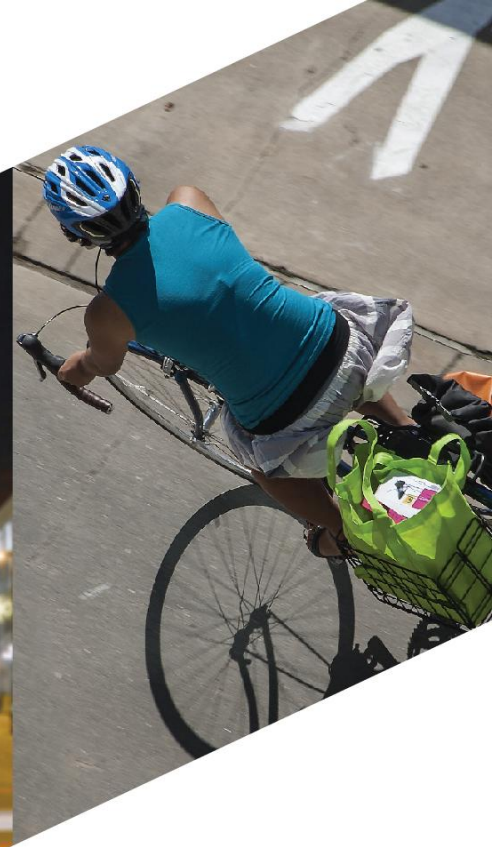


# Regional Transportation Plan 2050

Charting Our Course  
Madison Area



Madison Area  
**T • P • B**  
Transportation Planning Board  
A Metropolitan Planning Organization

Public Involvement Meetings | March 2017



# PRESENTATION OVERVIEW

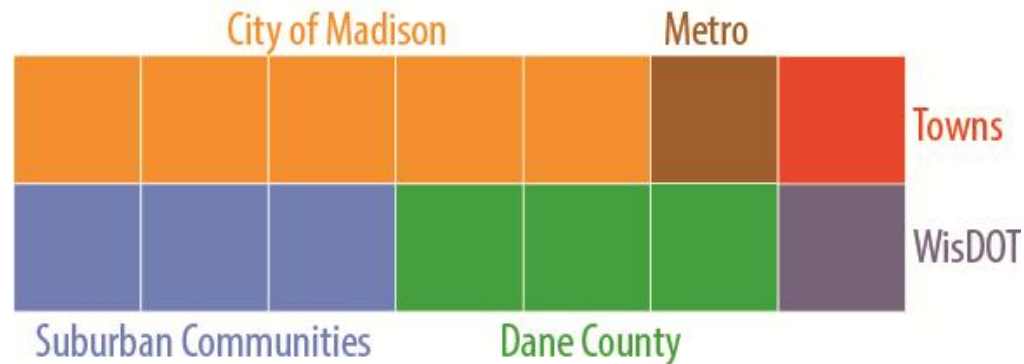
- What is MATPB?
- Draft Regional Transportation Plan 2050
  - Introduction
  - National & Regional Trends and Forecasts
  - Our Transportation System
  - Goals, Policies, and Performance Measures
  - Needs Analysis and Recommendations
  - Financial Capacity Analysis



# WHAT IS MATPB?

- Metropolitan Area Transportation Planning Policy Body
  - ▶ Responsible for cooperative regional transportation planning and decision-making
  - ▶ Approves use of federal transportation funding
  - ▶ Designated by Governor as Metropolitan Planning Organization (MPO) for Madison Urban Area
  - ▶ Formal intergovernmental agreement signed by local units of government representing over 75% of metro area population (May 2, 2007)

## Governance Structure for Madison Area Transportation Planning Board



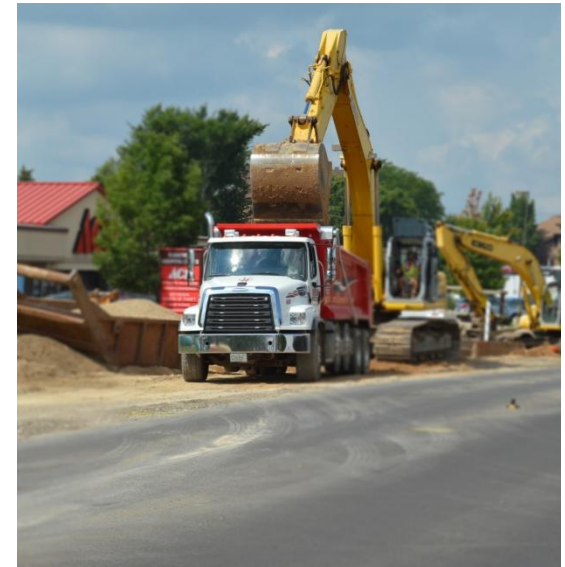


# CHAPTER 1: INTRODUCTION

- Purpose of the Plan
- The Planning Process
- Relationship to Other Plans and Studies
- Stakeholder Involvement and Public Outreach

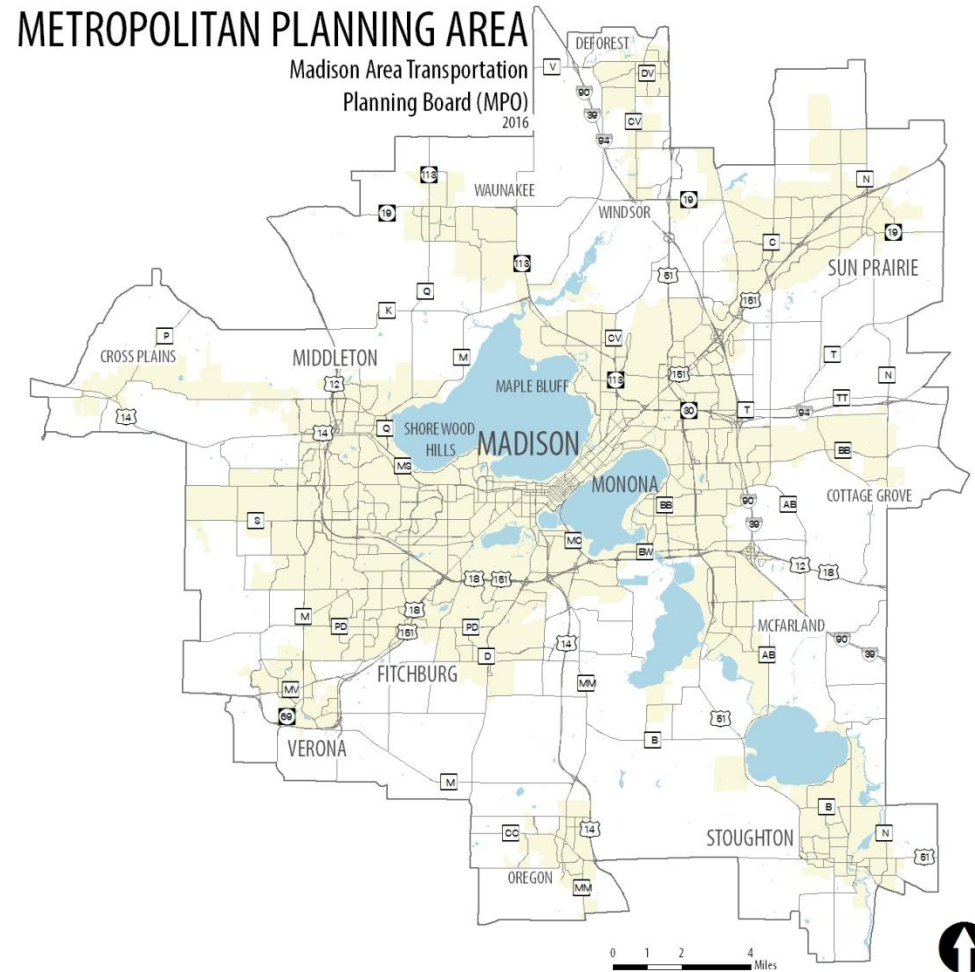
# WHAT IS THE RTP AND WHAT IS ITS PURPOSE?

- Integrated, multi-modal, long-range transportation plan
- Provides the overall framework for transportation planning in the region.
- Official plan for federal and state funding purposes
- Based upon and designed to support the regional land use policy plan and local comprehensive plans
- Identifies future transportation projects, studies, and strategies/actions to be implemented over the next 20+ years
- Financially constrained plan
- Updated every 5 years



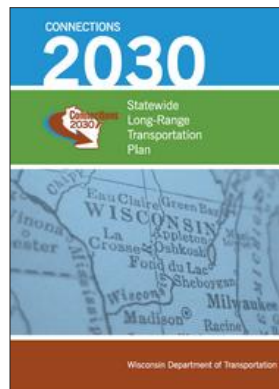
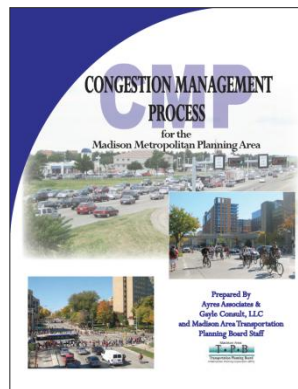
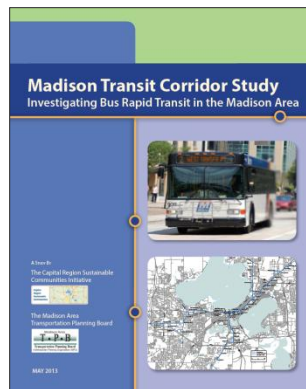
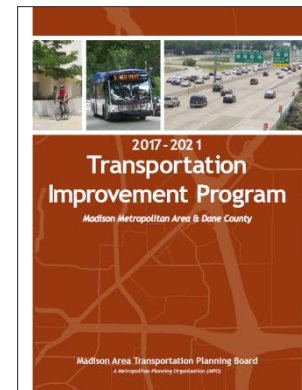
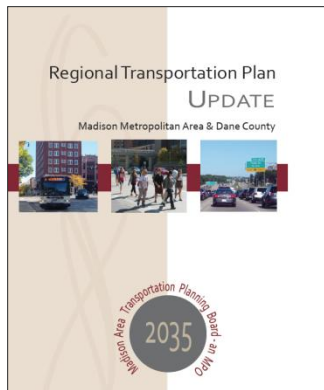
# PRIMARY MATPB PLANNING AREA

- Official jurisdictional area of MPO within which federal planning requirements apply
- Must cover existing urbanized area boundary (defined by US Census Bureau every 10 years)
- Also covers contiguous area expected to become urbanized within 20+ year period, including important regional transportation corridors



# RELATIONSHIP TO OTHER PLANS AND STUDIES

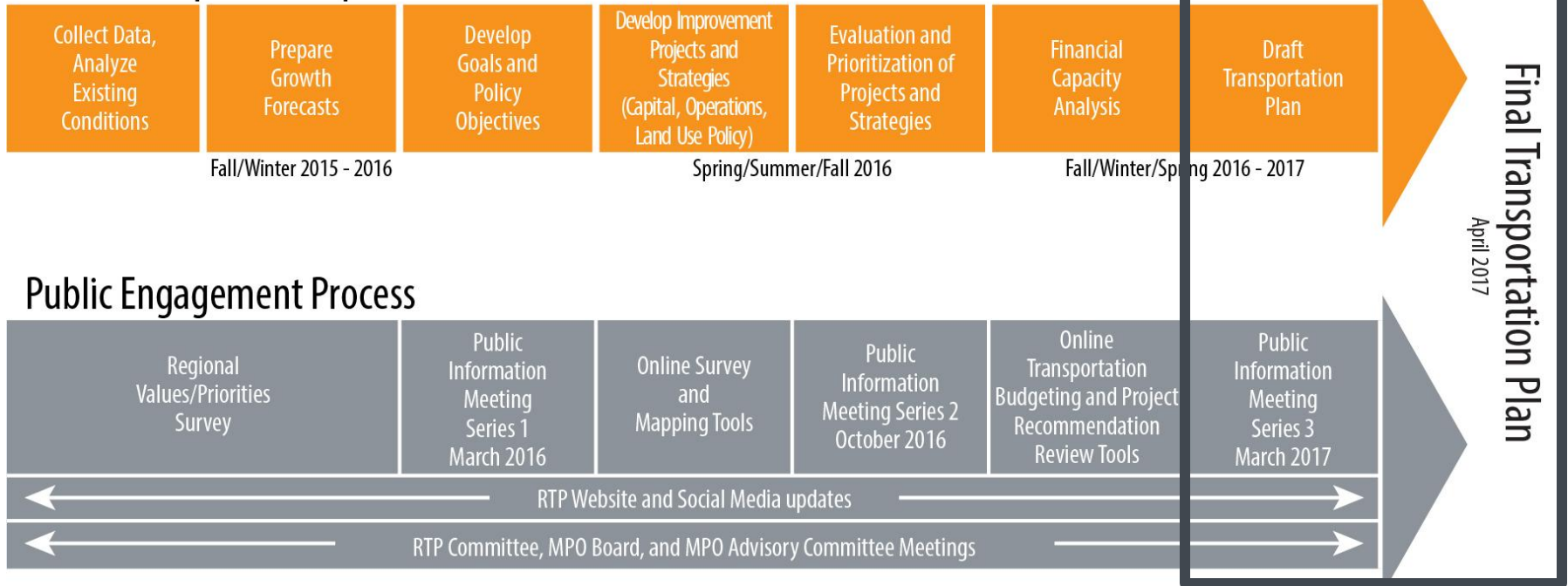
Builds upon and incorporates a number of plans, studies, and reports including (but not limited to):



# WHERE ARE WE IN THE PROCESS?

## Regional Transportation Plan Process and Schedule

### Plan Development Steps







## CHAPTER 2:

# NATIONAL & REGIONAL TRENDS AND FORECASTS

- Introduction
- Demographics
- Economics
- Land Use and Development
- Commuting Patterns
- Emerging Technologies

# POPULATION

- Dane County's population continues to grow at a steady rate, accounting for nearly ¼ of state's growth since 2000.
- Percentage growth in many suburban communities is higher than in City of Madison, but city has still accounted for over 1/3 of county growth since 1990.

Population Growth in Selected Communities

Community	Total Population			Change	
	1990	2000	2010	1990-2000	2000-2010
Cottage Grove, Village	1,131	4,059	6,192	258.9%	52.5%
Fitchburg, City	15,648	20,501	25,260	31.0%	23.2%
Madison, City	190,776	208,054	233,209	9.1%	12.1%
Madison, Town	6,442	7,005	6,279	8.7%	-10.4%
Maple Bluff, Village	1,352	1,358	1,313	0.4%	-3.3%
Middleton, City	13,785	15,770	17,442	14.4%	10.6%
Monona, City	8,637	8,018	7,533	-7.2%	-6.0%
McFarland, Village	5,232	6,416	7,808	22.6%	21.7%
Shorewood Hills, Village	1,680	1,732	1,565	3.1%	-9.6%
Stoughton, City	8,786	12,354	12,611	40.6%	2.1%
Sun Prairie, City	15,352	20,369	29,364	32.7%	44.2%
Verona, City	5,374	7,052	10,619	31.2%	50.6%
Waunakee, Village	5,897	8,995	12,097	52.5%	34.5%
Westport, Town	2,732	3,586	3,950	31.3%	10.2%

Population Growth in Dane County and Madison

	Total Population			Change	
	1990	2000	2010	1990-2000	2000-2010
Dane County	367,085	426,526	488,073	16.2%	14.4%
City of Madison	190,766	208,054	233,209	9.1%	12.1%
City as % of County	52.0%	48.8%	47.8%		

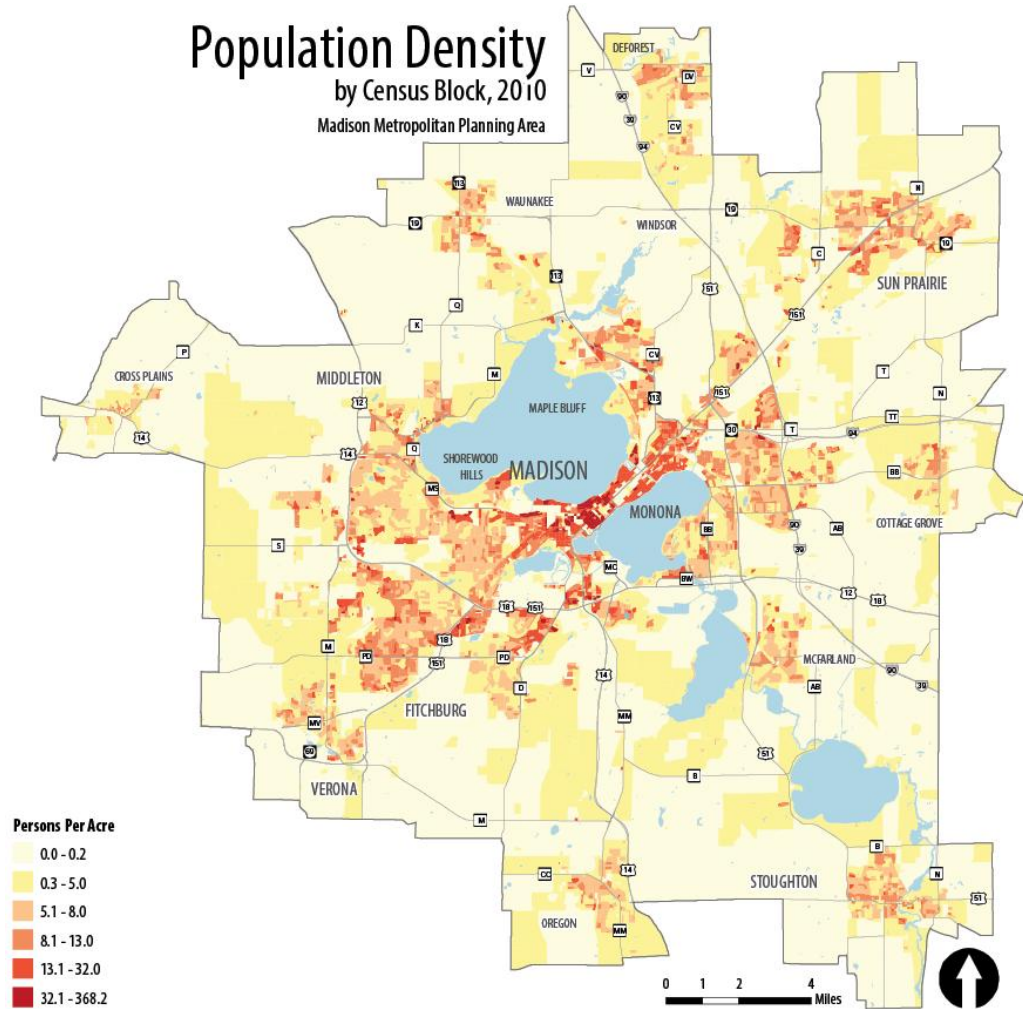


# POPULATION

## Madison Metropolitan Area Population 2010 Census and 2050 Forecast

Municipality	2010 Census		2050 Forecast		Change	
	Population	% of County	Population	% of County	Number	Percent
<b>Central Urbanized Area Total</b>	302,224	62%	379,118	60%	76,894	25%
City of Madison	234,618	48%	292,522	46%	57,904	25%
City of Fitchburg	25,413	5%	34,370	5%	8,957	35%
City of Middleton	17,548	4%	24,571	4%	7,023	40%
Village of McFarland	7,855	2%	10,379	2%	2,524	32%
<b>Larger Outer Urbanized Area Total</b>	93,111	19%	148,375	23%	55,264	59%
City of Sun Prairie	29,364	6%	50,883	8%	21,519	73%
City of Stoughton	12,611	3%	14,366	2%	1,755	14%
City of Verona	10,619	2%	18,840	3%	8,221	77%
Village of Cottage Grove	6,192	1%	10,594	2%	4,402	71%
Village of Waunakee	12,097	2%	19,279	3%	7,182	59%
Northern (DeForest/Windsor)	12,997	3%	20,794	3%	7,797	60%
Village of Oregon	9,231	2%	13,619	2%	4,388	48%
<b>Smaller USAs Total</b>	26,740	5%	36,151	5%	9,411	35%
<b>Rural Total</b>	65,998	14%	73,785	12%	7,787	12%
<b>County Total</b>	488,073		637,429		149,356	31%

