Mayor Karl Dean, Chairman

NASHVILLE AREA
Metropolitan Planning Organization

2035 Regional Travel Demand Deficiencies Analysis

Bicycle and Pedestrian Advisory Committee
Fulton Office Complex
March 11, 2010

Congratulations to RPM!

- One of only two-dozen Bronze Level Bicycle Friendly Businesses in the nation and the second in TN.

Bicycle Friendly Business

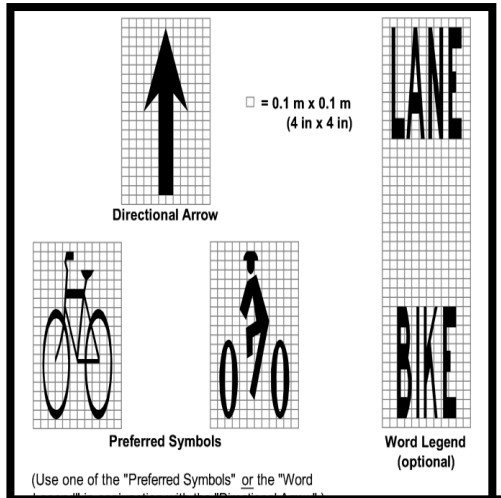
Design Manual

Key Highlights

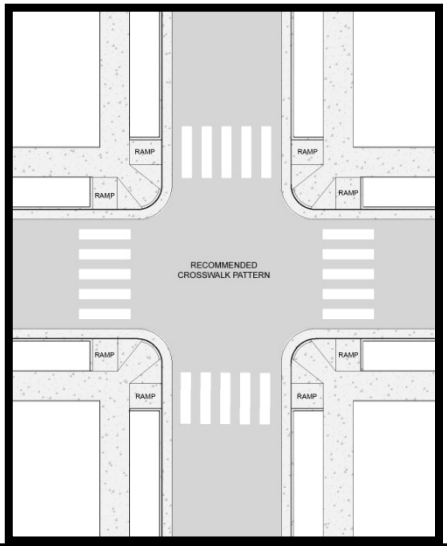
- ✓ Pedestrian Design Standards
- ✓ Bicycle Design Standards
- ✓ Examples of Current Practices & Innovative Designs
- ✓ Design Solutions for Retrofitting

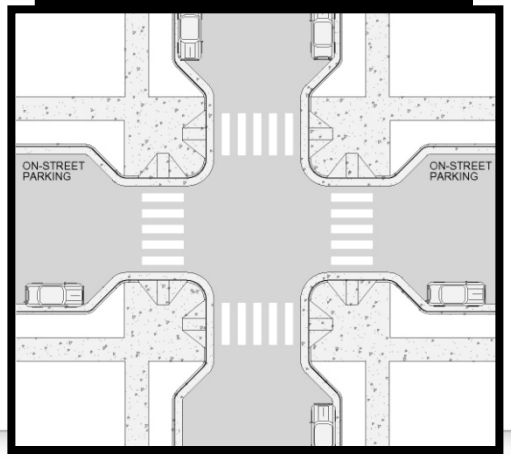
Design Manual

- Bike Lane Markings & Signs



- Sidewalk Ramps
- Crosswalks

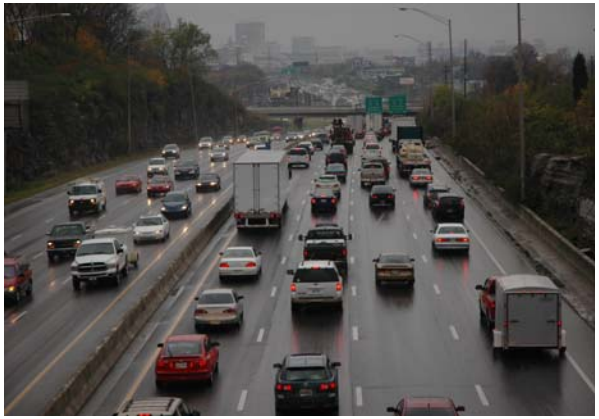




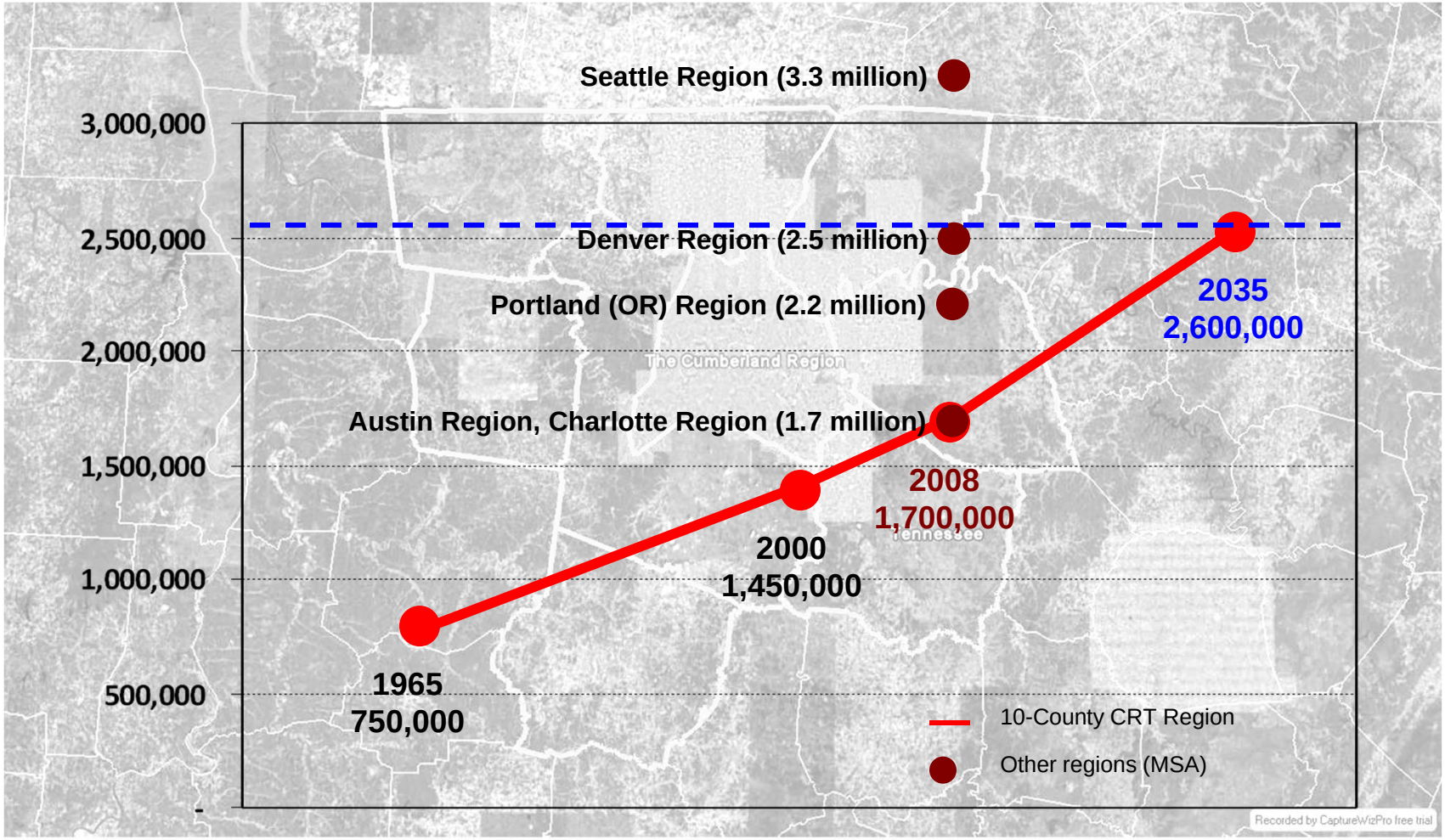
- **Countdown Signals**
- **Animated Eye Signals**

