Meeting Regional Climate Targets

WEBINAR | JUNE 16, 2022

GREATER MADISON mpo + CAPITAL AREA rpc

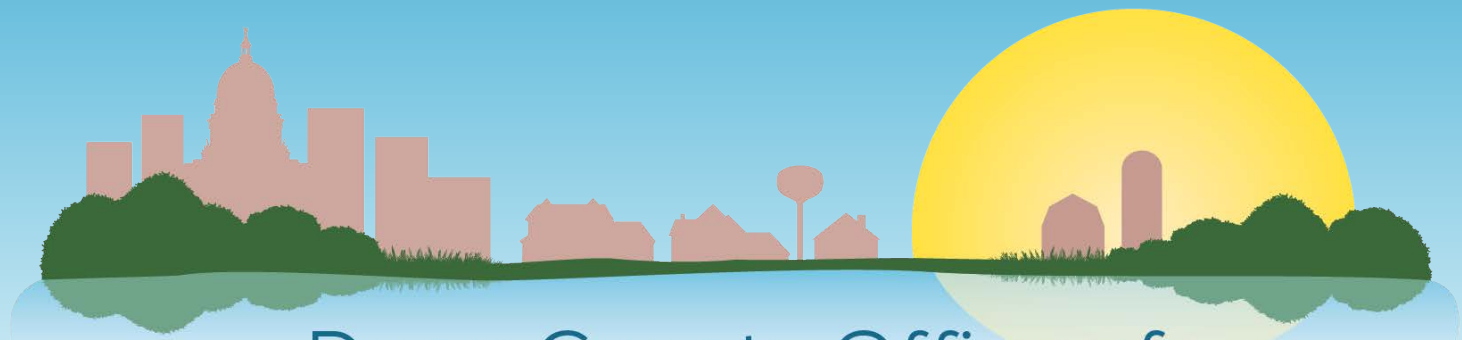
Dane County Office of Energy & Climate Change

Ice Breaker

What is one climate-friendly thing you have done in the past week?

Enter in the chat.

Dane County's Climate Action Plan



Dane County Office of
Energy & Climate Change

Kathy Kuntz, Director

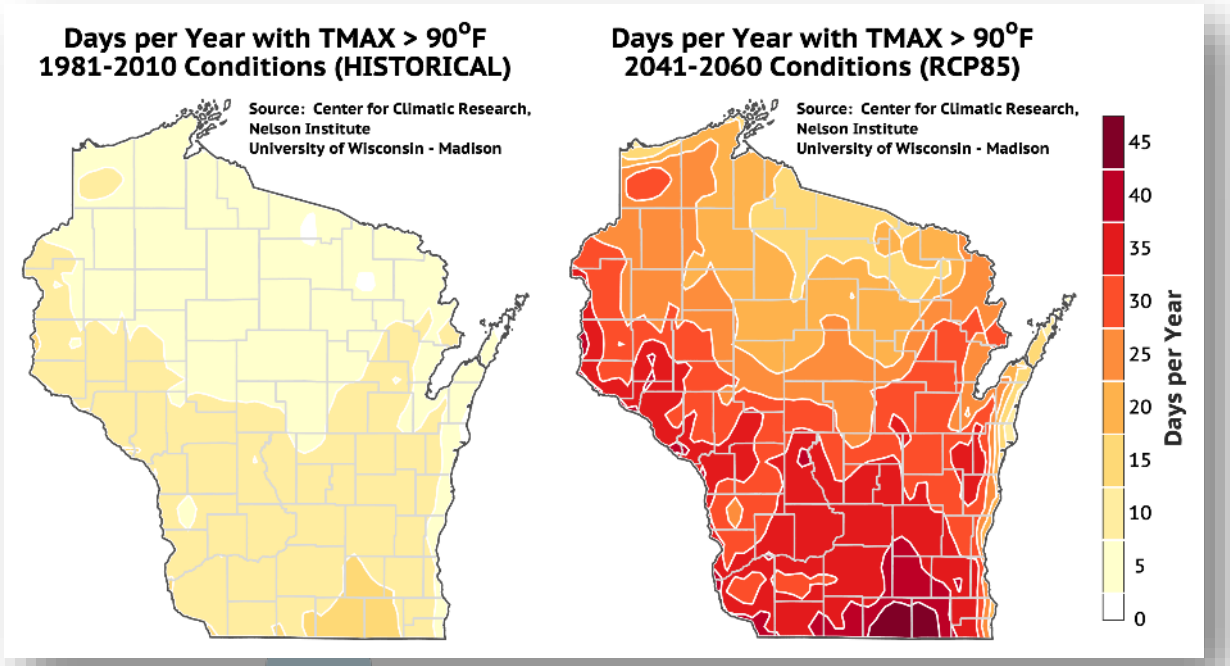
Office of Energy & Climate Change:

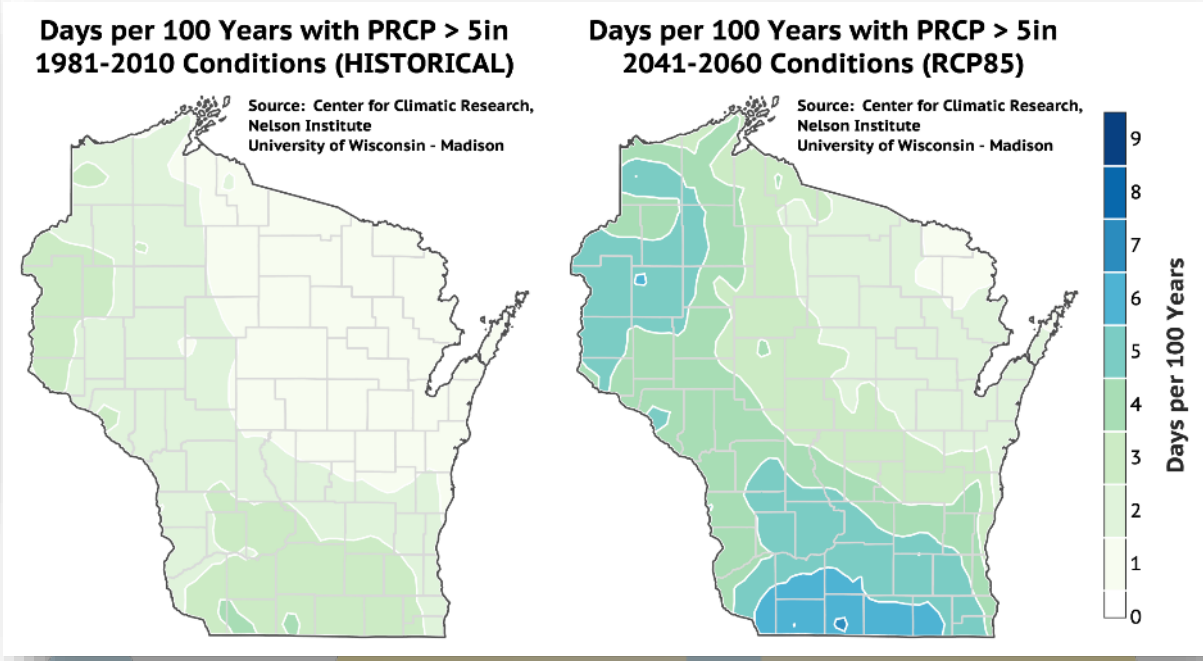
Next Step in a Long History of Leadership