## Population Density by Census Block, 2010 Madison Metropolitan Planning Area



# HOUSEHOLDS

## Madison Metropolitan Area Households

2010 Census and 2050 Forecast

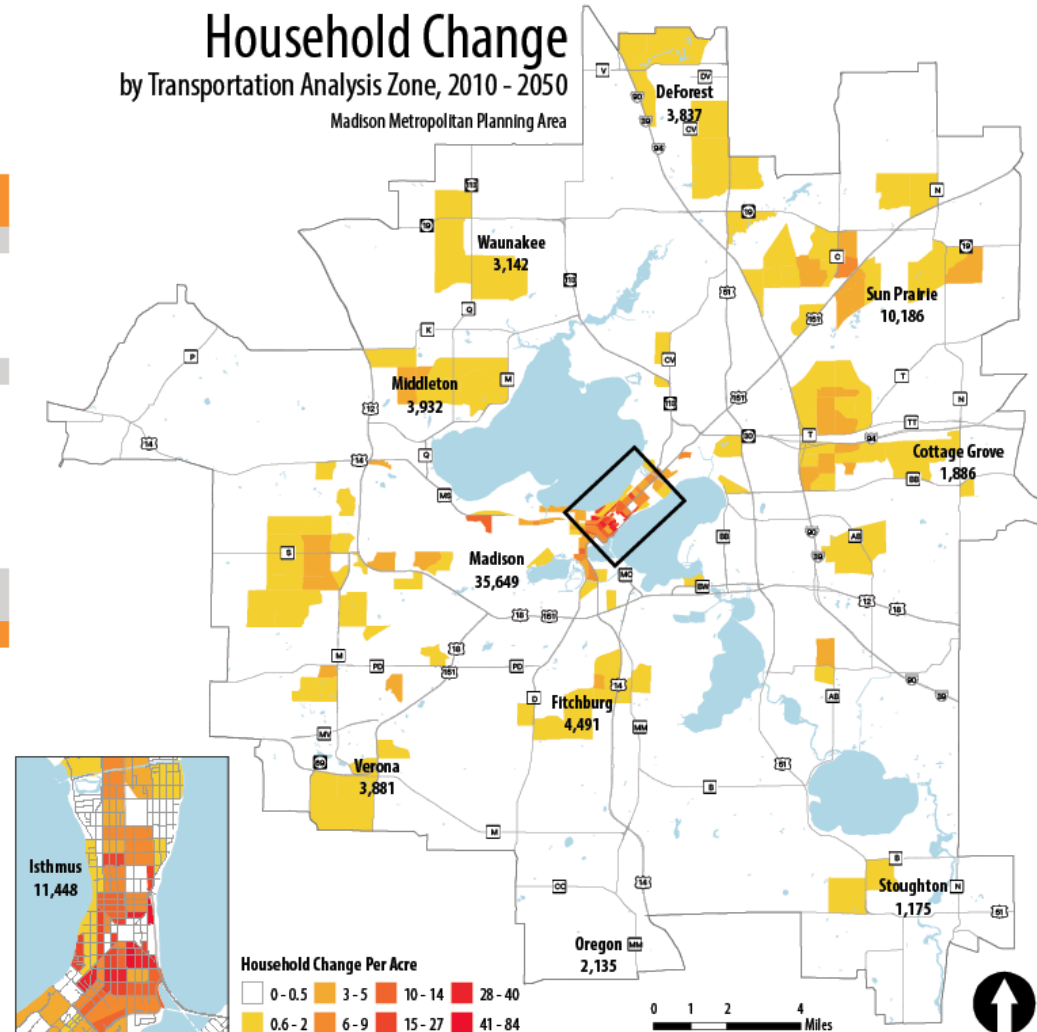
Municipality	2010 Census		2050 Forecast		Change	
	Households	% of County	Households	% of County	Number	Percent
<b>Central Urbanized Area Total</b>	132,172	65%	177,828	62%	45,656	35%
City of Madison	103,132	51%	138,781	49%	35,649	35%
City of Fitchburg	10,015	5%	14,506	5%	4,491	45%
City of Middleton	8,085	4%	12,017	4%	3,932	49%
Village of McFarland	3,097	2%	4,268	2%	1,171	38%
<b>Larger Outer Urbanized Area Total</b>	36,164	18%	62,406	22%	26,242	73%
City of Sun Prairie	11,636	6%	21,822	8%	10,186	88%
City of Stoughton	5,133	3%	6,308	2%	1,175	23%
City of Verona	4,223	2%	8,104	3%	3,881	92%
Village of Cottage Grove	2,210	1%	4,096	1%	1,886	85%
Village of Waunakee	4,344	2%	7,486	3%	3,142	72%
Northern (DeForest/Windsor)	5,029	2%	8,866	3%	3,837	76%
Village of Oregon	3,589	2%	5,724	2%	2,135	59%
<b>Smaller USAs Total</b>	10,497	5%	15,850	6%	5,353	51%
<b>Rural Total</b>	24,917	12%	29,100	10%	4,183	17%
<b>County Total</b>	203,750		285,184		81,434	40%

## Average Household Size in Dane County Communities Historical Census Data and Forecasts

	1970	1980	1990	2000	2010	Projections		
						2020	2030	2040
<b>Towns</b>	3.73	3.01	2.8	2.59	2.57	2.5	2.46	2.43
<b>Villages</b>	3.17	2.85	2.74	2.72	2.61	2.53	2.49	2.46
<b>Small Cities</b>	3.26	2.54	2.29	2.35	2.37	2.31	2.17	2.24
<b>Madison</b>	2.88	2.38	2.3	2.19	2.17	2.11	2.07	2.03
<b>Dane County</b>	3.09	2.56	2.46	2.37	2.33	2.27	2.23	2.2

## Household Change by Transportation Analysis Zone, 2010 - 2050

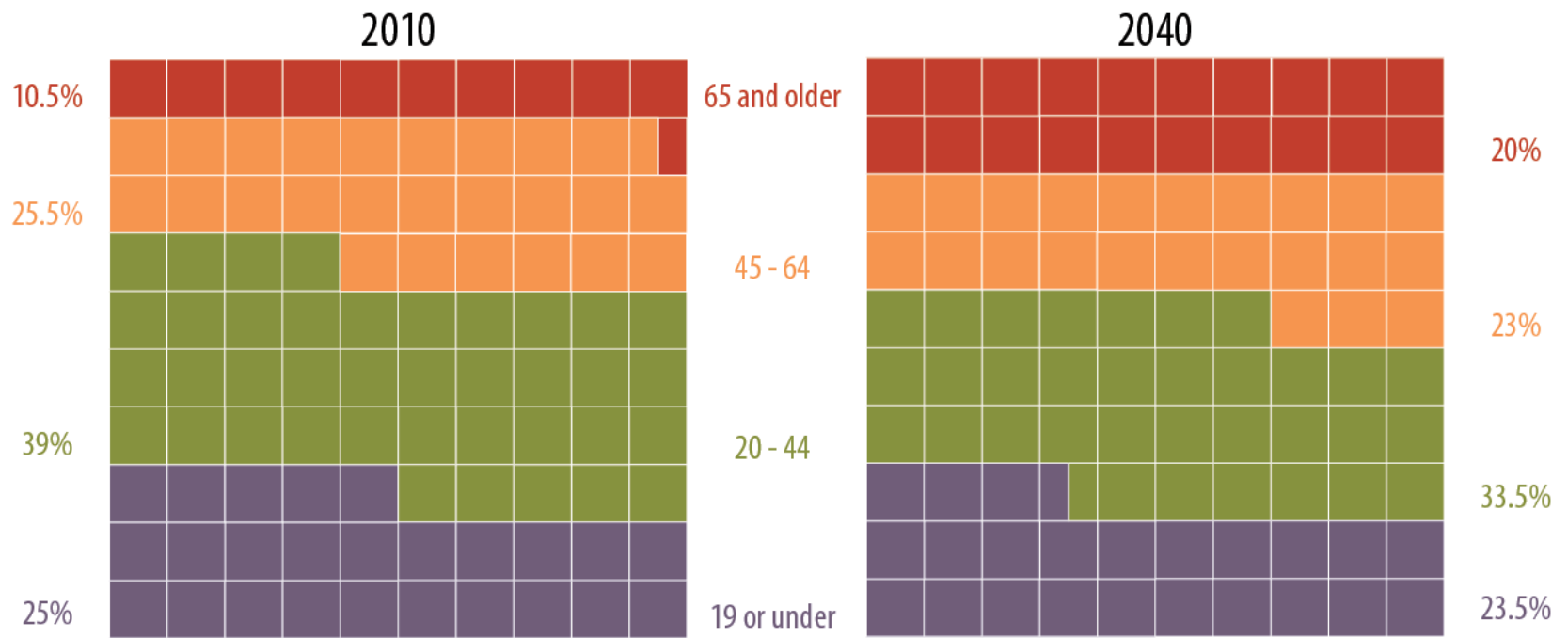
Madison Metropolitan Planning Area



# AGE

Dane County's population is projected to age over the coming years, following state and regional trends.

## Existing and Forecasted Dane County Age Distribution



# RACE AND ETHNICITY

Dane County has been becoming much more diverse in recent years.

## Race

Race	Number 2010	Percent of Total 2010	Increase 2000 -2010
White	413,631	85%	9%
Black/African American	25,347	5%	49%
Asian	23,035	5%	56%
Other Minority	13,960	3%	82%
Two or More Races	12,100	3%	59%
<b>Total Population</b>	<b>488,073</b>	<b>100%</b>	<b>14%</b>

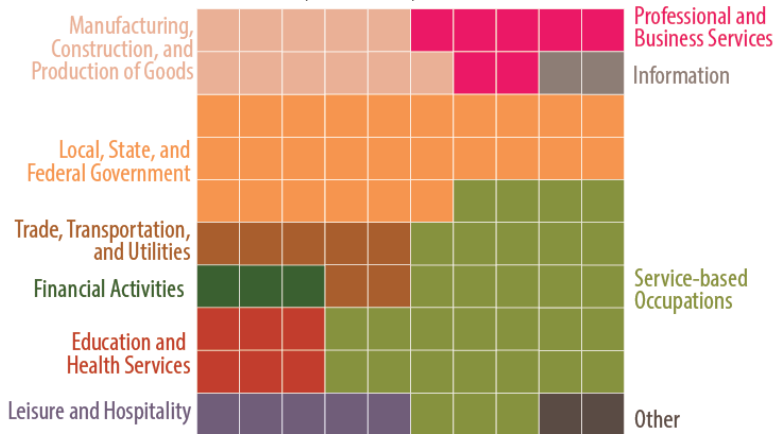
## Ethnicity

Ethnicity	Number 2010	Percent Total 2010	Increase 2000-2010
Hispanic	28,925	6%	101%
Non Hispanic	459,148	94%	11%
<b>Total Population</b>	<b>488,073</b>	<b>100%</b>	<b>14%</b>



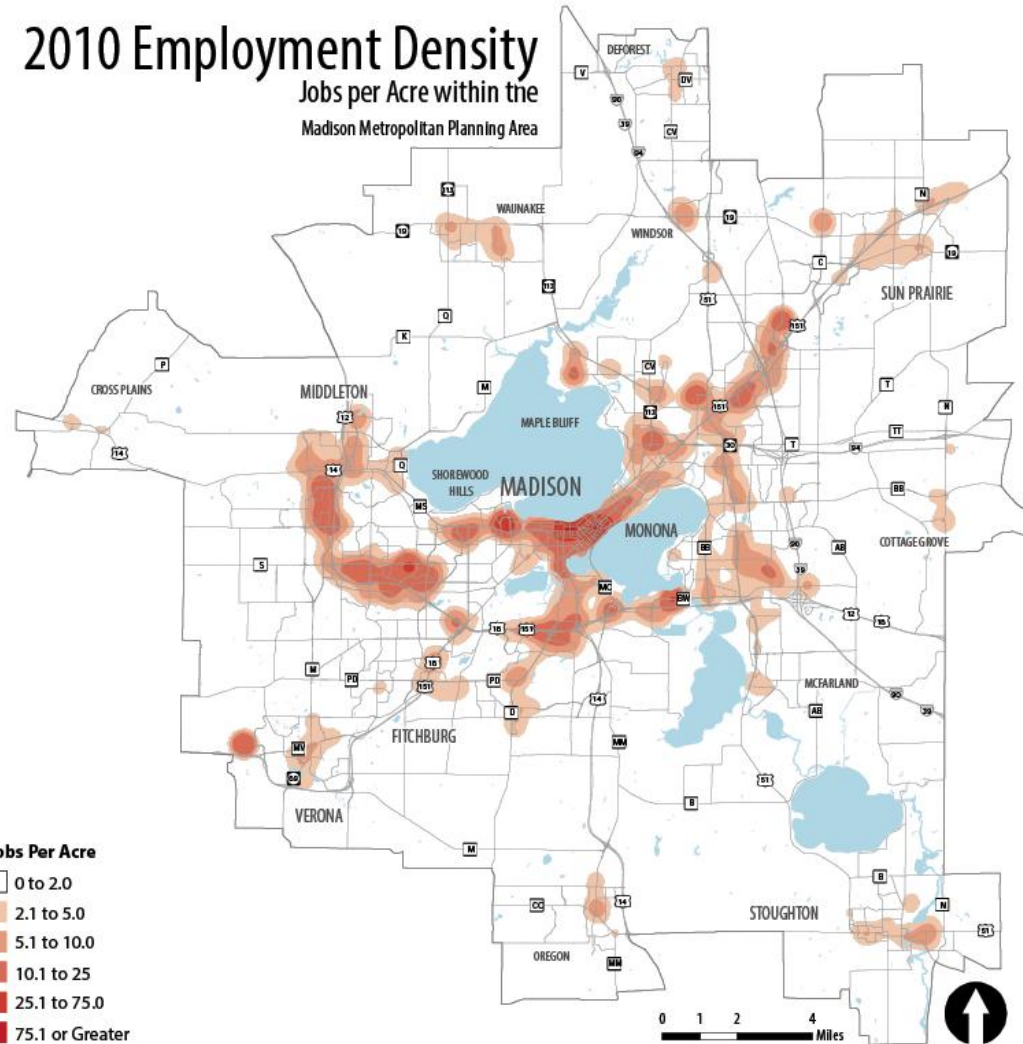
# EMPLOYMENT

Distribution of Dane County Employment By Industry, 2015



2015 Annual BLS County-level QCEW Data

2010 Employment Density  
Jobs per Acre within the  
Madison Metropolitan Planning Area



# EMPLOYMENT

## Madison Metropolitan Area Employment

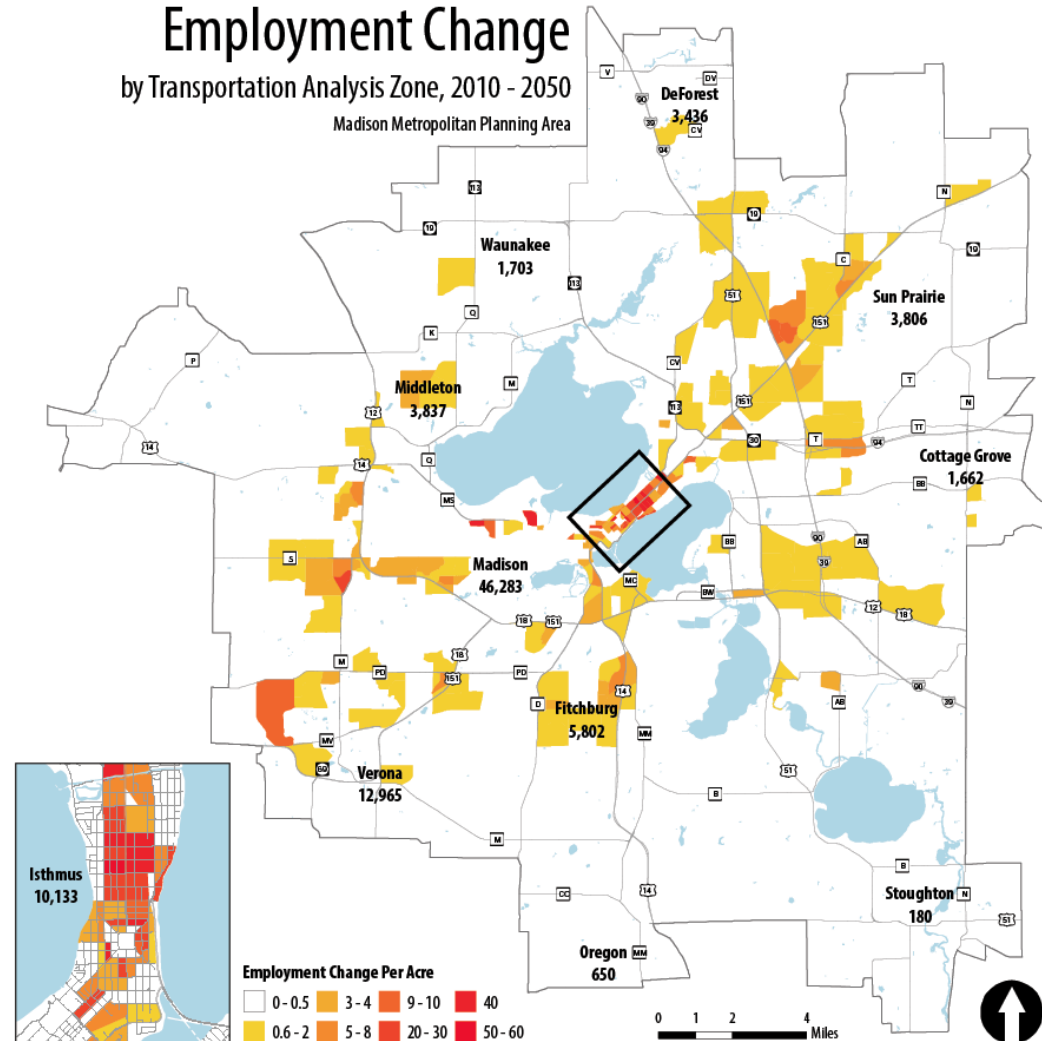
2010 InfoUSA and 2050 Forecast

Municipality	2010 InfoUSA		2050 Forecast		Change	
	Employment	% of County	Employment	% of County	Number	Percent
<b>Central Urbanized Area Total</b>	<b>249,579</b>	<b>80%</b>	<b>307,366</b>	<b>77%</b>	<b>57,787</b>	<b>23%</b>
City of Madison	195,888	62%	241,093	60%	45,205	23%
City of Fitchburg	12,165	4%	17,967	5%	5,802	48%
City of Middleton	19,104	6%	22,941	6%	3,837	20%
Village of McFarland	1,943	1%	2,511	1%	568	29%
<b>Larger Outer Urbanized Area Total</b>	<b>45,094</b>	<b>14%</b>	<b>70,545</b>	<b>18%</b>	<b>25,451</b>	<b>56%</b>
City of Sun Prairie	11,362	4%	15,168	4%	3,806	34%
City of Stoughton	6,445	2%	6,625	2%	180	3%
City of Verona	9,315	3%	22,280	6%	12,965	139%
Village of Cottage Grove	2,625	1%	4,287	1%	1,662	63%
Village of Waunakee	5,901	1%	8,406	2%	2,505	42%
Northern (DeForest/Windsor)	6,054	2%	9,737	2%	3,683	61%
Village of Oregon	3,392	1%	4,042	1%	650	19.16%
<b>Smaller USAs Total</b>	<b>9,567</b>	<b>3%</b>	<b>11,267</b>	<b>3%</b>	<b>1,700</b>	<b>18%</b>
Rural Total	9,478	3%	9,480	2%	2	0%
<b>County Total</b>	<b>313,718</b>		<b>398,658</b>		<b>84,940</b>	<b>27%</b>