Regional Deficiencies Analysis

- Population & Employment Forecasts
  - Countywide Control Totals
  - Allocated to Parcels
  - Aggregated to TAZs
- Travel Demand Model
  - Passenger Trip Model
  - Freight Trip Model
  - Mode-Choice Model (under development)
- Link-Level Congestion Measure
  - Travel Times 70% or less of expected Free Flow
  - Volume-Based Measures
- Regional/ Sub-Regional Congestion Monitoring
  - Congestion Monitoring for “CMP Districts”
  - Aggregated by Facility Type



Population Growth, Middle



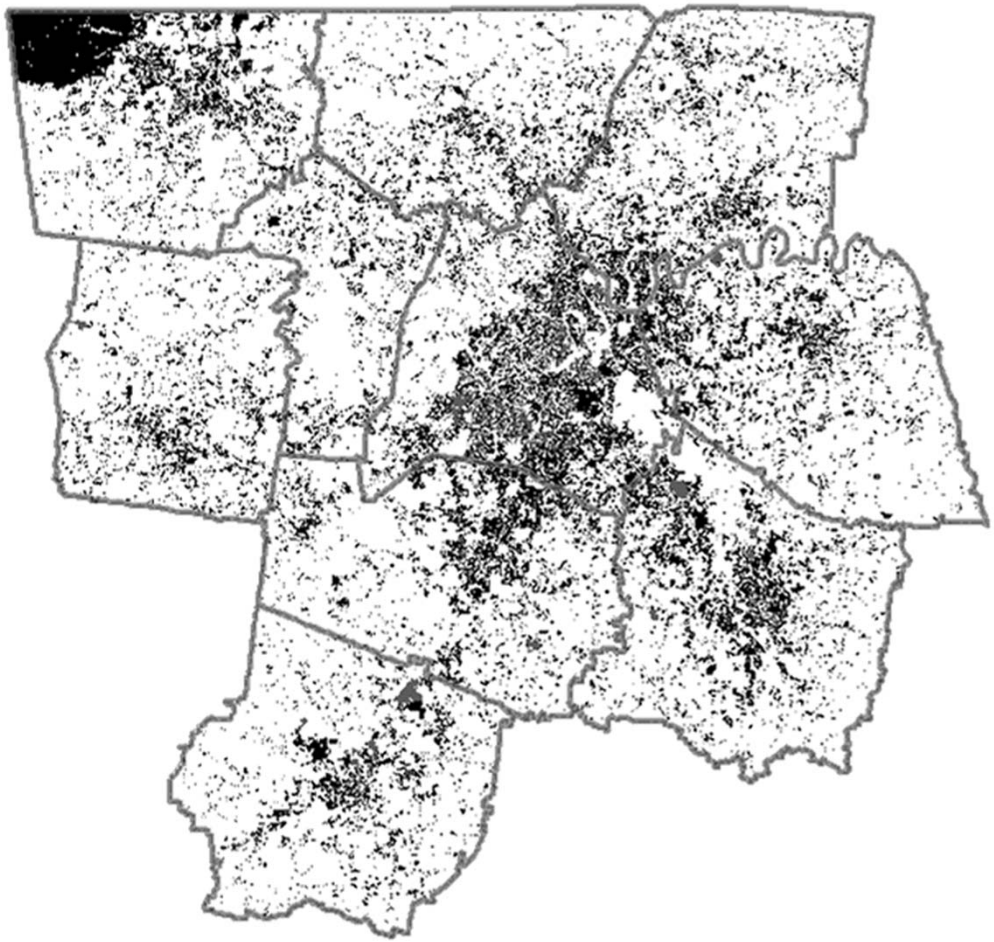
Regional Deficiencies Analysis

MPO Population & Employment Forecasts

	YEAR	MPO	DAVIDSON	MAURY	ROBERTSON	RUTHERFORD	SUMNER	WILLIAMSON	WILSON
People	2006	**1,394,928**	**613,856**	**77,550**	**61,708**	**230,980**	**148,534**	**159,094**	**103,206**
	2015	**1,637,000**	654,879	89,371	73,949	288,734	172,232	229,052	128,783
	2025	**1,904,300**	702,871	101,595	87,563	349,083	197,500	308,328	157,360
	2035	**2,174,914**	**752,326**	**114,005**	**101,324**	**409,986**	**223,124**	**387,970**	**186,179**
Jobs	2006	**983,074**	**559,435**	**44,773**	**29,573**	**131,831**	**57,236**	**108,904**	**51,322**
	2015	**1,128,118**	618,891	50,722	34,251	155,284	64,282	143,628	61,060
	2025	**1,316,029**	687,059	58,019	40,223	187,195	73,129	196,539	73,865
	2035	**1,536,746**	**755,684**	**65,964**	**47,049**	**226,453**	**83,053**	**269,755**	**88,788**

