



Madison Area Transportation Planning Board

PERFORMANCE MEASURES REPORT

Introduction and Purpose

- MPO updating Regional Transportation Plan (RTP)
- Goals and Policies developed for RTP to serve as guide for infrastructure and service investment decisions and transportation policy
- *Performance Measures Report* ties specific metrics to the Goals and tracks them over time
- Report can be used to gauge effectiveness of past investments and guide future investments
- Targets for federally required measures and others will be added in the future

Regional Transportation Plan Goals

1. Create Connected Livable Neighborhoods and Communities
2. Improve Public Health, Safety, and Security
3. Support Personal Prosperity and Enhance the Regional Economy
4. Improve Equity for All that Use the Transportation System
5. Reduce the Environmental Impact of the Transportation System
6. Advance System-wide Efficiency, Reliability, and Integration Across Modes
7. Establish Financial Viability of the Transportation System

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Create Connected Livable Neighborhoods and Communities

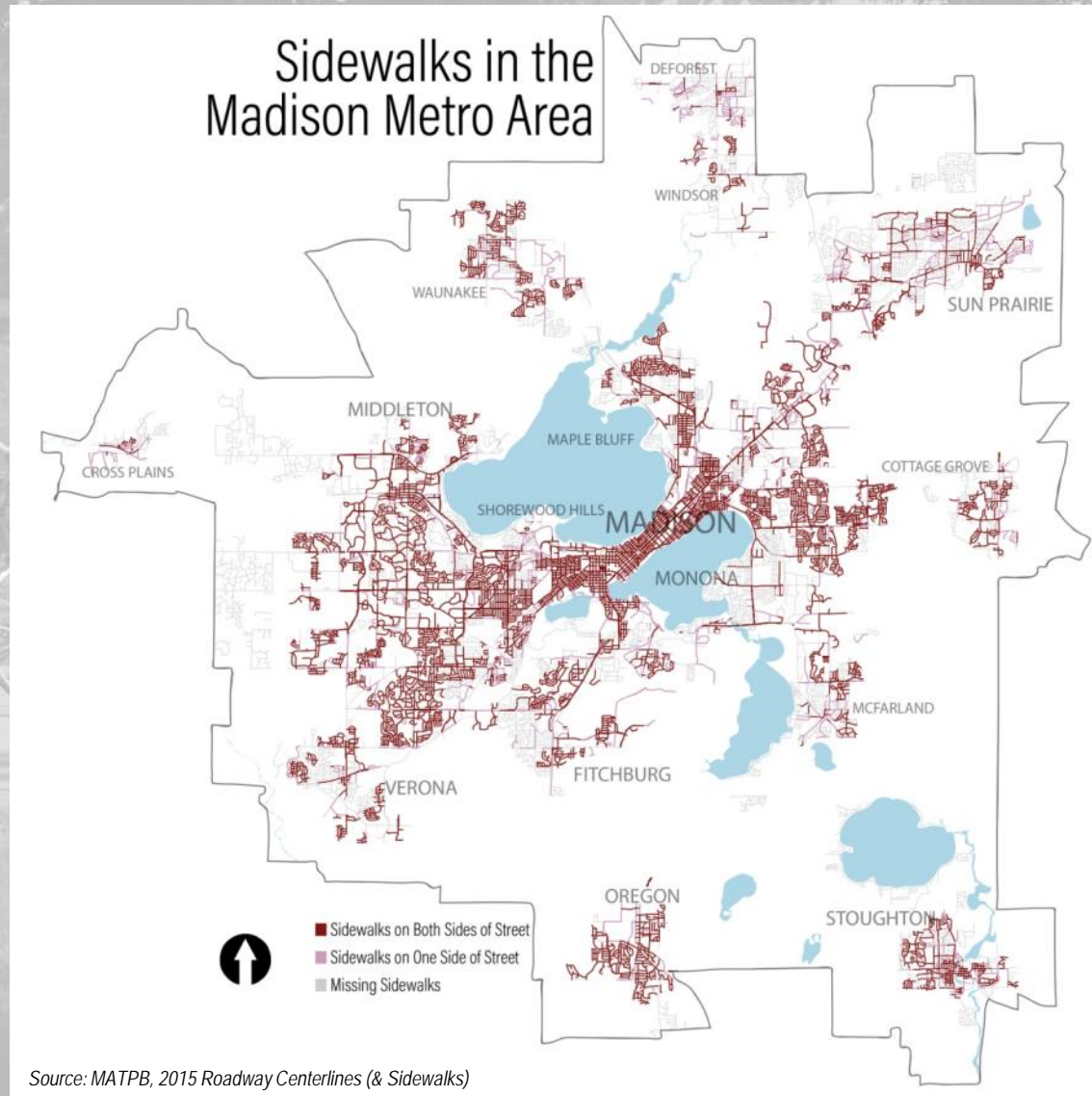
Create interconnected livable places linked to jobs, services, schools, shops, and parks through a multi-modal transportation system that is integrated with the built environment and supports compact development patterns that increase the viability of walking, bicycling, and transit.

Performance Measures

1. Miles of Pedestrian Facilities
2. Miles of Bicycle Facilities
3. BCycle Utilization
4. Active Living Index Scores

Create Connected Livable Neighborhoods and Communities

Miles of Pedestrian Facilities



Desired:



Actual:



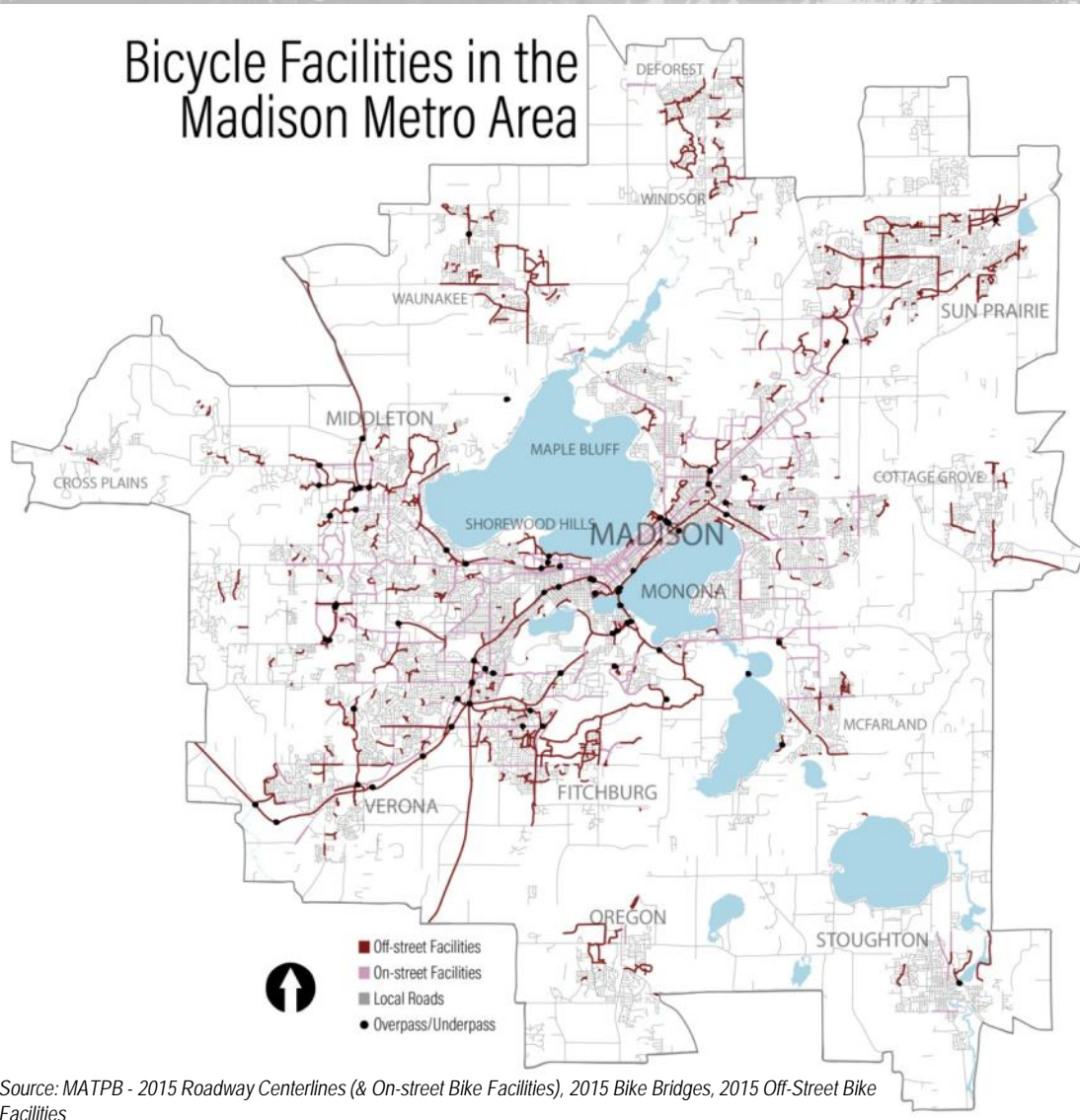
1,339 miles of pedestrian facilities in metro area, a 26 mile increase since last year.

BASELINE YEAR

Create Connected Livable Neighborhoods and Communities

Miles of Bicycle Facilities

Bicycle Facilities in the Madison Metro Area



Desired:

Actual:



2015 Bike Friendly Cities: Madison (Platinum), Fitchburg (Gold), Monona, and Middleton (Bronze)

Create Connected Livable Neighborhoods and Communities

BCycle Utilization

BCycle Station in
Madison Metro Area



MAPLE BLUFF

SHOREWOOD HILLS

MADISON

MONONA

See Inset

Off-street Facilities
On-street Facilities
BCycle Station

Source: MATPB - 2015 Roadway Centerlines (& On-street Bike Facilities), 2015 Off-Street Bike Facilities; BCycle - 2015 Station Locations

BCycle in the Madison Metro Area

Year	Trips	Members	Miles Biked	Avg Trip in Miles	Stations	Pop Served
2011*	18,501	475	39,618	2.14	27	39,664
2012	63,325	2,150	94,402	1.49	35	42,862
2013	81,662	1,843	173,940	2.13	35	42,862
2014	104,274	2,622	219,108	2.10	39	45,091
2015	101,339	2,789	307,241	3.03	40	45,465

*Partial year of data. Service Launched in June 2011.

Desired:



Actual:



Average trip length increased 44% from 2.1 to 3.0 miles. Ridership experienced a slight drop. Mileage Increased nearly 30%.

