

GRANT APPLICATION SUMMARY SHEET

Grant Name: Active Transportation Program: East Nashville Bikeways
Backbones 18-21

Department: PUBLIC WORKS

Grantor: U.S. DEPARTMENT OF TRANSPORTATION

**Pass-Through Grantor
(If applicable):** GREATER N'VILLE REG. COUNCIL

Total Applied \$1,291,500.00

Metro Cash Match: \$287,000.00

Department Contact: Laura Hardwicke
862-7185

Status: NEW

Program Description:

The purpose of East Nashville Backbones is to design, construct, and evaluate a spine of three major-separated and one minor-separated bikeway in East Nashville to connect communities, encourage active transportation, and decrease automobile dependence.

Plan for continuation of services upon grant expiration:

Maintenance of facilities included in Metro Public Works responsibilities/budget.

**APPROVED AS TO AVAILABILITY
OF FUNDS:**

Thomas Woodhead 3/9/18
Director of Finance Date

**APPROVED AS TO FORM AND
LEGALITY:**

Jason P. Bobo
Metropolitan Attorney Date

**APPROVED AS TO RISK AND
INSURANCE:**

BCW 3/9/18
Director of Risk Management Date
Services

Dan Claitor 3.9.18
Metropolitan Mayor Date



NASHVILLE AREA
Metropolitan Planning Organization

OFFICIAL USE:

Received by: _____

Date: _____

ACTIVE TRANSPORTATION PROGRAM GRANT APPLICATION Infrastructure Project

PROJECT NAME	East Nashville Backbones						
LEAD AGENCY	Metropolitan Government of Nashville and Davidson County Department of Public Works						
PROJECT TYPE	<input checked="" type="checkbox"/> On-Road Improvements <input type="checkbox"/> Off-Road Improvements <input checked="" type="checkbox"/> Amenities/ Enhancements						
COUNTIES	<input checked="" type="checkbox"/> Davidson	<input type="checkbox"/> Maury	<input type="checkbox"/> Robertson	<input type="checkbox"/> Rutherford	<input type="checkbox"/> Sumner	<input type="checkbox"/> Williamson	<input type="checkbox"/> Wilson
BRIEF DESCRIPTION	The purpose of East Nashville Backbones is to design, construct, and evaluate a spine of three major-separated and one minor-separated bikeway in East Nashville to connect communities, encourage active transportation, and decrease automobile dependence.						

PROPOSED ELEMENT(S)	PROJECT HISTORY																		
<input type="checkbox"/> Sidewalks <input type="checkbox"/> Crosswalk(s) <input type="checkbox"/> Signalization/traffic control <input checked="" type="checkbox"/> Signage <input type="checkbox"/> Curb ramp(s) <input type="checkbox"/> Pedestrian amenities. <input type="checkbox"/> Shortened signal cycle lengths of 90 seconds or less or other pedestrian friendly signal timing <input checked="" type="checkbox"/> Bicycle lane <input checked="" type="checkbox"/> Buffered bicycle lane <input type="checkbox"/> Bicycle parking (e.g., rack, locker) <input type="checkbox"/> Shared lane(s) <input type="checkbox"/> Bike share program <input checked="" type="checkbox"/> Landscaping (e.g., street trees or other features to promote use of walking/bicycling) <input type="checkbox"/> New greenway <input type="checkbox"/> Bus/transit stop <input type="checkbox"/> Transit stop amenities or bus stop pads <input type="checkbox"/> Wayfinding <input type="checkbox"/> Turning radius improvements <input type="checkbox"/> ADA accessibility	<input type="checkbox"/> Project in TIP ID# _____ <input type="checkbox"/> Not in TIP, LRTP Project ID# _____ <input type="checkbox"/> Existing Project, Not in TIP or Plan <input checked="" type="checkbox"/> New Project <input type="checkbox"/> Other: _____																		
ATP GRANT FUNDING SUMMARY*																			
	<table border="1"> <thead> <tr> <th>Federal Fiscal Year</th> <th>Total Cost</th> <th>ATP Requested**</th> </tr> </thead> <tbody> <tr> <td>2018</td> <td>\$0</td> <td>\$0</td> </tr> <tr> <td>2019</td> <td>\$326,700</td> <td>\$267,300</td> </tr> <tr> <td>2020</td> <td>\$1,251,800</td> <td>\$1,024,200</td> </tr> <tr> <td>2021 (future TIP)</td> <td>\$0</td> <td>\$0</td> </tr> <tr> <td>Total</td> <td>\$1,578,500</td> <td>\$1,291,500</td> </tr> </tbody> </table>	Federal Fiscal Year	Total Cost	ATP Requested**	2018	\$0	\$0	2019	\$326,700	\$267,300	2020	\$1,251,800	\$1,024,200	2021 (future TIP)	\$0	\$0	Total	\$1,578,500	\$1,291,500
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<p><i>*Please complete the PROJECT BUDGET WORKSHEET form and include any funding from other sources of revenue. **Must not exceed 80% of total cost.</i></p>																			