## Employment Change

by Transportation Analysis Zone, 2010 - 2050

Madison Metropolitan Planning Area





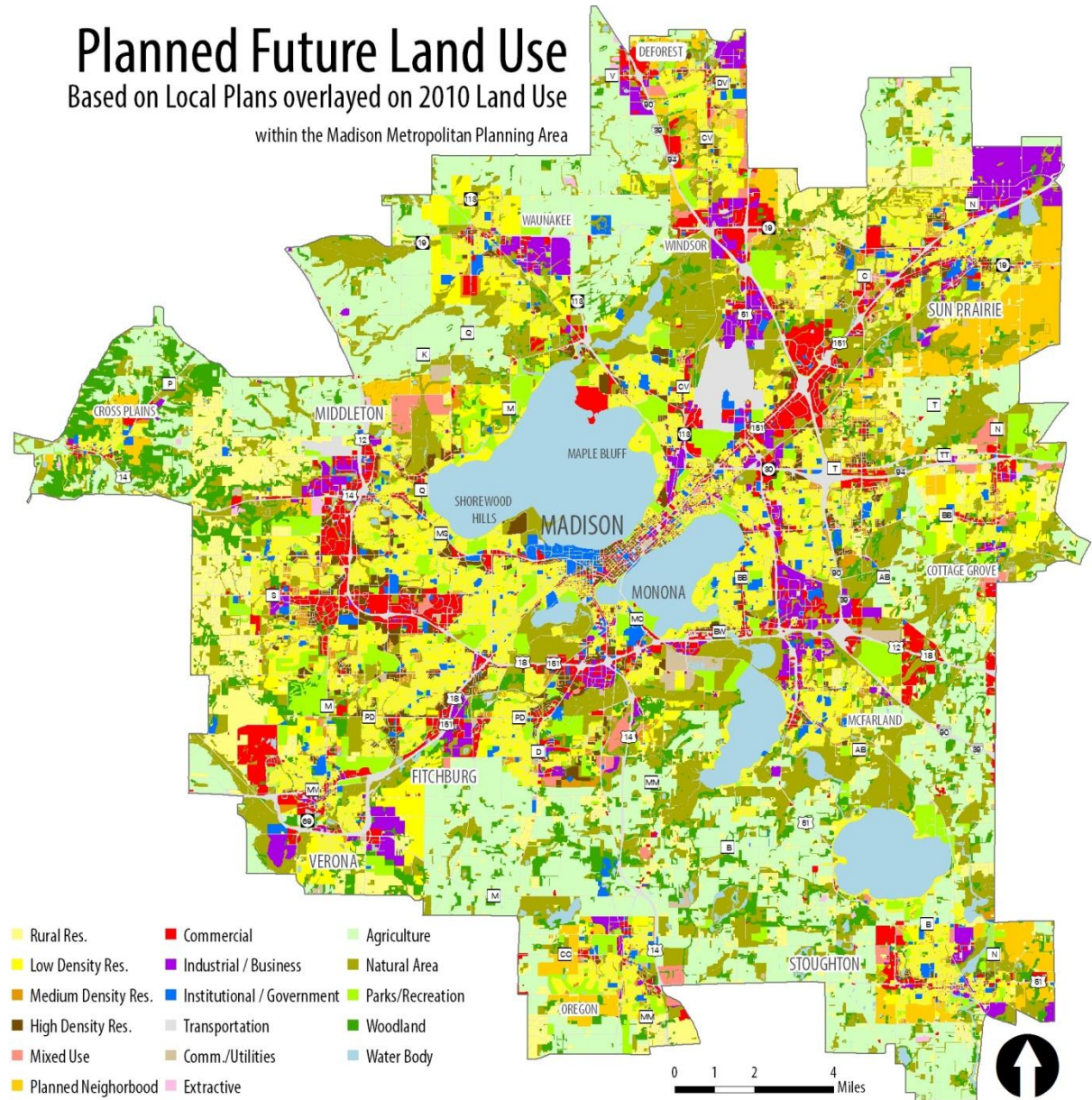
# LAND USE

Composite land use plans map

Served as basis for allocation of forecast growth, which in turn is main input for the future travel forecasts.

Assumed growth only fraction of complete build out represented on map.

**Planned Future Land Use**  
Based on Local Plans overlaid on 2010 Land Use  
within the Madison Metropolitan Planning Area

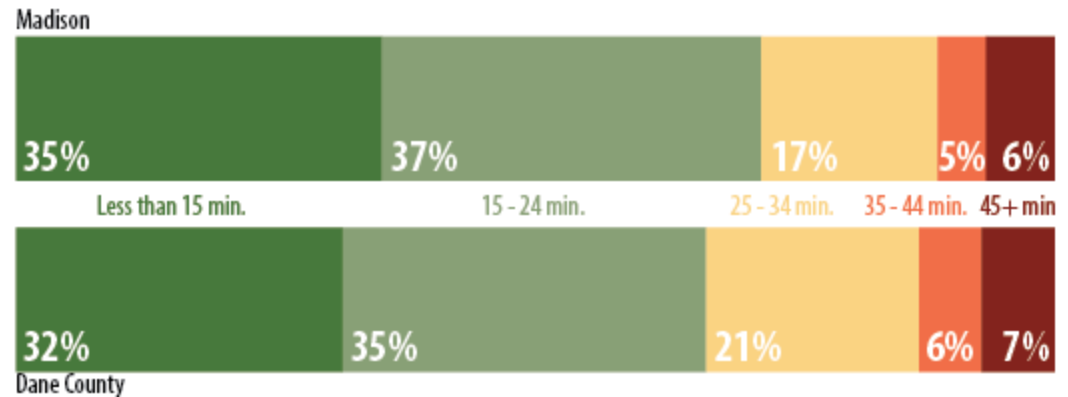


# COMMUTING PATTERNS

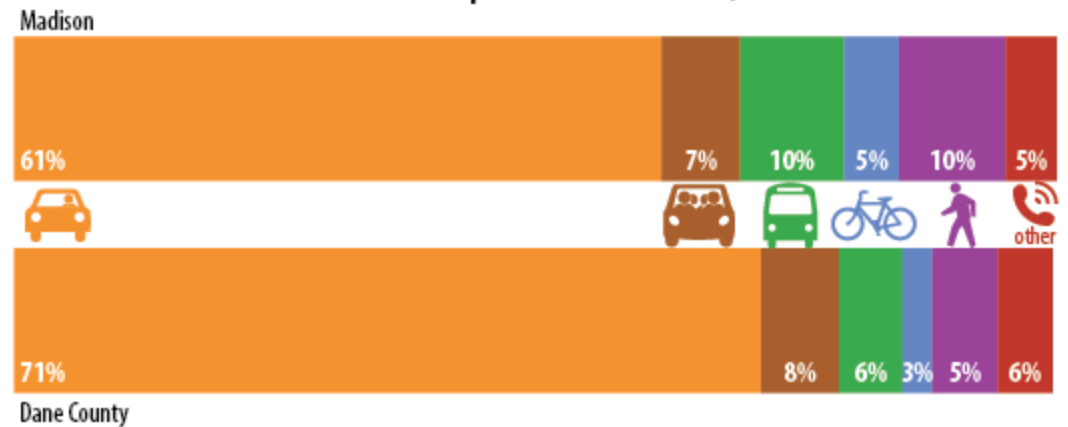
Strong majority of county residents have relatively short commutes.

Though most area residents drive to work, more people take transit, bicycle, walk, and telecommute than in other similarly sized and even larger urban areas.

Travel Time to Work, 2014



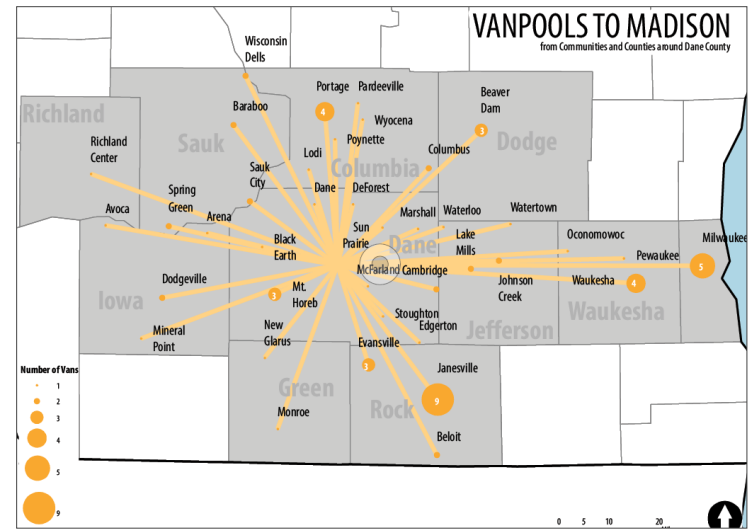
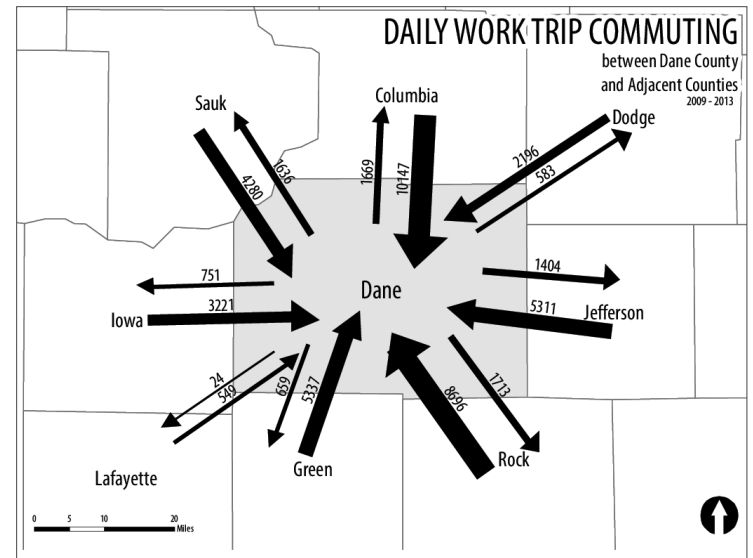
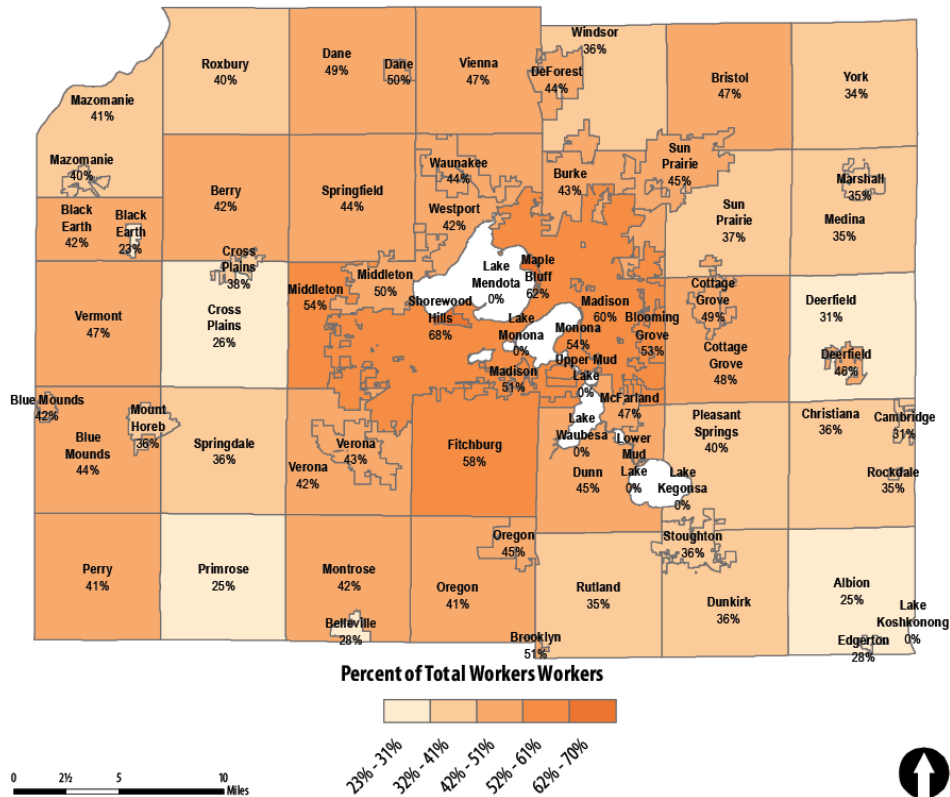
Mode of Transportation to Work, 2014



# COMMUTING PATTERNS

## DAILY WORK TRIP COMMUTING

from Outer Dane County  
to the City of Madison  
2014



Dane County and Madison are net-importers of workers.























# EMERGING TECHNOLOGY

A number of technologies are on the horizon that may change commuting and development patterns, including:

- Autonomous vehicles
- On-demand ride sharing services
- 3D-printing
- The “Internet of Things”
- Drones
- Wireless power transfer

## Levels of Vehicle Automation

Automation Level	Execution of Steering, Acceleration, and Deceleration	Monitoring of Driving Environment	Backup Performance of Dynamic Driving Task	System Capability
0 No Automation				Not Applicable
1 Driver Assistance				Certain Defined Traffic Situations
2 Partial Automation				
3 Conditional Automation				All Traffic Situations
4 High Automation				
5 Full Automation				

 Human driver performs task    
  System performs task





## CHAPTER 3:

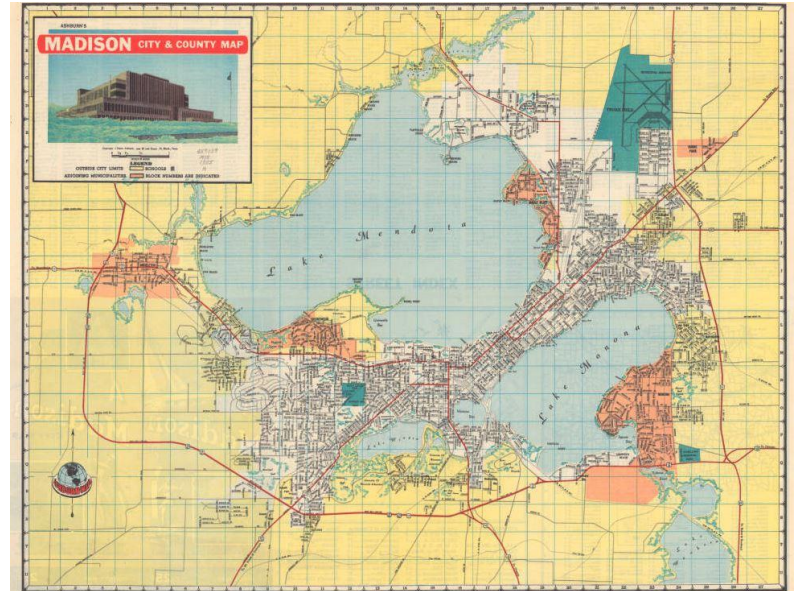
# OUR TRANSPORTATION SYSTEM

- Motor Vehicles
- Bicycles
- Pedestrians
- Public Transit
- Travel Demand Management/Ridesharing
- Inter-Regional Travel
- Freight/Goods Movement

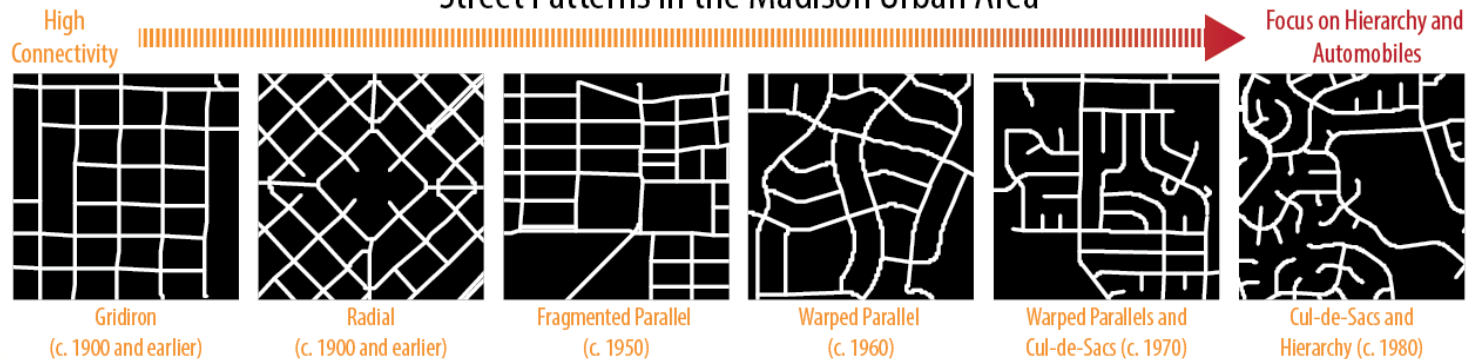
# INTRODUCTION

The design of the metropolitan area's roadway network influenced by when roadways were developed and geographic constraints.

Improving connectivity is a key issue in the region.



Street Patterns in the Madison Urban Area



# MOTOR VEHICLES: FUNCTIONAL CLASSIFICATION

Functional Classification defines the role that roadway plays (mobility, connectivity, accessibility) in serving travel needs.

It carries expectations about design, speed, capacity, and relationship to existing and future land use.