BASELINE YEAR

Create Connected Livable Neighborhoods and Communities

Active Living Index



Active Living Index Rank by Score

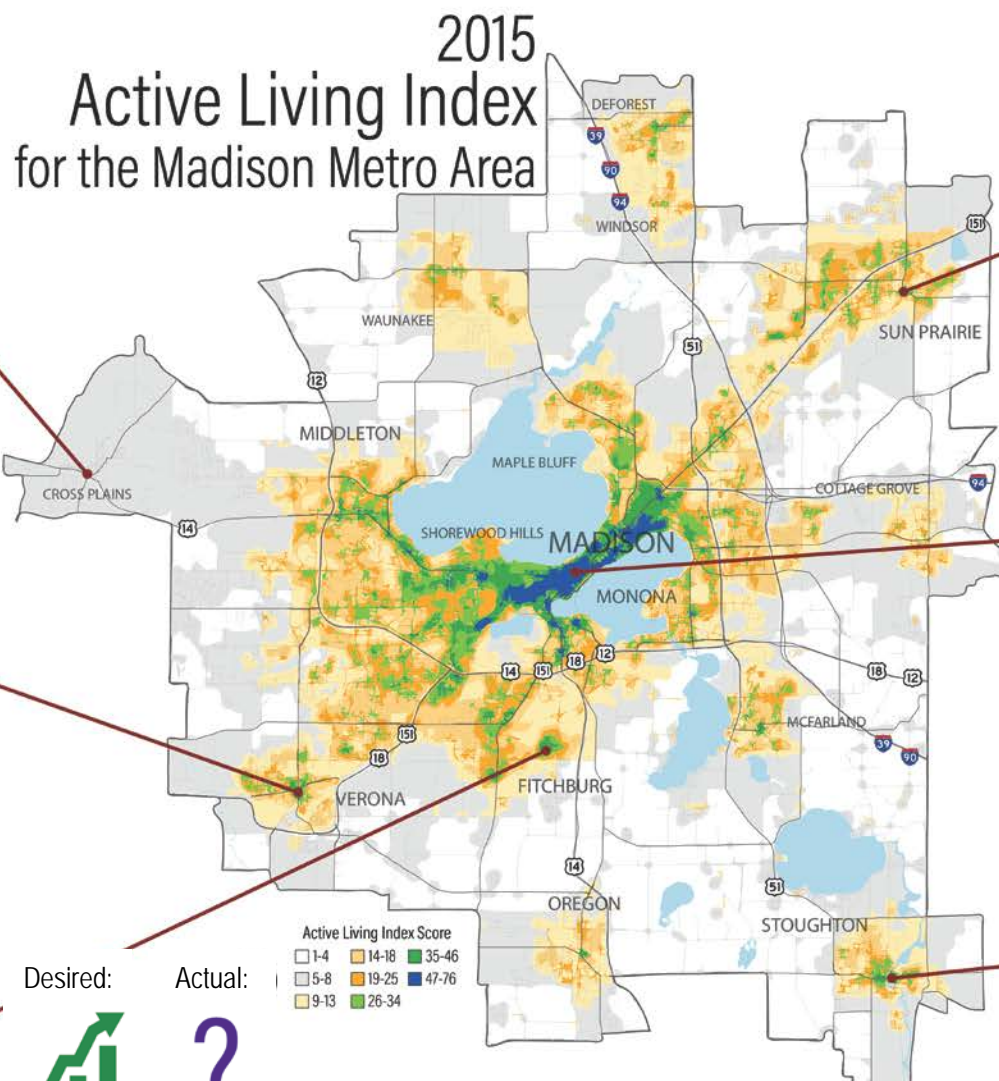
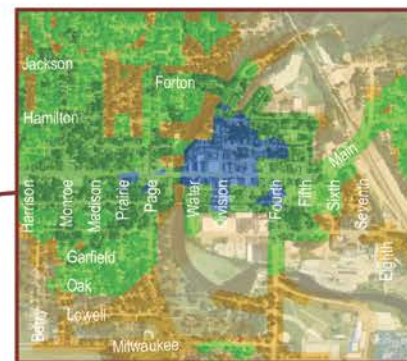
Rank	Community	Score	Maximum	Minimum
1	Shorewood Hills	27.1	57.3	9.2
2	Madison	20.2	75.8	1.5
3	Middleton	19.6	53.0	2.6
4	Maple Bluff	19.2	47.0	7.2
5	Fitchburg	19.2	52.2	2.5
6	Sun Prairie	18.8	42.2	3.0
7	Monona	18.7	52.8	3.3
8	Verona	17.0	55.1	2.7
9	Waunakee	16.3	38.4	5.4
10	Stoughton	15.8	52.4	4.0
11	McFarland	15.5	47.0	3.7
12	DeForest	14.5	47.1	1.5
13	Cottage Grove	14.2	33.4	6.0
14	Cross Plains	13.7	39.9	4.3
15	Oregon	13.4	46.6	1.5

New analysis tool created by MPO similar to WalkScore measuring how conducive an area is for active living.

BASELINE YEAR

Create Connected Livable Neighborhoods and Communities

Active Living Index



Desired:

Actual:



Active Living Index Score					
1-4	5-8	9-13	14-18	19-25	26-34
35-46	47-76				

Project is a Collaboration between MATPB, CARPC, and City of Madison

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A grayscale background image showing an emergency scene. In the foreground, a silver sedan is partially visible. Several firefighters in full gear are present; one is on the left, another is near the car, and others are further back. A fire truck is visible in the background on the right side. The scene is outdoors on a grassy area next to a road.

Improve Public Health, Safety, and Security

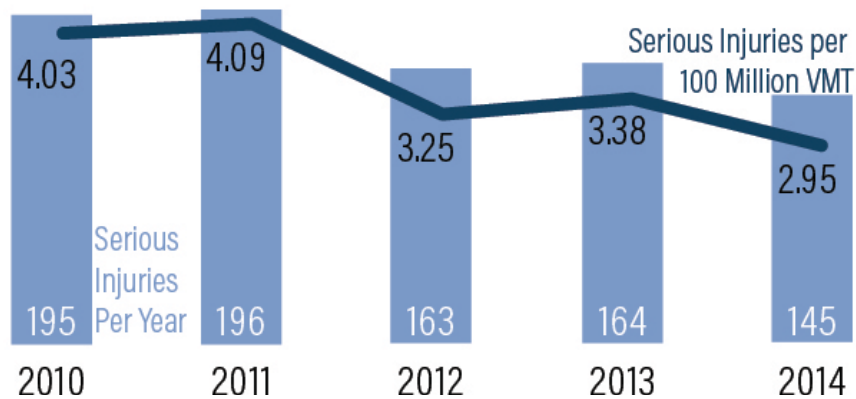
Design, build, operate, and maintain a transportation system that enables people to get where they need to go safely and that, combined with supportive land use patterns and site design, facilitates and encourages active lifestyles while improving air quality.

Performance Measures

1. Number and Rate of Motor Vehicle Crash Fatalities and Serious Injuries
2. Number of Non-Motorized Fatalities and Serious Injuries
3. County-wide Five-Year Rolling Averages

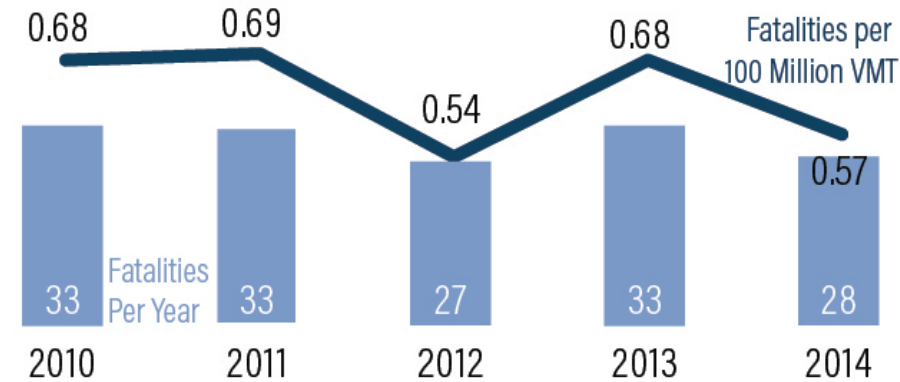
Number and Rate of Motor Vehicle Crash Fatalities and Serious Injuries

Dane County Motor Vehicle Serious Injuries and Rates



Source: WisTransPortal / UW TOPS Lab

Dane County Motor Vehicle Fatalities & Rates



Source: WisTransPortal / UW TOPS Lab

Desired:



Actual:

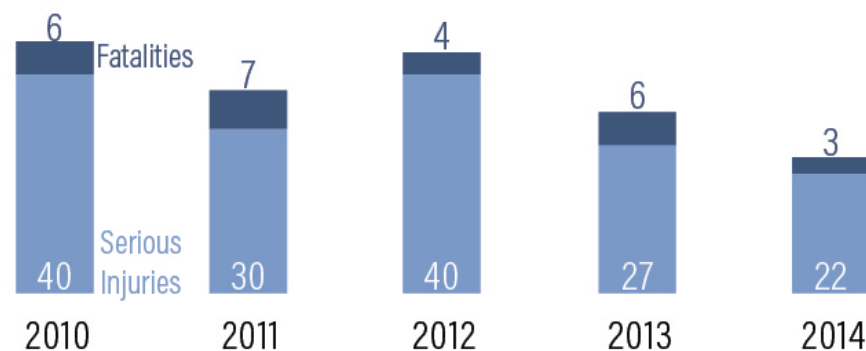


Fatalities and injuries have been falling. 2014 had 25% fewer serious injury crashes than 2010.

Improve Public Health, Safety, and Security

Number of Non-Motorized Fatalities and Serious Injuries and County-wide Five Year Rolling Averages

Dane County Pedestrian and Bicycle Fatalities and Serious Injuries



Source: WisTransPortal / UW TOPS Lab

Five-Year Rolling Averages: Motorized and Nonmotorized Fatalities and Serious Injuries

	2006-2010	2007-2011	2008-2012	2009-2013	2010-2014
Vehicular Fatalities	36.2	34.4	31.2	31.6	30.8
Vehicular Fatality Rate	0.742	0.711	0.645	0.651	0.632
Vehicular Injuries	229.0	216.6	193.4	179.8	172.6
Vehicular Injury Rate	4.697	4.478	4.002	3.702	3.541
Nonmotorized Inj. and Fat.	46.4	45.8	44.0	41.4	37.0

Desired:



Actual:



Pedestrian injuries and fatalities have been declining; 2014 was nearly half of 2010. Rolling averages show steady improvement.

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Support Personal Prosperity and Enhance the Regional Economy

Build, operate, and maintain a transportation system that provides people with affordable access to jobs and enables the exchange of goods and services within the region and to/from other regions.

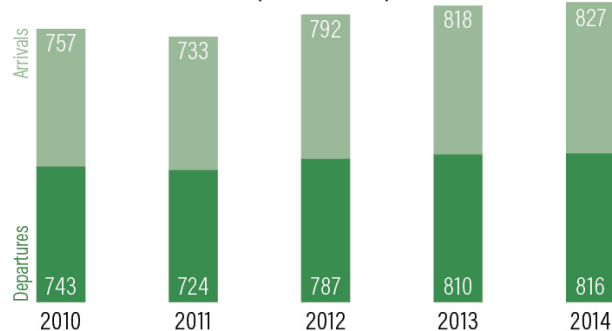
Performance Measures

1. Airline Passenger Traffic
2. Freight Imports and Exports
3. Housing + Transportation Costs
4. Transit Access to Employment

Support Personal Prosperity and Enhance the Regional Economy

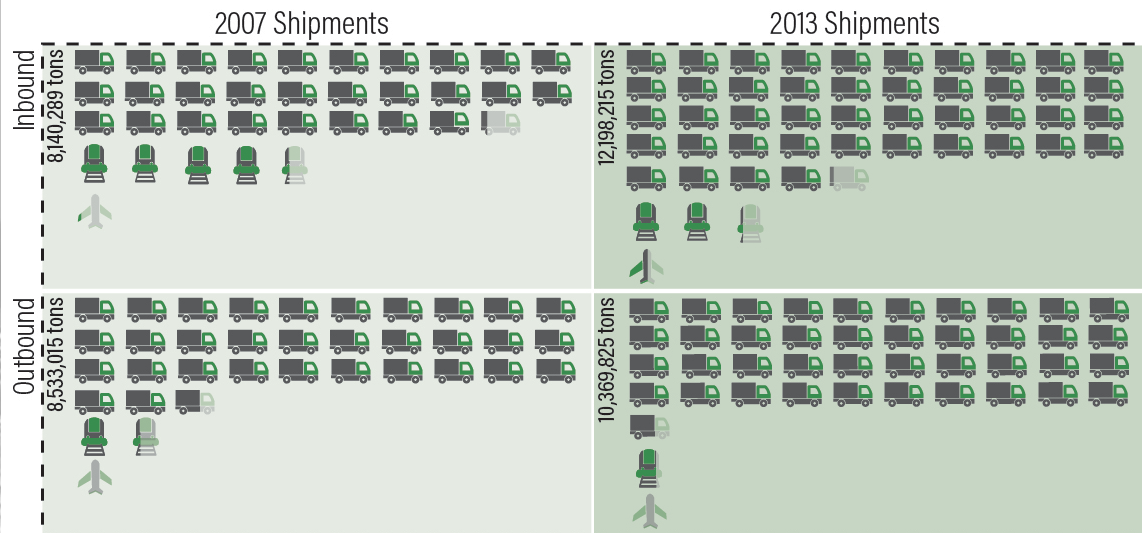
Airline Passenger Traffic and Freight Imports and Exports

Dane County Regional Airport (MSN)
Annual Passenger Volume
(in thousands)



Source: Dane County Regional Airport Monthly Record

Freight Tonnage to and From Dane County



Each symbol represents 250,000 tons of freight - the equivalent of over 83,000 full-sized pickup trucks. Airplane symbol represents air and all other modes.