Dane County Council on Climate Change
38 organizations with diverse perspectives

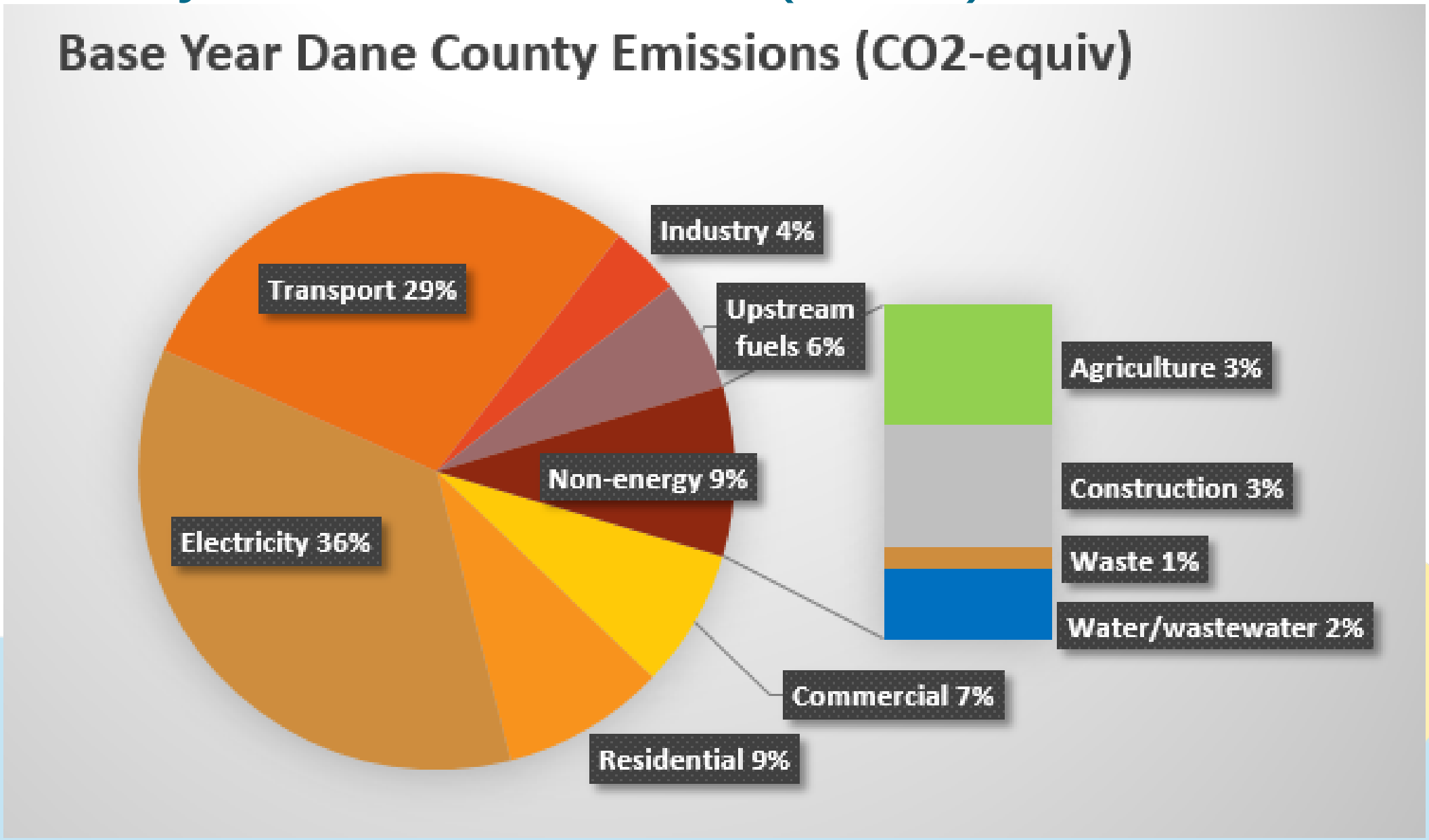
- 7 governments
- 3 utilities
- 7 businesses
- 2 agriculture organizations
- 4 community equity/justice organizations
- 6 environmental groups
- 3 UW-Madison groups
- 1 chamber of commerce
- Labor & law entities

