



Connect Greater Madison 2050

# Executive Summary



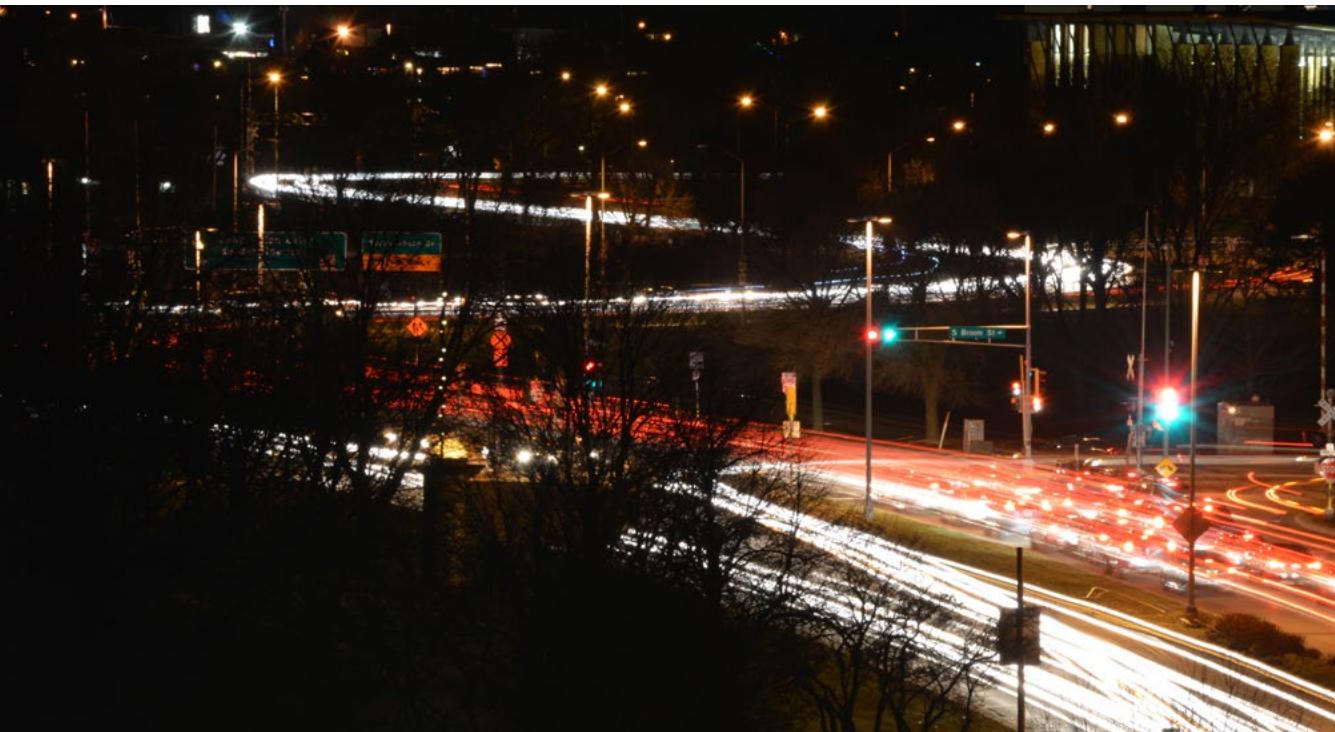
## The Connect Greater Madison 2050 Regional Transportation Plan

The Madison region's transportation system provides critical connections to commerce, employment, health care, education and recreation, and supports the quick and efficient movement of goods and services. A successfully integrated multi-modal transportation system provides multiple options for commuting, shopping, leisure, and regional travel. Transportation affects the affordability of neighborhoods and

communities, as well as the viability of community and economic development. The transportation network also directly influences quality of life in the region. Safe and efficient regional transportation facilities ensure convenient business and leisure travel, while an integrated, well-connected network makes traveling by all modes convenient and enjoyable. Streets can foster community by acting as community gathering and meeting spaces, and high quality transit and bicycling options are important for employers wanting to attract young, educated, skilled workers.

The *Connect Greater Madison 2050* Regional Transportation Plan (RTP) sets the

framework for the future of transportation in the Madison region, identifying how the region intends to invest in the transportation system to accommodate current travel demands and future growth, while setting priorities that balance limited funds. The plan includes strategies to begin addressing important trends such as rapidly evolving transportation technology and the rise of teleworking, as well as strategies to take action on critical issues, including equity and climate change. It articulates how the region intends to build, manage, and operate its multi-modal transportation system to meet important regional economic, transportation,



## Greater Madison MPO Mission and Vision

### MISSION

Lead the collaborative planning and funding of a sustainable, equitable transportation system for the greater Madison region.

### VISION

A sustainable, equitable regional transportation system that connects people, places, and opportunities to achieve an exceptional quality of life for all.

development, and sustainability goals. Finally, the plan ties goals to performance measures and sets targets to track progress.