Source: 2013 HIS Transsearch, 2007 Global Insight Dane County commodity flow data

Desired:



Actual:

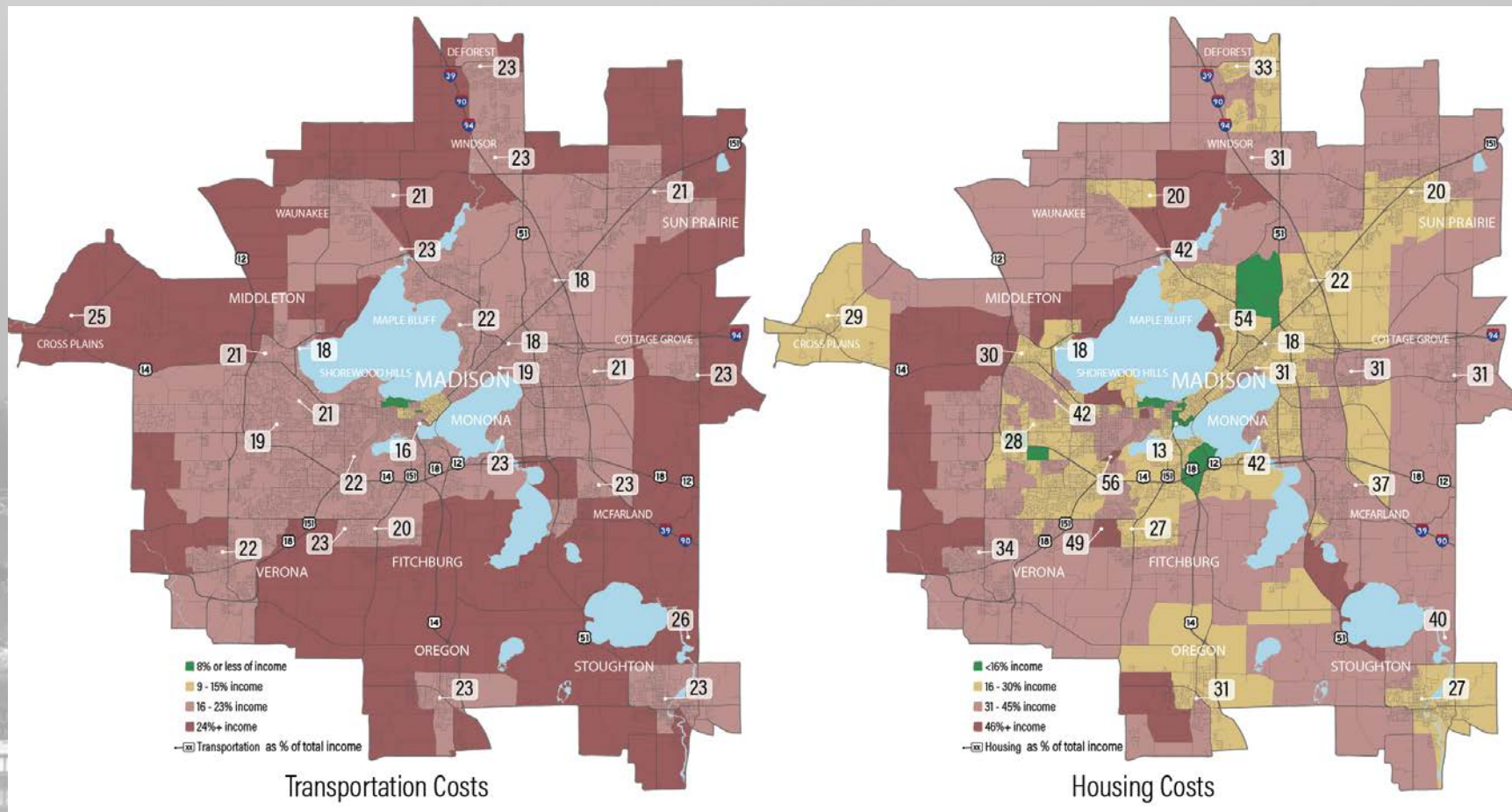


Airport passenger growth steady from 2010-'14. Freight originating from county has surged. Shift from rail to truck for inbound/outbound.

BASLINE YEAR

Support Personal Prosperity and Enhance the Regional Economy

Housing + Transportation Costs



Source: MATPB - 2015 Roadway Centerlines (& On-street Bike Facilities), CNT H+T Scores 2011 & 2013

Desired:



Actual:



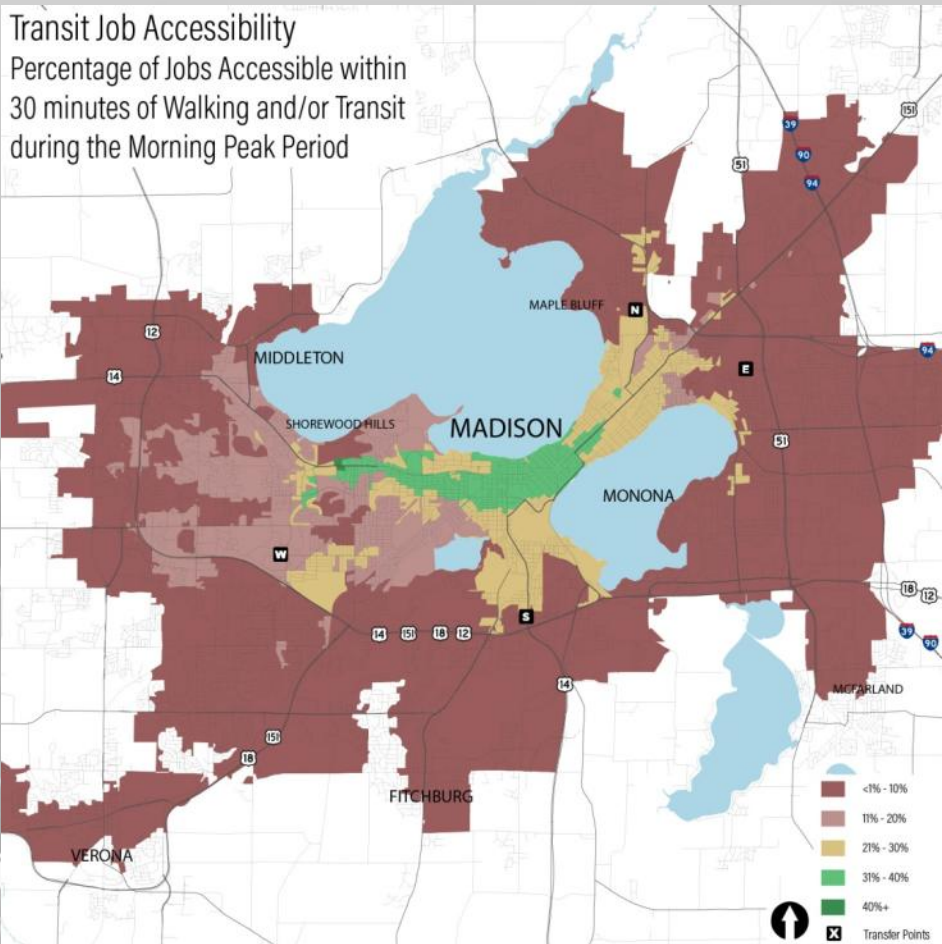
Increases in housing costs between 2011 and 2013 caused many parts of metro area to become unaffordable for families on a county-typical income.

BASLINE YEAR

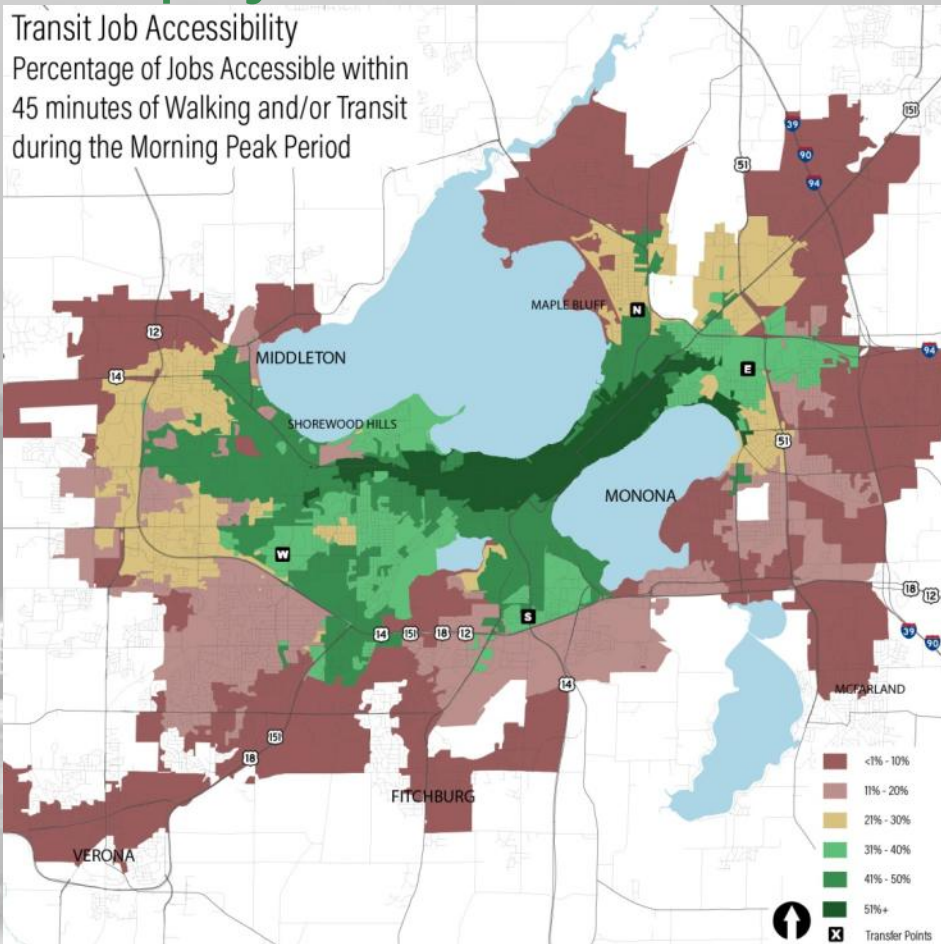
Support Personal Prosperity and Enhance the Regional Economy

Transit Access to Employment

Transit Job Accessibility
Percentage of Jobs Accessible within
30 minutes of Walking and/or Transit
during the Morning Peak Period



Transit Job Accessibility
Percentage of Jobs Accessible within
45 minutes of Walking and/or Transit
during the Morning Peak Period



Source: MATPB - 2015 Roadway Centerlines (& On-street Bike Facilities), Metro transit schedules, routes, and stop locations

Desired:

INCREASE

Actual:

UNKNOWN

The average transit commuter spends about 33 minutes getting to work, compared with 20 minutes for other modes.