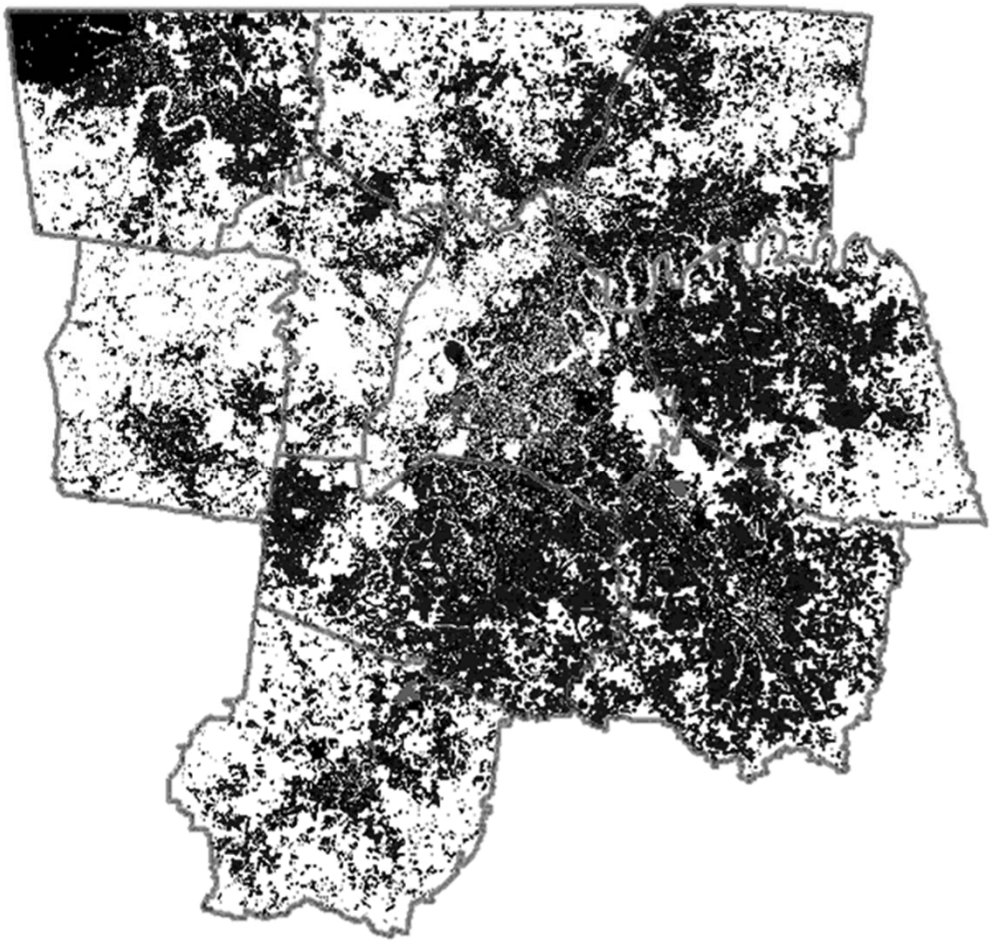
Regional Deficiencies Analysis

2008 Development Pattern



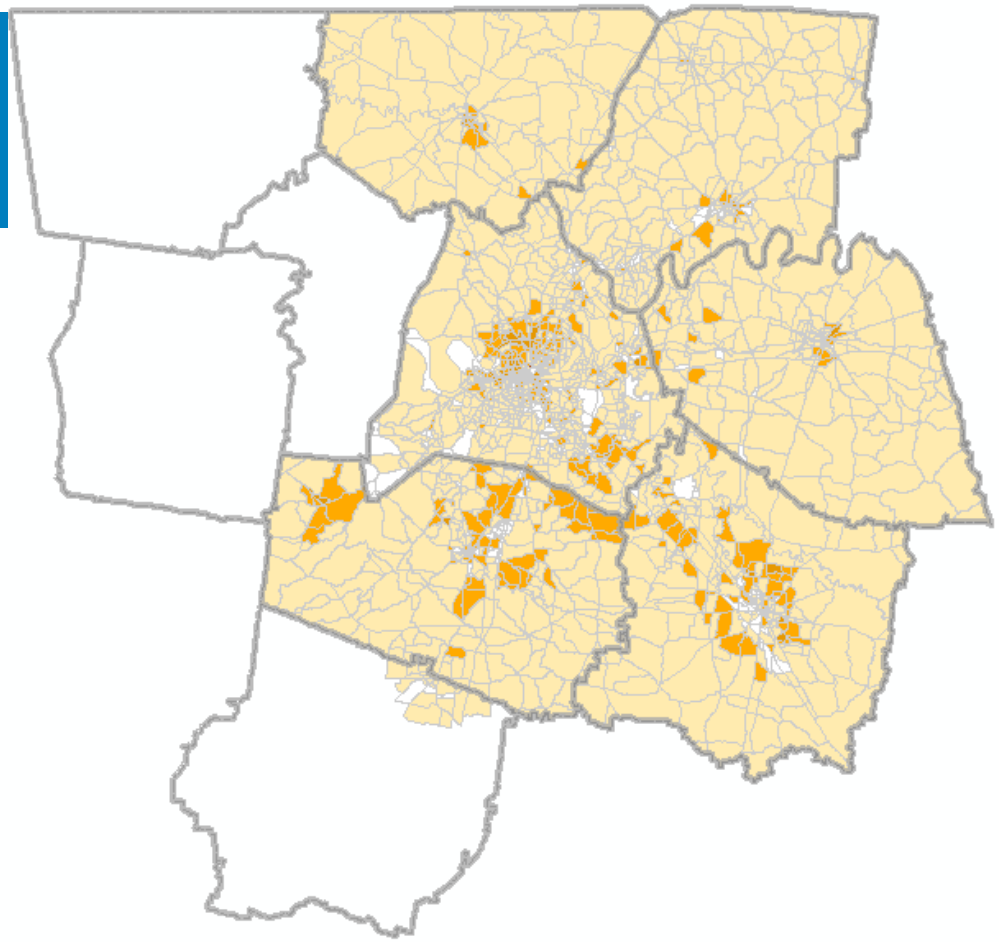
Regional Deficiencies Analysis

2035 Development Pattern



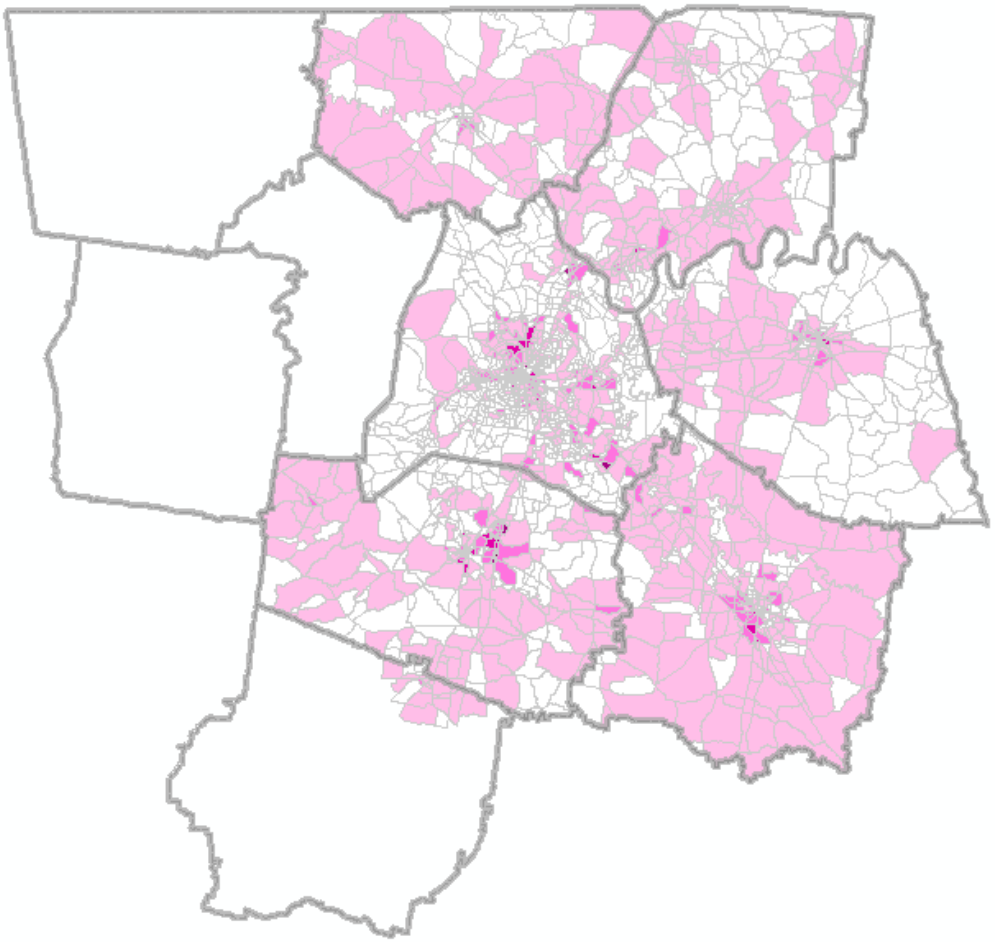
Regional Deficiencies Analysis

2035 Residential Density by TAZ



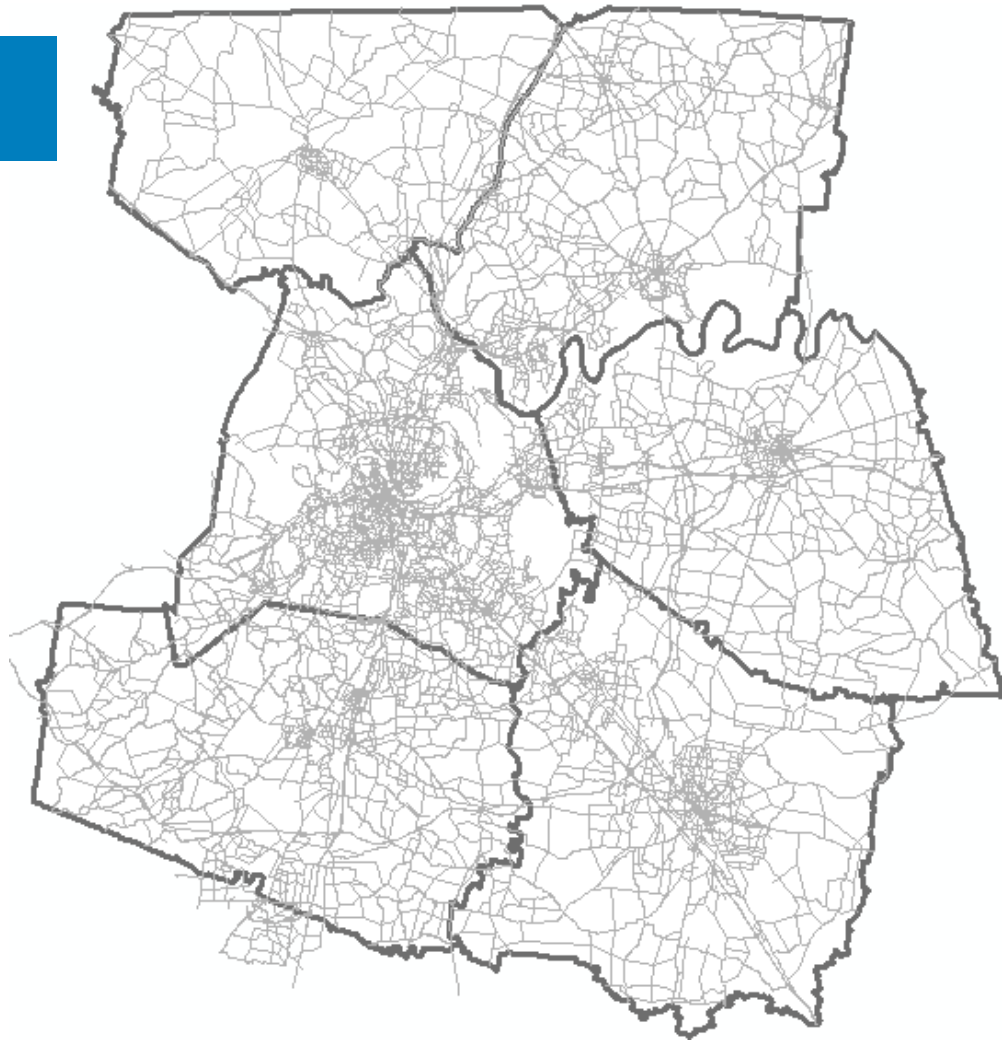
Regional Deficiencies Analysis

2035 Employment Density by TAZ



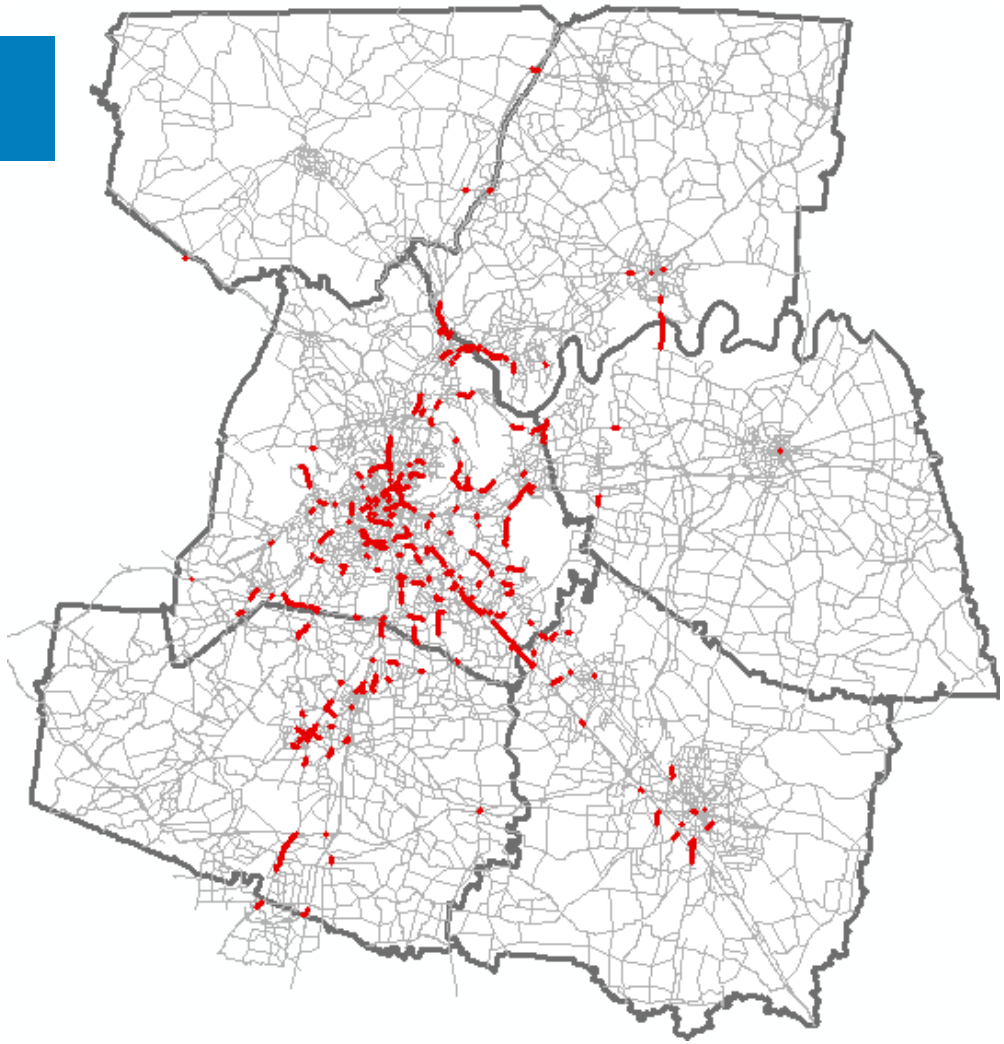
Regional Deficiencies Analysis

E+C Roadway Network



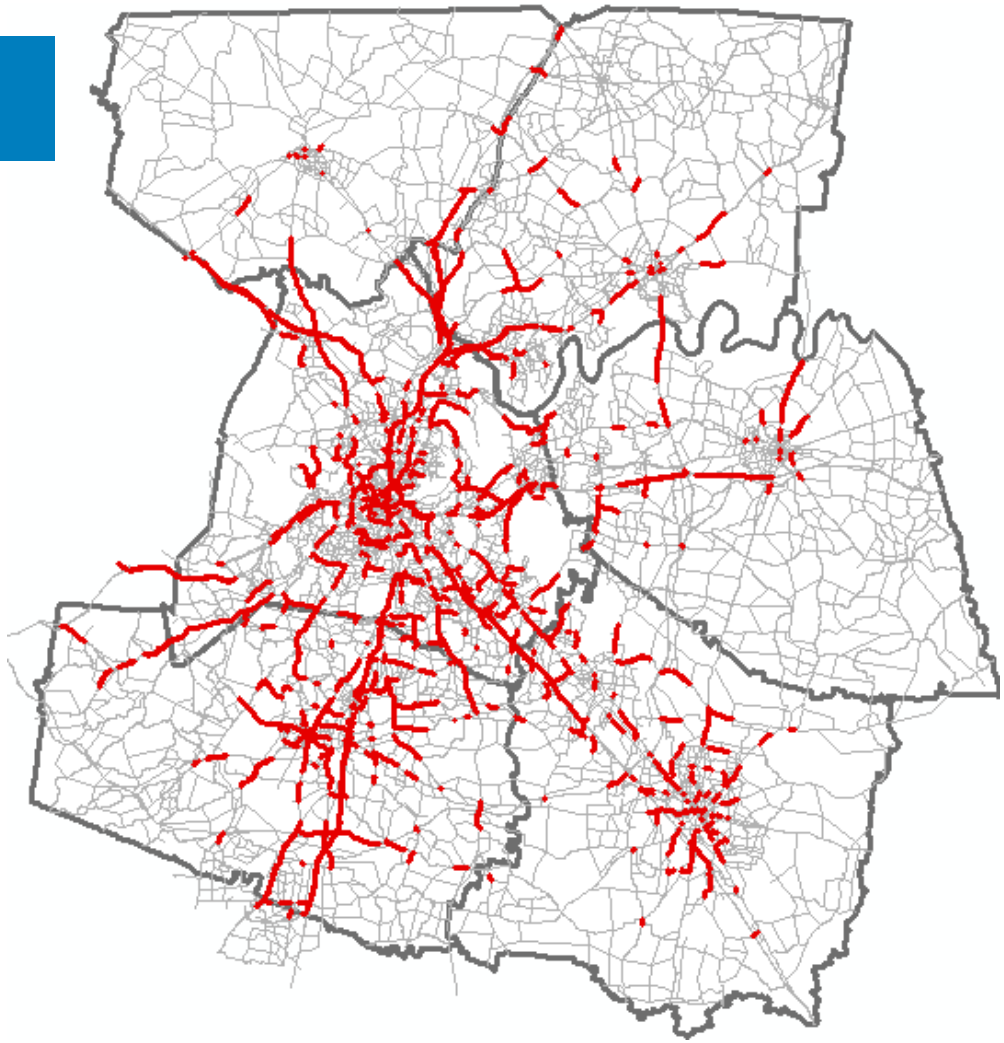
Regional Deficiencies Analysis

