

# CITY OF MEMPHIS SMART CITY CHALLENGE

National Rural ITS Conference  
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# VISION FOR A SMART CITY

Form public-private partnerships to help solve transportation challenges

- Partner with global industry leaders to improve the connection between jobs and workers
- Develop ways for goods to slip quietly and cleanly through the city
- Use automation and analytics to shrink the impact of sprawling infrastructure

## Smart City Focus

- Smart Networks
- Multimodal Dynamic Transit Operations
- Transportation Aided Program
- Transportation Information Warehouse
- Complete Streets Infrastructure



# VISION FOR A SMART CITY

Global leader in transportation, distribution, and logistics

- Over 58,000 jobs fall in these categories
- Memphis International Airport has the highest cargo volume in the world
- Five Class I Railroads
- Fourth-largest U.S. inland port
- Connect four interstate highways



# TRANSPORTATION ALLIANCE

- City of Memphis
- FedEx
- University of Memphis
- Memphis Area Transit Authority
- Greater Memphis Chamber
- Memphis Urban Area MPO
- Innovate Memphis (Bloomberg Innovation Delivery Team)
- Memphis Light, Gas, and Water
- Memphis and Shelby County Airport Authority
- Memphis and Shelby County Planning and Development
- Memphis and Shelby County Office of Sustainability
- Shelby County Health Department



