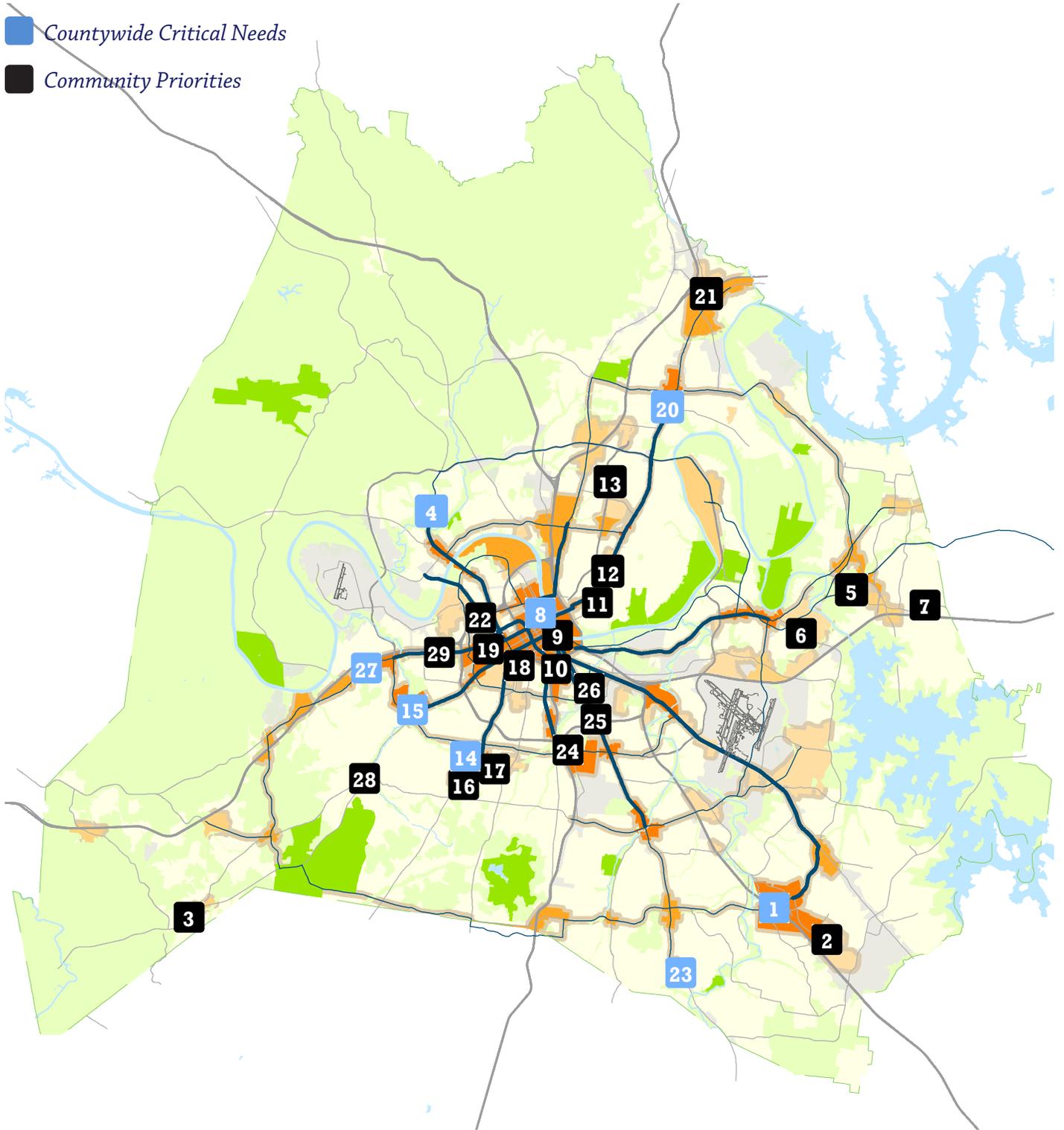
Countywide Critical Needs are denoted in light blue that substantially improve access for those living, working, or visiting an area and closely correlate to the Centers and High Capacity Transit Corridors in NashvilleNext, which improves city-wide accessibility. This list of Countywide Critical Needs and Community Priorities should be consulted by Metro during the development of the Capital Improvements Budget and Capital Spending Plan each year, the Tennessee Department of Transportation's Three Year Improvement Plan, and the Nashville Area MPO's *Regional Transportation Plan* and related Transportation Improvement Program. Each project is described below. Street connectivity projects for consideration are indicated with an asterisk. For additional discussion regarding the projects priorities, consult each Community Plan, found in Volume III.

