Growing Smarter:
How the Nashville Region is Using Technology to Improve Mobility

Peter Westerholm
Policy Director
Nashville Area MPO
About Nashville Area MPO

Transportation planning and policy-making body made up of local and state government and transportation-related agencies across seven counties in Middle Tennessee

Responsible for the region’s long-range transportation planning efforts

- Coordinating strategic planning for the region’s multi-modal transportation system
- Developing policies and programs that direct federal funds toward transportation projects that increase livability, sustainability, prosperity and diversity

The MPO does:
- Plan
- Fund
- Study
- Coordinate

The MPO does not:
- Build
- Operate
- Maintain
MPO is a term used in federal law to refer to organizations established to carry out transportation planning requirements.

An MPO exists in every metro area with a population over 50,000.

Plans developed by the MPO provide the pathway for federal funding.

Products:
- Regional Transportation Plan
- Transportation Improvement Program
- Unified Planning Work Program

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• Pressures of population growth
• Increasing density
• Coordination with land use, housing, environmental planning
• Increasing freight traffic
• Growing congestion and limited choices
• Limited funding
• Changing technology
2010 to 2040
2.5 Million Statewide
1.3 Million (52%) in the MIDDLE

Source: U.S. Census Bureau, Woods & Poole Economics
The amount of time we spend in our cars is expected to double by 2040.

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$8.5 Billion

- $1.2 Billion Regional Fixed-Guideway Transit
- $916 Million Local and Regional Transit Improvements
- $206 Million Active Transportation Projects
- $132 Million Technology Upgrades
- $2.7 Billion U.S. Interstate Improvements
- $396 Million Safety Improvements

80% Federal Funds
20% State and Local

2016-2040 RTP
Later this year, the Nashville Area MPO will be issuing an RFP for a Regional ITS (Intelligent Transportation Systems) and Smart Cities Assessment to provide a series of recommendations on:

1. How emerging technologies can improve and optimize the efficiency of the transportation system
2. How these technologies can help people understand their options and make better transportation choices based on information available

**Focus Areas**

- Communication infrastructure
- Data sharing analysis
- Outreach (Project Coordination Committee)
- Inventory of existing ITS
- Technology needs in existing plans
- Regional integrated tech vision
- Funding, priorities, and strategies
- Private sector collaboration
- Recommendations for updates to current ITS architecture
About ITS Architecture

Provides a long range plan for the deployment, integration, and operation of ITS in the region.

Sets vision and provides framework for building vision through incremental investments.

Understands increasing and evolving role of technology in transportation, mobility.

Targeted Outcomes

- Increased efficiency for roads, transit
- Improved incident and special event management
- Safer outcomes for travelers and roadway personnel
- Dynamic weather notifications, other travel updates
- Expanded functionalities for connected vehicles

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About Smart Cities

The Smart City Challenge
USDOT competitive grant to address how emerging transportation data, technologies, and applications can be integrated with existing systems to address transportation challenges.

What is a Smart City?
Integrates data to better manage city services and assets.

Key Themes of Challenge
Reduce congestion
Keep travelers safe
Protect the environment
Respond to climate change
Connect underserved communities
Support economic vitality
Connected Nashville
Effort to identify how technology can be deployed to support community priorities, based on collaboration between government, academia, and the private sector

Smart Cities Collaborative
Brought together cities and counties from across the country to explore how technology can improve urban mobility
About Connected Nashville

**Following the Smart City Challenge...**
Develop a long-term strategy designed uniquely for our community that will advance shared goals and objectives through the use of technology and data

**Built on Existing Plans**
Serves as a framework for implementing cross-agency, collaborative solutions to support better-connected citizens, more citizen-centric public services and better decision-making

**How can technology and data be used to achieve:**
- Smart Economy
- Smart Mobility
- Smart Environment
- Smart Governance
- Smart People
- Smart Living

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About Connected Nashville

**Guiding Principles**

- Collaborative
- Community-Focused
- Equitable and Inclusive
- Responsible and Transparent
- Sustainable and Resilient
Engage with Connected Nashville

Connected Nashville
A Vision for a Smarter City

To view the latest information about Nashville's Smart City Initiatives please visit
https://connected.nashville.gov.

Scan to view survey and give feedback!

Draft for community review

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“This collaborative will be an unprecedented step in unifying these urban areas and accelerate solutions that provide affordable, efficient ways to get around”

–Rit Aggarwala, Sidewalk Labs

**Nashville Areas of Focus:**
- Shared Mobility
- Performance Measures and Data Analytics

**Partner Cities**
- Austin
- Denver
- Boston
- Centennial, CO
- Chattanooga
- Lone Tree, CO
- Los Angeles
- Miami-Dade County
- Madison, WI
- Minneapolis/St. Paul
- Nashville
- Portland, OR
- Sacramento
- San Jose
- Seattle
- Washington DC
Collaborative Pilots

Tasked with developing pilots focused on Shared Mobility, Data Analytics

- Mobility on Demand
- Connected Corridor
- Smarter Bikeshare

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Nashville Pilot Update #1

Shared Mobility
Mobility on Demand

MTA issued an RFP for Shared Mobility and Mobility on Demand Solutions to address first/last mile and crosstown connectivity challenges

Progress Report
Vendors chosen in Summer 2017: TransLoc, DemandTrans

Potential zones are being explored

Evaluation criteria being finalized

Integrating real-time transit data into trip planning platform

Provide same day service for paratransit
Nashville Pilot Update #2

**Shared Mobility**

**Connected Corridor**

Working with Metro ITS, Metro Planning, Vanderbilt, to place sensors along corridor to measure car, transit, bike, ped traffic, as well as parking

**Progress Report**

Sensors have been installed and the system is being trained to differentiate between cars, bikes, peds

Different algorithms will track different types of movement

Near misses, parking will be next
Nashville Pilot Update #3

Shared Mobility
Smarter Bikeshare

GPS/air quality sensors on bike share vehicles

• Detailed information on where trips are taken and allow us to compare that with our existing and planned infrastructure

• Vital environmental health information at locations where people are active

Progress Report

Sensors ordered and will soon be outfitted on bicycles

Arrangements for data being finalized
Other Collaborations

The **Nashville Area Chamber of Commerce** began its **Moving Forward** initiative to ensure the creation of a regional transportation solution through a cohesive community effort that engages business and community leaders.

**Vanderbilt Initiative for Smart Cities Operations and Research (VISOR)**
- Focuses on multi-disciplinary research for formulating, developing, and deploying “smart city” applications
- Works with Metro agencies to develop a technical and policy platform that enables *living city labs* to study, research, and develop solutions to the challenges and problems faced by the city.
Peter Westerholm | Policy Director
MPO/Greater Nashville Regional Council
138 Second Ave N, Ste 300 | Nashville, TN 37201
m 615.429.4042  | v 615.862.8855 ext. 1057
pwesterholm@gnrc.org | nashvilempo.org

@nashvilempo