2008 Congestion



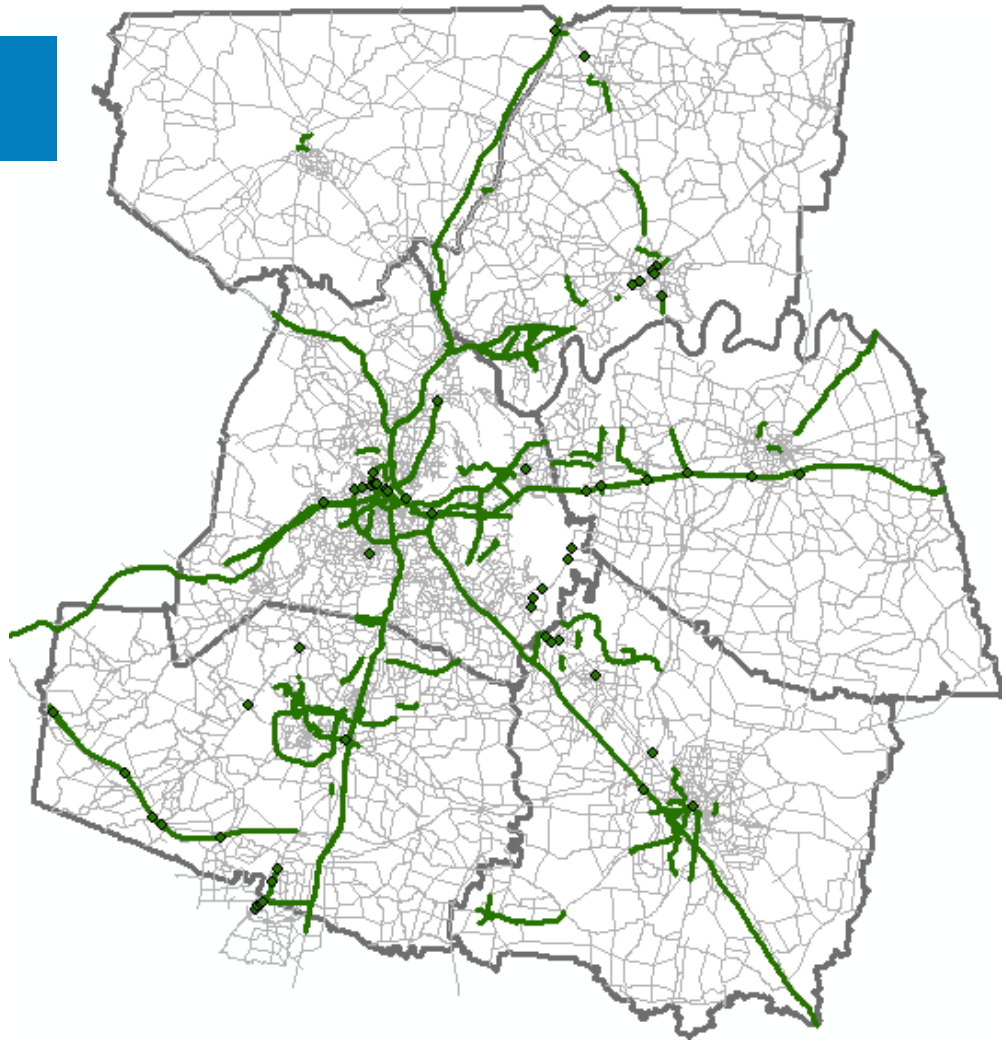
Regional Deficiencies Analysis

2035 Congestion (e+c)



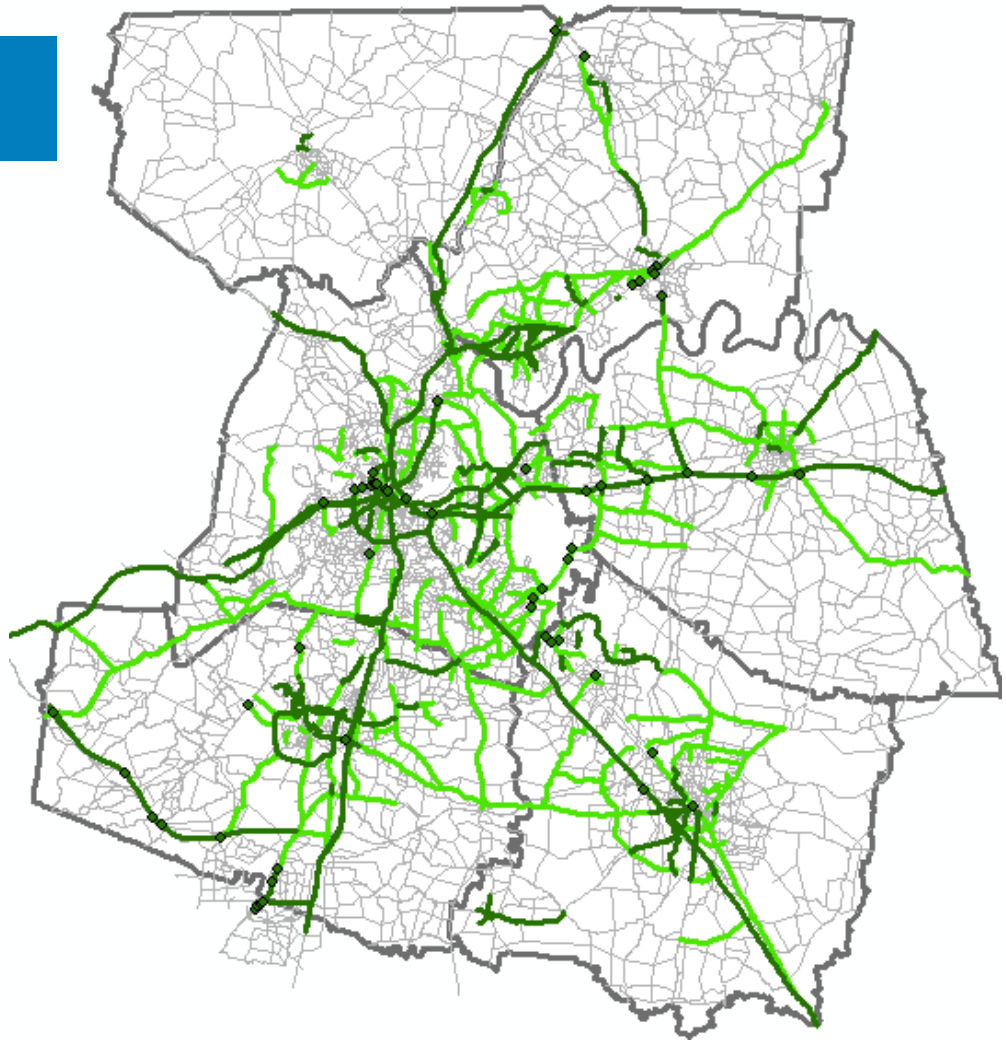
Regional Deficiencies Analysis

TIP Projects



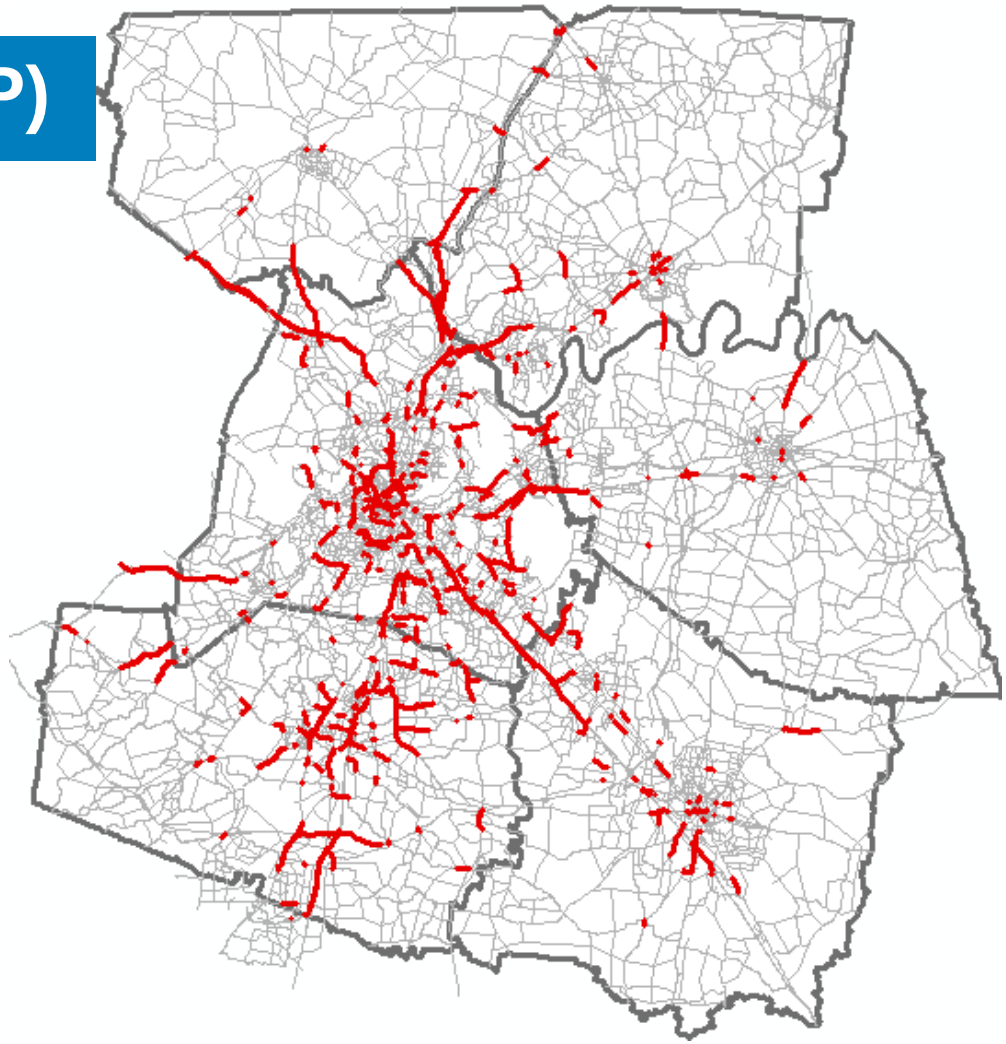
Regional Deficiencies Analysis

TIP & LRTP Projects



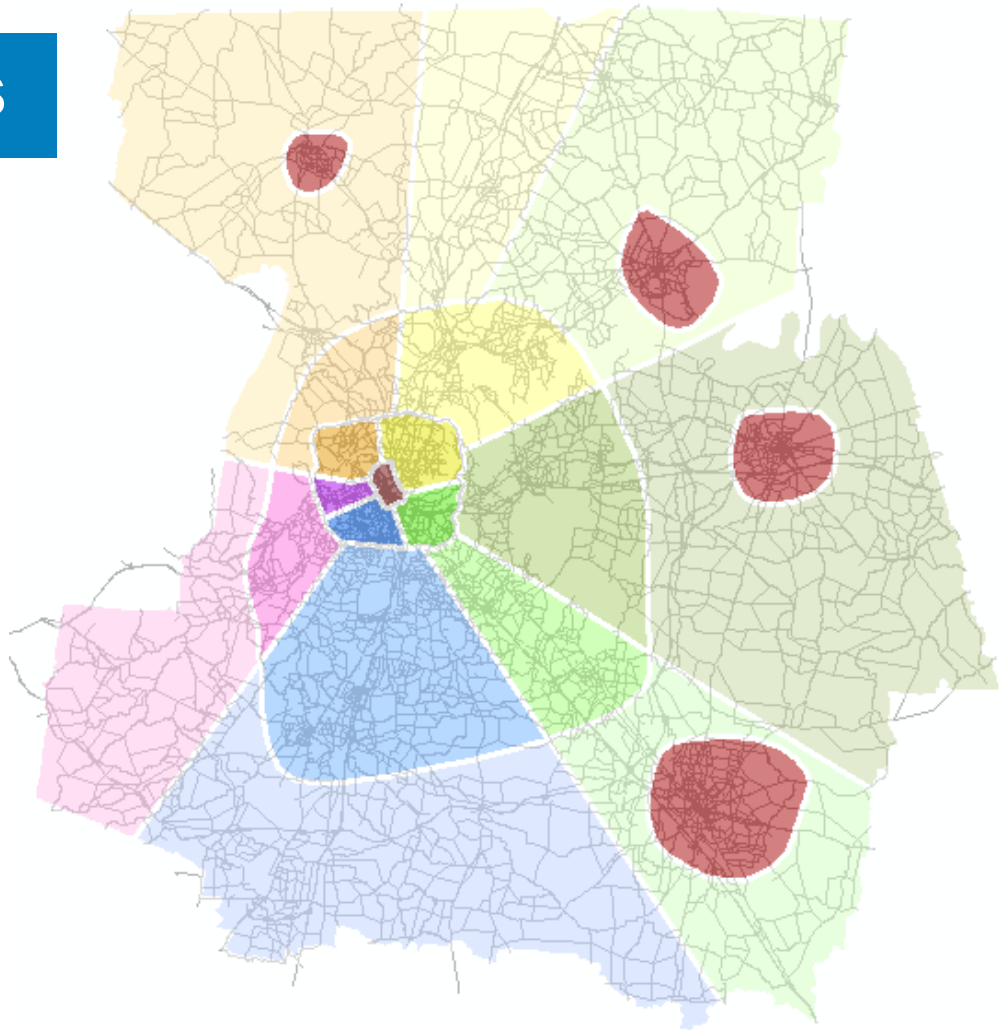
Regional Deficiencies Analysis

2035 Congestion (LRTP)



Regional Deficiencies Analysis

Regional CMP Districts



Regional Deficiencies Analysis

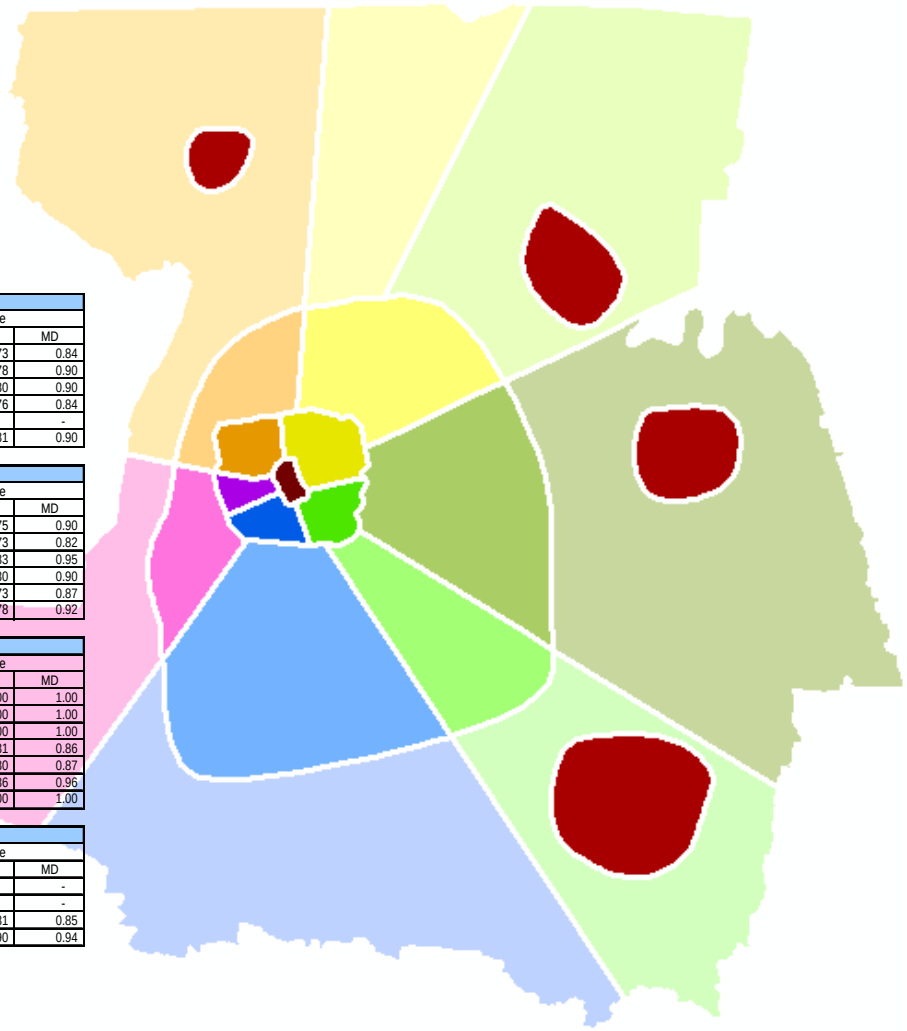
Regional CMP Districts