### *List of Streets Projects (\* indicates street connectivity projects)*

1. Gateway to Antioch
2. Crossings Boulevard\*
3. Highway 100 Widening
4. Clarksville Pike Widening
5. Central Pike Widening
6. Stewarts Ferry Pike Widening
7. Central Pike Widening Phase 2
8. Downtown Accessibility Study
9. Molloy Street Realignment
10. SoBro Accessibility Improvements Study
11. East Nashville Civic Square
12. Eastland Avenue Realignment\*
13. Northeast Corridor Preliminary Design
14. Crestmoor/Glen Echo Road Realignment\*
15. Bosley Springs Connector\*
16. Abbott Martin Road Extension\*
17. Benham Avenue Extension\*
18. 19<sup>th</sup> Avenue & Division Street Realignment\*
19. Midtown Couplets Study
20. Douglas Street Connector
21. Northeast Corridor Station Area Planning
22. North Nashville Street Connections\*
23. Nolensville Pike Widening
24. Thompson Lane Improvements Study
25. Glenrose Avenue & Rosedale Avenue Realignment
26. University Row Connector\*
27. Charlotte Pike Widening
28. Highway 100 & Highway 70 Improvements Study
29. Sylvan Park Mobility Study

**Figure 18: Countywide Priority Street Projects**

-  *Countywide Critical Needs*
-  *Community Priorities*



## Antioch-Priest Lake

*Access Nashville Street Project #1*

**Gateway to Antioch**—Reconstruct the existing I-24/Bell Road interchange and include appropriate walking, biking, and streetscaping infrastructure. (see related Walking Project #1: Hickory Hollow Area Sidewalks)

*Access Nashville Street Project #2*

**Crossings Boulevard\***—Extend Crossings Boulevard as a 4/5 lane facility to Old Hickory Boulevard and include sidewalks, bike lanes, and streetscaping.

## Bellevue

*Access Nashville Street Project #3*

**Highway 100 Widening**—Widen Highway 100 from 2/3 lanes to 3 lanes from McCrory Lane to Temple Road and include an adjacent multi-use path on one side connecting to the Natchez Trace Parkway. Designate the route as United States Bicycle Route (USBR) 23 Spur. (see related Bicycling Project #3: The Trace Connector)

## Bordeaux-Whites Creek

*Access Nashville Street Project #4*

**Clarksville Pike Widening**—Widen Clarksville Pike from 2/3 lanes to 5 lanes from Ashland City Highway to Briley Parkway and include a multi-use path connecting to the Whites Creek Greenway, protected bike lanes, sidewalks, and streetscaping. (see related Walking Project #6: Bordeaux Area Sidewalks and Bicycling Project #6: North Nashville Protected Bikeway)

## Donelson-Hermitage-Old Hickory

*Access Nashville Street Project #5*

**Central Pike Widening**—Widen Central Pike from Old Hickory Boulevard to Lebanon Pike from 2/3 lanes to 5 lanes with sidewalks and bike lanes.

*Access Nashville Street Project #6*

**Stewarts Ferry Pike Widening**—Widen Stewarts Ferry Pike from I-40 to Lebanon Pike from 2/3 lanes to 5 lanes with sidewalks and bike lanes.

*Access Nashville Street Project #7*

**Central Pike Widening Phase 2**—Widen Central Pike from Old Hickory Boulevard to the Wilson County Line from 2/3 lanes to 5 lanes with sidewalks and bike lanes.

## Downtown

*Access Nashville Street Project #8*

**Downtown Accessibility Study**—Study access within and to Downtown while major events are taking place to assess impacts upon walking, biking, transit, and traffic and provide a range of multi-modal recommendations to improve access during major events.