WICCI: Dane County Will Get Hotter, Wetter





County-Wide Emissions (2016) – 7.5MMtons



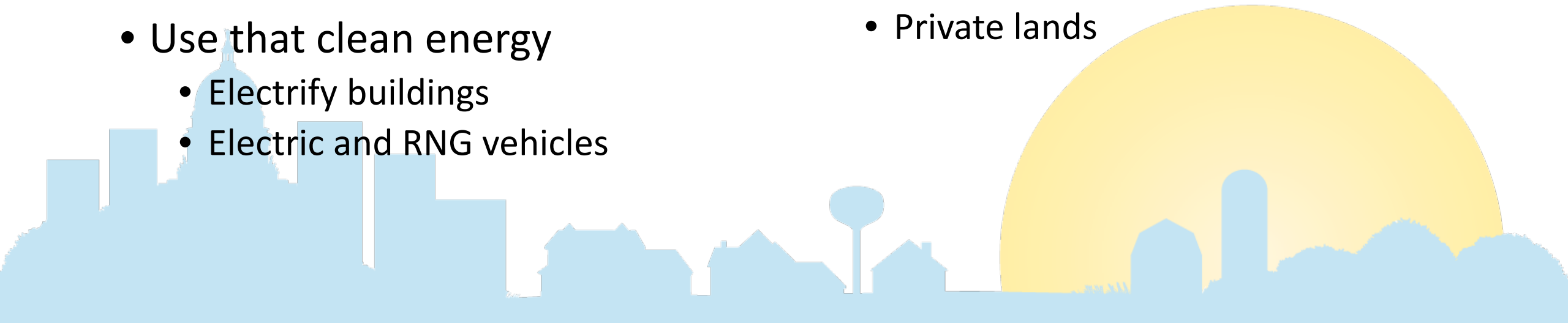
Subject-Matter Expert Working Groups: 100+ Recommendations

Reduce Emissions

- Eliminate waste –> efficiency
- Clean energy sources
  - Electricity from solar, wind
  - RNG from landfill, manure
- Use that clean energy
  - Electrify buildings
  - Electric and RNG vehicles