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Improve Equity for All that Use the Transportation System

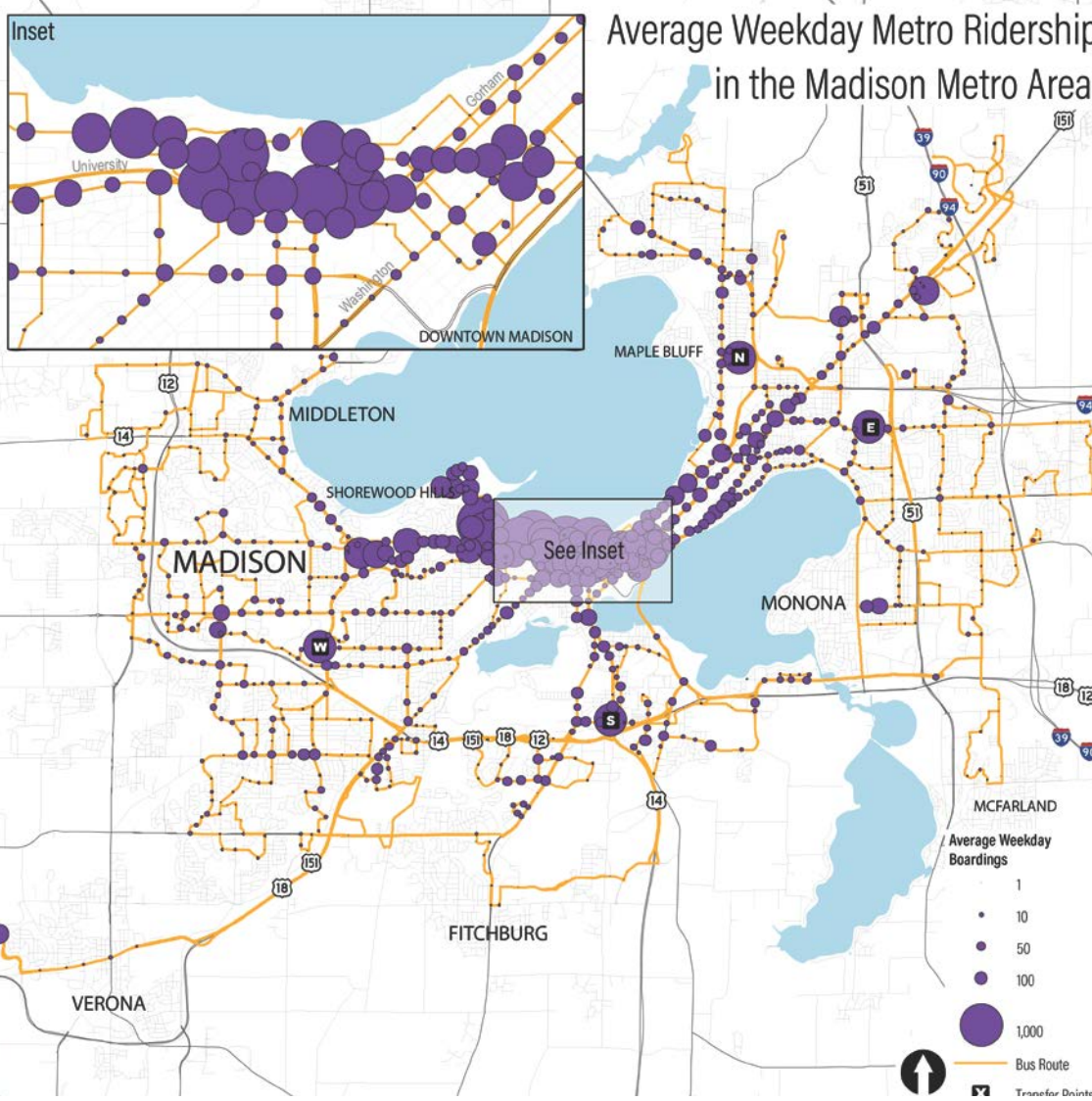
Provide an equitable level of transportation facilities and services for all regardless of age, ability, race, ethnicity, or income.

Performance Measures

1. Transit Ridership
2. Specialized Transportation Ridership
3. Fixed-Route Transit Service Area
4. Transit Coverage for Underrepresented Groups

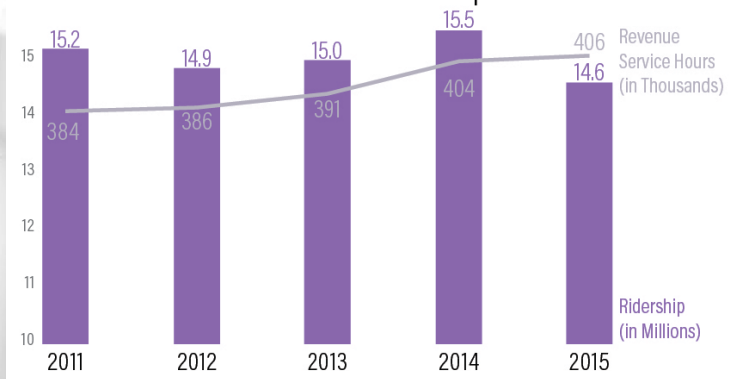
Improve Equity for All that Use the Transportation System

Transit Ridership



Source: MATPB - 2015 Roadway Centerlines (& On-street Bike Facilities), Metro transit schedules, routes, and stop locations

Metro Transit Fixed-Route Ridership and Service Hours



Desired:



Actual:

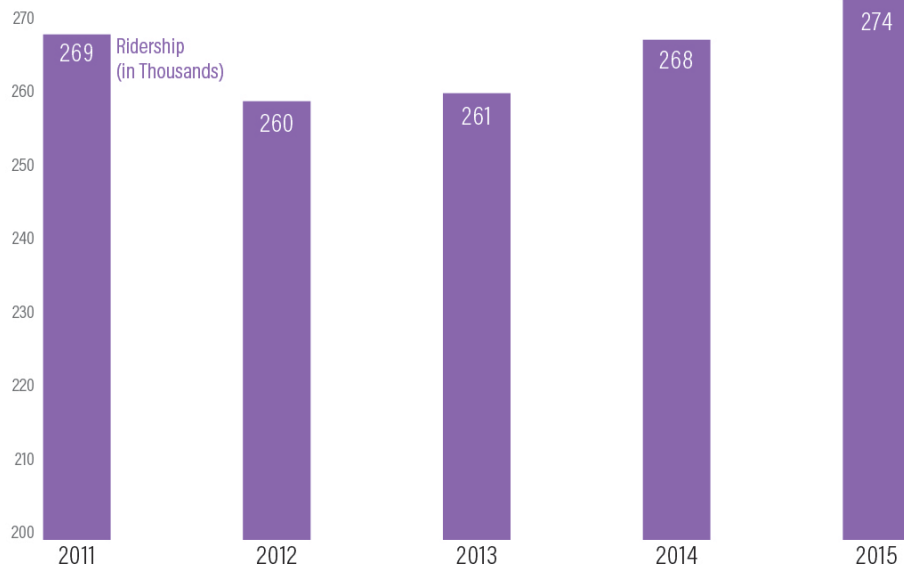


Gas prices dropped 30% between 2014 and 2015 and winter 2015 was exceptionally warm. This may have contributed to declines in ridership.

Improve Equity for All that Use the Transportation System

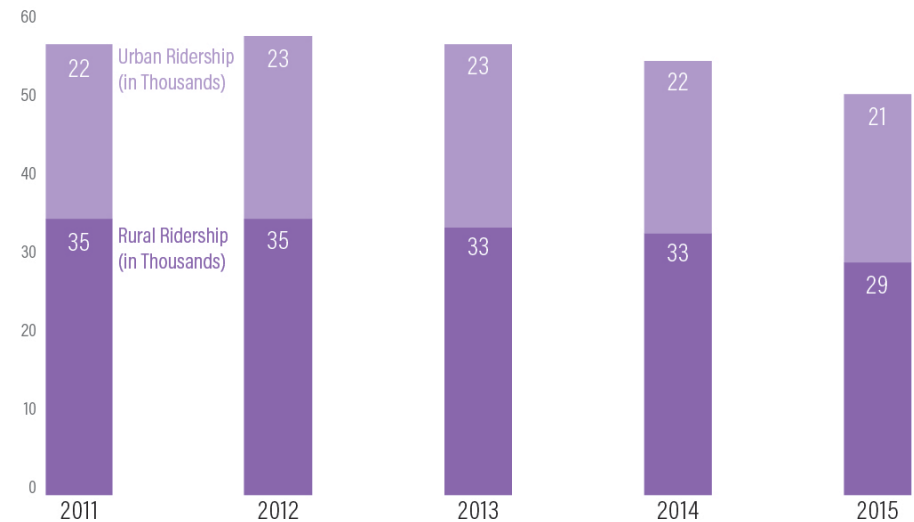
Transit Ridership

Metro Paratransit Ridership



Source: NTD/Metro Transit

Dane County Group Ride Program Ridership



Source: Dane County

Desired:



Actual:

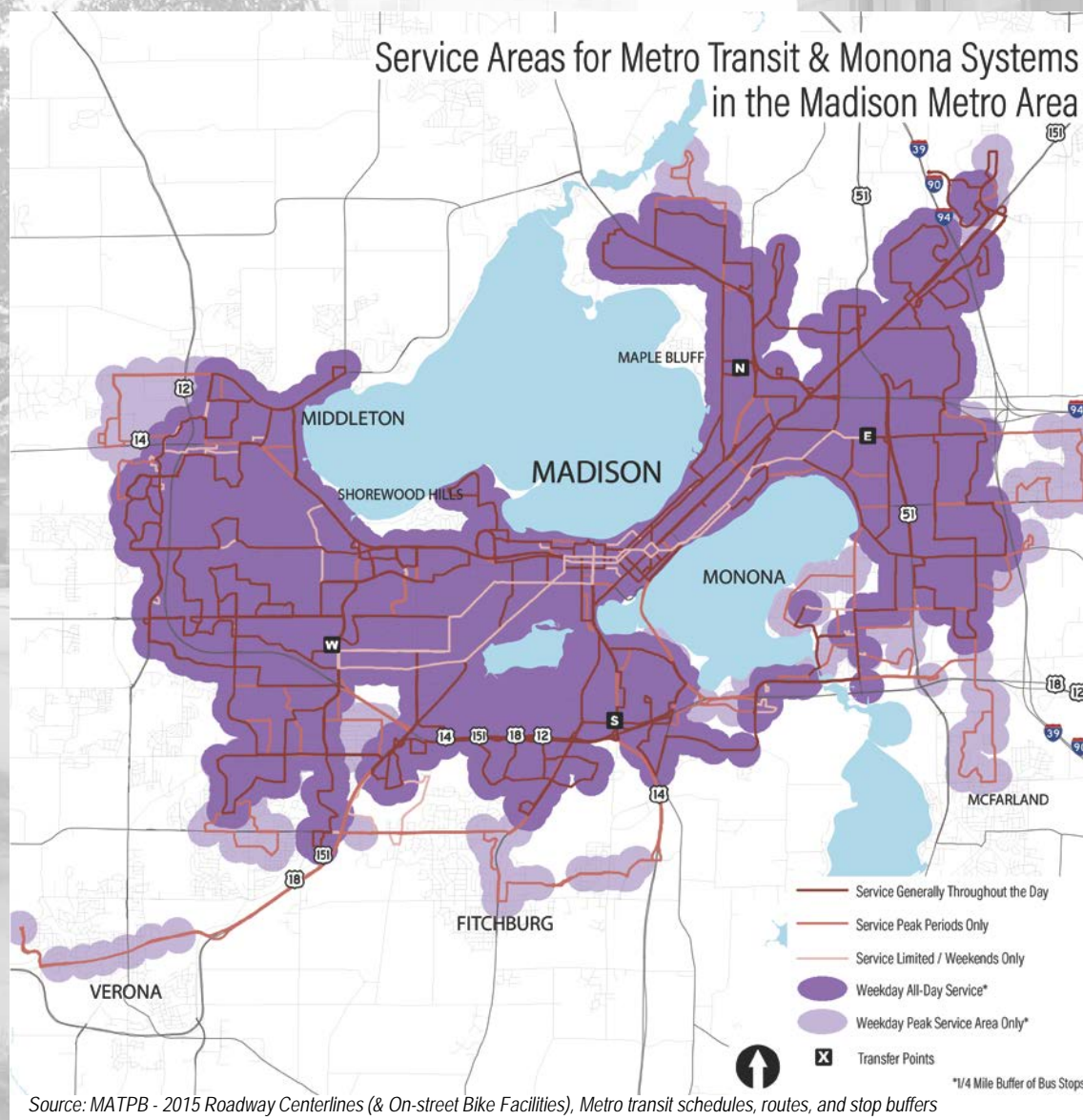


Paratransit is urban, while GRP is suburban and rural.