*Access Nashville Street Project #9*

**Molloy Street Realignment**—Straighten Molloy Street between 2nd Avenue South and 3rd Avenue South.

*Access Nashville Street Project #10*

**SoBro Accessibility Improvements Study**—Study the potential for access to Mulberry Street from the I-40 ramps at 4th Avenue South and reconnecting the ramps to 3rd Avenue South. Also assess the 2nd and 4th Avenue one-way couplets for improved access to properties and meeting complete street objectives.

## East Nashville

*Access Nashville Street Project #11*

**East Nashville Civic Square**—Construct a roundabout, streetscaping, and public art at Main Street and North 11th Street.

*Access Nashville Street Project #12*

**Eastland Avenue Realignment\***–Realign the intersection of West Eastland Avenue/Eastland Avenue at Gallatin Road.

*Access Nashville Street Project #13*

**Northeast Corridor Preliminary Design**–Begin alternatives study, engineering, and design on the mass transit recommendations from the Nashville Area MPO’s Northeast Corridor Mobility Study.

## Green Hills-Midtown

*Access Nashville Street Project #14*

**Crestmoor/Glen Echo Road Realignment\***–Realign the intersection of Crestmoor Road/Glen Echo Road at Hillsboro Pike.

*Access Nashville Street Project #15*

**Bosley Springs Connector\***–Connect Harding Pike to White Bridge Pike with a new 4/5-lane facility that includes sidewalks, bike lanes, streetscaping, and connection to the Richland Creek Greenway.

*Access Nashville Street Project #16*

**Abbott Martin Road Extension\***–Extend Abbott Martin Road to Hillmont Drive with a new 3-lane facility that include sidewalks, bike lanes, and streetscaping.

*Access Nashville Street Project #17*

**Benham Avenue Extension\***–If the Hillsboro High School property is redeveloped, extend Benham Avenue as 3/4 lanes to Richard Jones Road and develop internal street connections, include adjacent multi-use path on one side, sidewalks, and streetscaping.

*Access Nashville Street Project #18*

**19th Avenue and Division Street Realignment\***–Realign the intersection of 19th Avenue South with Division Street.

*Access Nashville Street Project #19*

**Midtown Couplets Study**–Study the one-way couplets in Midtown around the hospitals for improved access to properties and meeting complete street objectives.

## Joelton

No immediate priorities identified.

## Madison

*Access Nashville Street Project #20*

**Douglas Street Connector\***–Connect Douglas Street as a 3 lane facility to Neelys Bend Road with sidewalks, bike lanes, and streetscaping.

*Access Nashville Street Project #21*

**Northeast Corridor Station Area Planning**–Conduct station area planning with adjacent transportation improvements based upon the recommendations from the Nashville Area MPO’s Northeast Corridor Mobility Study along Vietnam Veterans Boulevard.

## North Nashville

*Access Nashville Street Project #22*

**North Nashville Street Connections\***–Connect 21st Avenue across the railroad tracks, include sidewalks. Connect Booker Street to Merry Street, include sidewalks. Connect 24th Avenue North to Merry Street, include sidewalks.

## Parkwood-Union Hill

No immediate priorities identified.

## Southeast

*Access Nashville Street Project #23*

**Nolensville Pike Widening**–Widen Nolensville Pike from Old Hickory Boulevard to the Williamson County Line from 2/3 lanes to 5 lanes with adjacent multi-use path connecting to the Mill Creek Greenway and sidewalks (*see related Bicycling Project #39: Mill Creek Greenway, Southeast and Walking Project #33: South Nolensville Pike Sidewalks*)

## South Nashville

*Access Nashville Street Project #24*

**Thompson Lane Improvements Study**–Study improvements to the area of Thompson Lane between Powell Lane and Bransford Avenue.

*Access Nashville Street Project #25*

**Glenrose Avenue and Rosedale Avenue Realignment\***–Realign the intersection of Glenrose Avenue/Rosedale Avenue at Nolensville Pike.

*Access Nashville Street Project #26*

**University Row Connector\***–Connect Walsh Road as a 3-lane facility to Murfreesboro Pike to complete the University Connector mass transit concept, include sidewalks, bike lanes, and streetscaping.