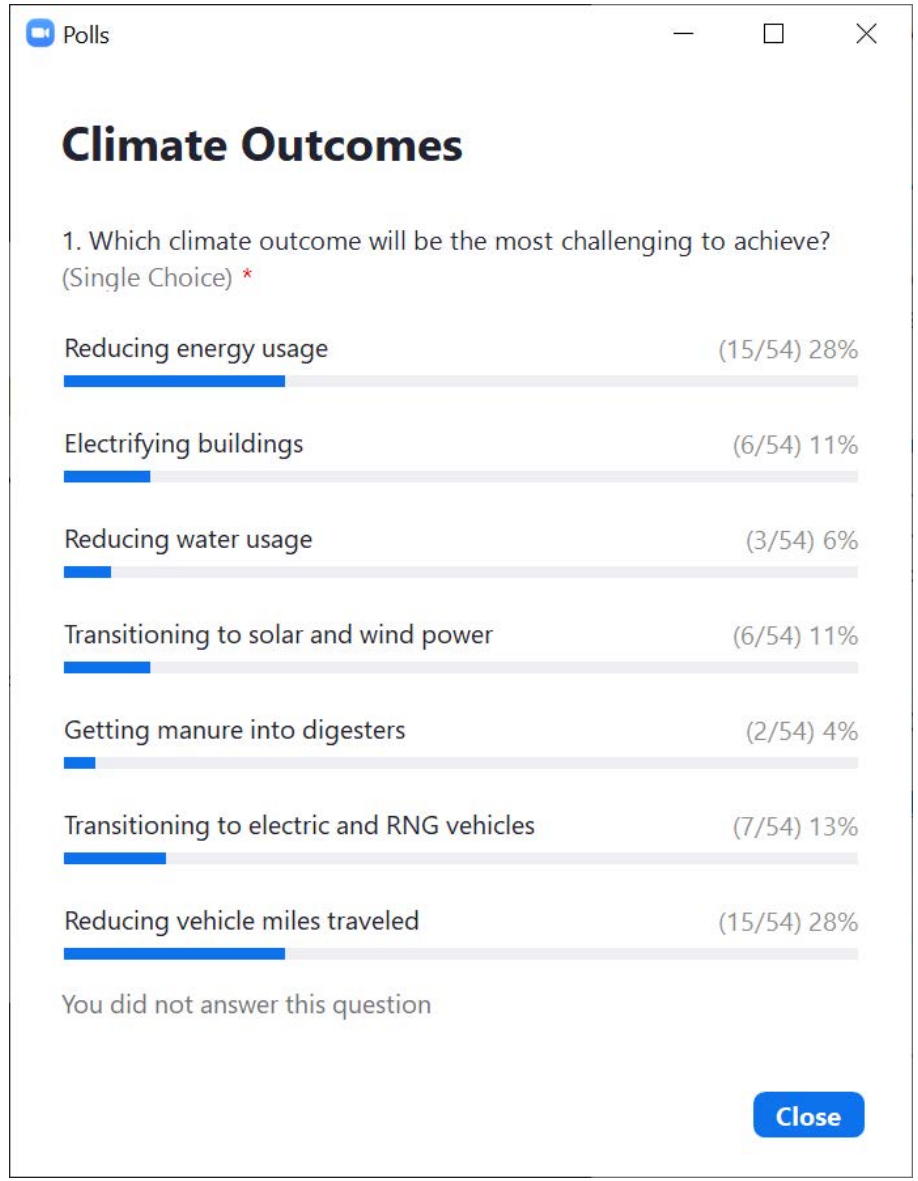
Increase Natural Sequestration

- Afforestation, reforestation
  - Rural and urban
- Regenerative ag practices
  - County lands
  - Private lands



Outcomes We're Pursuing

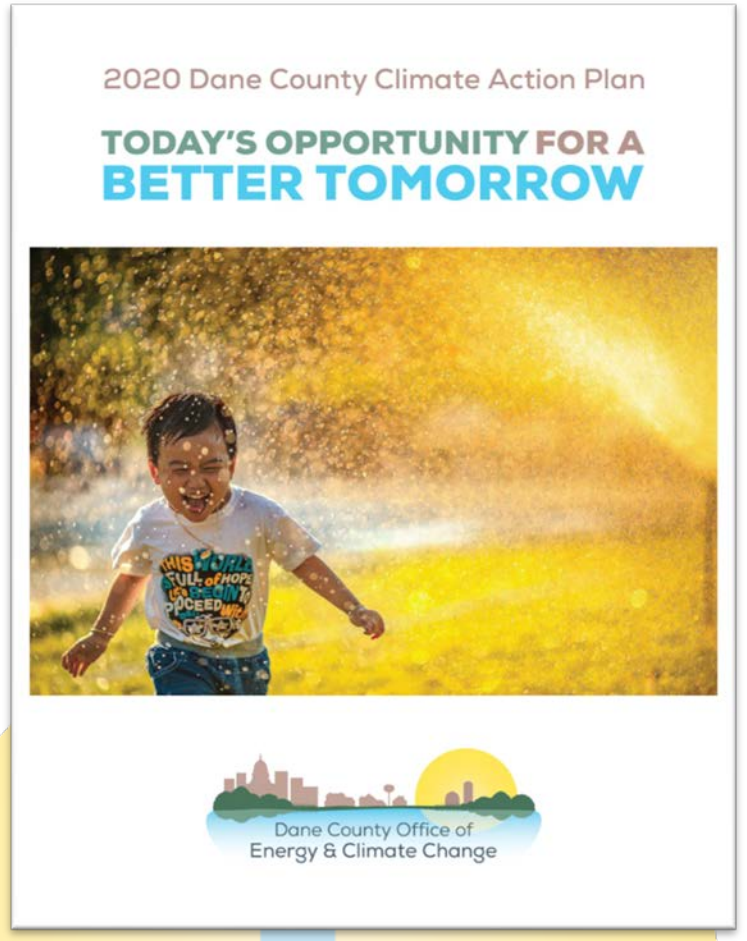
Emissions Targeted	Goal
Energy Usage	Reduce 2% annually by 2030, 3% by 2035 and 4% by 2040
Commercial building energy use	Reductions by 2025 with all new buildings using 75% less energy by 2040
Heat pumps	Convert ½ LP and oil heat homes by 2030; all by 2045 All new homes with heat pumps by 2040
Water – per capita demand	Decrease by 20% by 2030 and by 30% by 2040
Solar	1,200 MW installed by 2030; solar with wind meet 100% of load by 2045
Wind	Meets half Dane County load by 2030; wind with solar meet 100% by 2045
Manure in anaerobic digesters	Half of all manure in county by 2030; 100% by 2050
Electric Vehicles (EVs)	57% sales share by 2040
Heavy-Duty Vehicles	60% use biogas by 2026
Transit buses	50% are electric by 2035
Vehicle Miles Traveled (VMTs)	15% reduction in total VMTs by 2050