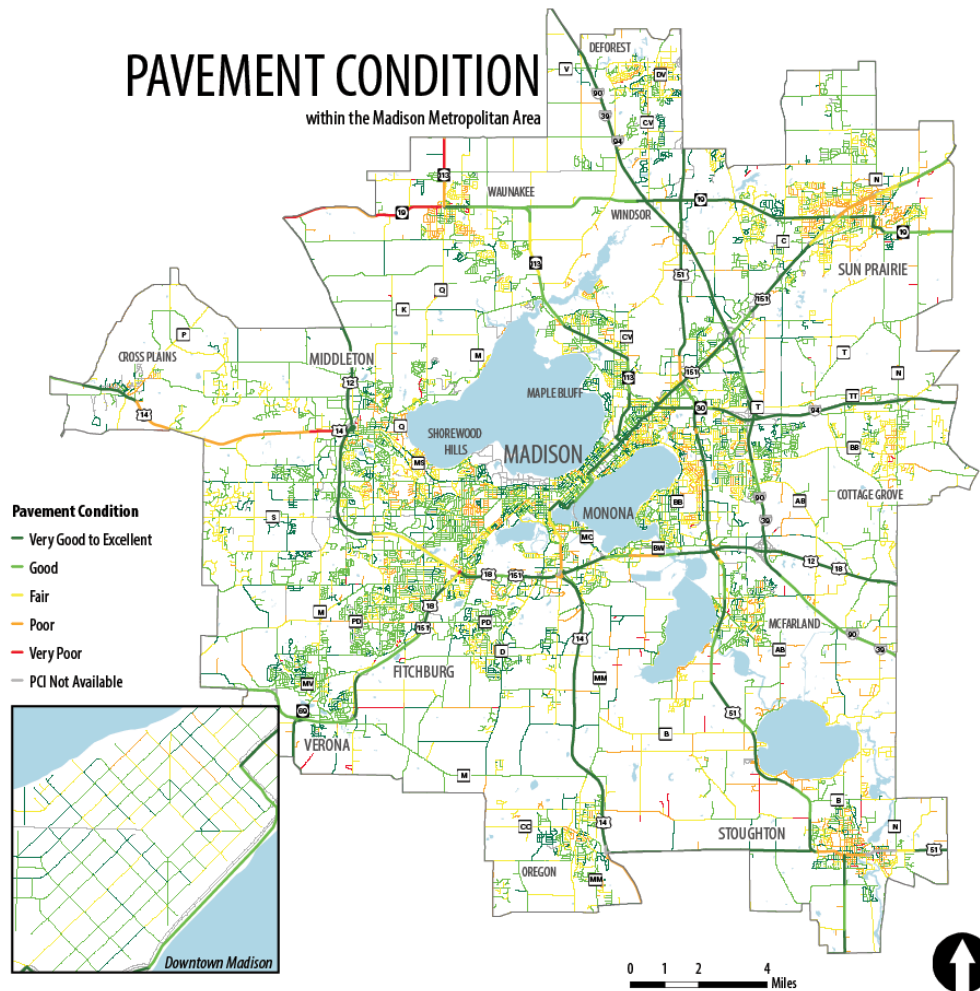
# MOTOR VEHICLES: PAVEMENT CONDITION

State highways are, in general, in better condition than local roadways.

- 100% of Interstate and 78% of US highways in good or better condition
- 64% of state highways rated good or better, while 16% in poor or worse condition
- 61% of local arterial/collector roadways rated good or better, while only 7% in poor or worse condition
- Condition of local roadways getting slowly worse

PASER Ratings and Corresponding Treatments

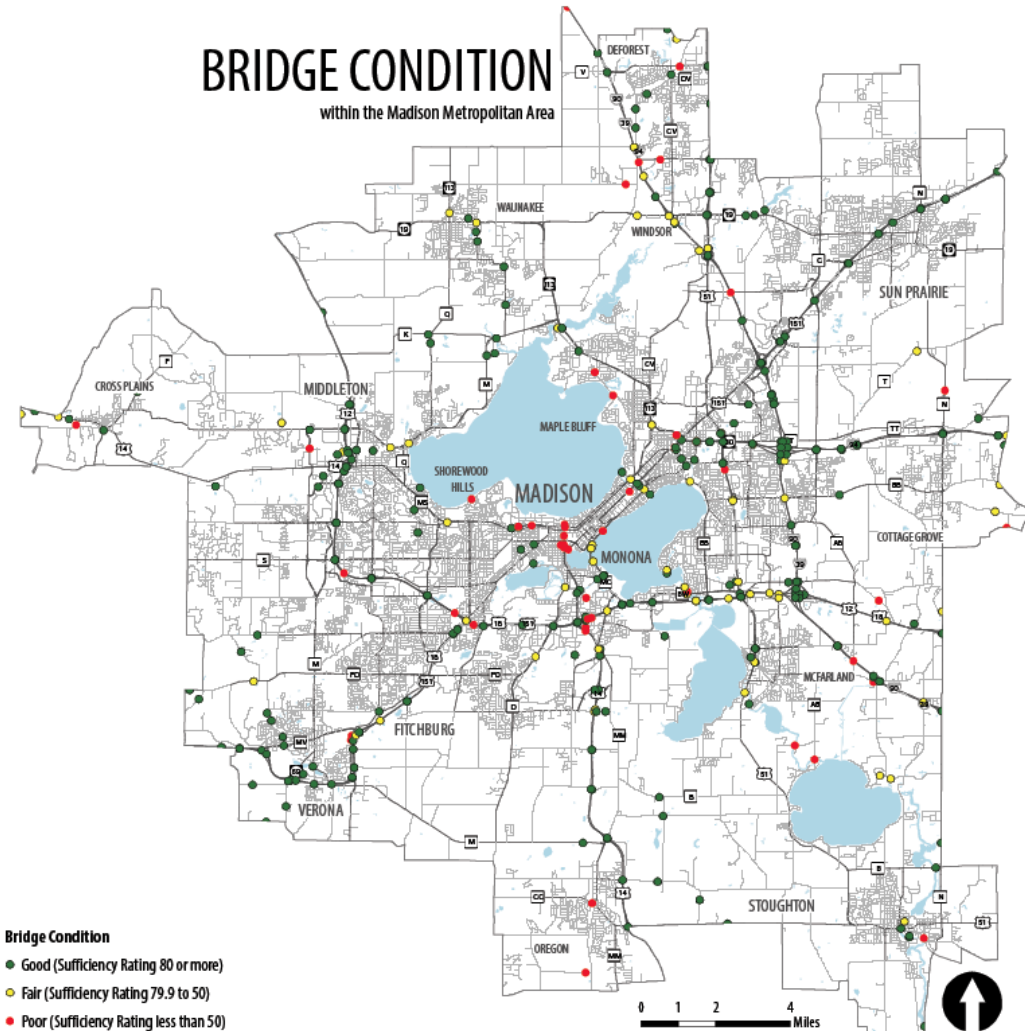
Quality	Rating	Treatment for Pavement	Treatment for Concrete
Excellent	9-10	No maintenance required	No maintenance required
Good	7-8	Crack sealing and minor patching	Routine maintenance
Fair	5-6	Preservation treatments (non-structural)	Surface repairs, partial-depth patching
Poor	3-4	Structural renewal (overlay)	Extensive slab or joint rehabilitation
Very Poor	1-2	Reconstruction	Reconstruction





# MOTOR VEHICLES: BRIDGE CONDITION

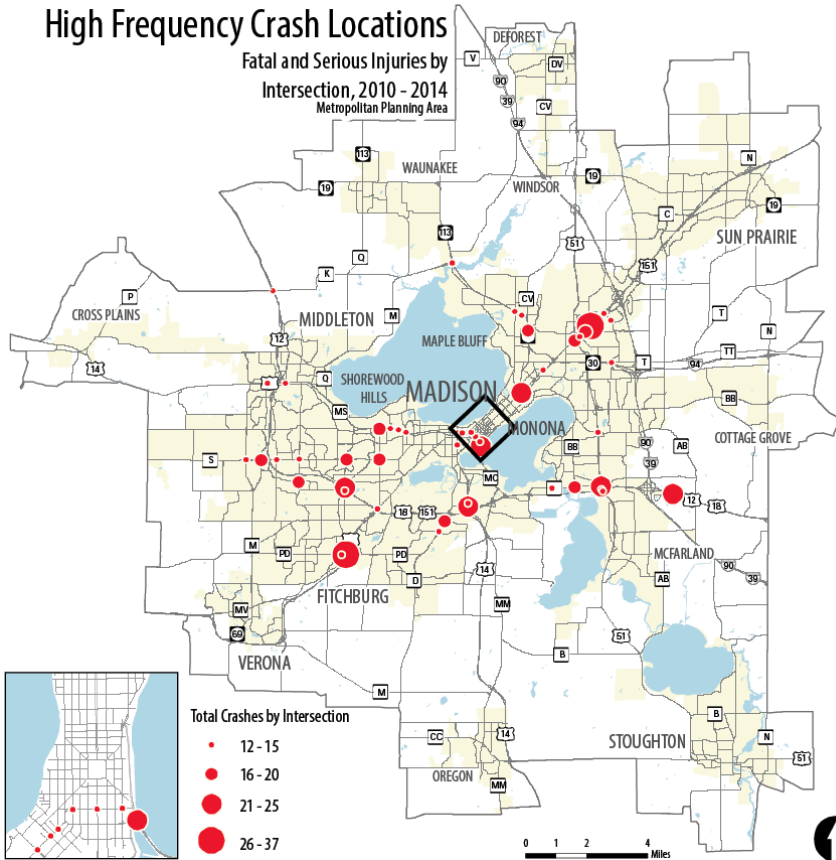
- “Bridge sufficiency” rating incorporates structural evaluation, design obsolescence, and essentialness.
- Bridge must score below 80 for repair funding and 50 for replacement funding.
- 95% of regional bridges are rated fair (50-79.9 sufficiency rating) or better.



# MOTOR VEHICLES: SAFETY

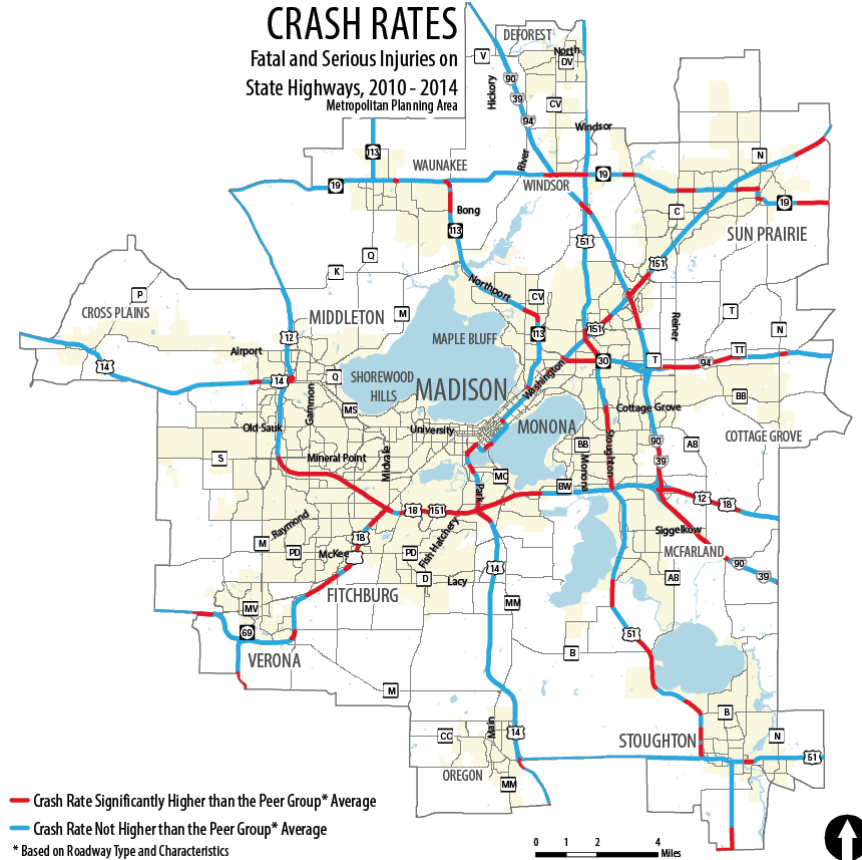
## High Frequency Crash Locations

Fatal and Serious Injuries by Intersection, 2010 - 2014  
Metropolitan Planning Area



## CRASH RATES

Fatal and Serious Injuries on State Highways, 2010 - 2014  
Metropolitan Planning Area



Many higher-volume arterials experience high crash frequency. Funding is available to reduce traffic fatalities and injuries at these areas for projects that reduce the number and severity of crashes.

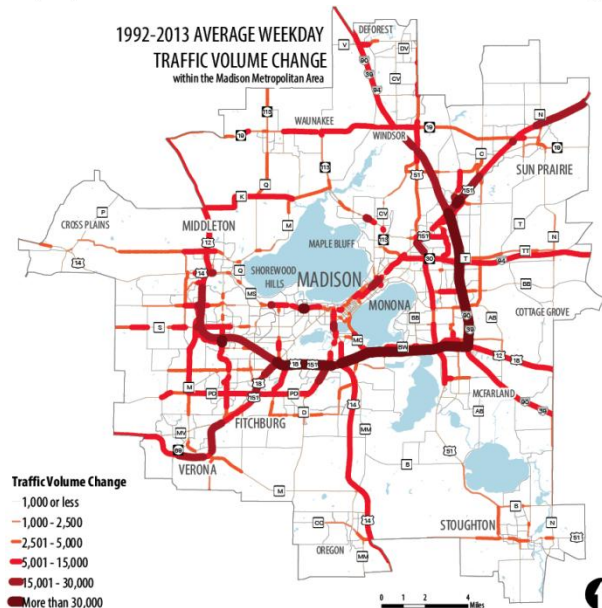
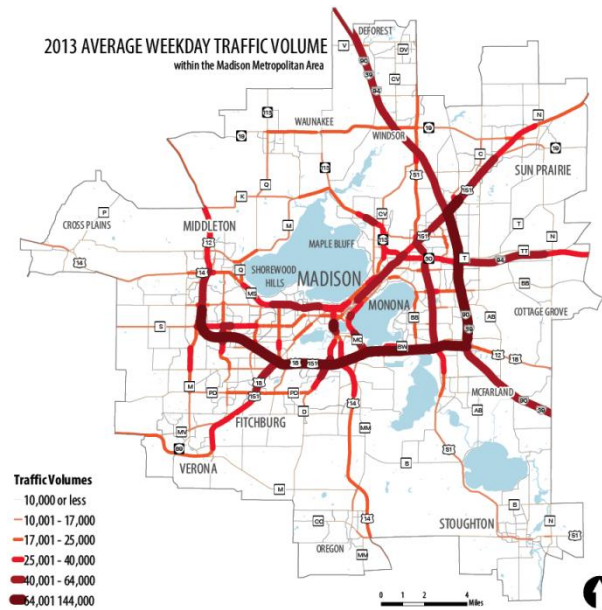


# MOTOR VEHICLES: CONGESTION

- VMT increased on average 0.6% per year from 2000 to 2015.
- Beltline, I-39/90/94, Verona Rd., Stoughton Road, University Ave, Fish Hatchery, USH 151 have highest volumes and have seen the biggest increases in traffic volume.

Estimated Daily VMT for Dane County

Year	VMT	Change from Previous Year
2000	12,497,100	-
2001	12,636,700	1.1%
2002	13,202,000	4.5%
2003	13,256,000	0.4%
2004	13,450,000	1.5%
2005	13,346,300	-0.8%
2006	13,621,900	2.1%
2007	13,561,000	-0.4%
2008	12,993,400	-4.2%
2009	13,214,200	1.7%
2010	13,258,300	0.3%
2011	13,116,500	-1.1%
2012	13,724,431	4.6%
2013	13,291,000	-3.2%
2014	13,481,513	1.4%
2015	13,637,621	1.2%

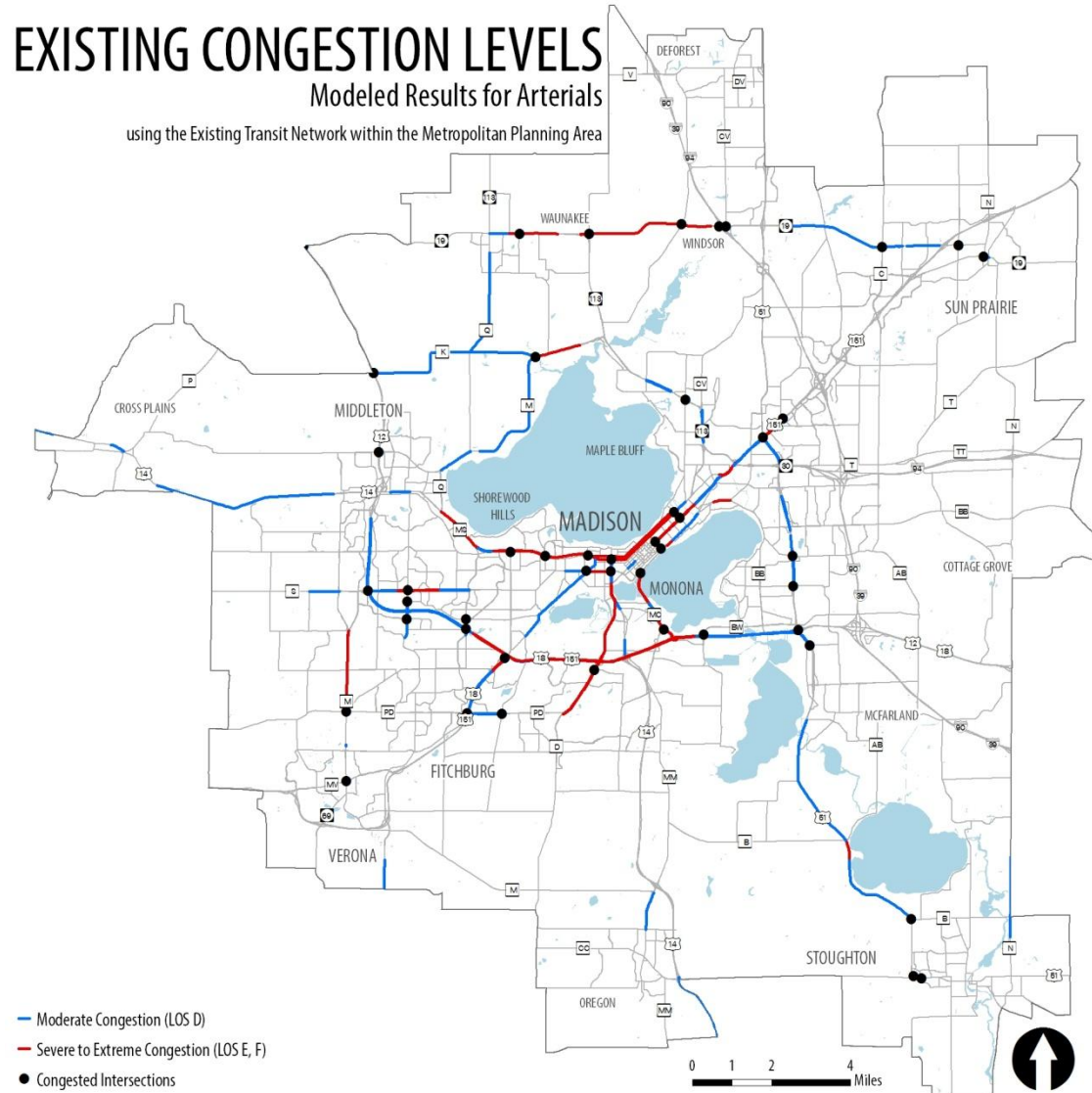


# MOTOR VEHICLES: CONGESTION

## EXISTING CONGESTION LEVELS

Modeled Results for Arterials

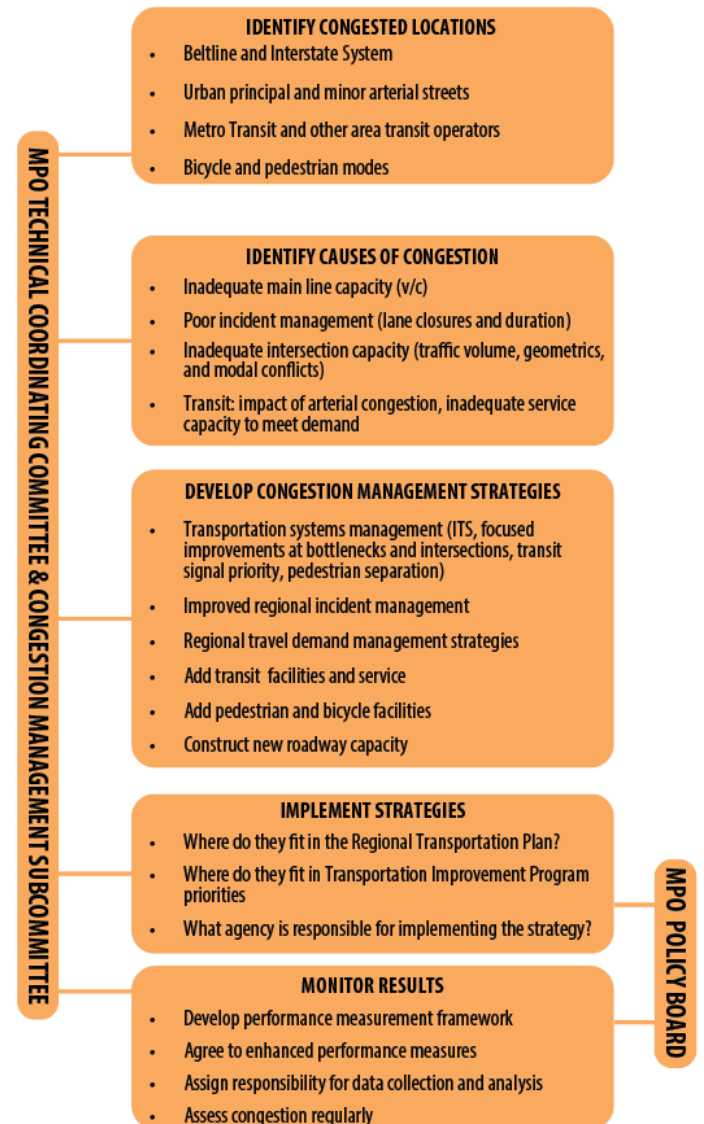
using the Existing Transit Network within the Metropolitan Planning Area