## West Nashville

*Access Nashville Street Project #15*

**Bosley Springs Connector\***–Connect Harding Pike to White Bridge Pike with a new 4/5-lane facility that includes sidewalks, bike lanes, streetscaping, and connection to the Richland Creek Greenway.

*Access Nashville Street Project #27*

**Charlotte Pike Widening**–Widen Charlotte Pike from 2/3 lanes to 5 lanes between White Bridge Pike and Hillwood Boulevard include sidewalks and bike lanes. (*see related Walking Project #37: Charlotte Pike Sidewalks*)

*Access Nashville Street Project #28*

**Highway 100 & Highway 70S Improvements Study** – Study the intersection of Highway 100 and Highway 70S for traffic and walking improvements.

*Access Nashville Street Project #29*

**Sylvan Park Mobility Study**–Study the need for strategic left-turn lanes at key intersections along Charlotte Pike between I-440 and White Bridge Pike.

## **Transportation Network Plans**

The Key Recommendations, Countywide Critical Needs, and Community Priorities within this plan guide the modal transportation plans for Nashville/Davidson County to align with the NashvilleNext vision. The following four transportation-related plans are developed by city agencies. Other transportation plans are developed by partner agencies that impact the transportation network in the region by the Nashville Area MPO, TDOT, RTA, the Nashville International Airport, and others.

### **Major and Collector Street Plan**

*Implementing Complete Streets: Major and Collector Street Plan for Metropolitan Nashville* was the most significant and recent update to the Major and Collector Street Plan (MCSP). It was adopted by the Metro Planning Commission in 2011. This update changed how streets are planned to move people and goods by incorporating the Mayor's Complete Streets Executive Order. The MCSP improves the city's street system to provide safe and effective access for all users while addressing streetscape design in context with the existing or envisioned character of the community. Context and character of a street are important, so the transportation facility fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety, improving access, and providing mobility. The MCSP helps tie transportation to land use. Complete Streets and Context Sensitive Solutions also advance environmental sustainability and community health. With the completion of NashvilleNext, the MCSP is readopted with changes. These changes involve a reevaluation of potential road widenings to align these streets' roles within Centers and High Capacity Transit Corridors and anticipated financial constraints; coordination in identifying bikeways on major streets; adjustments to the context or character of a street relative to changes in land use policies identified in the community plans, inclusion of all streets within Downtown to ensure a good interface between the public and private realms, identification of street segments for potential road diets, and updates to design standards to continue Nashville's efforts to achieve good urban form that is safe, convenient, and welcoming for multiple modes of transportation.

## Strategic Plan for Sidewalks and Bikeways

The *Strategic Plan for Sidewalks and Bikeways* was updated by Metro Public Works in 2008, provides a functional framework for the city's implementation of sidewalk and bikeway facilities. Since it was originally created in 2002, Nashville has changed and grown significantly, and at the same time, Nashville's peer and competitor cities have built upon early cycling successes and are now taking a proactive approach to Complete Streets by providing separated biking facilities, new pavement markings for bicyclists, signals, and narrower street crossings through curb extensions to increase pedestrian safety, parklets, and other innovations in roadway design.

Today, development now occurs most frequently in urban areas, and residents strongly express a preference for a more walkable and bikeable Nashville. Metro Public Works endorsed the National Association of City Transportation Officials' *Urban Street Design Guide* in 2014. The Strategic Plan needs to be updated to respond to current market trends and to implement the new infrastructure techniques described in the *Urban Street Design Guide* and the MCSP to increase the safety and comfort of walking and biking, encourage active transportation for utilitarian trips, and make all modes of transportation safer.

## Strategic Transit Master Plan

Nashville MTA last updated the *Strategic Transit Master Plan* in 2009. The MTA Board of Directors adopted that five year plan to guide transit infrastructure improvements. Since the plan's completion, many of the identified projects such as creating Bus Rapid Transit (BRT) Lite service on Gallatin Pike and extending service frequencies to Bellevue have been implemented. In 2015, MTA has begun an update to the plan with a more comprehensive, longer range vision of Nashville's transit system. This planning process is called nMotion 2015. The High Capacity Transit Corridors on the NashvilleNext Growth and Preservation Concept Map serves as the foundation to further explore transit priorities during the nMotion process by closely linking anticipated redevelopment areas with improved transit. Once completed, the new nMotion 2015 Plan will help implement the objectives of NashvilleNext.