Inner Region	0.80			0.80			0.80			0.80		
	Collector			Arterial			Freeway			Interstate		
	AM	PM	MD	AM	PM	MD	AM	PM	MD	AM	PM	MD
CBD	0.87	0.79	0.91	0.95	0.90	0.99	-	-	-	0.83	0.73	0.84
Inner Core I-65 S	0.96	0.88	0.98	0.92	0.84	0.96	-	-	-	0.88	0.78	0.90
Inner Core I-24 E	0.96	0.91	0.98	0.93	0.85	0.98	0.94	0.86	0.95	0.87	0.80	0.90
Inner Core I-24/65 N	0.93	0.88	0.98	0.90	0.84	0.96	0.93	0.86	0.96	0.82	0.76	0.84
Inner Core I-24W	0.96	0.92	0.98	0.87	0.80	0.96	0.92	0.86	0.96	-	-	-
Inner Core I-40 W	0.96	0.92	0.98	0.93	0.87	0.97	0.93	0.79	0.94	0.89	0.81	0.90

Middle Region	0.80			0.80			0.80			0.80		
	Collector			Arterial			Freeway			Interstate		
	AM	PM	MD	AM	PM	MD	AM	PM	MD	AM	PM	MD
Middle Core I-24 E	0.86	0.80	0.96	0.87	0.80	0.95	-	-	-	0.82	0.75	0.90
Middle Core I-24 W	0.99	0.98	1.00	0.86	0.83	0.97	-	-	-	0.81	0.73	0.82
Middle Core I-40 E	0.91	0.88	0.97	0.88	0.82	0.96	-	-	-	0.87	0.83	0.95
Middle Core I-40 W	0.97	0.94	1.00	0.89	0.85	0.97	-	-	-	0.88	0.80	0.90
Middle Core I-65 N	0.97	0.95	0.99	0.84	0.77	0.96	0.82	0.75	0.91	0.80	0.73	0.87
Middle Core I-65 S	0.86	0.81	0.96	0.81	0.74	0.92	-	-	-	0.87	0.78	0.92

Outer Region	0.80			0.80			0.80			0.80		
	Collector			Arterial			Freeway			Interstate		
	AM	PM	MD	AM	PM	MD	AM	PM	MD	AM	PM	MD
Outer Core I-24 E	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Outer Core I-24 W	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Outer Core I-40 E	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Outer Core I-40 W	0.99	0.97	1.00	0.83	0.80	0.93	0.99	0.98	0.99	0.88	0.81	0.86
Outer Core I-65 N	0.96	0.94	0.99	0.87	0.85	0.98	-	-	-	0.86	0.80	0.87
Outer Core I-65 S	0.95	0.93	0.99	0.89	0.84	0.94	0.98	0.97	0.99	0.90	0.86	0.96
Outer Core SR386	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