# MOTOR VEHICLES: CONGESTION

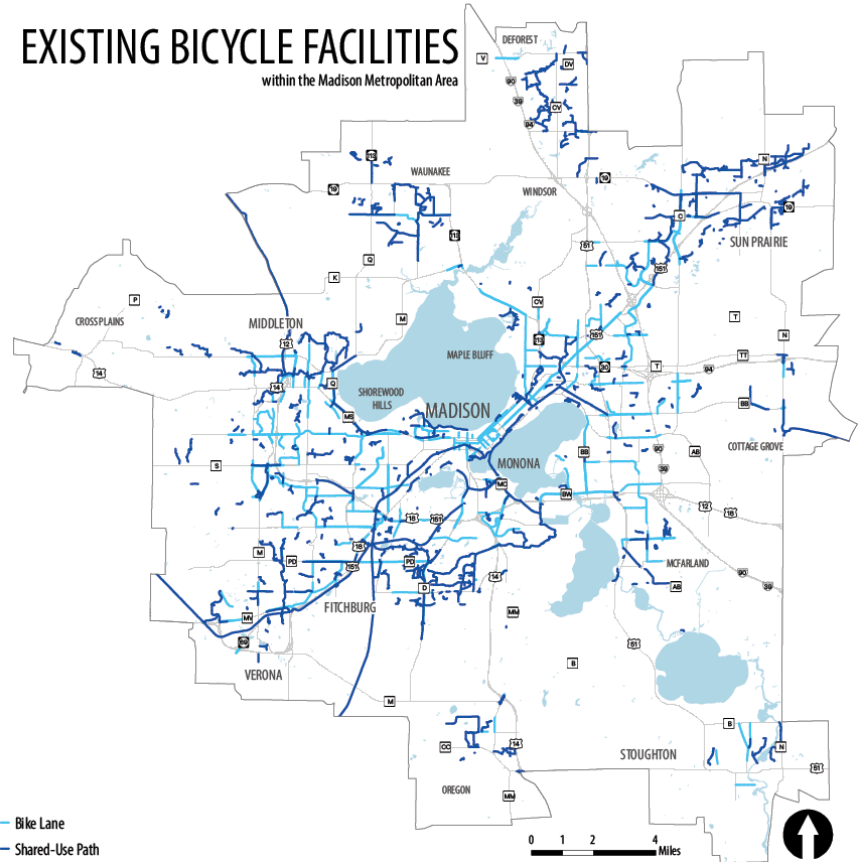
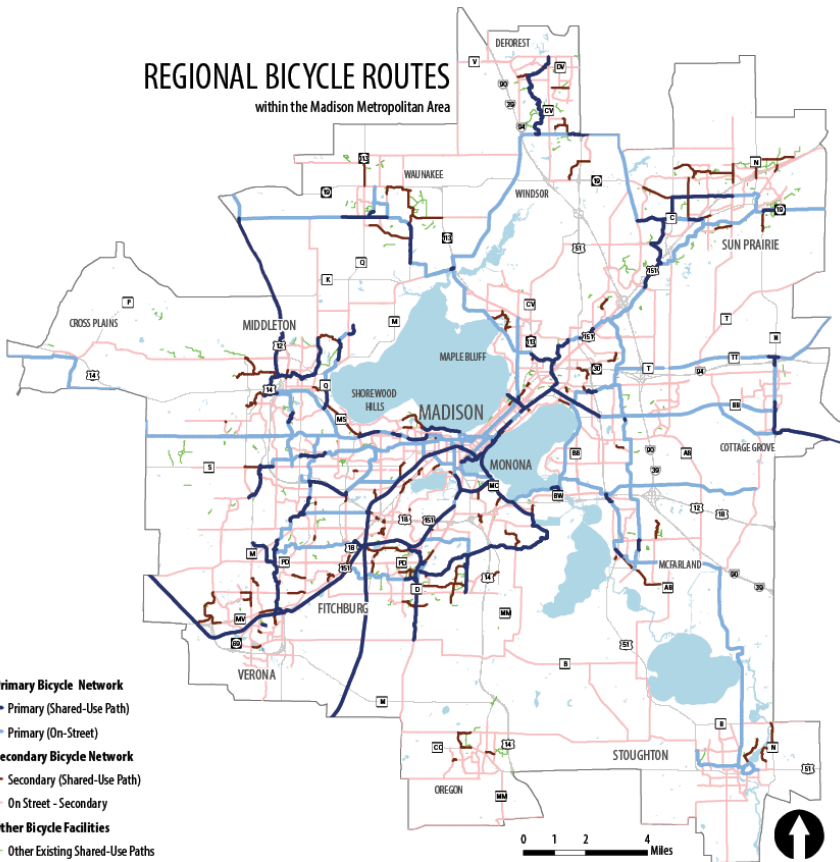
- Top causes of congestion:
  - Physical bottlenecks (40%)
  - Traffic Incidents (25%)
  - Work Zones (10%)
  - Weather (15%)
  - Traffic Control Devices (5%)
  - Special Events (5%)
  - Normal fluctuations
- One source of congestion can trigger another to occur
- Congestion Mitigation Process (CMP) helps to identify causes of congestion, identify projects, identify implementing agency, and monitor results.
- CMP last updated in 2011

## Congestion Management Process for the Madison Area



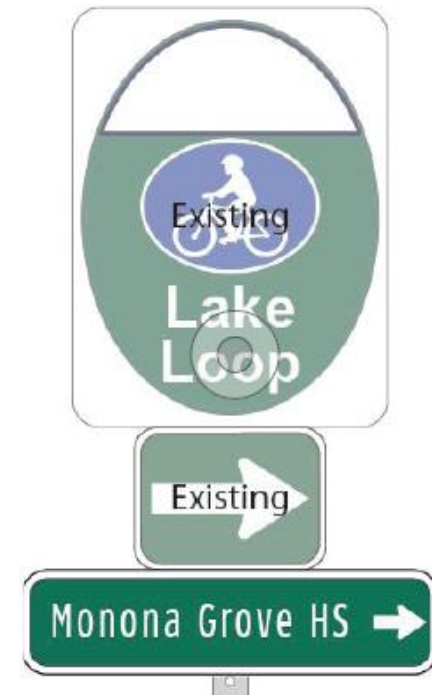
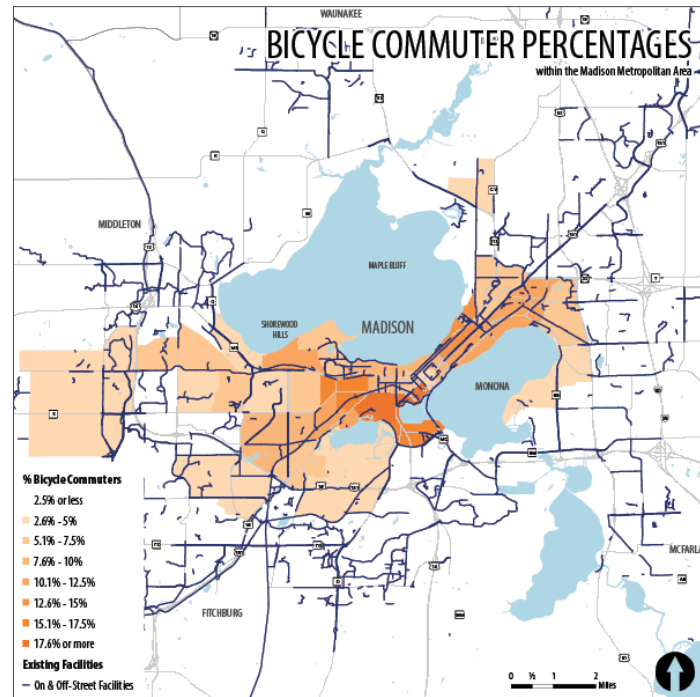
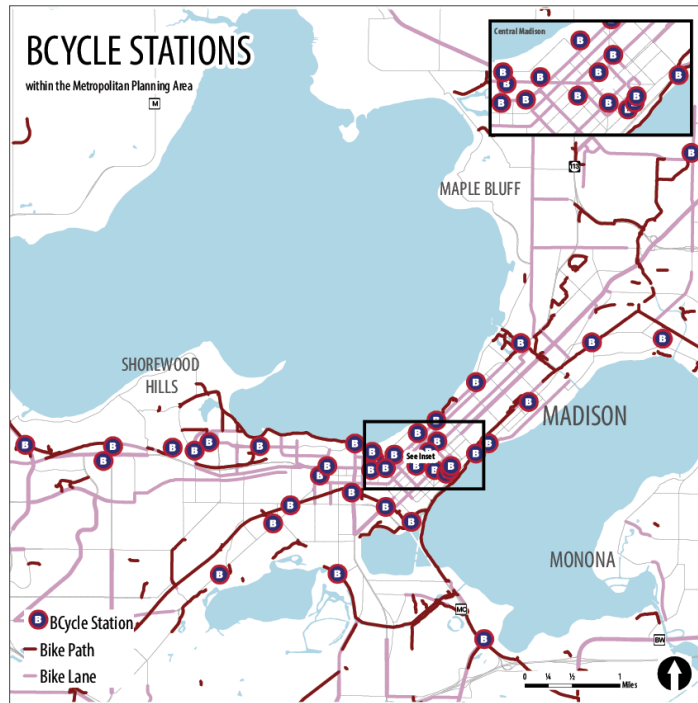
# BICYCLES

The region is well served by a nationally-renowned bikeway network. Bikeway construction began in earnest in the 1990s and most major roadway projects now feature provisions for bicyclists and pedestrians.



# BICYCLES

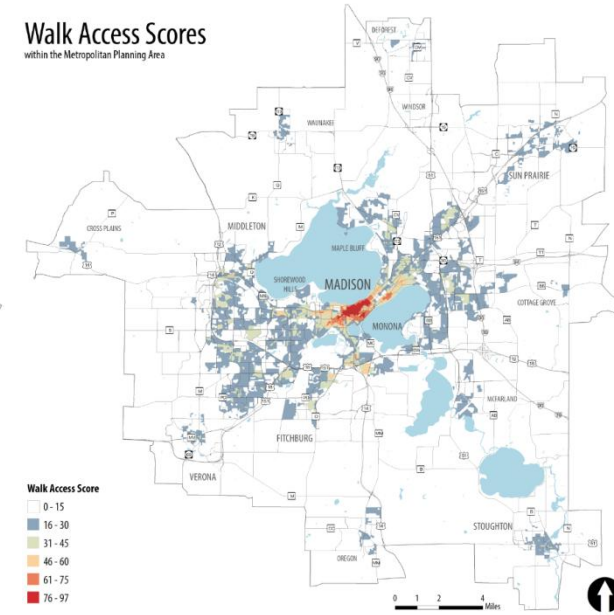
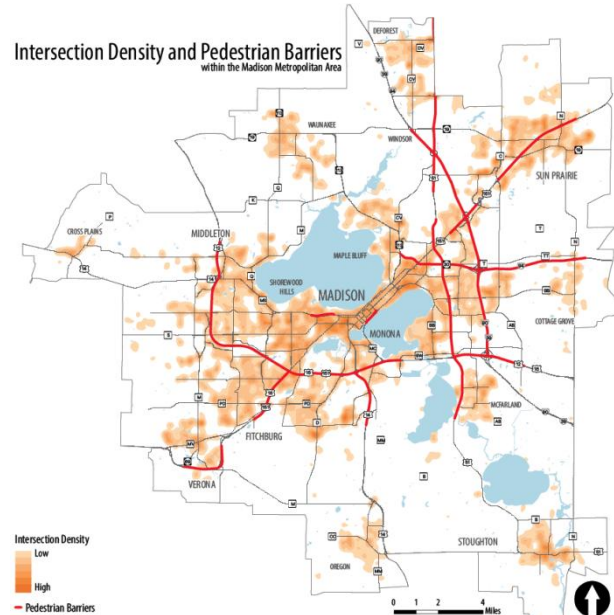
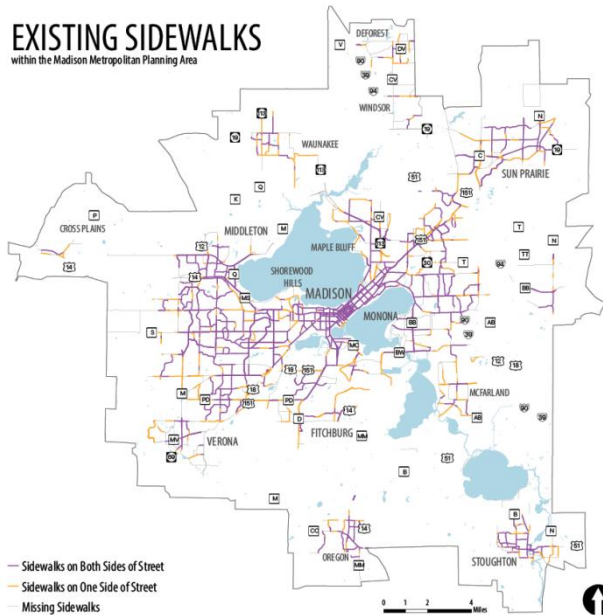
High-quality facilities helped Madison become an early pioneer in bicycle sharing. Further, the facilities have led to increase in percentage of bicycle commuters. New wayfinding plan should increase existing facility visibility and increase already high utilization.



# PEDESTRIANS

55% of urban arterial and collector streets in the metro area have sidewalks on both sides where they are expected, 21% have sidewalk on one side, and 24% have no sidewalks at all.

They are most needed in areas with high population density and pedestrian-generating uses.

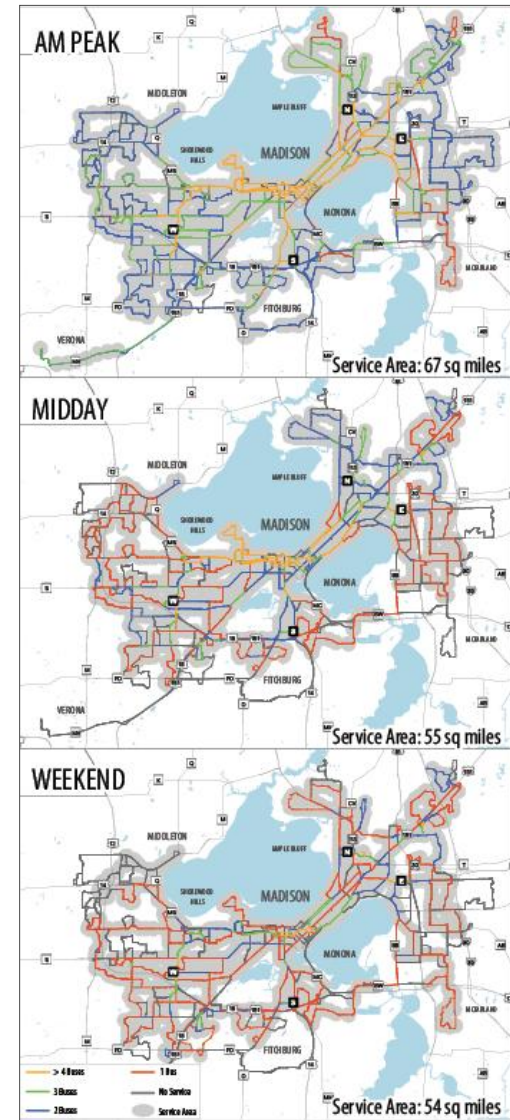
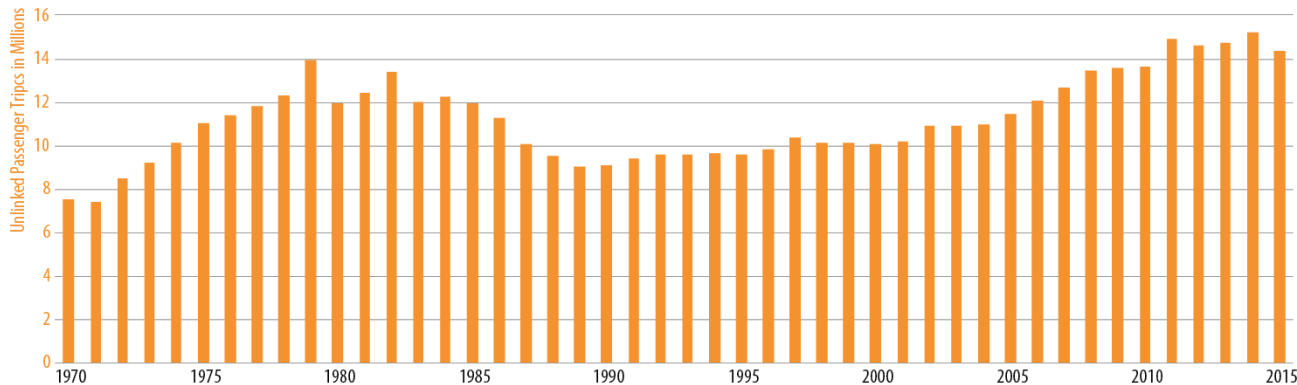




# PUBLIC TRANSPORTATION

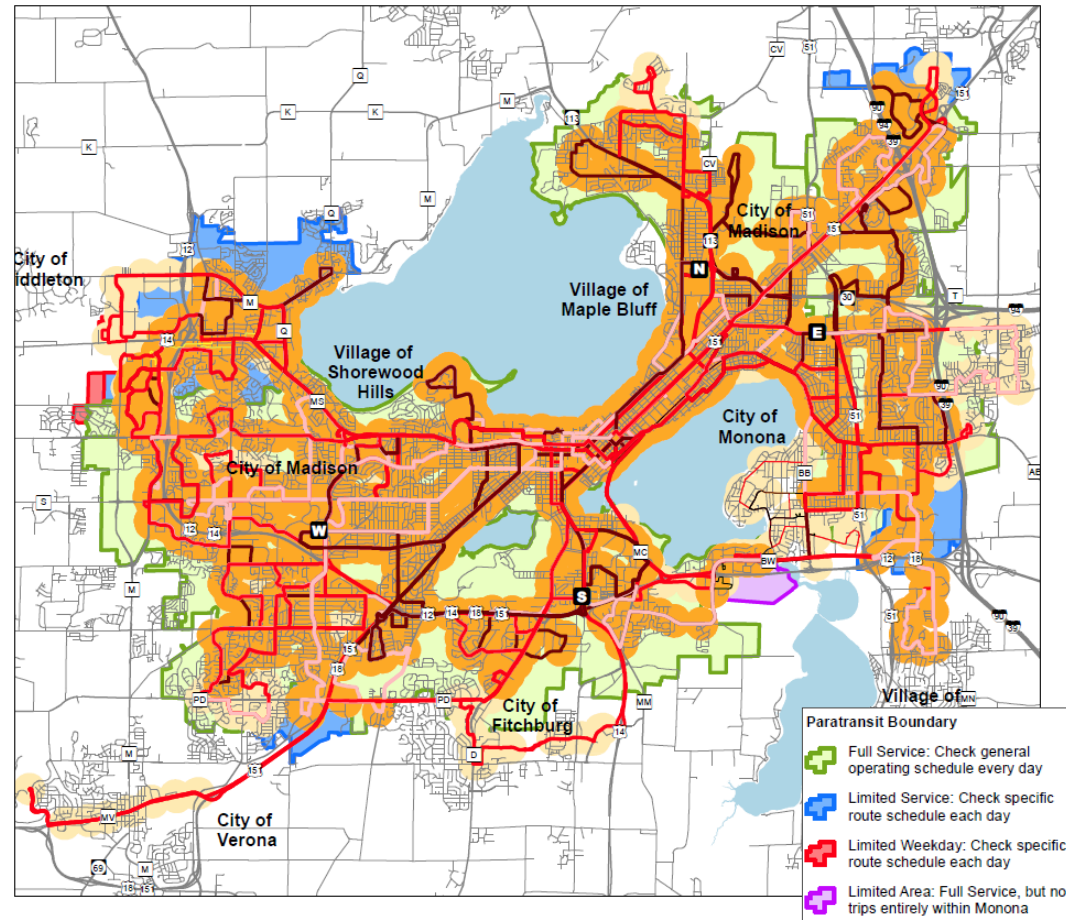
- Madison area is well-served by local bus service during the AM and PM peak periods. Service frequency diminishes greatly during off-peak periods and weekends. Regional commuter express service is not available.
- Bus service limited to central urban area and Verona.
- Ridership had been rising nearly every year until 2015, but declined the past two years.
- Funding for transit continues to be a problem due to lack of a local funding mechanism other than property taxes combined with stagnant state and federal funding.