AGENCY CONTACT INFORMATION

Name	Laura Hardwicke	E-mail	laura.hardwicke@nashville.gov
Title	Grants Coordinator	Phone	615-862-7185
Department	Planning		
Agency/ Organization	Metropolitan Government of Nashville and Davidson County		

This application is contingent upon approval of the application by the Metropolitan Council.

PROPOSAL NARRATIVE (Provide no more than 10 pages, responding to each of the following sections)	
Section 1. Project Description, Purpose, Need, and Objectives	<p>Please provide a detailed description of the proposed active transportation project including its purpose, need, and main objectives. Applicants also must describe the following:</p> <ul style="list-style-type: none"> • Intended audience(s) • Anticipated reach/ size of audience • Expected scope of work • Major tasks/ activities • Final deliverables / products
Section 2. Benefits to Active Transportation	<p>Applicants should address how its proposal relates to the following goals:</p> <ul style="list-style-type: none"> • Provide safe traveling options for pedestrians and cyclists • Provide opportunities for physical activity among users of the region's transportation system • Increase connectivity among a mix of land uses including neighborhoods, schools, jobs, parks and public space, fresh food markets/ grocery stores, retail, entertainment venues, etc. • Provide last-mile connectivity for users of public transportation
Section 3. Benefits to Region and Local Community	<p>Describe how the proposed project will benefit the region and affected local communities. Specifically, consider how the project helps to promote:</p> <ul style="list-style-type: none"> • MPO's regional goals identified in the 2040 RTP, also known as "Middle Tennessee Connected," and • Local neighborhood or community plans. <p>In addition, please describe how the proposed project will help support traditionally underserved or vulnerable populations. Examples include children, seniors, persons with a physical or mental disability, ethnic and minority populations, non-English speaking individuals, low income households, households without a personal automobile, populations with high rates of health disparities and chronic disease, etc.</p>
Section 4. Proposed Innovation	<p>Describe how the proposed project incorporates innovative approaches to advancing the region's Active Transportation Program goals such as emerging technologies, creative placemaking practices, or public-private partnerships.</p>
Section 5. Sustainability of Effort	<p>Describe this history of the proposed project and how it will be sustained beyond the life of awarded grant funds.</p>
Section 6. Project Deliverables, Schedule, & Milestones	<p>Provide a detailed schedule for the completion of the proposed project. Identify and describe key milestones, major tasks and activities, and the final deliverables/ products. Include a description of how the project will be managed and how progress will be tracked to ensure timely and efficient implementation.</p> <p>Include a description of the lead agency's recent experience in successfully implementing similar projects. This description should include the project or projects that were implemented and sufficient detail to demonstrate the project was successfully completed on time and within budget.</p>
Section 7. Budget Narrative	<p>Provide a descriptive narrative about the funds needed to complete the proposed project or program. Describe the source of matching funds. Applicants must provide documentation to validate that matching funds are secured and available. Funding is subject to continued compliance with MPO TIP Programming Policies regarding federal obligation deadlines.</p>