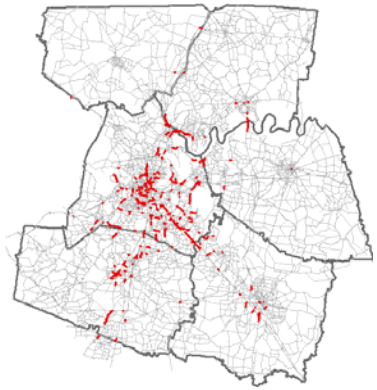
CITY	0.80			0.80			0.80			0.80		
	Collector			Arterial			Freeway			Interstate		
	AM	PM	MD	AM	PM	MD	AM	PM	MD	AM	PM	MD
Springfield	0.97	0.96	0.99	0.97	0.95	0.99	-	-	-	-	-	-
Gallatin	0.94	0.92	0.98	0.89	0.86	0.96	-	-	-	-	-	-
Lebanon	0.96	0.94	0.99	0.94	0.91	0.99	-	-	-	0.88	0.81	0.85
Murfreesboro	0.94	0.90	0.98	0.87	0.81	0.95	-	-	-	0.95	0.90	0.94



Regional Travel Demand

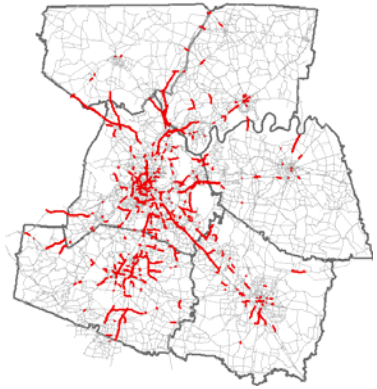
- **Regional Vehicle Miles Traveled**
  - 2008: 37,837,013
  - 2035: 55,519,872 (e+c)
  - 2035: 54,878,563 (2030 LRTP)
- **Per Capita VMT**
  - 2008: 27.96
  - 2035: 27.11 (e+c)
  - 2035: 26.79 (2030 LRTP)
- **Regional Vehicle Hours Traveled**
  - 2008: 810,268
  - 2035: 1,349,971 (e+c)
  - 2035: 1,276,743 (2030 LRTP)
- **Per Capita VHT**
  - 2008: 35.93
  - 2035: 39.55 (e+c)
  - 2035: 37.40 (2030 LRTP)

2008



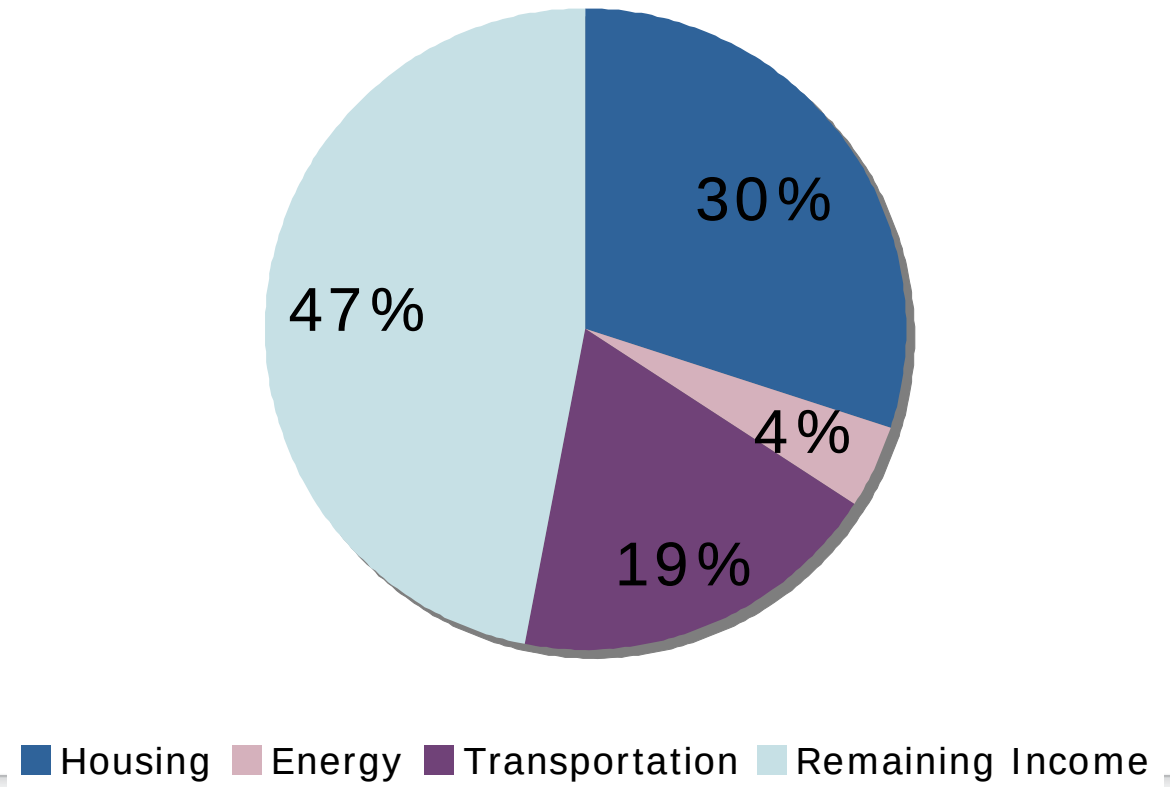
2035 E+C

2035 (2030 LRTP)



True Cost of Living

Inclusive Monthly Housing Costs



A Multi-Modal Approach

A PLAN TO SUPPORT:

Economy

Mobility

Environment

Safety

Security

Choice

DEVELOPED BY & FOR:

Federal Agencies

State Agencies

Local Govts

Transit Agencies

Residents

Businesses

Regional Transportation Plan

- How do projects get into the Regional Transportation Plan?
- Three areas of Analysis:
- Project Evaluation Criteria – for all projects
- Bicycle and Pedestrian Prioritization Evaluation
  - Determines priority for stand-alone/off-road projects
  - Determines priority for roadway projects that include bicycle and pedestrian facilities
  - Helps staff evaluate/recommend bicycle/pedestrian facilities for projects that do not include facilities as proposed
- Emphasis Scenarios

Project Evaluation Criteria

- Highlights:
- Multi-Modal Options 15/100 points
  - Project located within Strategic Multi-Modal Corridor
  - Project Incorporates Multi-Modal Solutions
- Safety and Security 10/100 points
  - Bike/ped crashes in MPO region now geo-coded
- Health and Environment 10/100 points
  - Provides Transportation Choices in High Health Impact Areas
  - Provides opportunity for Physical Activity

  - Note: other multi-modal criteria included in other areas

Bicycle and Pedestrian Prioritization

- 7 Factors and 48 total points

Bicycle or Ped LOS	12
Bicycle/Ped Demand	12
Connectivity	6
Safety	6
Congestion	6
Consistent with Local Plans	3
High Health Impact	3
TOTAL	**48**

Project Submittals

- Almost 450 projects submitted – deadline March 31st
- 337 Roadway Projects/ 252 have bike and/or ped elements – 75%
- 47 Intersection Projects /28 have bike and/or ped elements – 60%
- 28 Stand-alone projects (such as greenways)

Emphasis Scenarios

- Walkable Communities
- System Preservation
- Transit
- Others

- MPO Technical Coordinating Committee will be discussing scenarios this spring.
- ARRA funding: A great start (almost 30% of projects had a bike and/or ped element.
- Total funding $26.4 million.

Next Steps

- Recommendations for projects by March 31, 2010
- Staff will review all 500 project submittals and evaluate for how well meeting the needs of bicyclists and pedestrians
- Next meeting: March 25th 2-4pm
  - Staff will present evaluation findings of projects reviewed.
  - BPAC will look for any gaps
  - Continue discussion of how money could be spent that is not tied to a specific project

Livability. Sustainability. Prosperity. Diversity.