The RTP is a federally required long-range (20+ years) transportation plan that guides federally funded transportation investments. It must be updated every five years in order for the Madison metropolitan area to be eligible to receive federal funding for transportation projects. The *Connect Greater Madison 2050* plan update builds upon recent and ongoing MPO, WisDOT, and local government projects, plans, and studies, including an MPO traffic safety study, WisDOT's Beltline flex lane and U.S. Highway 51 Highway projects, and Metro's Bus Rapid Transit project and Transit Network Redesign study. Federal rules require the plan to be financially constrained.

The plan complements and supports the Capital Area Regional Planning Commission's (CARPC) Regional Development Framework (RDF), including the future growth scenario built using the RDF goals and strategies and local plans. Together with the RDF, Connect Greater Madison 2050 establishes a regional vision for the future, and roadmap to achieving regional transportation and land use goals through strategic, coordinated investments.

### THE ROLE OF THE GREATER MADISON MPO

The Greater Madison MPO is the federally designated metropolitan planning organization (MPO) responsible for overseeing the transportation planning

## The Connect Greater Madison 2050 Regional Transportation Plan Goals



### GOAL 1: LIVABLE COMMUNITIES

Create connected livable places linked to jobs, services, education, retail, and recreation through a multimodal transportation system that supports compact development patterns, increasing the viability of walking, bicycling, and public transit.



### GOAL 2: SAFETY

Ensure that the transportation system enables all people to get to where they need to go safely with an emphasis on enhanced protection for vulnerable roadway users through use of a safe systems approach, thereby helping to achieve the long-term goal of eliminating fatal and serious traffic injuries.



### GOAL 3: PROSPERITY

Build and maintain a transportation system that provides people with affordable access to jobs, enables the efficient movement of goods and services within the region and beyond, and supports and attracts diverse residents and businesses, creating a shared prosperity that provides economic opportunities for all.



### GOAL 5: ENVIRONMENTAL SUSTAINABILITY

Minimize transportation-related greenhouse gas emissions that contribute to global climate change; avoid, minimize, and mitigate the environmental impacts of the transportation system on the natural environment and historic and cultural resources; and design and maintain a transportation system that is resilient in the face of climate change.



### GOAL 4: EQUITY

Provide convenient, affordable transportation options that enable all people, regardless of age, ability, race, ethnicity, or income, to access jobs, services, and other destinations to meet their daily needs; engage traditionally underrepresented groups; and ensure that the benefits of the regional transportation system are fairly distributed, taking into consideration current inequities resulting from past decisions, and that environmental justice populations are not disproportionately impacted.



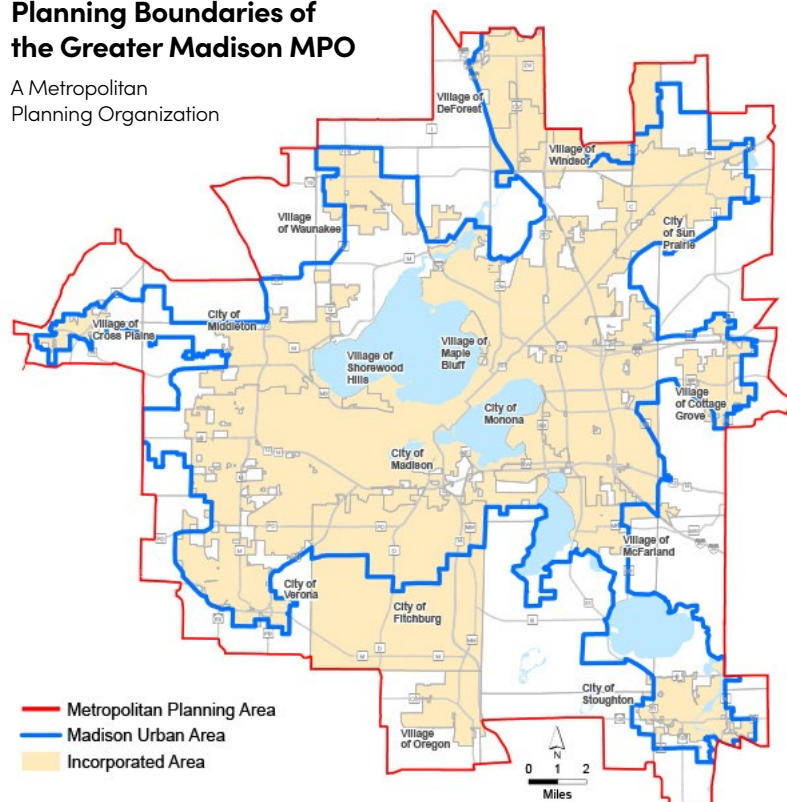
### GOAL 6: SYSTEM PERFORMANCE

Maximize the investment made in the existing transportation system by maintaining it in a state of good repair and harnessing technological advances; promote compact development and travel demand management to minimize the need for new roadway lane-miles and maximize mobility options; and manage the system to maximize efficiency and reliability.

decision-making process for the Madison Metropolitan Planning Area (Map EX-a). The goal of the MPO's planning and programming processes is to build regional agreement on transportation investments that balance roadway, public transit, bicycle, pedestrian, and other transportation needs to support regional land use, economic development, and environmental goals.