APPLICATION CHECKLIST

Yes, I have reviewed:	<input type="checkbox"/> MPO TIP Programming Policies
Yes, I have included:	<ul style="list-style-type: none"><input type="checkbox"/> Detailed project description including purpose and need<input type="checkbox"/> Project map and supporting illustrations<input type="checkbox"/> Description of intended users/ audience<input type="checkbox"/> Estimate of the anticipated number of users/ size of audience<input type="checkbox"/> Detailed scope of work including description of major tasks/activities<input type="checkbox"/> List of final deliverables / products<input type="checkbox"/> Detailed project schedule including major milestone dates<input type="checkbox"/> Detailed project budget including all estimated costs and funding sources<input type="checkbox"/> Documentation of matching funds<input type="checkbox"/> Completed project narrative

East Nashville Backbones

Section 1: Project Description, Purpose, Need, and Objectives

The purpose of East Nashville Backbones is to design, construct, and evaluate a spine of three major-separated and one minor-separated bikeway in East Nashville to connect communities, encourage active transportation, and decrease automobile dependence.

The Woodland Street corridor has been the site of numerous crashes between bicyclists and cars, several of which have involved incapacitating injuries. These conflicts reveal dangerous conditions, but also the desire for Woodland Street to accommodate more non-automobile users. In addition to connecting Shelby Park (via Riverside Drive bike lanes under construction) and Gallatin Pike, the east-west connections included in this proposal traverse many East Nashville neighborhoods, connecting residents to schools, retail destinations, and transit stops.

By providing dedicated, physically separated biking space, this project will encourage users from adjacent residential and mixed-use commercial areas to walk and bike on this north-south connector.

Intended audience and Anticipated Reach

Woodland Street represents a connection between Downtown Nashville and the neighborhoods of East Nashville, but the section between the bridge landing and the interstate is flanked by parking lots and industrial land uses. However, those industrial land uses are quickly redeveloping into mixed use areas similar to Main Street and Woodland Street east of the interstate. The Census tracts north of the interstate that will be impacted by these bikeway projects have population densities between 5,000 and 10,000 people per square mile. This density is much higher than the 1,291 people per square mile Davidson County average.

East Nashville has increasingly become a major destination for people relocating to Nashville, as well as for increased commercial development in retail pockets and mixed use corridors like those that already exist on Main Street, Woodland Street, and South 10th Street. Increased transit, including the possibility of Gallatin Pike becoming Nashville's first light rail corridor, will serve as a further catalyst for this growth. The Let's Move Nashville plan identifies the intersections of Main Street and South 5th Street, South 8th Street, and West Cleveland Street as light rail stations.

Expected scope of work

Active Transportation Program funds will be used for design, engineering, and construction of the East Nashville Backbones. For each segment, design and engineering will consider opportunities for signal improvements and sensors. Scope for major separated bike lanes includes installation of necessary pavement markings, signs, and delineators on both sides of the following road segments:

East Nashville Backbones

Woodland Street from 2nd Avenue North to 11th Street
South 5th Street from Woodland Street to Davidson Street
10th Street from Woodland Street to Sevier Street

Additionally, a minor separated bike lane will be designed, engineered, and installed on McFerrin Avenue from Woodland Street to West Cleveland Avenue.

Major tasks/ activities

The project's major tasks and activities include:

- Design and preliminary engineering documents
- Communications plan to notify communities of upcoming improvements, in concert with Planning Department and Walk Bike Nashville
- Construction and installation of facilities
- Project completion notification and evaluation

Final deliverables / products

- 3.1 Miles of protected bike lanes
- 32 Improved crossings (every major intersection touch through these projects)
- 8-10 Sensors (major intersections plus Woodland Street Bridge)

Section 2: Benefits to Active Transportation

Protected bike lanes provide a safe setting for cyclists of varying abilities to use for commuting, recreation, and exercise. The buffer also helps pedestrians on adjacent sidewalks feel safe from vehicular traffic as well. By improving signals and crosswalks at strategic intersections, this project will protect users when they are most vulnerable.