## Parks and Greenways Master Plan

The *Metropolitan Parks and Greenways Master Plan* was updated in 2008. It outlines a vision for the parks and greenways systems through the development of new community centers, greenways, nature centers, playgrounds, and other parks improvements. Although not primarily a transportation plan, the greenways portion of the Master Plan has directed the development of the extensive greenways network in Nashville. These facilities were developed for recreational and environmental purposes. As this system has evolved over time, residents increasingly use portions of the system for transportation purposes and should be further encouraged. Metro Parks and Greenways anticipates updating the Master Plan in 2015 and 2016. The new Master Plan should support and supplement the *Strategic Plan for Sidewalks and Bikeways* and carry forward the NashvilleNext vision which outlines open space opportunities and an expansion of the greenways system to incorporate multi-use paths connected to bike lanes.

The Accessibility Principles, Strategic Initiatives, and Key Recommendations of Access Nashville can be achieved through specific action steps to thoroughly examine existing plans, policies, and agency responsibilities, and adjust them to direct multimodal transportation improvements that support the NashvilleNext vision. The result will be Countywide Critical Needs, Community Priorities, and related policies and programs are carried through to implementation. The following action steps are the most rational, economical, and expedient ways to accomplish Nashvillians' goals for multimodal transportation. Action Items based on these essential next steps are included in the NashvilleNext Elements under the Land Use, Transportation, and Infrastructure Element; the Health, Livability, and Built Environment Element; and the Natural Resources and Hazard Adaptation Element.

**1. Develop a multi-year program of projects to reflect the city's multimodal transportation vision (see Action Item 278).**

- » Coordinate the prioritization of projects and selection of projects in a transparent manner, emphasizing Countywide Critical Needs and Community Priorities identified in NashvilleNext, and within the framework of the Nashville Area MPO's Regional Transportation Plan updates and Transportation Improvement Program. Update metrics to assess potential projects regularly with new, meaningful tools and data. Example measures might include calculating greenhouse gas emissions associated with transportation projects, determining future multimodal projections based upon regional modeling, establishing consistent land use and transportation goal metrics for Nashville/ Davidson County to achieve, and other robust datasets and tools. Metro can use these tools and measures to prioritize transportation projects in the future.
  
- » Adjust Metro's Capital Improvements Budget process to coordinate with the Nashville Area MPO's Regional Transportation Plan update and the Transportation Improvement Program process. Ensure projects for the Capital Improvements Budget are assessed in meeting the vision of NashvilleNext. Consult the Countywide Critical Needs and Community Priorities identified.

2. **As goals are achieved and/or NashvilleNext is updated, update policies, Accessibility Principles, Strategic Initiatives, Key Recommendations, Countywide Critical Needs, and Community Priorities in Access Nashville and Community Plans and associated concepts in the Strategic Plan for Sidewalks and Bikeways, the Strategic Transit Master Plan, the Metropolitan Parks and Greenways Master Plan, and the MPO's Regional Transportation Plan. Prioritize projects in each plan to maintain a robust and evolving multimodal transportation vision (see various action items referenced below).**
  - » Readopt the Major and Collector Street Plan with the proposed changes and amend the MCSP as updates to NashvilleNext are adopted. Amend as necessary to reflect updated land use policy changes and capital investment decisions of Metropolitan Government and TDOT. Coordinate this planning process with the Nashville Area MPO's Regional Transportation Plan updates and Transportation Improvement Program. Consult the Major and Collector Street Plan for guidance on street widenings and future strategic connections (see Action Items 276 and 277).
  - » Update the Strategic Plan for Sidewalks and Bikeways on a regular basis. In the next update, reflect the vision, policy direction, Countywide Critical Needs, and Community Priorities identified in NashvilleNext. Restructure the planning process for sidewalks and bikeways to include low-stress bikeways and innovative bicycling infrastructure concepts being implemented in peer cities, the Metropolitan Parks and Greenways Master Plan, and the city's bikeshare system. The city's bicycle and pedestrian infrastructure planning process should set transparent, short- and mid-term priorities for all of its components within given financial constraints. Monitor funding opportunities for sidewalks and bikeways through the Nashville Area MPO's Regional Transportation Plan updates and Transportation Improvement Program (see Action Items 203, 273, and 274).
  - » Complete the update to the Strategic Transit Master Plan, and update it on a regular basis. Reflect the vision and policy direction of NashvilleNext to prioritize High Capacity Transit Corridors with projected increases in employment and housing. Use the Strategic Transit Master Plan to develop corridor plans with community input that involve land use, walking, biking, transit, streetscaping, and