### Planning Boundaries of the Greater Madison MPO

A Metropolitan Planning Organization



Map EX-a Planning Boundaries of the Greater Madison MPO

## How Will the Region Grow?

Demographic changes, commuting patterns, economic shifts, and land use development patterns all influence the type, location, and amount of demand on transportation facilities and services. It is particularly important to plan for these changes in the greater Madison region—the fastest growing and changing region in the state. The Madison area is outpacing the rest of the state in all key economic indicators, including job creation, business growth, and construction activity. The area's population is also growing more rapidly than the rest of the state and becoming increasingly diverse.

**Dane County is expected to grow 35% by 2050, adding nearly 195,000 additional people**

### POPULATION

Between 2010 and 2020, while the state population grew just 4%, Dane County grew by 15%—accounting for more than one-third of the state's total population growth. This rapid population growth is expected to continue over the coming decades, as shown in Figure EX-a. Dane County is

### Dane County Projected Population Growth

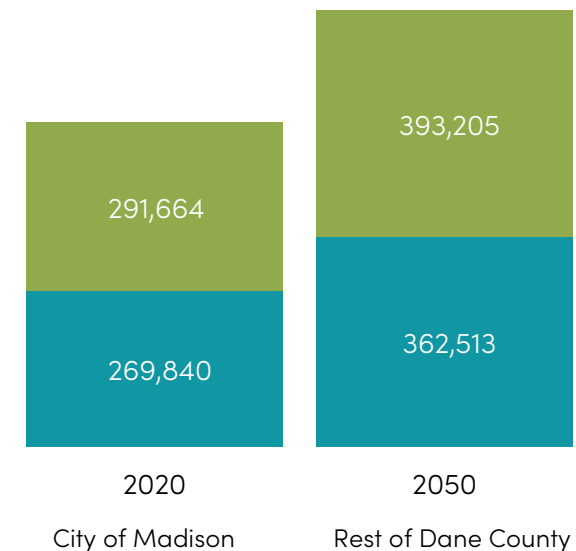


Figure EX-a Dane County Projected Household Growth

### Dane County Projected Employment Growth

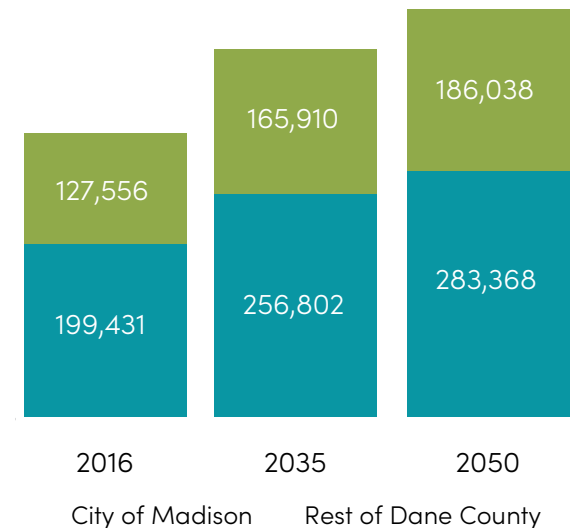
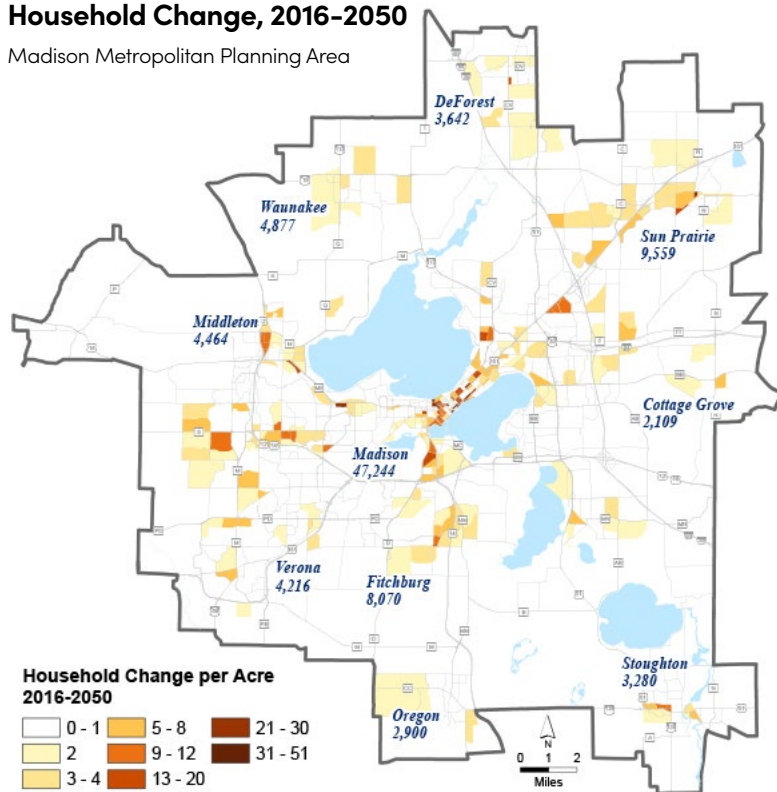