All of the streets in East Nashville Backbones have 30-mile-per-hour speed limits. Once cars reach a speed just above 20 mph, they rapidly become more deadly. According to AAA Safety Foundation data, a person is about 70 percent more likely to be killed if they're struck by a vehicle traveling at 30 mph versus 25 mph. Delineators and buffers will provide a safety shield for pedestrians and cyclists. Through partnership with Metro Stormwater, the project presents these buffers can be enhanced by utilizing green infrastructure.

The same design solutions that improve safety can also encourage physical activity, as users of all abilities will feel safe utilizing East Nashville Backbones for active transportation, whether for commuting or recreation and physical activity. The South Fifth Street spur links to existing protected bike lanes on Davidson Street, part of the 27 mile Music City Bikeway, which feeds into Shelby Park and Shelby Bottoms Greenway, part of the longest greenway segment in Nashville (12 miles).

East Nashville Backbones

This project would provide a connection from Public Square Park (and surrounding destinations like Music City Central, Legislative Plaza, Tennessee Performing Arts Center, and the Cumberland River Greenway) east over the Cumberland River to new multi-use developments, local banks, shops, East Park and Community Center, as well as the Five-Points business district. The east-west vertebrae offer connections to existing neighborhoods and churches, and the Cleveland Park neighborhood center with landmark restaurants.

East Nashville Backbones is a significant priority because of the connections and opportunities it provides for vulnerable users. Doctors, dentists, and health care offices are located along Woodland Street. The Fifth Street segment would offer a gateway for residents in James Cayce Homes, currently undergoing construction of the Envision Cayce Master Plan. The plan will create a mixed-income, mixed-use community, and ensures a one-for-one replacement of public housing units, while adding both new affordable, workforce and market-rate housing. Also along Fifth is Edgefield Manor, public housing specifically for residents 62 years or older. Kirkpatrick Elementary Enhanced Option, Warner Enhanced Option Elementary School, and Ross Elementary School are along this project's direct route, offering a safe travel option for students.

Bus stops along the East Nashville Backbones include hourly routes 20-Scott and 30-McFerrin as well as route 4-Shelby with service every 20 minutes. Combined with *Let's Move Nashville*, Metro's Transportation Solution that includes more convenient and reliable transit service, on demand technology, and stations on Eighth and Tenth streets, this project can have significant impact on first and last mile travel for transit.

Section 3: Benefits to Region and Local Community

Middle Tennessee Connected

This project addresses the complete street goals set out in the Regional Transportation Plan to provide low-stress bicycling options for streets with high speeds. East Nashville Backbones seeks to provide a pedestrian and bicycle connection to downtown in addition to the Siegenthaler Bridge, fulfilling the need for increased active transportation options, outlined in RTP 2040. This could help reduce the number and severity of crashes, since facilities will be designed for all users.

Local and Neighborhood Plans

Nashville's WalkNBike plan identifies Woodland Street, South 5th Street, South 10th Street, and McFerrin Street as protected bikeways. These projects will incorporate many advanced designs including physically separated bike lanes, bicycle- and pedestrian-separated crossings and signals, bicycle- and pedestrian-only crossings, chicanes, and gateways. The East Nashville Backbones project will also include smart sensors to continuously and automatically provide count and speed data, which will enable us to better evaluate the impact of these changes.

East Nashville Backbones

Due to close proximity to neighborhood services mentioned in Section 2, East Nashville Backbones will support the following traditionally underserved populations: children, seniors, ethnic and minority groups, low-income households, public housing residents, people with health disparities. These services are located on the direct route of the connections made using ATP funding. Considering a half-mile radius of the proposed project, East Nashville Backbones can improve the connectivity between workforce and jobs by offering a range of options to manage commuting distances and travel times.

Section 4: Proposed Innovation

This project will incorporate emerging sensor technologies and through potential partnership with Metro Water, stormwater mitigation designs to advance the region's Active Transportation Program goals.

In addition to TDOT'S Smartway and EfficientTDOT intelligent transportation system components, Metro Public Works equips most traffic signals with cameras or other sensors that detect vehicles and has developed signal timing plans for major arterials throughout Davidson County. These signal timing plans are updated every few years as land use and traffic conditions change. Technology is also moving into the transit system with MTA transit system information delivered in real time, which 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.