Polls
Climate Outcomes
1. Which climate outcome will be the most challenging to achieve?
(Single Choice) *
Reducing energy usage (15/54) 28%
Electrifying buildings (6/54) 11%
Reducing water usage (3/54) 6%
Transitioning to solar and wind power (6/54) 11%
Getting manure into digesters (2/54) 4%
Transitioning to electric and RNG vehicles (7/54) 13%
Reducing vehicle miles traveled (15/54) 28%
You did not answer this question
Close

Cut in half total countywide emissions by 2030

The CAP is just the beginning…

- Engage everyone
  - We are all part of the solution
  - Together we'll create a stronger Dane County
- Make it easy to take action
- Celebrate leadership
- Report on progress



Reducing Waste: Big Savings & Big Hurdles

- Energy and water efficiency
  - Building design, outdated equipment, wasteful habits
  - For businesses, PACE: savings > cost of upgrades
- Transportation efficiency
  - Old vehicles on the road, driver habits
- Food efficiency
  - Confusing ‘Use By’ signals, imperfect produce, poor planning

- *Critically important and hugely challenging – human behavior*

Renewable Energy to Replace Fossil Energy

- Solar in Dane County
  - Rooftop – 100s of installations – total about 25 MW
  - Utility-Customer Partnerships – 5 installations – total about 60 MW
  - Utility Scale (also some wind) – typically 300 MW/project
- RNG (Renewable Natural Gas)
  - Landfill
  - Dairy digesters
- *Strong momentum – economics are in our favor*

Transition Buildings & Fleet to Clean Energy

- Transportation
  - Electrify light duty vehicles
  - RNG and electricity and biodiesel for heavy duty vehicles
- Buildings
  - All electric, eventually
  - Cost savings and better indoor air quality

- *Growing momentum on EVs, buildings will take longer*

Quantifying Natural Carbon Sequestration

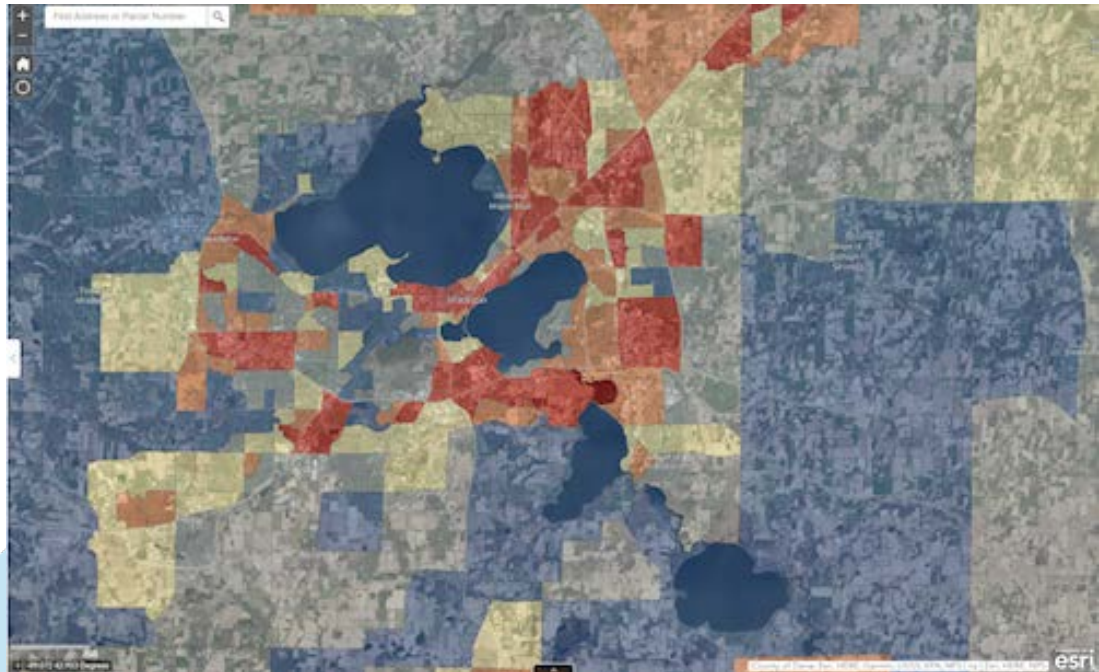
- Lots of land preservation/flood mitigation efforts
  - Prairie restorations
  - Continuous Cover Crop program
- These efforts have multiple ecosystem benefits
  - Reduce flooding
  - Reduce phosphorous and nitrates in our lakes
  - Sequester carbon