Figure EX-b Dane County Projected Employment Growth



**Household Change, 2016-2050**

Madison Metropolitan Planning Area



Map EX-b Household Change, 2016-2050

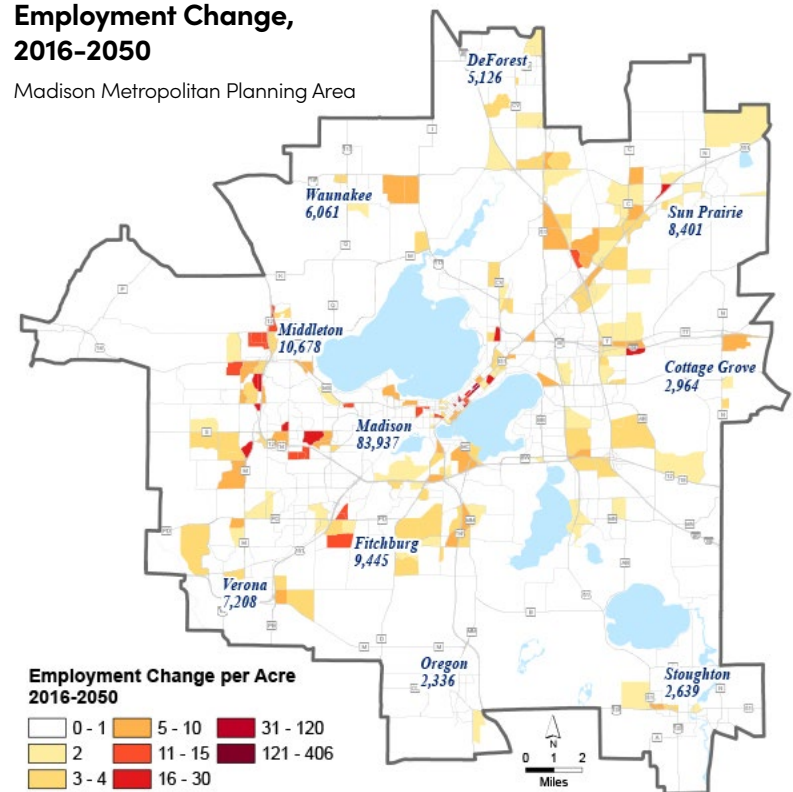
expected to gain nearly 100,000 households by 2050, with about two-thirds of those expected in the City of Madison and its inner ring of adjacent suburban communities (see Map EX-b).

**EMPLOYMENT AND THE ECONOMY**

Dane County's thriving and diverse economy has led to one of the lowest unemployment rates in Wisconsin, and this trend is expected to continue in the coming years (see Figure EX-b). Employment in the City of Madison is expected to grow by more than 80,000 by

**Employment Change, 2016-2050**

Madison Metropolitan Planning Area



Map EX-c Employment Change, 2016-2050

2050, with the remainder of Dane County's job growth is expected to occur in suburban communities, as shown in Map EX-c.

**Dane County is expected to add approximately 140,000 jobs by 2050**

## Our Transportation System Tomorrow: 2050

What will our transportation system look like in 2050? What critical issues and drivers of change will shape how our transportation system grows and evolves? How do we leverage transportation to achieve our long-term vision for the region? The way our transportation system will evolve over the next three decades will be shaped by countless public and private decisions at all levels. *Connect Greater Madison 2050* includes a detailed analysis of current and future transportation needs in the region, taking

into account critical issues that will need to be considered in all levels of planning and decision-making. *Connect Greater Madison 2050* provides the framework for prioritizing multimodal investments in the transportation system and includes recommendations necessary to meet the region's mobility needs now and in the future, supporting the region's vision and goals.

### CRITICAL ISSUES

As the greater Madison region's transportation system evolves, three critical issues that play an important role in planning and decision-making include equity,

climate change, and health. Each is directly affected by the benefits and burdens of the transportation system, and each deeply affects quality of life.

Central to local and regional agencies' ability to act on equity, climate change, and health is the effective coordination of transportation and land use strategies that naturally support these goals. The foundation for this is community design that provides access for all to transportation options, affordable housing, and other basic needs, thereby fostering equitable access to opportunity, wise use of natural resources, and the ability of individuals to live healthy, sustainable lives. *Connect Greater Madison 2050* centers these critical issues at the heart of its analysis of needs, recommendations, and identification of multimodal investments.