This project will install eight to ten sensors (likely camera based) to advance Nashville's use of smart technology to make data driven decisions on transportation planning and infrastructure, as well as evaluate the success of projects. Adding a sensor component to this project will also increase community awareness of the facilities and elevate the understanding of bicycle and pedestrian demand.

East Nashville Backbones

Another opportunity for emerging technologies is green infrastructure. 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 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 the city overflows 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. Metro Water Services created a Low Impact Development (LID) Manual that outlines the different techniques to handle stormwater that can be utilized on Metro's public-sector investments, and Metro Public Works has green street standards that can be used 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 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 separates the car lanes, while rain gardens and pervious concrete absorb and properly drain rainwater. Similar approaches were applied to the 28th-31st Avenue Connector and the extension of Korean Veterans Boulevard. However, examples of smaller scale green streets projects are just now starting to take shape in Nashville. Currently under design, Metro Stormwater is working with design plans for bike lanes on Twelfth Avenue, south of the Gulch. The Woodland Street segment could be another example of green infrastructure deployed on a small to medium scale. The project's proximity to the Cumberland River and high risk flood areas on the East Bank underscores the importance of incorporating green streets emerging practices into the design and construction of these facilities.

East Nashville Backbones

Section 5: Sustainability of Effort

The major project elements were most recently identified in the Access Nashville 2020 plan, the transportation component of the city's general plan NashvilleNext. The NashvilleNext process was based on community vision and input, with nearly twenty thousand community members sharing their thoughts and suggestions online and in person at over four hundred meetings, briefings, events, and public conversations. The plan was adopted in 2015 and updated in 2017. The following Access Nashville Projects corresponds to elements in this proposal:

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 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 Fifth Street to Briley Parkway. Implement as coordinated capital improvements projects. As redevelopment occurs, consolidate access points to create a limited number of vehicular/pedestrian conflict points.

After completion of construction activities, the facilities will be wrapped into Metro Public Work's maintenance schedule. Currently Metro Public Works maintains 281 miles of bike lanes, and this project will represent a 1% increase, nominally effecting the maintenance budget.

Section 6: Project Deliverables, Schedule, & Milestones

The project will be managed by Metro's Public Works Department. Progress toward key milestones will be tracked to ensure timely and efficient implementation. The project requires no right-of-way acquisition and could be a D-List Categorical Exemption from NEPA, allowing funds to be obligated quickly for construction

Phase 1: Design, PE, and Outreach

East Nashville Backbones

Duration: October 2018 - September 2019

Task 1: Contract design and preliminary engineering

Task 2: Apply for categorical exclusion

Task 3: Commence outreach with surrounding communities in partnership with Walk Bike Nashville and Metro Planning Department

Phase 1 Milestones

- Final design and preliminary engineering documentation
- Categorical Exclusion or completed NEPA
- Meetings with community stakeholders, including Metro Stormwater

Phase 2: Construction

Duration: October 2019 - June 2020

Task 1: Construction and installation of the following deliverables

- 3.1 miles of protected bike lanes
- 32 improved crossings (every major intersection touch through these projects)
- 8-10 sensors (major intersections plus Woodland Street Bridge)

Phase 3: Evaluation

Duration: July - September 2020, and after performance period

Task 1: Review and analyze on a continuous and regular basis the data from sensors

Task 2: Follow-up with community stakeholders

Phase 3 Milestones

- Make corresponding policy and program decisions based on data analytics from sensors
- Recommendations for similar public/private partnerships in regards to infrastructure project education and outreach

The following recently complete projects demonstrate Metro Public Works' expertise in completing similar active transportation projects

16th/17th Avenues South

This approximately 1.5 mile long couplet of one-way streets was completed in 2017 with protected bike lanes. The project provides a valuable link between the neighborhoods surrounding Vanderbilt University and downtown Nashville via the Demonbreun Street bike lanes. The project was completed on-time and on-budget, as it was accomplished in coordination with a Metro Nashville Public Works paving project.