Metro Transit Ridership 1970-2015



# SPECIALIZED TRANSIT

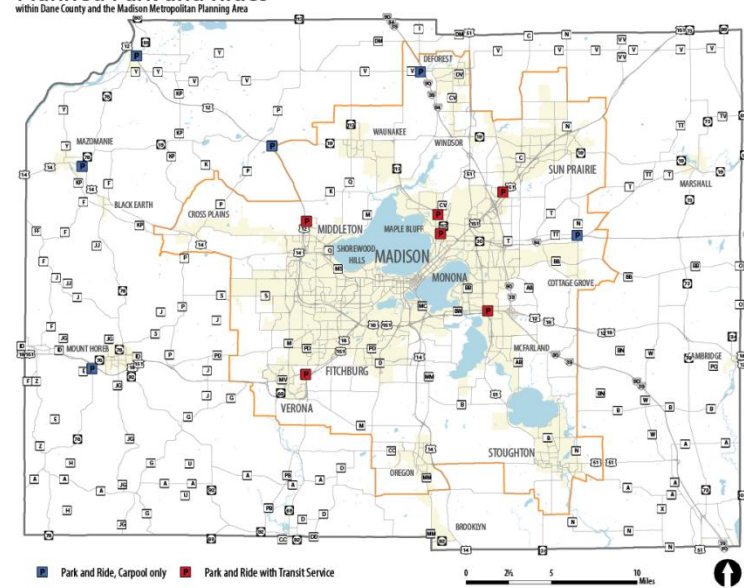
- Metro provides paratransit service in accordance with the Americans with Disabilities Act (ADA)
  - Shadows all-day fixed-route bus system, excluding peak-period commute-oriented service
- Dane County operates other services, such as group access service and rural senior group transportation program
- Sun Prairie and Stoughton offer accessible shared-ride, door-to-door service.
- Union Cab offers private, non-subsidized, door-to-door accessible service in Madison



# TRAVEL DEMAND MANAGEMENT

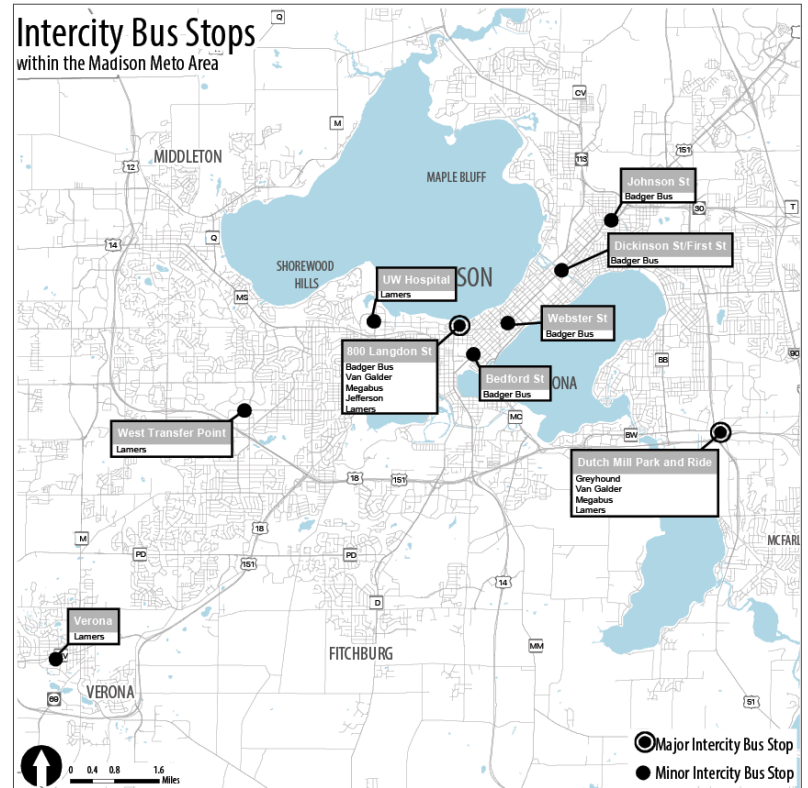
- MATPB administers the Rideshare, Etc. Program. Program signups have decreased in recent years, but overall participation remains near 2,000.
- The State Vanpool program operates 70 vanpools with nearly 1,000 passengers
- 12 park and ride lots are available in Dane County, 5 of which have Metro service.
- MATPB collaborates with Metro, UW-Madison, and Dane County to run an advertising campaign aimed at raising awareness of commuter options.
- Multiple community efforts promote cycling such as *Bike Week* and *Love to Ride Madison*

## Planned Park and Rides



# INTERCITY TRAVEL

- Intercity service is available via bus to major regional cities and many cities in between.
- The community lacks an inter-city bus terminal; however, many buses stop on Langdon street on the UW campus and at Dutch Mill Park and Ride.
- Site have been investigated for a terminal, which could be constructed as part of replacement of the Lake Street parking garage.



# FREIGHT AND GOODS MOVEMENT

- Freight shipments have increased in recent years while shifting towards trucks.
- Freight arriving by air has increased in recent years, which is significant because much of air-tonnage is high-value goods
- Value of inbound and outbound shipments surpassed \$24 billion in 2014
- Top imports include stone/riprap, gravel/sand, and warehouse goods. Top exports include gravel/sand, grain, and stone/riprap

Dane County Freight Tonages by Mode (2014)

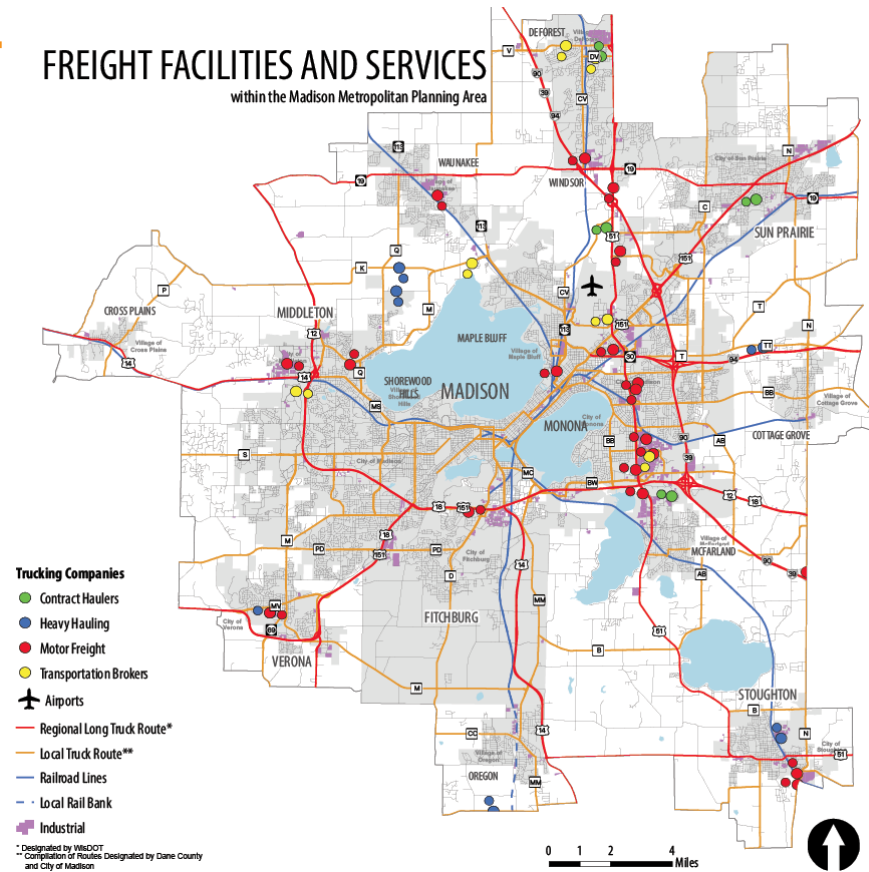
Mode	Outbound Freight				Inbound Freight				Internal Freight			
	Within WI	Outside WI	Total	% Within WI	% Outside WI	Within WI	Outside WI	Total	% Within WI	% Outside WI	Total	% of Total
Truck	5,362,444	3,542,398	8,904,841	60.2%	40%	5,888,514	5,606,114	11,494,628	51.2%	48.8%	2,689,808	99.9%
Rail	16,072	77,736	93,808	17.1%	83%	91,320	311,452	402,772	22.7%	77.3%	3,600	0.1%
Air	3,961	8,993	12,953	30.6%	69%	3,924	9,090	13,013	30.2%	69.8%	0	0.0%
Unknown	0	78	77	0.0%	100%	0	83	83	0.0%	100.0%	0	0.0%
<b>Total</b>	<b>5,382,476</b>	<b>3,629,204</b>	<b>9,011,680</b>	<b>59.7%</b>	<b>40%</b>	<b>5,983,758</b>	<b>5,926,739</b>	<b>11,910,497</b>	<b>50.2%</b>	<b>49.8%</b>	<b>2,693,408</b>	<b>100.0%</b>

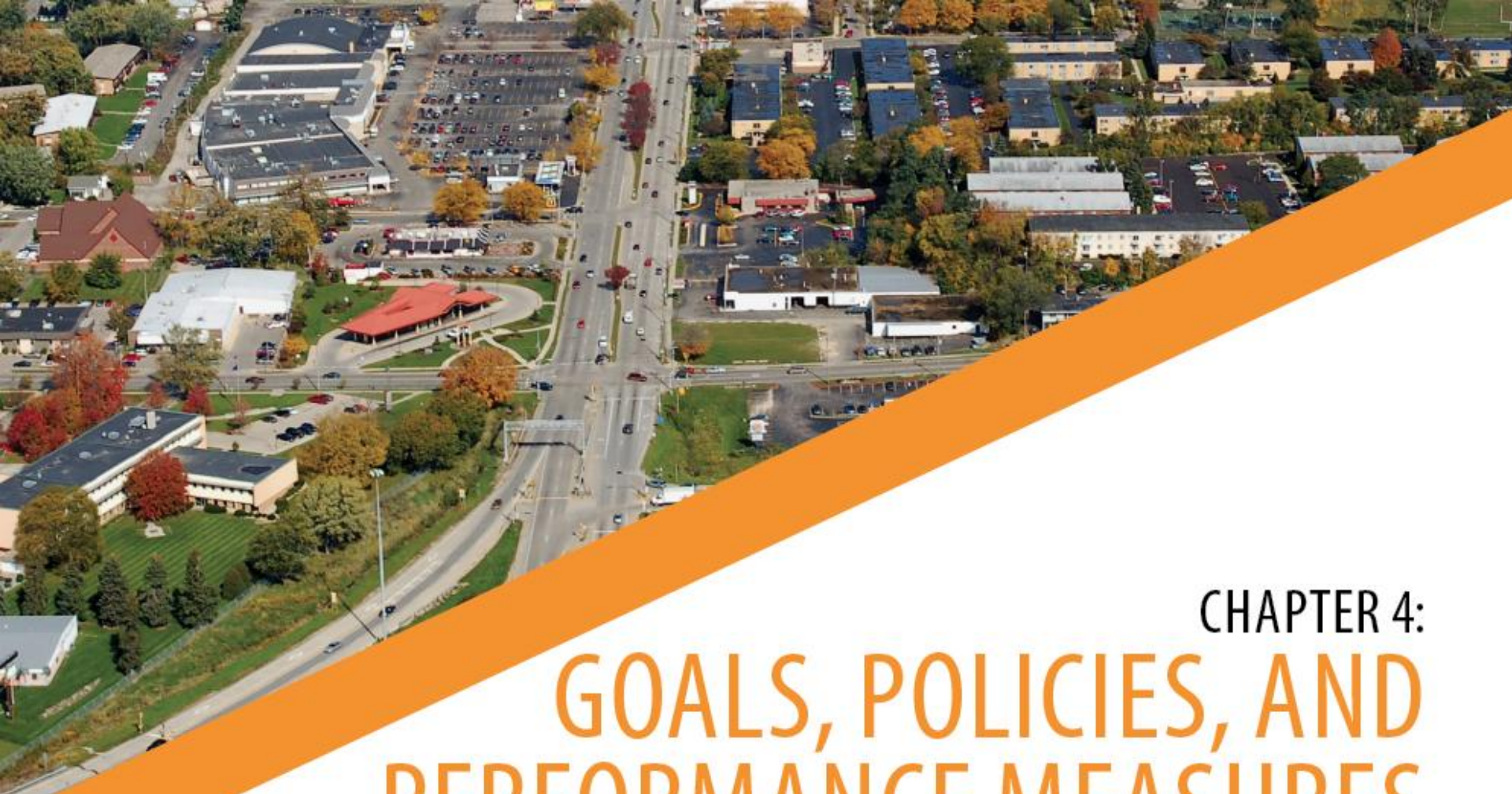
Dane County Freight Flows (2014)

	Rail Tons	Truck Tons	Air Tons	Other Tons	Total Tons	Rail Value	Truck Value	Air Value	Other Value	Total Value
Outbound	93,808	8,950,409	12,953	78	9,057,248	\$57,318,279	\$8,598,129,851	\$844,223,852	\$3,284,361	\$9,502,956,343
Inbound	402,772	11,494,628	13,013	83	11,910,497	\$240,770,009	\$11,828,391,105	\$804,907,825	\$1,314,921	\$12,875,383,860
Internal	3,600	2,689,808	0	0	2,693,408	\$2,067,151	\$1,712,152,252	\$0	\$0	\$1,714,219,403
<b>Totals</b>	<b>500,180</b>	<b>23,134,845</b>	<b>25,966</b>	<b>161</b>	<b>23,661,153</b>	<b>\$300,155,438</b>	<b>\$22,138,673,208</b>	<b>\$1,649,131,677</b>	<b>\$4,599,282</b>	<b>\$24,092,559,606</b>

## FREIGHT FACILITIES AND SERVICES

within the Madison Metropolitan Planning Area





# CHAPTER 4: GOALS, POLICIES, AND PERFORMANCE MEASURES

- Introduction
- Goals and Policies
- Performance Measures

# GOALS AND PERFORMANCE MEASURES

## 1. Create Connected Livable Neighborhoods and Communities

- Miles of Pedestrian Facilities
- Miles of Bicycle Facilities
- B-Cycle Utilization
- Active Living Index Scores

## 2. Improve Public Health, Safety, and Security

- Number and Rate of Motor Vehicle Crash Fatalities and Serious Injuries
- Number and Non-Motorized Fatalities and Serious Injuries
- County-wide Five-year Rolling Averages

## 3. Support Personal Prosperity and Enhance the Regional Economy

- Airline Passenger Traffic
- Freight Exports and Imports
- Housing + Transportation Costs
- Transit Access to Jobs

## 4. Improve Equity for Users of the Transportation System Transit Ridership

- Fixed-Route Transit Service Area
- Transit Access to Employment
- Transit Coverage for Underrepresented Groups

## 5. Reduce the Environmental Impact of the Transportation System

- Vehicle Miles Traveled
- Mode of Transportation to Work
- Air Quality

## 6. Ensure System-Wide Efficiency, Reliability, and Integration Across Modes

- Transit On-time Performance
- Percent of Key Destinations Served by Transit
- Roadway Congestion and Reliability

## 7. Ensure Financial Viability of the Transportation System

- Bridge Condition
- Roadway Pavement Condition
- Metro Vehicle On-Road Service Calls
- Buses At or Past Replacement Age





## CHAPTER 5:

# NEEDS ANALYSIS AND RECOMMENDATIONS

- Introduction
- Land Use and Transportation Integration
- Streets and Roadways
- Public Transit
- Bicycles
- Pedestrians
- Specialized Transit
- Transportation Demand Management
- TSM, Operations, and ITS
- Freight Air, and Rail
- Parking



# INTRODUCTION

- Chapter includes needs analysis and planning/strategic and facility/service recommendations.
- Recommendations include supporting actions
- Recommendations cover the following:
  - Land Use and Transportation Integration
  - Streets and Roadways
  - Public Transit
  - Bicycles
  - Pedestrians
  - Inter-regional Travel
  - Specialized Transit
  - Travel Demand Management (TDM)
  - Transportation System Management (TSM), Operations, and Intelligent Transportation Systems (ITS)
  - Freight, Air, and Rail
  - Parking