### DRIVERS OF CHANGE

Drivers of change are the new technologies and technology-enabled ways of doing things that are changing the way people use the transportation system. Telework, e-commerce, shared mobility, vehicle electrification, connected autonomous vehicles, and other recent advancements in intelligent transportation systems (ITS) represent major departures from the 20<sup>th</sup> century status quo. As they become more prevalent, and increasingly intertwined, their impact on the transportation system will be profound in ways not easy to predict. The region's transportation system will need to be resilient and adaptable to these



evolutionary changes. The MPO will continue to stay up to date on these rapid changes, and will evaluate a range of scenarios using its regional travel forecast model to inform current and future planning efforts, including major regional corridor studies.

### CONNECT GREATER MADISON 2050 RECOMMENDATIONS

*Connect Greater Madison 2050* includes a detailed analysis of the region's transportation system needs and a series of project and policy recommendations with supporting actions for each mode of transportation, including:

- Land use and Transportation Integration
- Roadways
- Transportation System Management and Operations (TSMO) and Technology
- Public Transit
- Specialized Transit
- Bicycles
- Pedestrians
- Travel Demand Management (TDM)
- Parking
- Inter-Regional Travel
- Freight, Air, and Rail

Plan recommendations were developed based on analyses of the existing transportation network condition and performance; prior and ongoing transportation planning efforts by the

MPO and implementing agencies; travel forecasts accounting for future growth; and input received from stakeholders through public engagement activities. Plan recommendations are largely focused on optimizing the use, capacity, and safety of existing facilities, expanding transportation options, and improving land use and transportation integration.

Implementing agencies, including local and county governments as well as WisDOT, are encouraged to consult the recommendations and supporting actions identified in *Connect Greater Madison 2050* when undertaking planning efforts and implementing specific transportation projects to ensure regional continuity of the transportation system and support regional transportation plan goals. The following are an excerpt of key plan recommendations.



#### Land Use and Transportation Integration

Land use and transportation are inextricably linked. The role of transportation is to connect people with opportunities, services, goods, and other resources. In order for transportation policies and investments to be successful in achieving this, they must be coupled with complementary land use plans, policies, and implementing ordinances. Low-density land use patterns increase demand for transportation while reducing the feasibility of transit, biking, and walking. Location-efficient development, that provides dense clusters

of development with a variety of land uses in a pedestrian-oriented environment, gives people easier access to key destinations and reduces transportation costs by making alternative travel modes more convenient and economical.

#### Key Recommendations

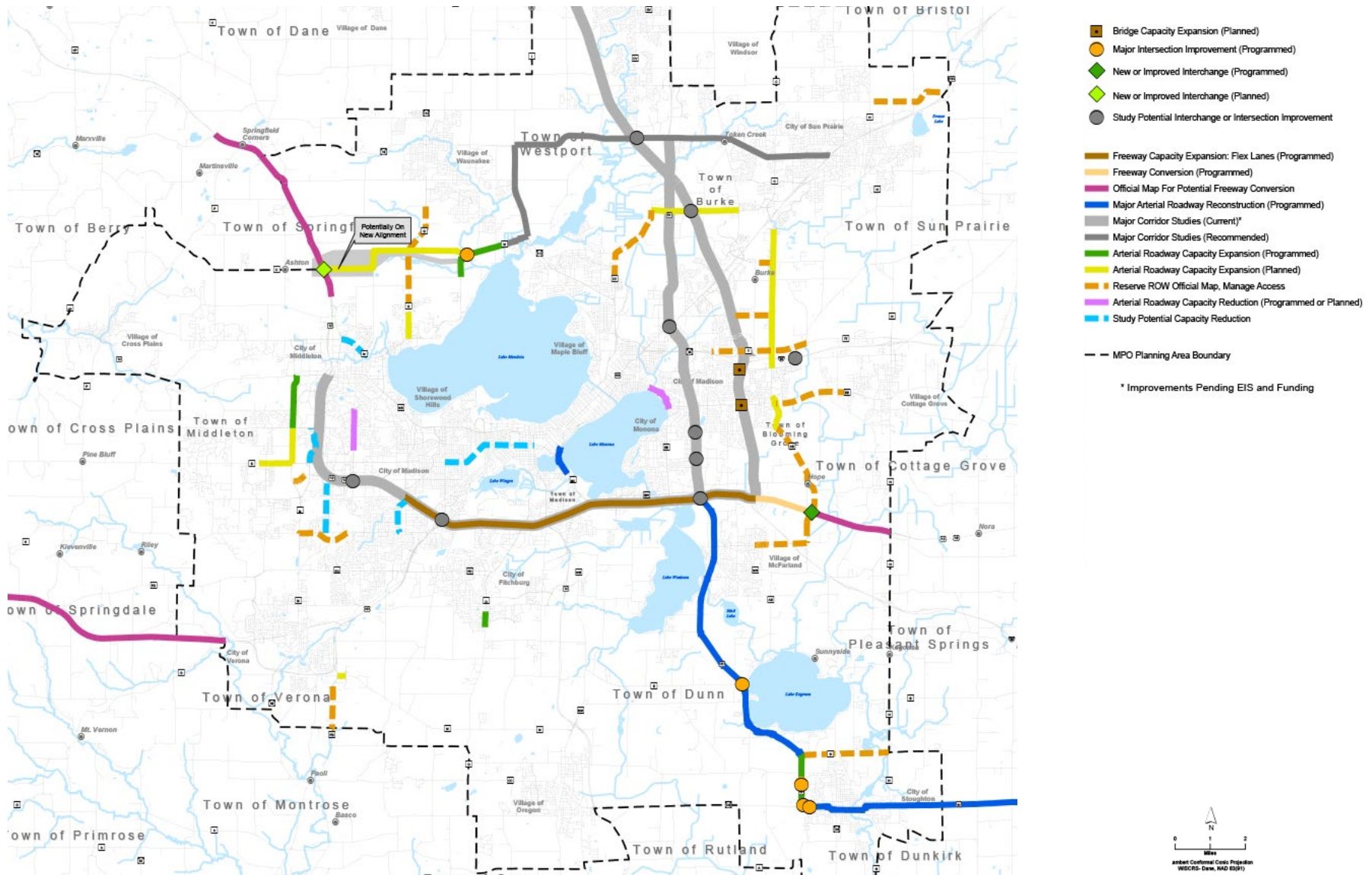
- Adopt local land use plans that support RTP goals and policies.
- Provide a mix of housing types with higher densities in areas with multimodal access to jobs and services in order to provide affordable living options in less car dependent neighborhoods.