other infrastructure components to create more complete streets as redevelopment occurs and through the CIB process. Monitor funding opportunities for transit and connections from transit to sidewalks and bikeways through the Nashville Area MPO's Regional Transportation Plan updates and Transportation Improvement Program (see Action Items 132 and 270).

- » Complete the update to the Metropolitan Parks and Greenways Master Plan, and update it on a regular basis. Tie the vision for greenways to the vision, policy direction, Countywide Critical Needs, and Community Priorities of NashvilleNext and future updates to the sidewalks and bikeways network established in the Strategic Plan for Sidewalks and Bikeways. Monitor funding opportunities for greenways through the Nashville Area MPO's Regional Transportation Plan updates and Transportation Improvement Program (see Action Items 203, 221, and 274).
- 3. Coordinate between transportation agencies and land use planning agencies on planning studies, development plans, and capital improvements projects within Metro Nashville and adjacent counties in Middle Tennessee. Consult the Countywide Critical Needs and Community Priorities identified in NashvilleNext as the starting point for future transportation improvements. Encourage additional input on the review of development projects among transportation agencies and the public. Broaden the review process to assess health impacts, safety, and return on investment with development proposals (see Action Items 70, 71, 130, 132, 173, 270, 271, 273, 274, 276, 277, 278, and 365)**
  - 4. Adequately fund the maintenance and operation of existing transportation infrastructure and its components. Coordinate investments between transportation agencies to leverage funding opportunities (see Action Items 154, 200, 203, 272, and 281)**
  - 5. Secure dedicated revenue to fund transportation plans where federal transportation funds have not kept pace with inflation and local needs (see various action items referenced below).**

- » Foster coordination and collaboration among 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 (see Action Items 100 and 132).
- » Collaborate with the private-sector through organizations like the Transit Alliance of Middle Tennessee, the Nashville Area Chamber of Commerce, and Cumberland Region Tomorrow to educate businesses and the public about the need to expand and modernize the region's transportation system (see Action Items 83, 132, 144, and 271).
- » Consider mechanisms to fully fund sidewalk implementation throughout Nashville/Davidson County (see Action Items 154, 200, 203, 281).
- » Assess and establish a supplemental transportation program for older adults to provide a needed transportation service for a growing segment of our population in the region. This service will need to be guided by land use, transportation, and social services agencies with various state and local partners and the private sector to start and eventually lead to a self-sustaining organization (see Action Items 102 and 269).

**6. Explore options for consolidation of local transportation functions to better align future city planning activities guided by NashvilleNext to capital improvements. Research the strengths and weaknesses of various models of collaboration and 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, Metro Health, MDHA, the Mayor's Office, and their roles and responsibilities should be evaluated. A discussion about their functions and linkages to planning, prioritizing, implementing, and constructing is needed, so functions of Nashville's transportation system are maximized across modes, balanced in their evaluation, and delivered to areas most in need and with anticipated future potential.**

This evaluation and reorganization should lead to a balanced multi-year program of transportation projects (see Action Items 173 and 278)

7. Continue to develop the Access Nashville 2040 Report Card as a mixed-methods annual evaluation mechanism and published report that highlights multimodal transportation projects completed in Nashville/Davidson County by transportation agencies, as well as their associated costs and impacts. Include private sector contributions to the transportation network. Assess basic transportation indicators and report on their progress with the public. Update metrics as new tools are developed and start establishing specific transportation goals for Nashville/Davidson County to achieve. Align the release of the report with Metro's budget process, so that residents and elected officials have facts about our transportation network and NashvilleNext progress when considering transportation related budget requests (see Action Items 56, 70, 169, 271, and 363).