# LAND USE AND TRANSPORTATION INTEGRATION

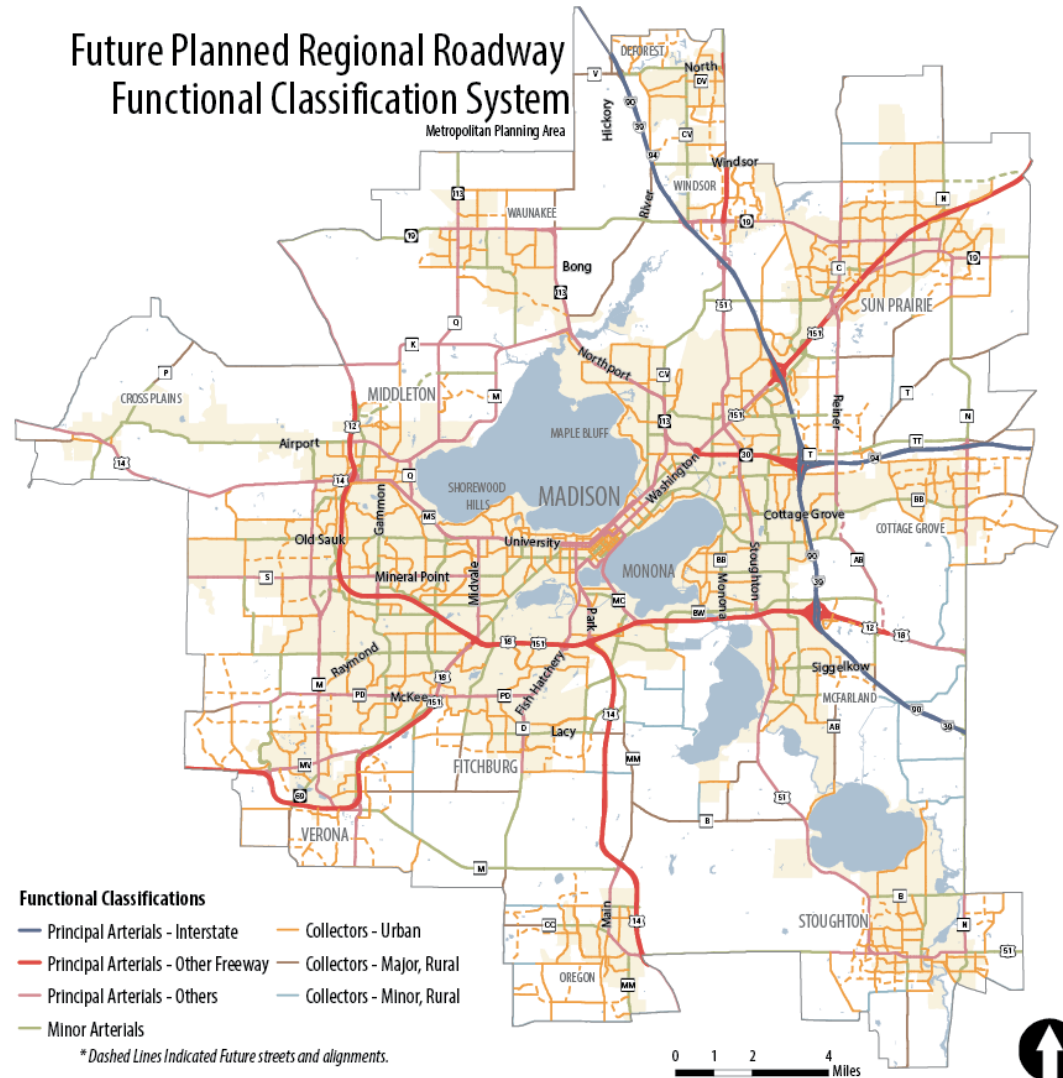
1. Adopt local land use plans and policies that support RTP goals and policies
2. Develop urban areas with a mix of housing types and land uses to provide walkable, affordable neighborhoods



# STREETS AND ROADWAYS

1. Preserve and maintain the region's street and highway system.
2. Build a well-connected network of regional roadways to accommodate future growth and efficiently distribute traffic.
3. Incorporate complete streets and green streets concepts for regional and local roadways.

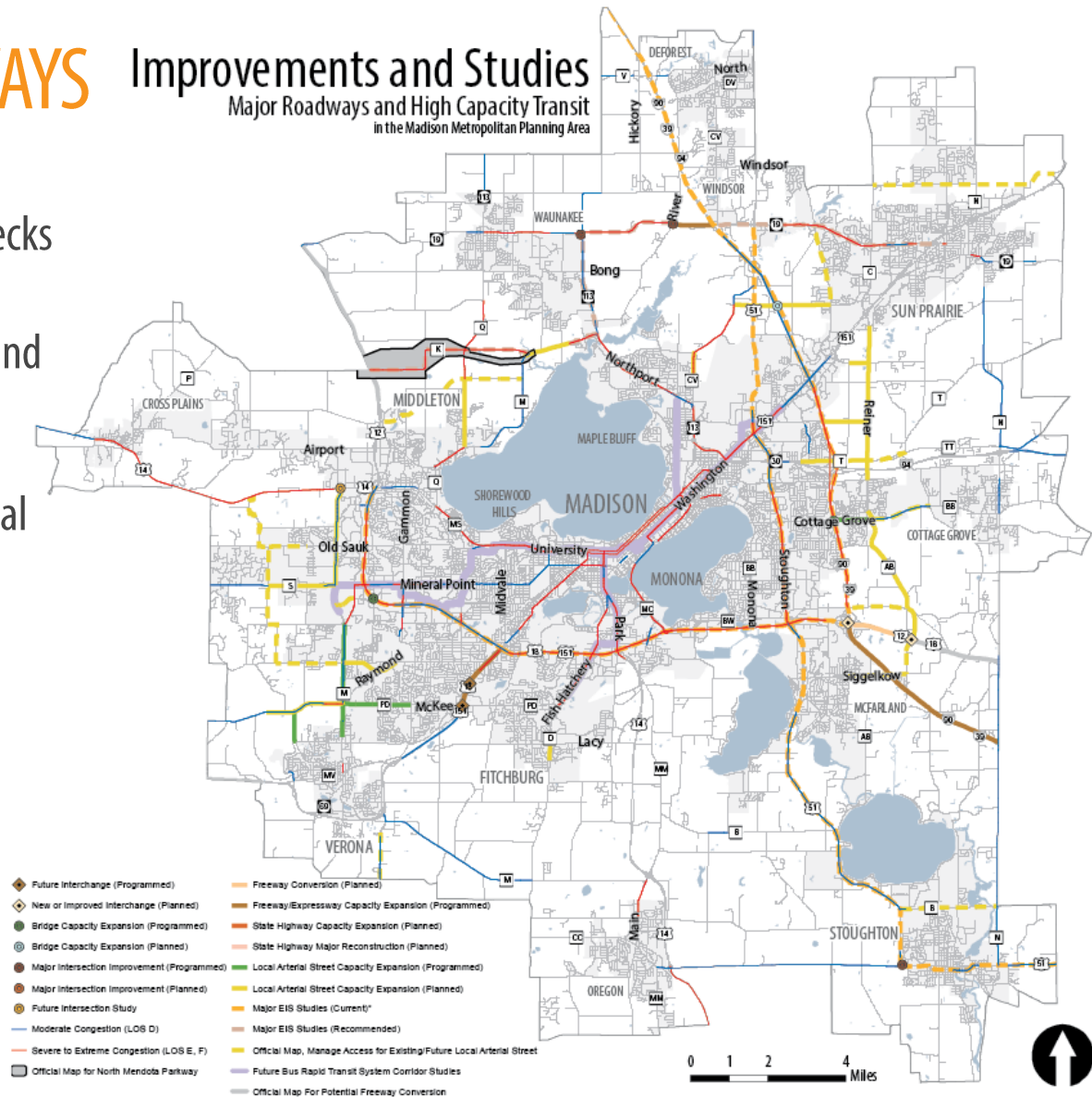
## Future Planned Regional Roadway Functional Classification System



# STREETS AND ROADWAYS

## Improvements and Studies Major Roadways and High Capacity Transit in the Madison Metropolitan Planning Area

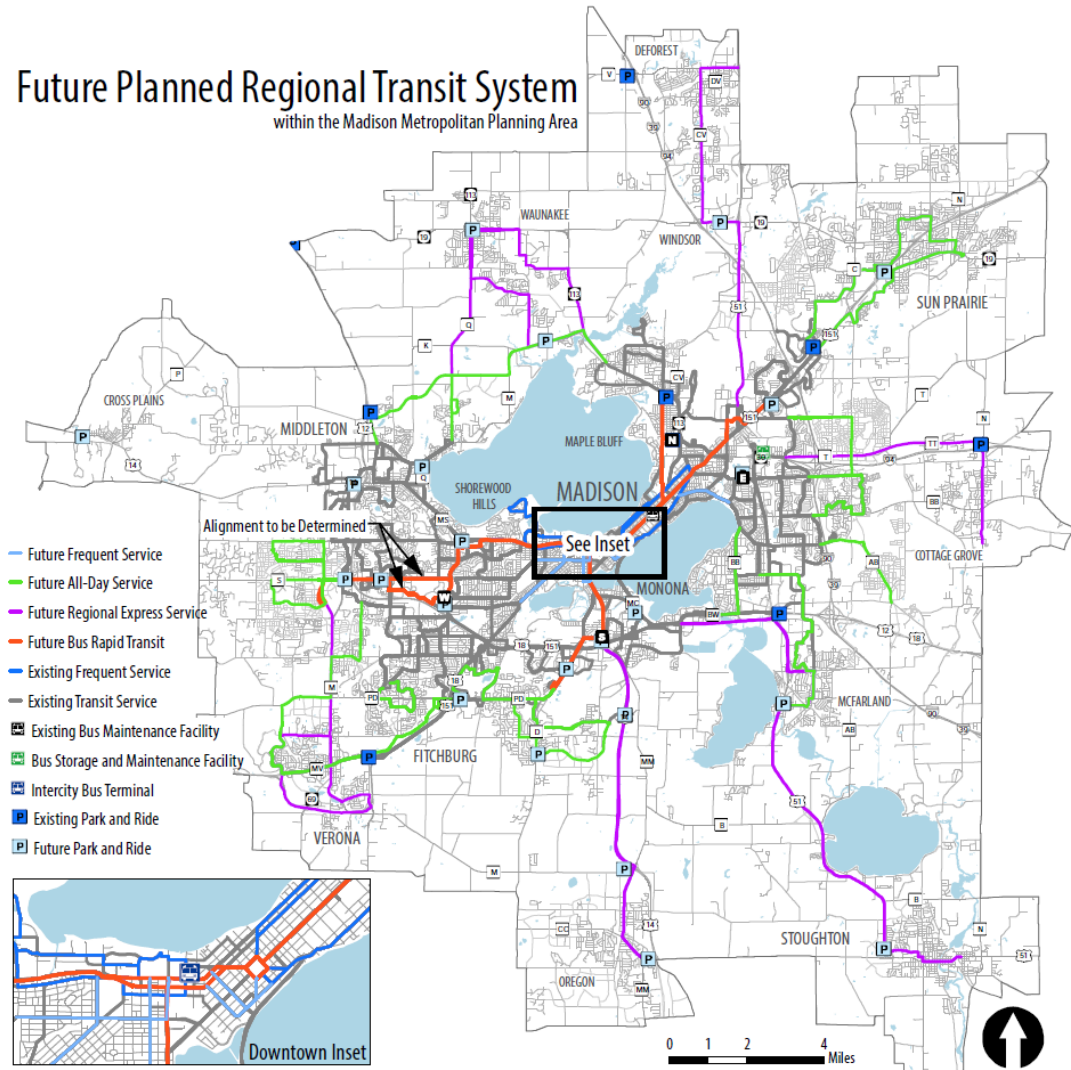
- Expand regional roadway system capacity to address critical bottlenecks and accommodate future planned growth consistent with RTP goals and policies.
- Address safety needs on the regional roadway system through a comprehensive "3-E" approach.



# PUBLIC TRANSIT

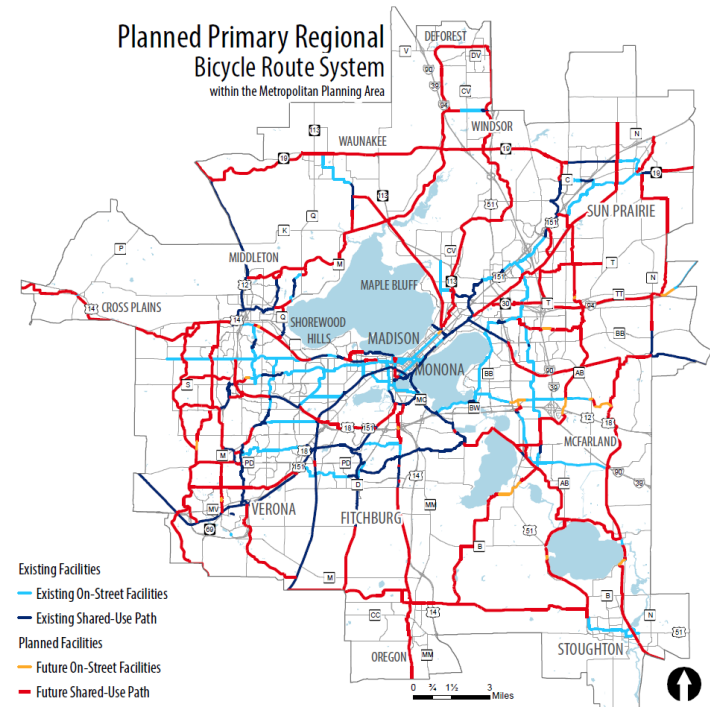
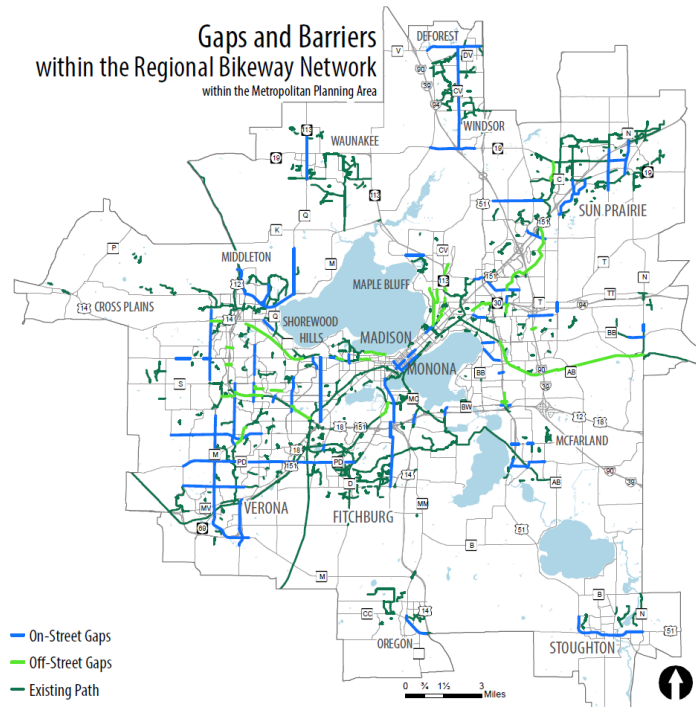
1. Implement a BRT system.
2. Improve the local bus network.
3. Add all-day service in developing neighborhoods.
4. Enhance transit stops.
5. Utilize alternative service delivery models to serve low-demand areas.
6. Implement a regional express bus network.
7. Expand park-and-ride facilities in conjunction with BRT and express services.
8. Implement a regional transit entity with stable funding and representative governance.

Future Planned Regional Transit System  
within the Madison Metropolitan Planning Area



# BICYCLES

1. Expand the bikeway network with new shared-use paths and on-street facilities.
2. Maintain and modernize existing bicycle facilities.
3. Eliminate bicycle barriers and hazards in the bikeway network.
4. Provide adequate bicycle parking.
5. Improve bicyclist safety through a “3-E” approach.
6. Continue bike share, education, and bicycle supportive policies.

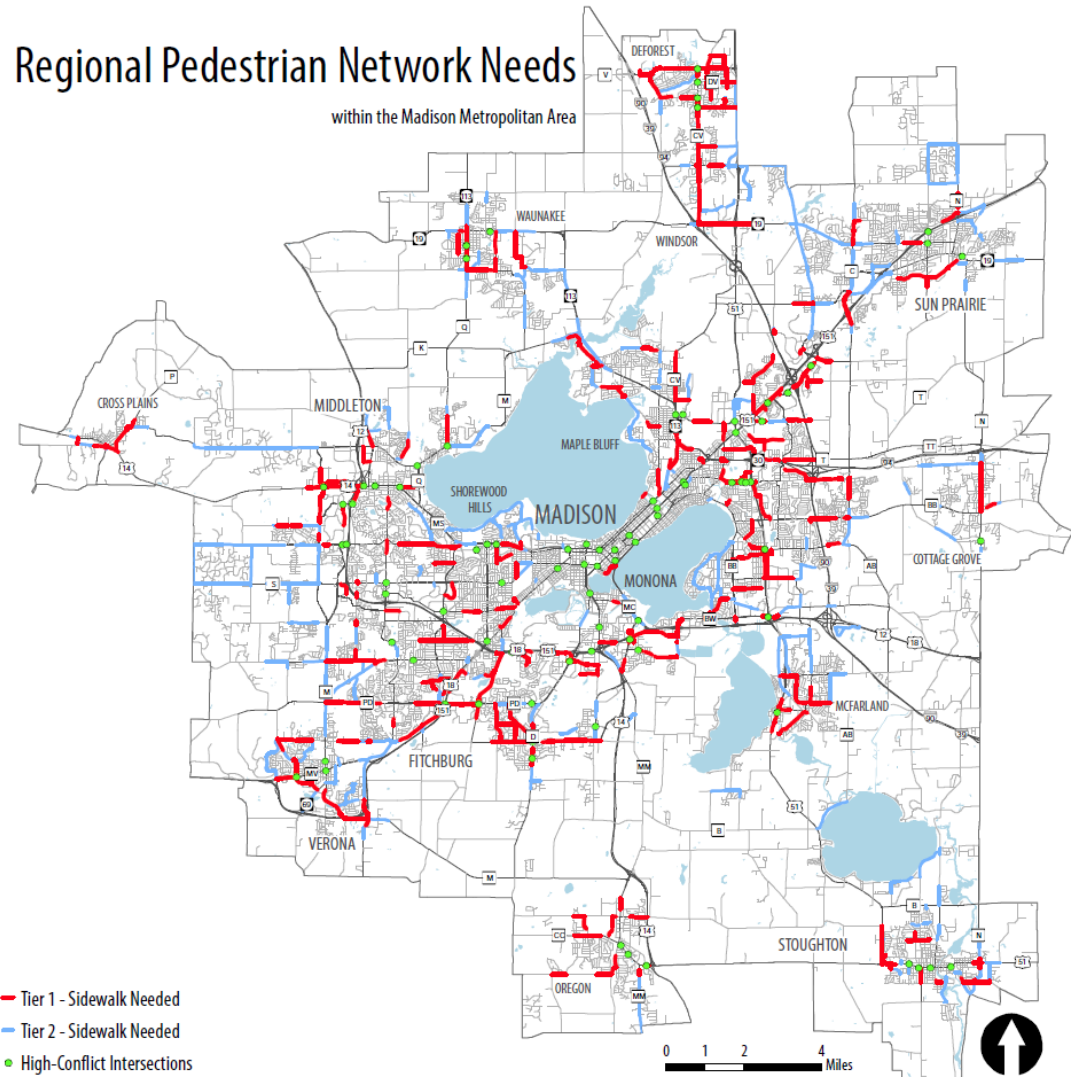


# PEDESTRIANS

1. Provide sidewalks and appropriate pedestrian amenities in developing neighborhoods.
2. Retrofit regional streets with modern, safe pedestrian accommodations.
3. Improve safety and usability for pedestrians at intersections and crossings.
4. Maintain sidewalks and pedestrian facilities for year-round use.
5. Design new streets and retrofit existing streets to reduce speeding.

## Regional Pedestrian Network Needs

within the Madison Metropolitan Area



# INTER-REGIONAL TRAVEL

1. Initiate planning for and build an inter-city bus terminal
2. Support new and improved inter-city bus service
3. Maintain and preserve the rail network for future passenger rail service





# SPECIALIZED TRANSIT

1. Expand the coverage of accessible fixed-route bus and paratransit service.
2. Work collaboratively with private taxi operators to ensure accessible taxi service is available and costs for the service are shared equitably.
3. Continue and expand specialized work-based transportation for low-income people.
4. Utilize emerging technologies to lower operating costs and expand travel options
5. Improve interagency coordination of the various specialized transit services and private services.