- *In early stages of quantifying carbon benefits*

Maintain and Expand Tree Canopy

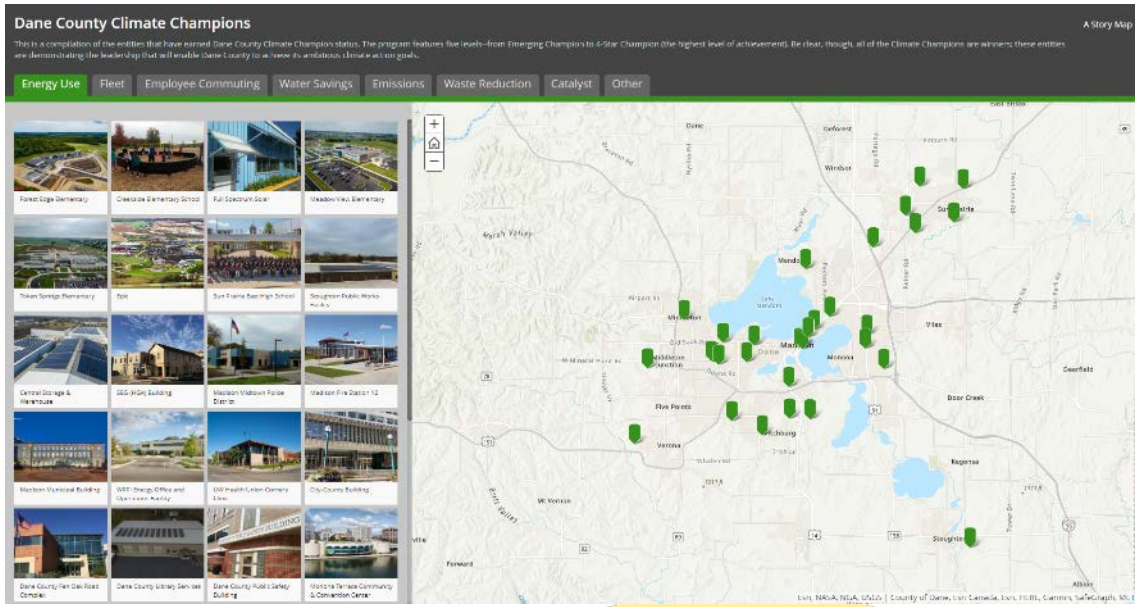
- Trees deliver important climate resilience benefits
- CARPC work: tree canopy is shrinking
- Working group to maintain and expand tree canopy
- Webinar for local governments on June 23

- *Lots of interest in this work*



Recognize Leaders via Climate Champions

- Recognition for entities leading on
  - Energy, Water, Waste reductions
  - Fleet practices
  - Employee commuting
  - Carbon emissions
  - New building design
  - Sustainable land practices
  - Catalyzing public action
  - Other efforts



- More than 50 champions – apply now to be in 2022 cohort!

Greater Madison grows together

CAPITAL AREA rpc

CLIMATE CHANGE & THE 2050 REGIONAL DEVELOPMENT FRAMEWORK

Steve Steinhoff
Agency Director

01

A Greater Madison Vision

HOW WE GROW MATTERS

A Greater Madison Vision
how we grow matters

Over 9,000 people surveyed identified desires, challenges and their highest priorities.