## Major Roadway Projects and Studies

Madison Area, Wisconsin



Map EX-d Major Roadway and High Capacity Transit Projects and Studies





### Roadways

Streets and roadways provide mobility for the vast majority of residents in the region, however they travel, but they also make up the majority of our public space, providing areas to walk, play, and socialize with our friends. It is important to preserve this infrastructure and manage it so that it continues to serve our community effectively, making targeted enhancements when appropriate.

#### Key Recommendations

- Preserve and maintain the region's street and highway system in a manner that minimizes their life cycle cost, maintains safety, and minimizes driver costs while reducing their impact on the environment.
- Build a well-connected network of regional roadways to accommodate future growth, efficiently distribute traffic to avoid bottlenecks on overburdened routes, and providing multimodal connections between neighborhoods.
- Incorporate complete streets and green streets concepts for regional and local roadways.
- Expand regional roadway system capacity to address critical bottlenecks and accommodate future planned growth consistent with RTP goals (see Map EX-d).
- Adopt a Safe System Approach for addressing safety needs on the regional roadway system.
- Address security and resiliency needs related to the regional roadway system.



### Transportation System Management and Operations (TSMO) and Technology

Transportation system management and operations (TSMO) includes strategies such as improved traffic signal operations, management of roadway incidents, and traveler information, as well as targeted roadway modifications to provide bottleneck relief. Intelligent Transportation Systems (ITS) technologies, such as sensors and communications devices that allow multiple agencies to work together, can aid these TSMO strategies. TSMO strategies are cost effective methods to improve travel conditions and maximize the benefits of existing transportation infrastructure.

Transitioning away from traditional fossil fuels toward electric powered vehicle technology represents one way in which Dane County can decrease emissions, slowing global warming and reducing our reliance on imported fossil fuels. Expanding access to charging infrastructure, increasing familiarity with electric vehicles, and easing range anxiety will be key strategies to help the region shift towards cleaner transportation options.

#### Key Recommendations

- Develop a regional transportation systems management and operations (TSMO) plan.
- Promote electric vehicle charging infrastructure to reduce greenhouse gas emissions.