BASELINE YEAR

Improve Equity for All that Use the Transportation System

Fixed-Route Transit Service Area



Desired:



Actual:



UNKNOWN

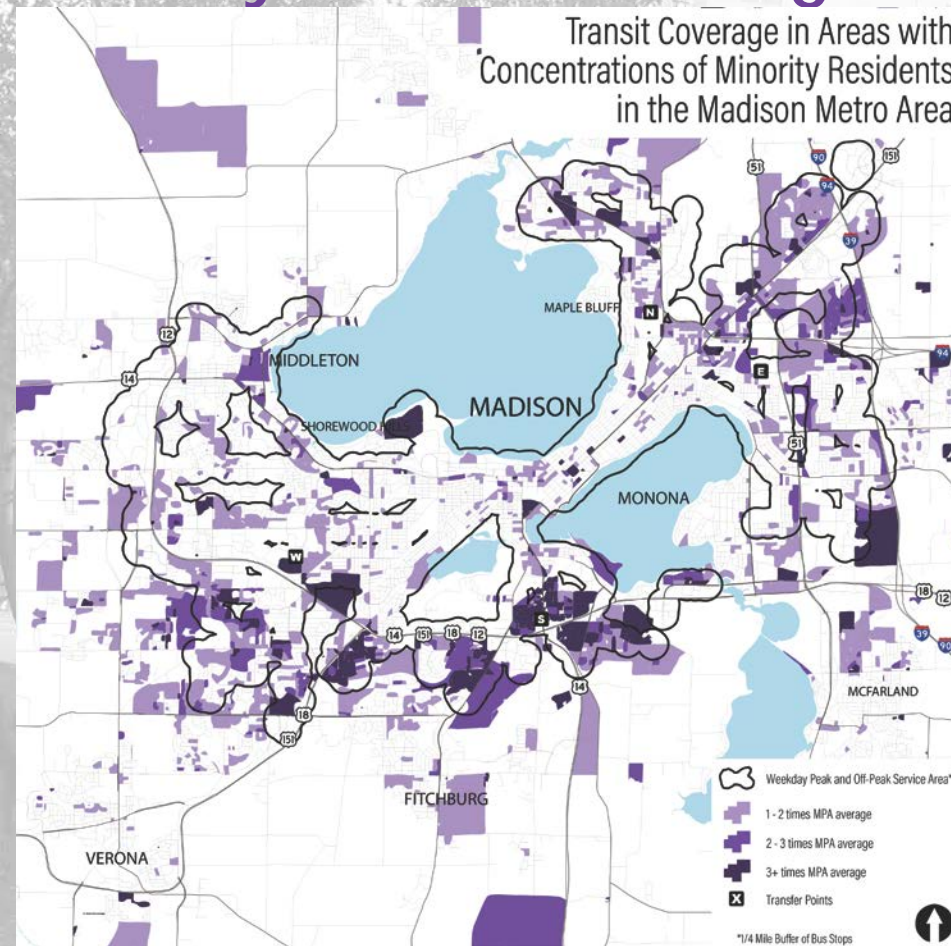
Peak period service covers 71% of metro area residents. All-day service covers 65% of metro area residents.

BASELINE YEAR

Improve Equity for All that Use the Transportation System

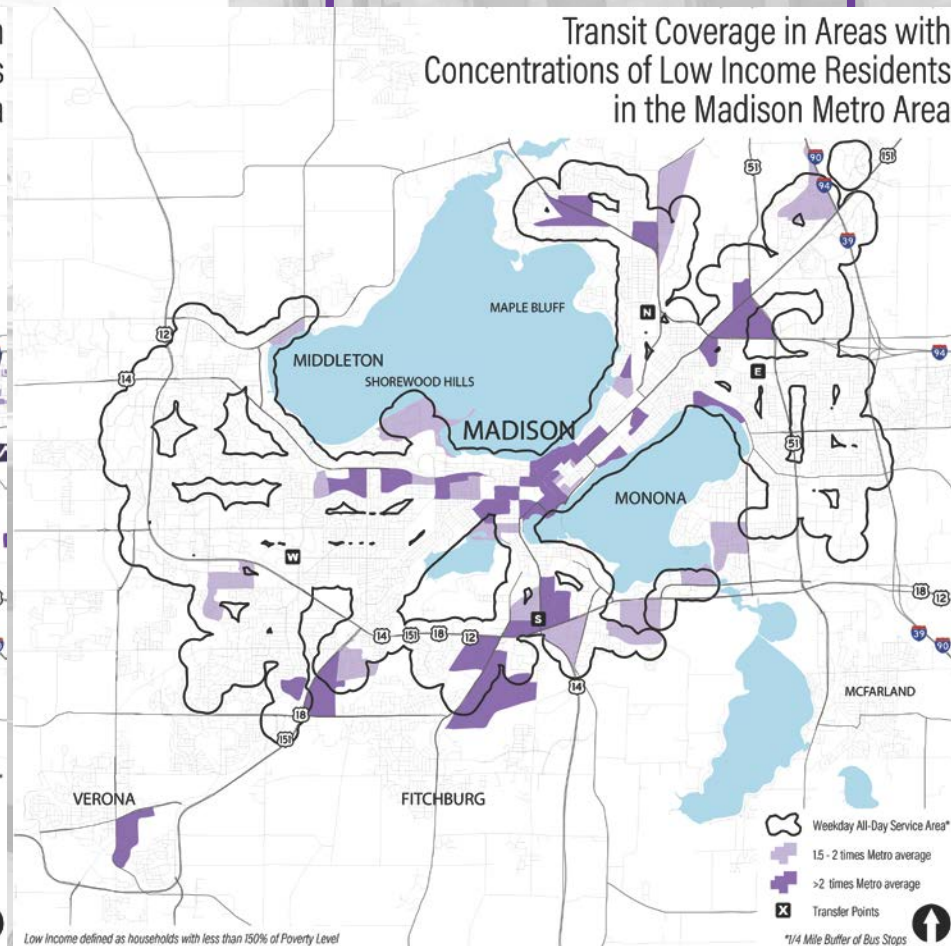
All Day Transit Coverage for Underrepresented Groups

Transit Coverage in Areas with Concentrations of Minority Residents in the Madison Metro Area



Source: Metro Transit routes and stops. US Census 2010 minority population by Census block.

Transit Coverage in Areas with Concentrations of Low Income Residents in the Madison Metro Area



Source: Metro Transit routes and stops. CTPP 2010 poverty level by TAZ

Desired:

Actual:



?

UNKNOWN

Though minorities comprise 17% of the metro population, they constitute 27% of transit riders. 29% of all riders have incomes below \$35,000.

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Reduce the Environmental Impact of the Transportation System

Ensure that the transportation system is designed, built, operated, and maintained in a way that protects and preserves the natural environment and historic and cultural resources, and minimizes air pollutant emissions.

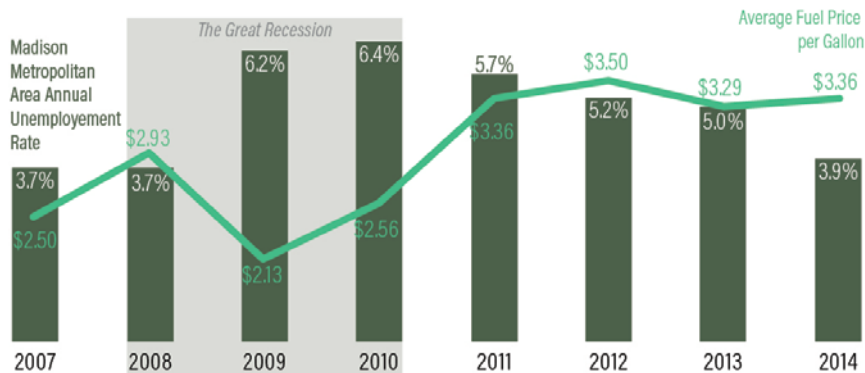
Performance Measures

1. Vehicle Miles Traveled
2. Mode of Transportation to Work
3. Air Quality

Reduce the Environmental Impact of the Transportation System

Vehicle Miles Traveled

Madison Metro Area Unemployment Rate &
Average Annual per Gallon Fuel Prices
(inflation adjusted to 2014)



Average Daily Vehicle Miles Traveled (VMT) and
Average Annual per Gallon Fuel Prices
(inflation adjusted to 2014)



Source: WisDOT Forecasting Section, BLS, and EIA

Desired:



Actual:

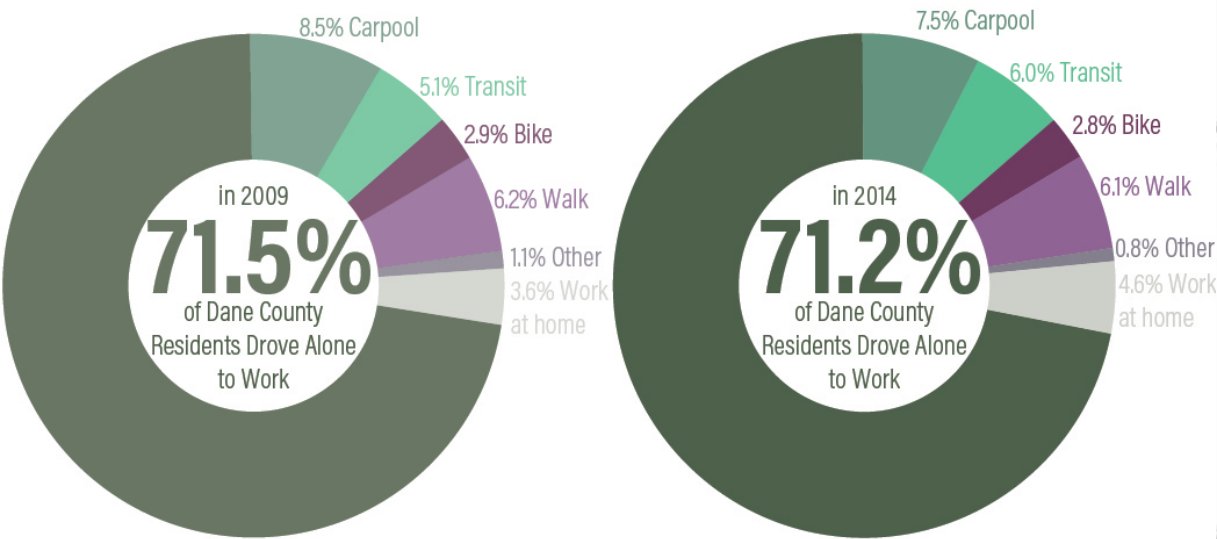


2015 gas price drops will have a major impact on 2015 VMT. In the future, connected/autonomous vehicle may spur VMT growth.