# TRANSPORTATION DEMAND MANAGEMENT

1. Expand the regional network of park-and-ride lots to encourage carpooling, transit use, and bicycling.
2. Expand the state vanpool program and support the development of additional vanpool programs.
3. Continue to encourage and provide support to large employers, institutions, and municipalities to develop and promote strategies to reduce single occupant motor vehicle trips.
4. Provide financial incentives for people to use alternative transportation and increase funding for marketing programs.
5. Support transportation options at schools through Safe Routes to School programs.



**Reinvent Your Trip**  
**RideshareEtc.org**  
BUS, CARPOOL, BIKE   
rideshare/etc

## SafeRoutes



# TSM, OPERATIONS, AND ITS

1. Implement and periodically update the adopted Congestion Management Process (CMP).
2. Implement access management plans and standards for existing and planned future arterial roadways as development and street reconstruction occur.
3. Modernize the multimodal transportation network using technology.
4. Implement and periodically update the Regional Intelligent Transportation System Strategic Plan.



# FREIGHT, RAIL, AND AIR

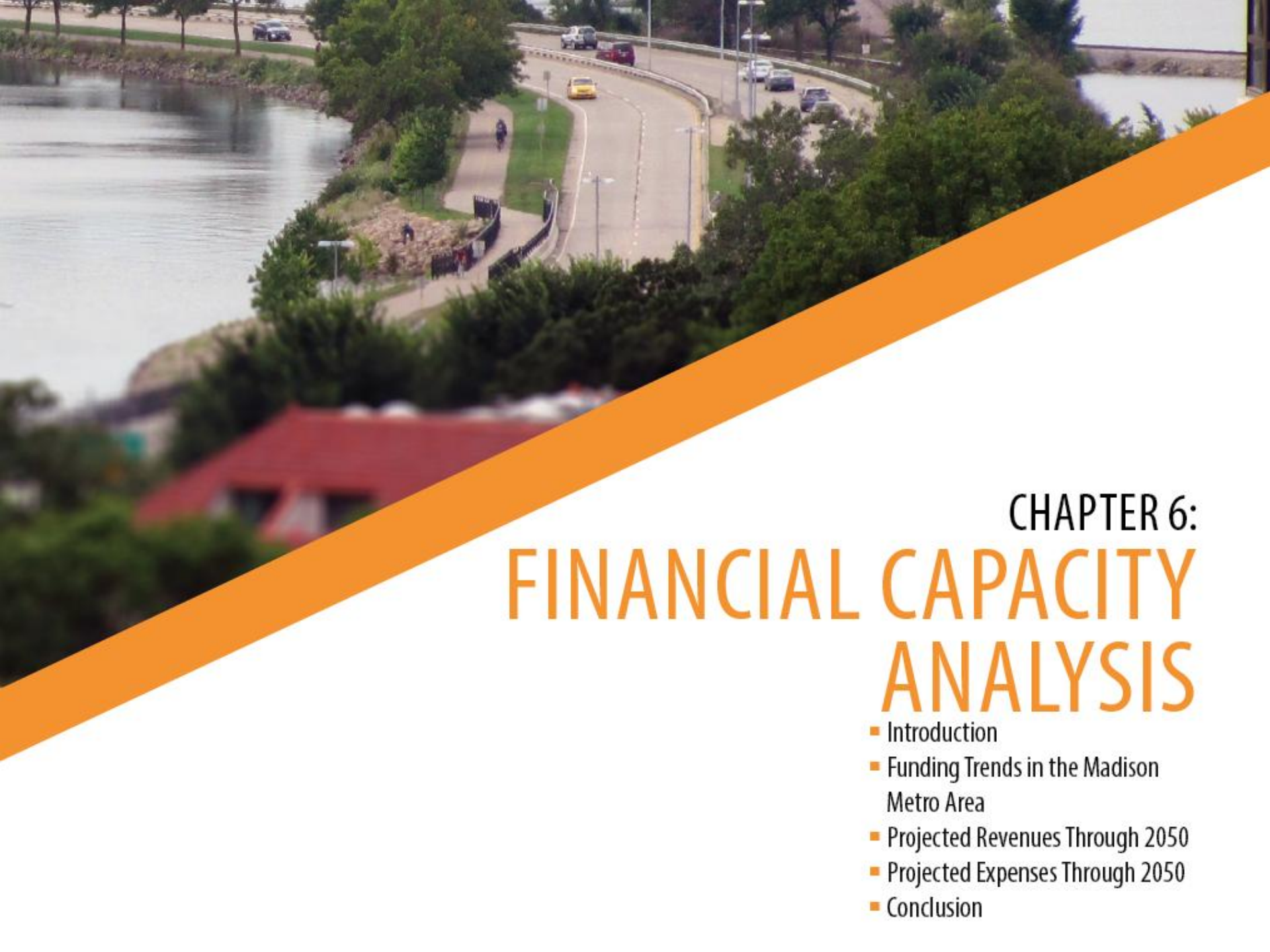
1. Maintain and promote new industrial uses along freight corridors.
2. Maintain and expand existing infrastructure on the multimodal freight network, prioritizing projects that improve safety, increase efficiency, and minimize lifetime costs.
3. Increase focus on freight planning for regional and local transportation facilities.
4. Maintain the availability of rail facilities for current and future uses.
5. Mitigate conflicts between rail and other uses.
6. Ensure the compatibility of uses near airports.
7. Improve airport facilities to enhance usability and convenience for passenger traffic.
8. Improve the airport's freight accommodations and connections.



# PARKING

1. Use parking management strategies to reduce congestion within downtown areas and major activity centers.
2. Modify parking requirements to encourage multi-modalism and innovative design using a more market-based approach.
3. Ensure flexibility of parking facilities to accommodate future technologies.





## CHAPTER 6: FINANCIAL CAPACITY ANALYSIS

- Introduction
- Funding Trends in the Madison Metro Area
- Projected Revenues Through 2050
- Projected Expenses Through 2050
- Conclusion

# INTRODUCTION

- RTPs must be “fiscally constrained” to demonstrate that recommended projects can realistically be addressed with projected revenues.
- If a shortfall exists, new sources of revenue must be identified.
- Requires project prioritization, balancing the needs of new facilities or capacity expansion projects with system preservation needs.



# FUNDING TRENDS : ROADWAYS

- Revenue based on recent funding levels
- Much more funding for (re)construction than maintenance on state side, more balanced locally

Annual Roadway Revenue Estimates (\$000's)  
for the Madison Metropolitan Planning Area

Roadway Construction	Funding Program	Avg. Annual Funding (\$000s)
<b>State Highways</b>		
Federal/State Funding	Combined Backbone and non-Backbone and Majors	\$ 69,876
<b>Local Roadways</b>		
Federal/State Funding	STBG, Local Roads Improvement Program (LRIP), Federal Safety Programs, Local Bridges, 70% General Transportation Aids , 70% Connecting Highway Aids	\$ 24,035
Local Funding	Total County/Local Revenue (from State Department of Revenue) less Federal/State Funding Estimate	\$ 45,001
<i>Subtotal of Local Roadways</i>		<i>\$69,035</i>
<b>Subtotal</b>		<b>\$ 138,912</b>
Roadway Maintenance and Operations	Funding Program	Avg. Annual Funding (\$000s)
<b>State Highways</b>		
Federal/State Funding	State Highway Maintenance and Operations, State Highway Rehabilitation (SHR) Bridges, SHR Large Bridges	\$ 7,964
<b>Local Roadways</b>		
Federal/State Funding	30% General Transportation Aids, 30% Connecting Highway Aids	\$ 6,012
Local Funding	Total County/Local Revenues (from State Department of Revenue) less Federal/State Funding Estimate	\$ 52,390
<i>Subtotal of Local Roadways</i>		<i>\$58,402</i>
<b>Subtotal</b>		<b>\$ 66,365</b>
<b>Total</b>		<b>\$205,277</b>





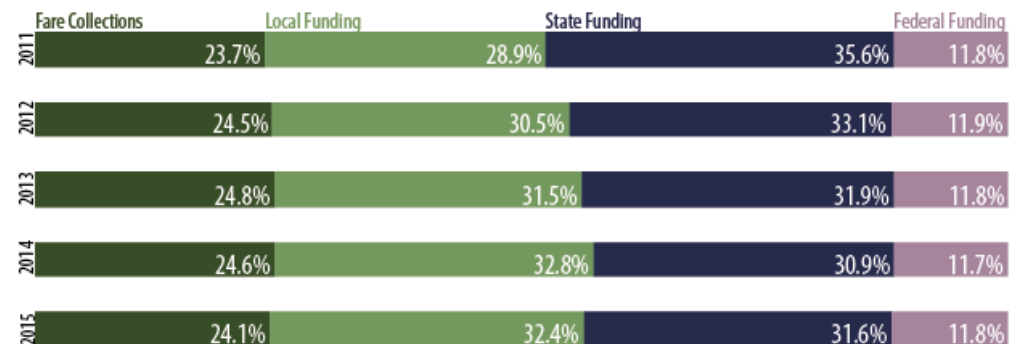
# FUNDING TRENDS : TRANSIT

- Funded through a mixture of federal funding, state operating assistance, fares, and local funds (property taxes).
- Federal funding and state operating assistance have remained flat.
  - State assistance now covers 31.6% of budget, compared to 45% in the mid-1990s
- Local funding has been a growing component of funding.
- Metro finding it more and more difficult to maintain bus fleet replacement schedule, let alone address other capital needs.

Annual Transit Revenue Estimates (\$000's)  
for the Madison Metropolitan Planning Area

Metro Transit	Funding Program	Avg. Funding (\$000s)
<b>Capital</b>		
Federal Funding	Urbanized Area Formula Program (5307), State of Good Repair Formula Program (5337), Bus & Bus Facilities Formula Program (5339)	\$ 4,830
Local Funding	City of Madison Property Taxes and Cooperative Agreements with Neighboring Municipalities	\$ 1,208
<b>Subtotal</b>		<b>\$6038</b>
<b>Operating</b>		
Federal Funding	Urbanized Area Formula Program (5307), Special Needs/ADA (5310)	\$ 6,189
State Funding	State Operating Assistance	\$ 17,063
Local Funding	City of Madison Property Taxes and Cooperative Agreements with Neighboring Municipalities, Advertising and Other Revenues	\$ 15,674
Passenger and other General Revenue	Collections on Buses, Transit Passes, Advertising, etc.	\$ 13,467
<b>Subtotal</b>		<b>\$ 52,393</b>
<b>Total</b>		<b>\$58,431</b>

Metro Operating Revenue Summary  
2011 - 2015



# FUNDING TRENDS : BICYCLE AND PEDESTRIAN

- Primary source for bicycle and pedestrian facilities is local funding.
- Dane County recently created the PARC & Ride Bicycle Grant Program, which has provided \$750,000 in the last two years to local communities.
- MATPB allocates Transportation Alternatives Program (TAP) funding to local communities for off-street bike/ped facilities – around 700,000 per year.
- WisDOT also provides TAP funding from a statewide pool of funds.
- \$4.05 million per year has been programmed outside of TAP
- On-street facilities are included as part of street projects.

Annual Transit Revenue Estimates (\$000's)  
for the Madison Metropolitan Planning Area

Bicycle and Pedestrian Facilities	Funding Program	Avg. Annual Funding (\$000s)
<b>Off-Street Facilities</b>		
Federal/State Funding	STBG - Transportation Alternatives Program (TAP) Set Aside	\$ 746
Local and Other Funding	County PARC & Ride Bicycle Grant Program, Local municipal funding, Other	\$ 4,054
<b>Subtotal</b>		<b>\$4,800</b>



Estimated Transportation Revenue, 2017 - 2050 (\$000's)  
for the Madison Metropolitan Planning Area

# PROJECTED REVENUES

- Revenue projected for 34-year planning period assuming recent funding levels and inflationary increases of 2% per year
- Overall revenue of 13.3 billion
- Federal and State roadway numbers derived from 6 –year rolling average of expending funds between 2011-2016 obtained from WisDOT
- Local funding estimates based on 5-year rolling average of expended municipal transportation funds from 2010-2014 obtained from Wisconsin Department of Revenue
- Metro revenues based on 5-year rolling average from 2011-2015 NTD reports.
- Bike/ped funding based on recent and currently programmed projects.

Source	2017-2020	2021-2035	2036-2050	Total
<b>Roadway Construction</b>				
State Highways				
Federal/State Funding	\$279,505	\$1,269,419	\$1,708,470	\$3,257,394
Local Roadways				
Federal/State Funding	\$96,139	\$436,633	\$587,650	\$1,120,423
Local Funding	\$180,002	\$817,509	\$1,100,259	\$2,097,770
<b>Subtotal of Local Roadways</b>	<b>\$276,142</b>	<b>\$1,254,142</b>	<b>\$1,687,910</b>	<b>\$3,218,193</b>
<b>Subtotal of Roadway Construction</b>	<b>\$555,647</b>	<b>\$2,523,560</b>	<b>\$3,396,380</b>	<b>\$6,475,587</b>
<b>Roadway Maintenance and Operations</b>				
State Highways				
Federal/State Funding	\$31,855	\$144,673	\$194,710	\$371,238
Local Roadways				
Federal/State Funding	\$24,048	\$109,216	\$146,990	\$280,254
Local Funding	\$209,560	\$951,750	\$1,280,930	\$2,442,239
<b>Subtotal of Local Roadways</b>	<b>\$233,607</b>	<b>\$1,060,966</b>	<b>\$1,427,920</b>	<b>\$2,722,493</b>
<b>Subtotal of Maintenance and Operations</b>	<b>\$265,462</b>	<b>\$1,205,638</b>	<b>\$1,622,630</b>	<b>\$3,093,731</b>
<b>Metro Transit</b>				
Capital				
Federal Funding	\$20,583	\$93,481	\$125,813	\$239,877
Local Funding	\$5,146	\$23,370	\$31,453	\$59,969
<b>Subtotal of Capital</b>	<b>\$25,729</b>	<b>\$116,851</b>	<b>\$157,266</b>	<b>\$299,846</b>
Operating				
Federal Funding	\$28,548	\$138,929	\$207,604	\$375,081
State Funding	\$78,730	\$383,142	\$572,538	\$1,034,410
Local Funding	\$75,587	\$367,849	\$549,686	\$993,122
Farebox	\$58,860	\$286,445	\$428,041	\$773,346
<b>Subtotal of Operating</b>	<b>\$241,725</b>	<b>\$1,176,365</b>	<b>\$1,757,869</b>	<b>\$3,175,959</b>
<b>Subtotal of Metro Transit</b>	<b>\$293,182</b>	<b>\$1,410,067</b>	<b>\$2,072,402</b>	<b>\$3,475,805</b>
<b>Bicycle and Pedestrian Facilities</b>				
On-Street Facilities	----included as part of street project funding----			
Off-Street Facilities				
Federal/State Funding	\$3,136	\$14,244	\$19,170	\$36,550
Local Funding	\$16,709	\$75,887	\$102,133	\$194,729
<b>Subtotal of Off-Street Facilities</b>	<b>\$19,845</b>	<b>\$90,130</b>	<b>\$121,303</b>	<b>\$231,279</b>
<b>Subtotal</b>	<b>\$19,845</b>	<b>\$90,130</b>	<b>\$121,303</b>	<b>\$231,279</b>
<b>Total Projected Revenue</b>	<b>\$1,134,136</b>	<b>\$5,229,396</b>	<b>\$7,212,716</b>	<b>\$13,276,402</b>



# PROJECTED EXPENSES

- Expenses for 34-year period are expected to be nearly \$12.8 billion.
- Without increases in spending, trend of declining roadway pavement condition will continue.
- For state highway expenses, assumed all funding would be expended as major projects subject of studies (Beltline, I-39/90/94, Stoughton Rd, USH 51) were not included at this time.
- Additional state revenue will be needed to fund all of these major projects.
- There is sufficient funding for identified local arterial construction projects.
- There is sufficient funding for priority regional path projects identified in 2015 Bicycle Transportation Plan.
- Significant increase in transit funding needed to implement recommended regional system.

Estimated Transportation Expenses, 2017 - 2050 (\$000's)  
for the Madison Metropolitan Planning Area

Source	2017-2020	2021-2035	2036-2050	Total
<b>Roadway Construction</b>				
State Highways	\$279,505	\$1,269,419	\$1,708,470	\$3,257,394
Local Roadways	\$263,269	\$1,228,992	\$1,724,617	\$3,216,878
Subtotal	\$542,774	\$2,498,411	\$3,433,087	\$6,474,272
<b>Roadway Maintenance and Operations</b>				
State Highways	\$31,855	\$144,673	\$194,710	\$371,238
Local Roadways	\$183,788	\$857,961	\$1,203,957	\$2,245,706
Subtotal	\$215,643	\$1,002,633	\$1,398,667	\$2,616,943
<b>Bicycle and Pedestrian Facilities</b>				
On-Street Facilities	---included as part of street project funding---			
Off-Street Facilities	\$22,783	\$80,003	\$113,764	\$216,550
Subtotal	\$22,783	\$80,003	\$113,764	\$216,550
<b>Metro Transit</b>				
Capital Expenses	\$25,729	\$116,851	\$157,266	\$299,846
Operating Expenses	\$241,725	\$1,176,365	\$1,757,869	\$3,175,959
Subtotal	\$267,453	\$1,293,216	\$1,915,136	\$3,475,805
<b>Total Projected Expenses</b>	<b>\$833,010</b>	<b>\$3,871,630</b>	<b>\$5,461,987</b>	<b>\$12,783,571</b>



# PROJECTED TRANSIT EXPENSES

- Projected transit expenses do not include major capital projects.
- Projected transit expenses would cover less than ½ of estimated operating costs to implement the recommended regional transit system.
- New local funding mechanism would be needed to cover capital projects and operating cost increases.
- Vehicle registration fee not enough, ¼% sales tax would be sufficient, but ½% would act as a safeguard against future state/federal funding instability, and allow shift away from property tax.

Estimated Costs of Needed Transit System Capital Projects

Major Capital Expense	Estimated Cost in Millions
Bus Rapid Transit System with buses and Nakoosa Trailbus storage and maintenance facility	\$165
Second satellite bus storage and maintenance facility	\$35
Fleet expansion for new all-day service and regional express service	\$30
Upgrade standard 40-foot buses to electric buses with some articulated buses	\$75
<b>Grand Total</b>	<b>\$305</b>

Estimated Annual Service Hours for Recommended Regional Transit System

Service Category	Estimated Annual Revenue Service Hours	Estimated Cost in Millions
Existing Metro Transit Service	406,000	\$55
Bus Rapid Transit	104,000	\$14
New All-Day Service	88,000	\$12
Frequency Improvements	7,000	\$1
Regional Express Service	56,000	\$8
<b>Grand Total</b>	<b>661,000</b>	<b>\$90</b>

Estimated Annual Revenue Generated from New Taxing Authority

Revenue Source	Estimated Cost in Millions
RTA - ¼ % Sales Tax	\$23
RTA - ½ % Sales Tax	\$46
Vehicle Registration Fee - \$20 per year	\$8



For more information on the Regional Transportation Plan and to review the draft plan, please visit

[www.MadisonAreaRTP.com](http://www.MadisonAreaRTP.com)

**Written comments on the draft plan will be accepted through Wednesday, March 22, 2017.  
Comments may be provided via the RTP website or via email/mail to the project contact.**

## PROJECT CONTACT

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