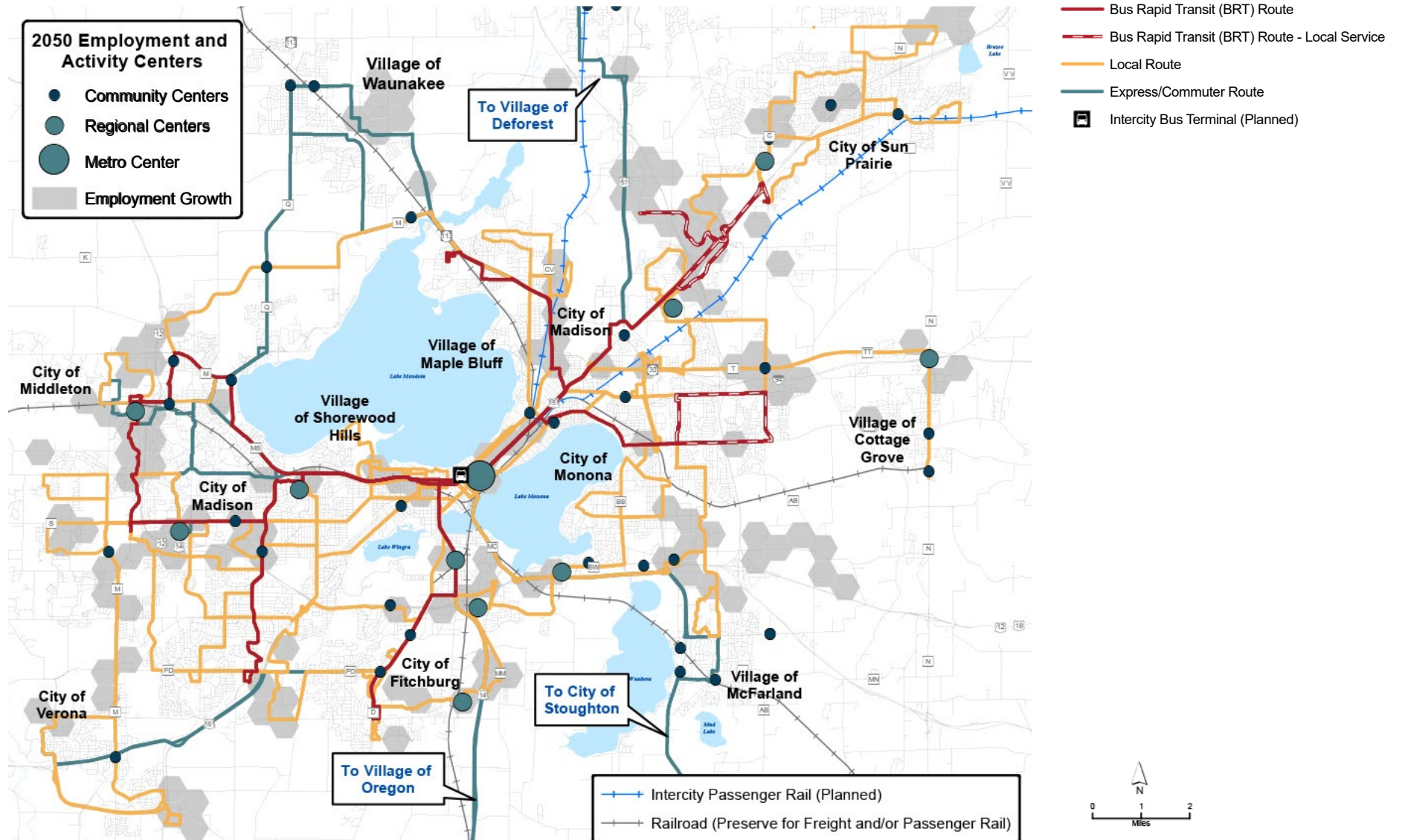


### Public Transit

With the goal to provide frequent and more direct transit service, better access to jobs, and make the system overall easier to use, the Metro Network Redesign project is taking place concurrently with the development of this Regional Transportation Plan. The transit element of this plan builds upon this network redesign effort and the initial BRT project to identify a long-term vision for the regional transit system. This vision includes an expanded BRT system, addition of regional express routes, and local service improvements and expansion that together

## Future Planned Regional Transit Service Network

Madison Area, Wisconsin



Map EX-e Future Planned Regional Transit Service Network



will greatly increase job accessibility and also significantly expand the “frequent transit network” (15 minute service or better throughout the day), which allows people to live “car light” or “car free.” (see Map EX-e)

#### Key Recommendations

- Implement a bus rapid transit (BRT) system.
- Improve the local bus network by investing where needs are greatest.
- Implement a regional express bus network.



#### Bicycles

Although the region’s bikeway network is well developed compared to peer metropolitan areas, gaps in the network persist, particularly outside the central Madison area. Top priorities over the coming decades include connecting and increasing access to low-stress bike routes, improving bicyclist safety, and removing barriers that keep people from bicycling. Map EX-f details the planned future regional bicycle routes.

#### Key Recommendations

- Reduce barriers to bicycling.
- Expand the bikeway network with new shared-use paths and on-street facilities.
- Improve bicyclist safety.
- Continue bike share, education, and bicyclist supportive policies.



#### Pedestrians

All trips, regardless of mode used, begin and end with a walk trip.

Sidewalks provide many benefits, including safety, mobility, and healthier communities. Sidewalks, along with street crossing facilities, such as curb ramps, crosswalks, signals, and grade-separated crossings, are the building blocks of the pedestrian transportation network. Local communities should focus on maintaining and improving these existing facilities, and expanding the network to serve poorly connected neighborhoods and new developments.

#### Key Recommendations

- Provide sidewalks and appropriate pedestrian amenities in developing neighborhoods, and retrofit regional streets with modern, safe, and accessible pedestrian accommodations.
- Improve safety and usability for pedestrians at intersections and crossings.