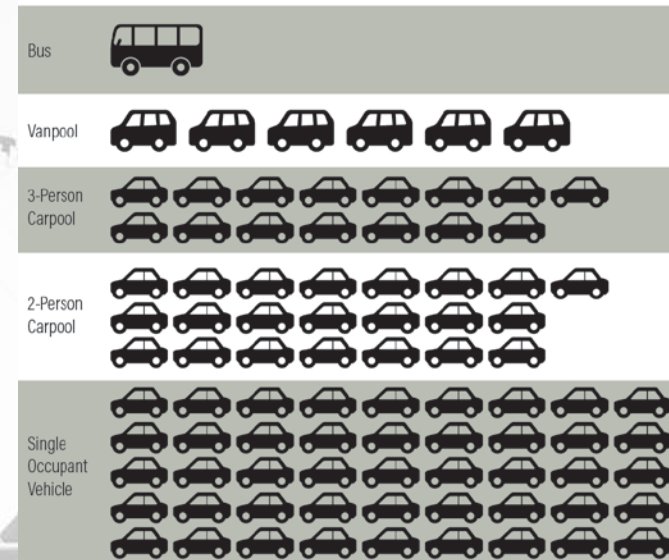
Reduce the Environmental Impact of the Transportation System

Mode of Transportation to Work

Mode of Transportation to Work in Dane County



Number of Vehicles Needed to Carry 45 People



Source: ACS

Desired:

Actual:

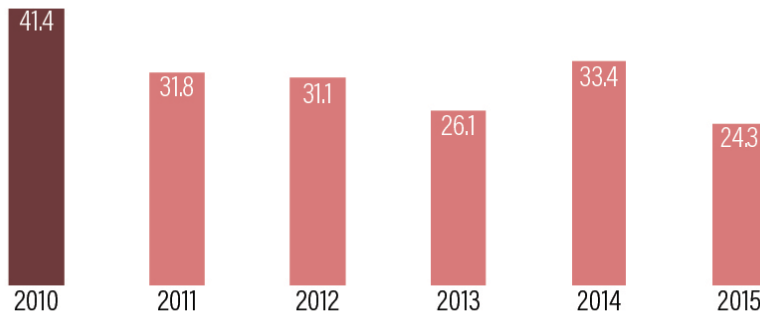


Changes in non-SOV preference are significant – less carpooling and more transit and telecommuting, resulting in fewer vehicle on the road.

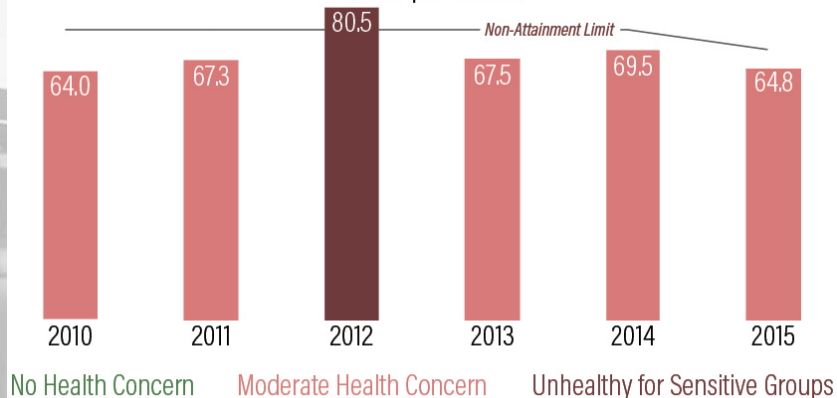
Reduce the Environmental Impact of the Transportation System

Air Quality

24-Hour PM_{2.5} Levels*
in Micrograms/Cubic Meter (LC)



8 Hour Ozone Levels*
in Parts per Billion



*Average of four highest reading days in the year.

Source: EPA (left), CNT (right)

Dane County Vehicular Pollution Facts 2015



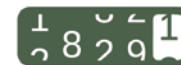
\$12,847

Annual Transportation Costs



1.75

Autos Per Household



21,865

Vehicle Miles Traveled
per Household



10.01

Annual Tons of Greenhouse Gas
Emissions per Household

Desired:

Actual:



Particulate matter in the region is low; however, ozone averages are of moderate concern and have been for some time.

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Advance System-wide Efficiency, Reliability, and Integration Across Modes

Design, build, operate, and maintain an efficient transportation system with supportive land use patterns that maximizes mobility, minimizes unexpected delays, and provides seamless transfers between all modes.

Performance Measures

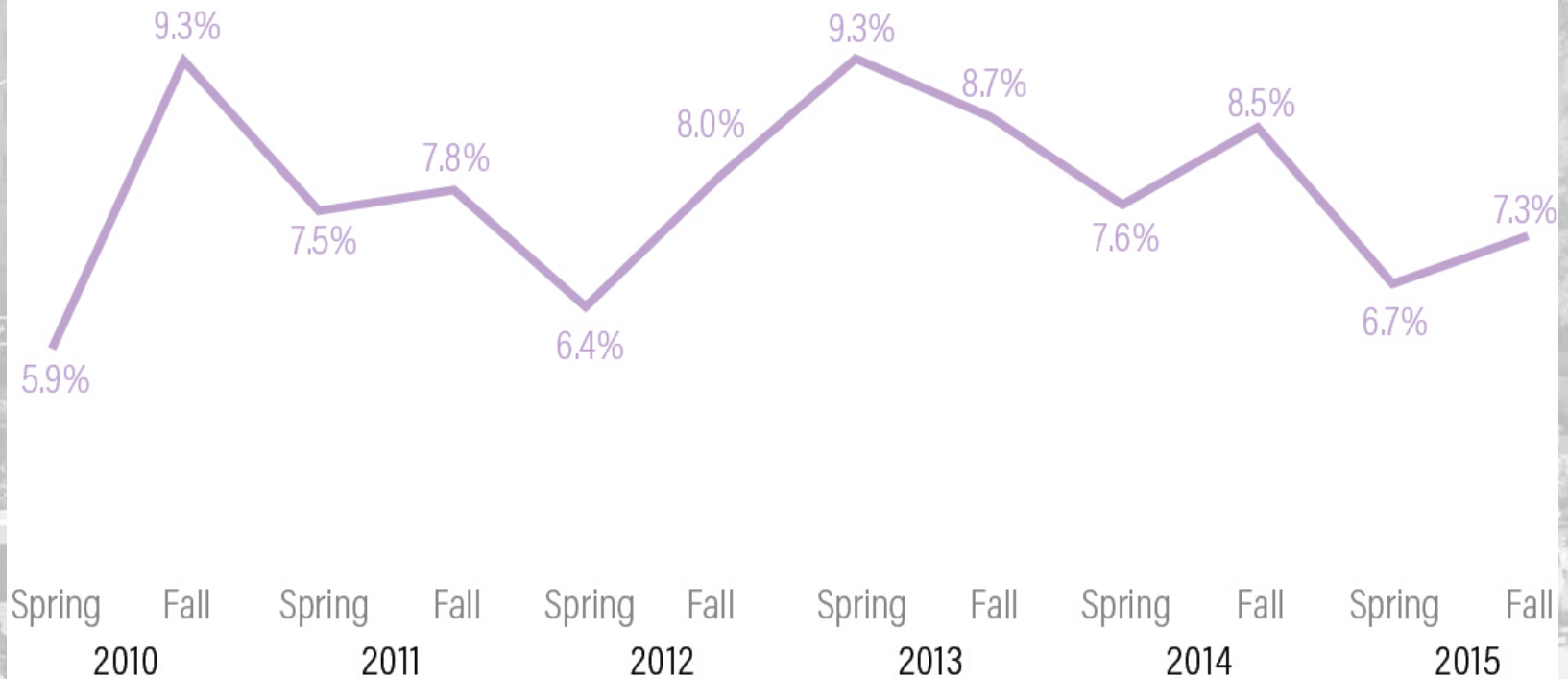
1. Transit On-time Performance
2. Percent of Key Destinations Served by Transit
3. Roadway Congestion
4. Roadway Reliability

Advance System-wide Efficiency, Reliability and Integration Across Modes

Transit On-time Performance

Madison Metro Transit On-Time Performance

Buses Arriving 5 or More Minutes Late to Time Points



Source: EPA (left), CNT (right)

Desired:

Actual:

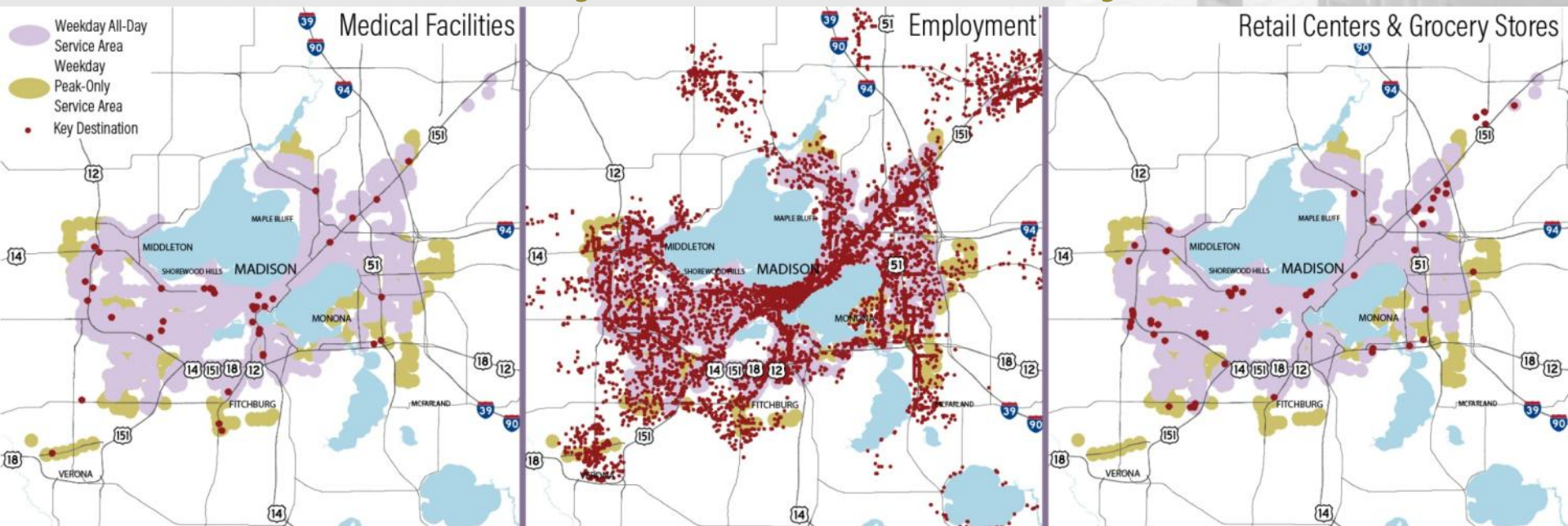


Metro's time-transfer system requires a very high level of on-time performance. Performance has improved since 2013.