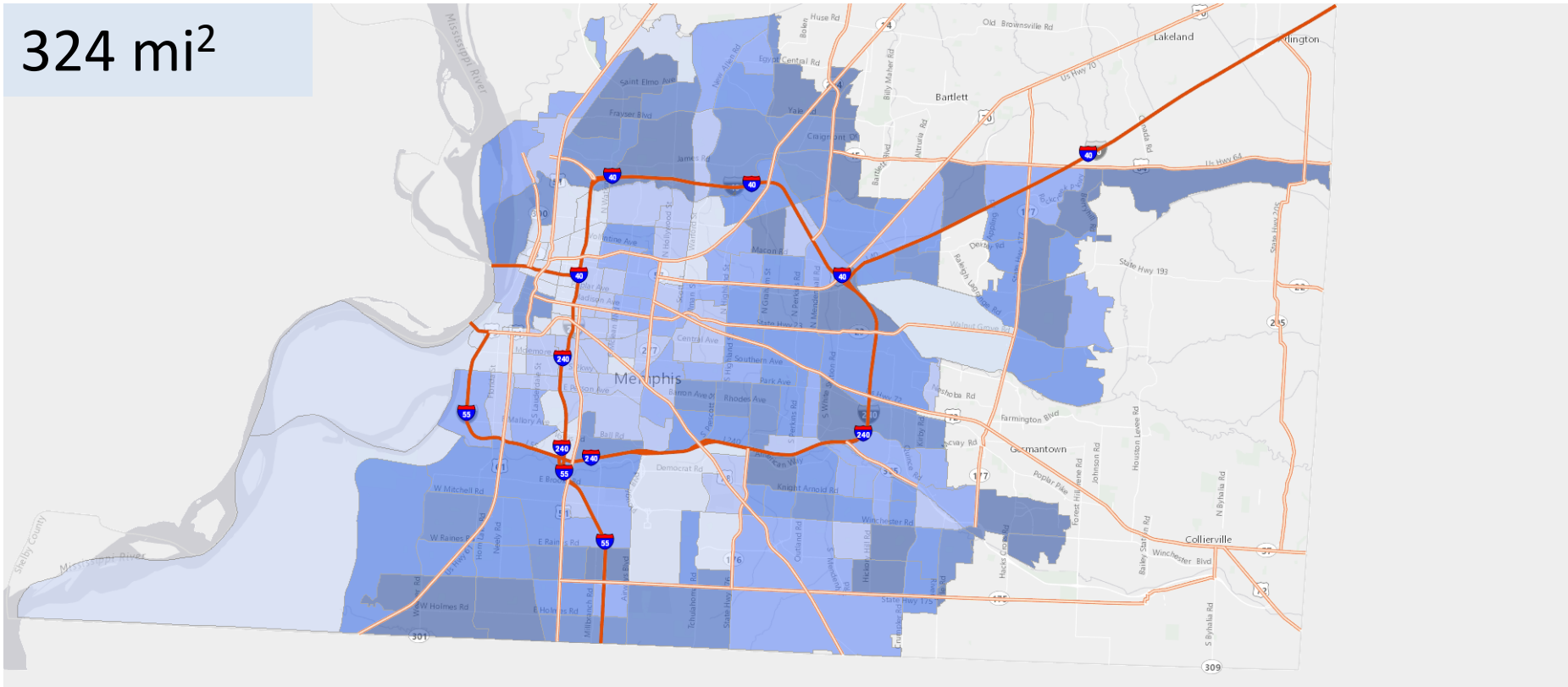
# PLANNING ENVIRONMENT

- Aerotropolis Master Plan
- MidSouth Regional Greenprint and Sustainability Plan
- HUD's National Disaster Resiliency Competition
- HUD Choice Neighborhoods Grant
- Complete Streets and Roadway Regulatory Plan
- Upcoming Comprehensive Plan



# MEMPHIS NOW

324 mi<sup>2</sup>



Population: 653,480

Population Density: 2017 residents/mi<sup>2</sup>



# EXISTING INFRASTRUCTURE

## Roadway

- 511 Arterial Miles
- 63 Freeway Miles
- 2,108 Other Road Miles

928 Traffic Signals

180,000 Traffic Signs

## Bicycle Facilities

- 240 On-Street Miles
  - 92 Shared Use Miles
- Sidewalks 3400 Miles



# ICT AND ITS TECHNOLOGY

## Signal System Project

- **Interconnecting 439 Traffic Signals**
  - 120 miles of fiber optic cable
  - Future: 511 Signals with 150 miles of fiber
- **188 System Detectors**
  - 122 Count Stations
  - 66 Bluetooth and MAC Address Detectors
- **City Hall Traffic Management System**
- **Coordinated Signal Timing**

Updated the CBD Signal Coordination System

CCTV Camera Project: Installing 50 PTZ cameras





# MEMPHIS AREA TRANSIT AUTHORITY

## Annual Transit Service

- Ridership: 7.9 million passengers
- Fixed Bus Operation: 7.6 million miles on 32 routes
- Paratransit Operation: 1.7 million miles/ 233 K passengers
- Trolley Service on 7 miles of track

## New initiatives

- BRT Service
- Transit Boulevards
- Changing to Grid Based Network
- Transit stop enhancement project

## MATA ITS

- Radio System
- Computer Aided Dispatch/ Automatic Vehicle Locator
- Automatic Passenger Counters
- Automatic Vehicle Annunciation
- Automatic Vehicle Health Monitoring
- On-Board Security Cameras
- Customer Information Signs
- Traffic Signal Priority
- TransLoc Rider
- Fixed-Route Buses GPS Transit Priority Emitters



# SHARED-USE MOBILITY SERVICES

- Shared-Use Mobility Center
- Zipcar has 20 vehicles
  - Downtown
  - Midtown
  - Airport
- Explore Bike Share
  - Fully operational by 2017
  - 60 Stations with 600 Bikes
- Transportation Network Companies
  - Uber and Lyft
  - TransLoc launched transit partnership with Uber February 2016



# INTEGRATED APPROACH

1. Urban Automation
2. Connected Vehicles
3. Intelligent Sensor-Based Infrastructure
4. Urban Analytics
5. User-Focused Mobility and Choices
6. Urban Delivery and Logistics
7. Strategic Business Models and Partnerships
8. Smart Grid, Roadway Electrification, and Electric Vehicles
9. Connected, Involved Citizens
10. Architectures and Standards
11. Low-Cost, Efficient, Secure, and Resilient Information and Communication Technology
12. Smart Land Use



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