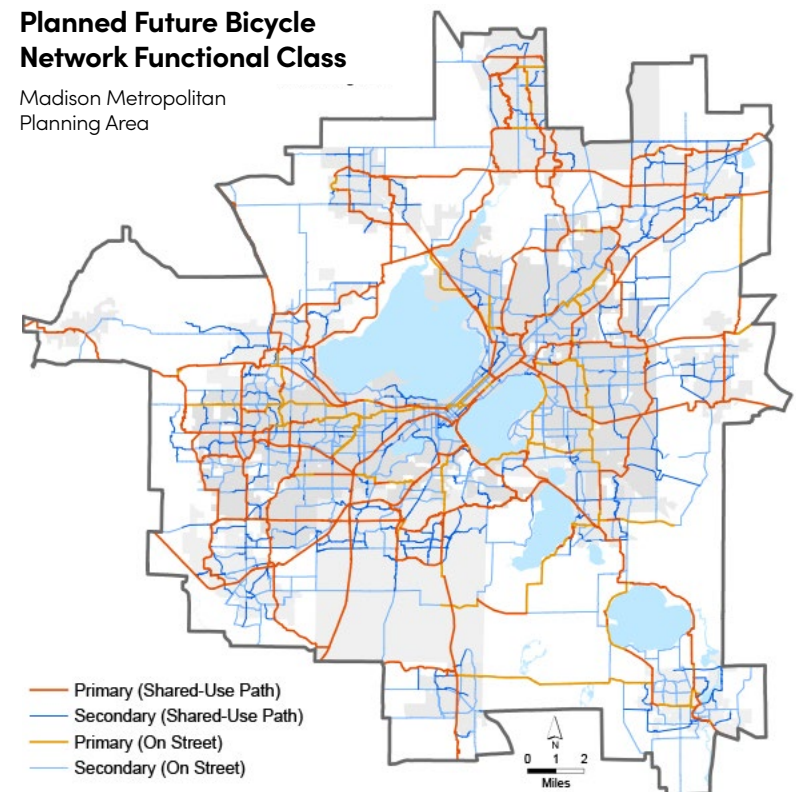


#### Travel Demand Management

Transportation demand management (TDM) improves transportation system efficiency—reducing vehicle miles traveled and peak period roadway congestion—by maximizing the availability and use of alternatives to driving alone. TDM is a low-cost way to improve community health and livability by nudging travelers to adjust how or when they travel.

#### Planned Future Bicycle Network Functional Class

Madison Metropolitan Planning Area



Map EX-f Planned Future Bicycle Network Functional Class

**Key Recommendations**

- Expand the availability and use of facilities and services that support shared mobility.
- Work with employers, institutions, and municipalities to implement and promote strategies to reduce drive-alone vehicle trips.
- Expand the availability, use, and funding of financial incentives and encouragement programs, and increase the funding available to market these programs.

**Inter-Regional Travel**

In an increasingly connected world, inter-regional travel opportunities must be maintained and expanded.

While the Madison area hosts several intercity-bus options, they lack a common terminus and often lack good connections to local bus routes. While Madison's passenger rail service ended decades ago, there is growing interest in renewing it and a funding opportunity through the recently passed federal infrastructure bill.

**Key Recommendations**

- Initiate planning for and build an inter-city bus terminal.
- Support new and improved inter-city bus service.
- Implement passenger rail service to and through the Madison area.

## Investing in the Region's Transportation Future

**BY THE NUMBERS**

Connect Greater Madison 2050 identifies nearly \$12.5 billion in regional multimodal investments over the next three decades: \$6.4 billion for programmed and planned roadway projects; \$3.3 billion for maintenance and operations of nearly 700 miles of regional roadways and bridges; \$2.5 billion for Metro Transit capital and operation expenses, including BRT; and \$320 million for new off street bicycle and pedestrian facilities, including 131 miles of priority multi-use paths.

**FUNDING THE PLAN**

Federal rules require that RTPs be fiscally constrained to ensure that planned projects are likely to be feasible using current or expected new funding sources. This requirement forces MPOs to realistically assess their region's ability to fund the plan and to identify new funding sources if necessary; it also forces MPOs to engage stakeholders in difficult decisions regarding priorities and prevents the RTP from devolving into a "wish list" of projects.

Increased state and/or local funding is needed to maintain, let alone reverse the trend of declining pavement condition. The ability to fund major state highway

projects coming out of the current studies is uncertain, depending on the scope of those projects. Sufficient funding will be available to fund arterial roadway projects and major regional shared use paths. The state gasoline tax rate will need to be increased and eventually other new revenue sources (e.g., mileage based registration fee) created in order to offset lost gas tax revenue from electrification of the fleet and inflationary increases in project costs and address long-term system preservation needs. Increased funding will also be needed to fully implement the planned regional transit system, in particular the latter two phases of the BRT system and most of the additional service hours from frequency improvements, new service to developing areas, and commuter express service to suburban communities. Implementation of the plan would require a new regional funding mechanism, such as a regional transit authority, with the ability to levy a sales tax.

**EVALUATING PLAN PERFORMANCE**

To gauge progress on plan goals, the MPO developed a number of performance measures that it will track and report on regularly. Some of these measures are federally required, while others have been identified by the MPO or by CARPC as part of the Regional Development Framework (RDF).