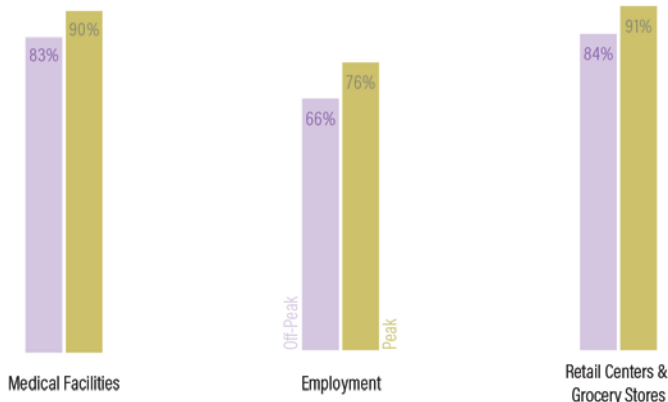
BASLINE YEAR

Advance System-wide Efficiency, Reliability and Integration Across Modes

Percent of Key Destinations Served by Transit



Percent of Destinations Served by Transit
within Metropolitan Planning Area Boundary, 2015



Source: MATPB - 2015 Roadway Centerlines, Metro Transit Station Buffers, InfoUSA POIs

Desired:

Actual:



UNKNOWN

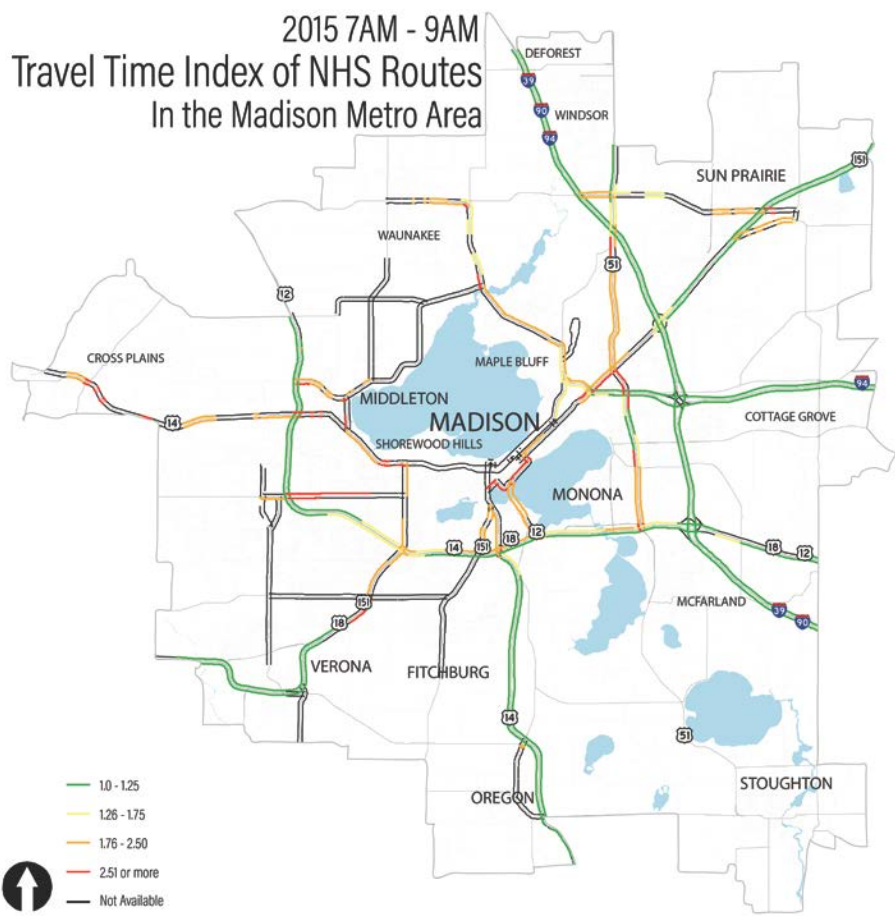
The difference in accessibility is not dramatic – no more than 10% between peak and off-peak for any destination type.

BASLINE YEAR

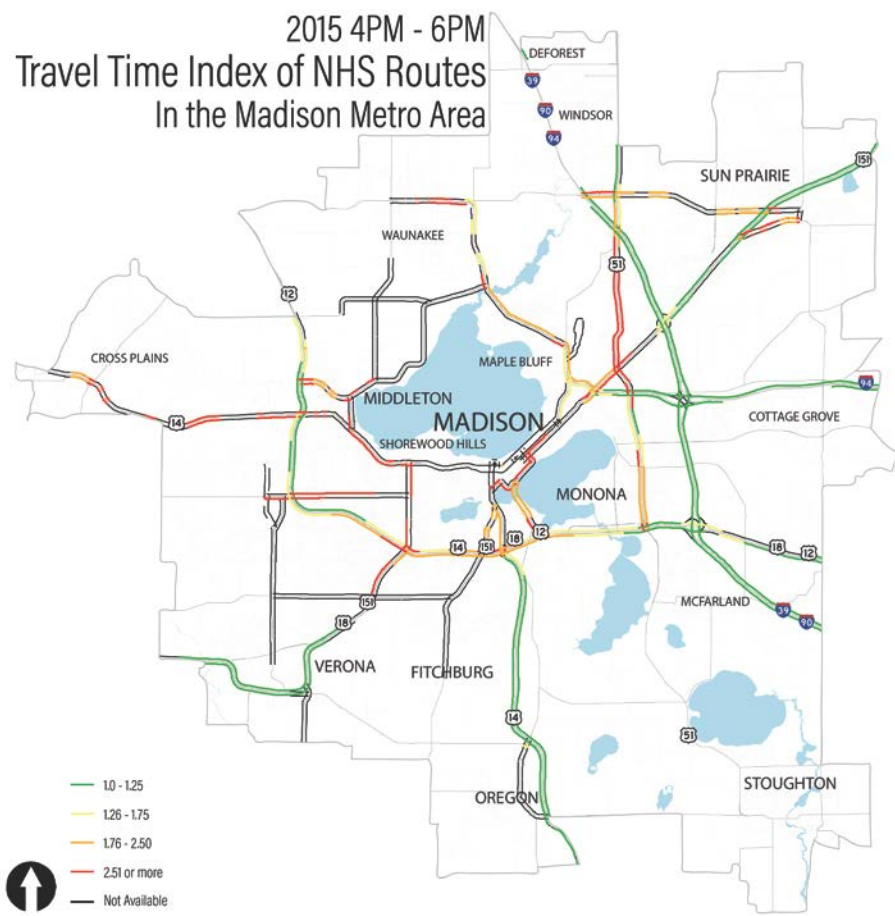
Advance System-wide Efficiency, Reliability and Integration Across Modes

Roadway Congestion

2015 7AM - 9AM
Travel Time Index of NHS Routes
In the Madison Metro Area



2015 4PM - 6PM
Travel Time Index of NHS Routes
In the Madison Metro Area



Desired:



Actual:



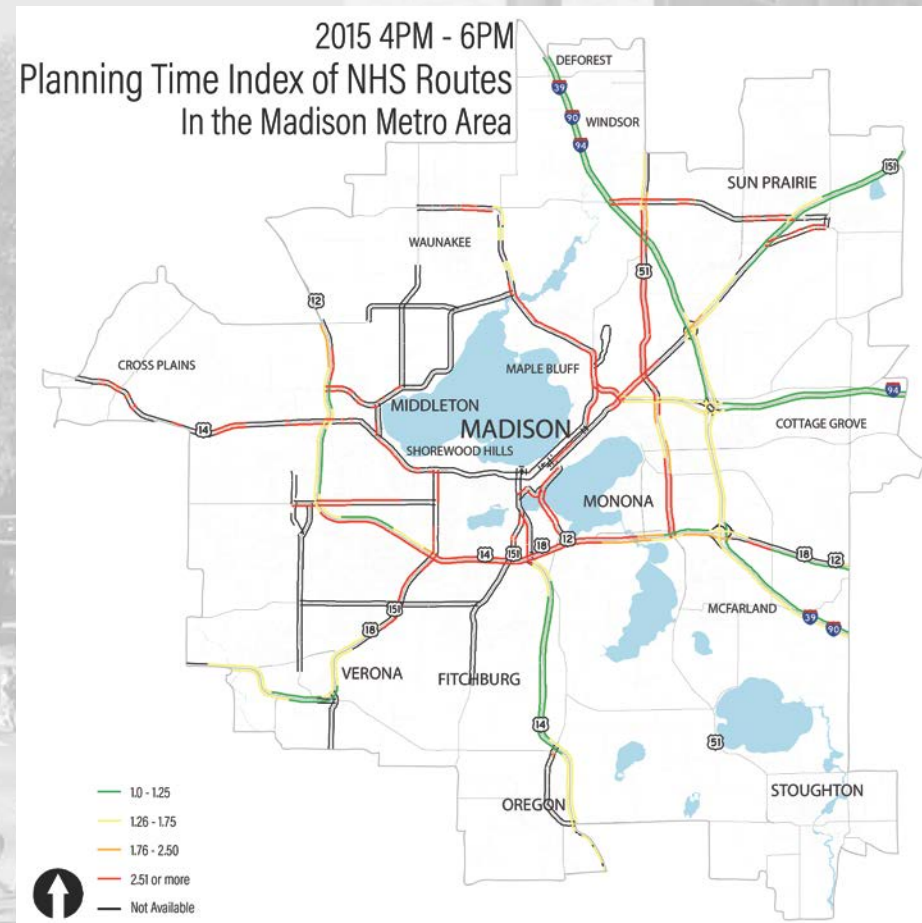
Source: MATPB - 2015 Roadway Centerlines, NPMRDS via RITIS

System-wide TTI during morning rush hour is 1.49, during afternoon rush hour is 1.60.

BASLINE YEAR

Advance System-wide Efficiency, Reliability and Integration Across Modes

Roadway Reliability



Source: MATPB - 2015 Roadway Centerlines, NPMRDS via RITIS

Desired:	Actual:

System-wide PTI during morning rush hour is 2.63, during afternoon rush hour it is 3.12.

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Establish Financial Viability of the Transportation System

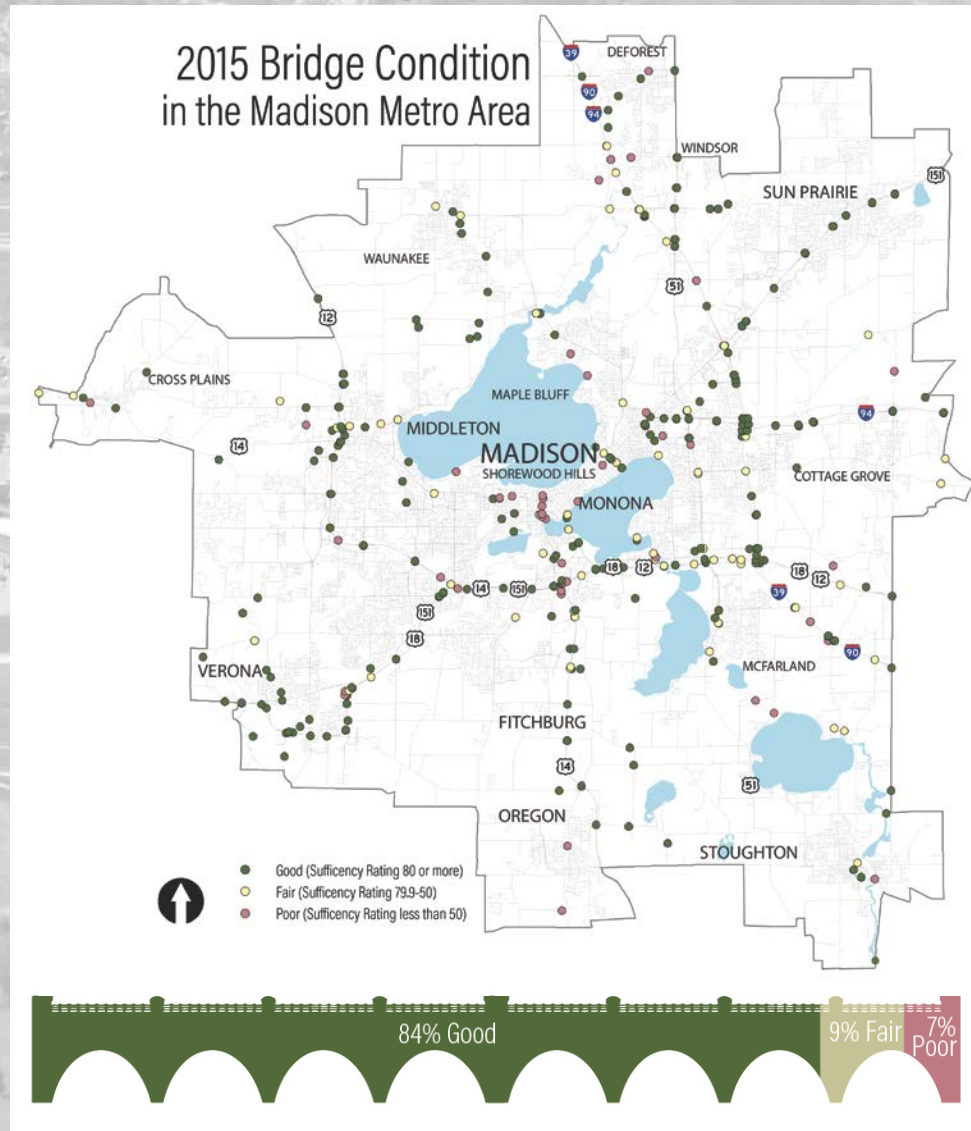
Achieve and maintain a state of good repair for the existing transportation system, invest in cost-effective projects, and ensure adequate, reliable funding to meet current and future needs.

Performance Measures

1. Bridge Condition
2. Roadway Pavement Condition
3. Metro Buses At or Past Replacement Age

Establish Financial Viability of the Transportation System

Bridge Condition



Desired:



Actual:



Source: MATPB - 2015 Roadway Centerlines, WisDOT Bridge Condition via HSI

More than 90% of all bridges are in good or fair condition. This trend has held for more than 5 years.

Establish Financial Viability of the Transportation System

Pavement Condition

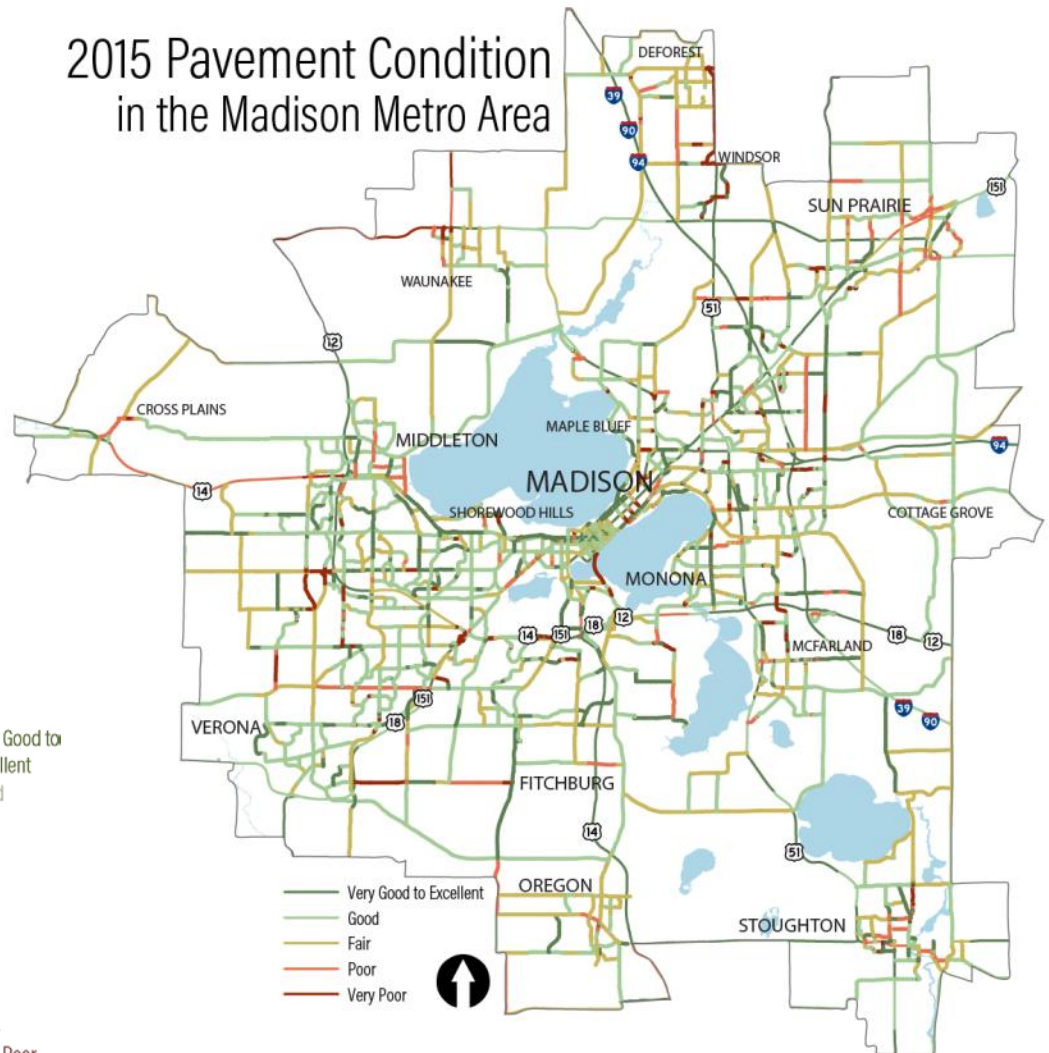
Desired:



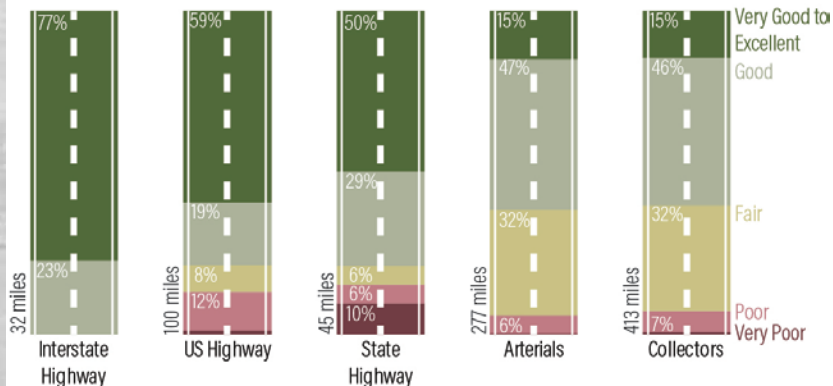
Actual:



2015 Pavement Condition in the Madison Metro Area



2015 Pavement Condition by Roadway Type within Metropolitan Planning Area Boundary

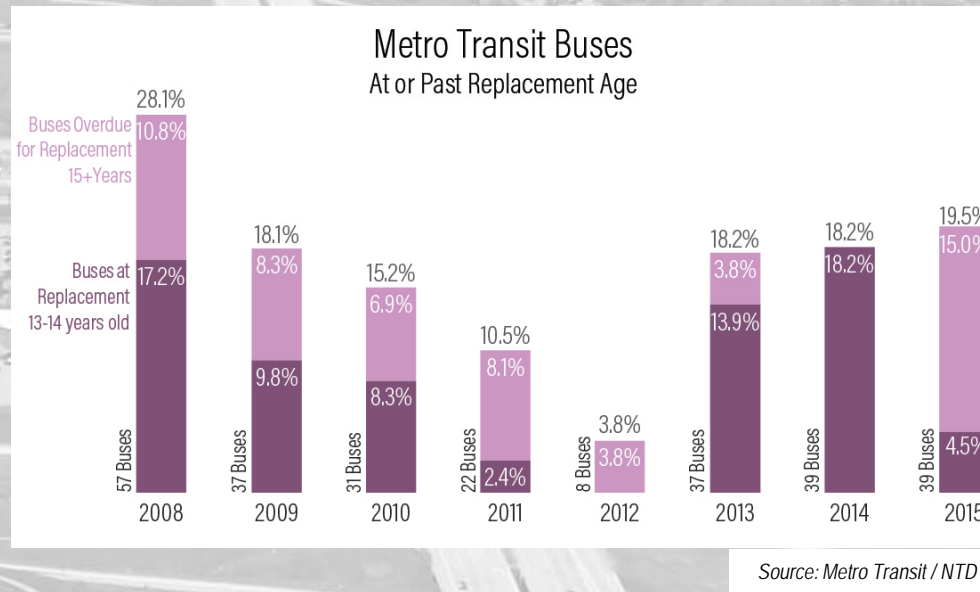


Source: MATPB - 2015 Roadway Centerlines, PASER, WisDOT PCI

65% of all high-volume, regional mobility roadways (collector or higher) are in good or excellent condition, 27% fair, 8% poor or very poor.

Establish Financial Viability of the Transportation System

Buses At or Past Replacement Age



Desired:



Actual:



Average bus ages have returned to pre-ARRA levels.

Performance Measures Overview

Measure	Desired Trend	Actual Trend	Analysis
Miles of Pedestrian Facilities	 Increase in miles of facilities	 Increase in miles of facilities	26 miles of pedestrian facilities were completed in 2015.
Miles of Bicycle Facilities	 Increase in miles of facilities	 Unknown	This is the first year comprehensive data has been collected using this methodology.
BCycle Utilization	 Increase in utilization	 Increase in utilization	BCycle miles biked increased by nearly 1/3 and trip lengths increase by 44%.
Active Living Index Score	 Increase in community scores	 Unknown	This is the first year comprehensive data has been collected using this methodology.
Injuries and Fatalities	 Decline in injuries and fatalities	 Decline in injuries and fatalities	Using five-year rolling averages, motorized and non-motorized fatalities and serious injuries have declined nearly every year.
Airline Passenger Traffic	 Increase in passengers	 Increase in passengers	Passenger volume has been increasing, rising nearly 9% since 2010.
Freight Exports and Imports	 Increase in total freight tonnage	 Increase in total freight tonnage	Inbound and outbound freight volumes have increased and shifted to on-road options.
Housing + Transportation Costs	 Steady Housing + Transportation Costs	 Steady Housing + Transportation Costs	Combined housing and transportation costs have increased due to a sharp rise in the costs of housing metro-wide.
Transit Access to Jobs	 Increase in job accessibility percentages	 Unknown	This is the first year comprehensive data has been collected using this methodology.
Transit Ridership	 Increase in ridership	 Decline in ridership	A 30% drop in gas prices, strong economy, and mild winter may have contributed to the drop in ridership.
Specialized Transit Ridership	 Steady ridership	 Steady ridership	Metro Paratransit ridership has returned to 2011 levels, while Dane County Group Ride Program ridership has leveled off.
Fixed Route Transit Service	 Increase in coverage and population served	 Increase in coverage and population served	Metro Transit continues to add routes that increase peak and all-day coverage and population served.
Transit Service for Minorities and Low Income Persons	 Increase in coverage and population served	 Unknown	This is the first year comprehensive data has been collected using this methodology.
Vehicle Miles Traveled	 Steady total VMT	 Steady total VMT	VMT data is only available through 2014, meaning gas price drops are not accounted for with this dataset. 2015 may see sharp increase in VMT.
Mode of Transportation to Work	 Decline in # of residents driving to work alone	 Steady # of residents driving to work alone	A little more than 71% of work-related trips are single occupant vehicles and have been for the past five years.
Air Quality	 Decline in air pollution levels	 Steady air pollution levels	Air pollution levels are tied to SOV utilization and VMT - both of which have remained steady over the last five years.
Transit On-time Performance	 Decline in percentage of late buses	 Decline in percentage of late buses	A transfer point-based system relies on strong on-time performance. The system will continue to perform well as routine route modifications take place.
Percent of Key Destinations Served by Transit	 Increase in number of destinations covered	 Unknown	This is the first year comprehensive data has been collected using this methodology.
Roadway Congestion	 Decline in congestion	 Unknown	This is the first year comprehensive data has been collected using this methodology.
Roadway Reliability	 Increase in reliability	 Unknown	This is the first year comprehensive data has been collected using this methodology.
Bridge Condition	 Steady bridge sufficiency ratings	 Steady bridge sufficiency ratings	Federal, State, Regional, and Local agencies have demonstrated a strong commitment to maintaining bridge condition. More than 90% are "good."
Roadway Pavement Condition	 Steady average pavement condition	 Steady average pavement condition	65% of all roads are in "good" or "excellent condition and all Interstate highways in the area have a PCI of at least "good."
Buses at or Past Replacement Age	 Steady percentage of old buses	 Increase in percentage of old buses	The end of ARRA funding has meant the return of fleet age to pre-2008 levels.

Questions?

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