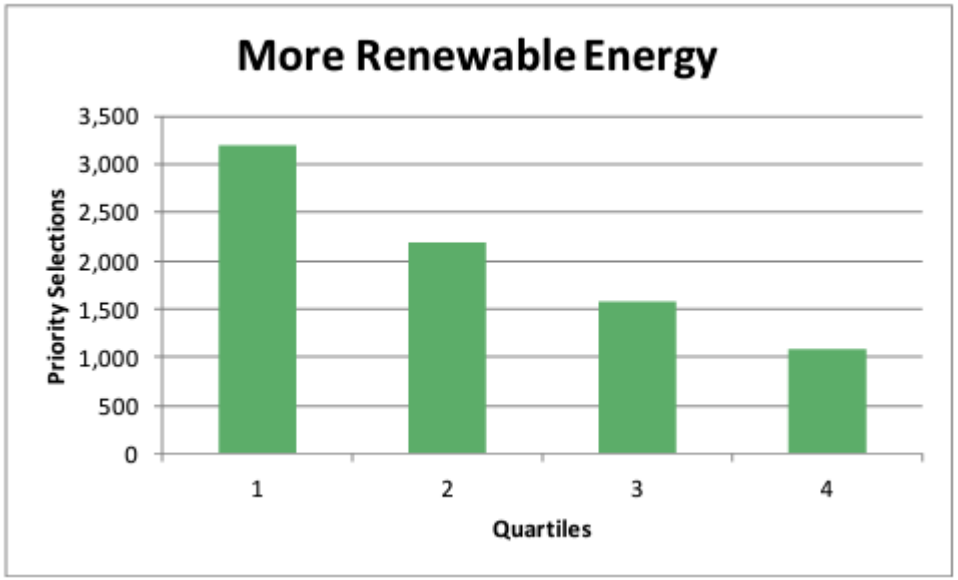
9,186
PARTICPANTS

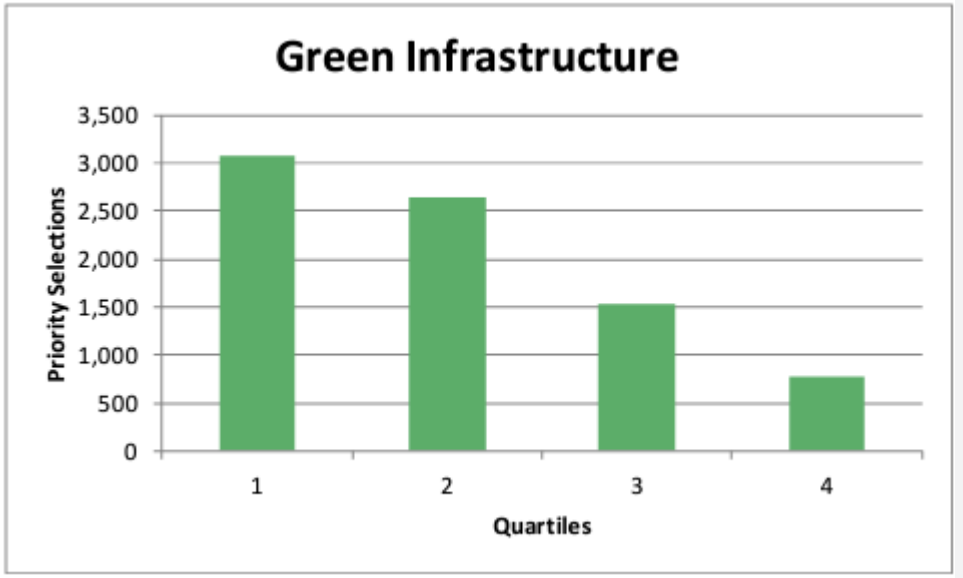
2,109
COMMENTS

Survey Results

A Greater Madison Vision
how we grow matters

1 ENVIRONMENTAL CHALLENGES, INCLUDING CLIMATE CHANGE AND INCREASED RISK OF FLOODING, ARE A TOP PRIORITY FOR THE REGION.





Charts show number of priority rankings for Renewable Energy and Green Infrastructure by quartile (e.g. first quartile = priorities 1-4).

02

The Regional Development Framework

THE CHALLENGE OF HOW TO GROW

Goals

The Framework is designed to address the region's top priorities.

01 Reduce greenhouse gas emissions and foster community climate resilience

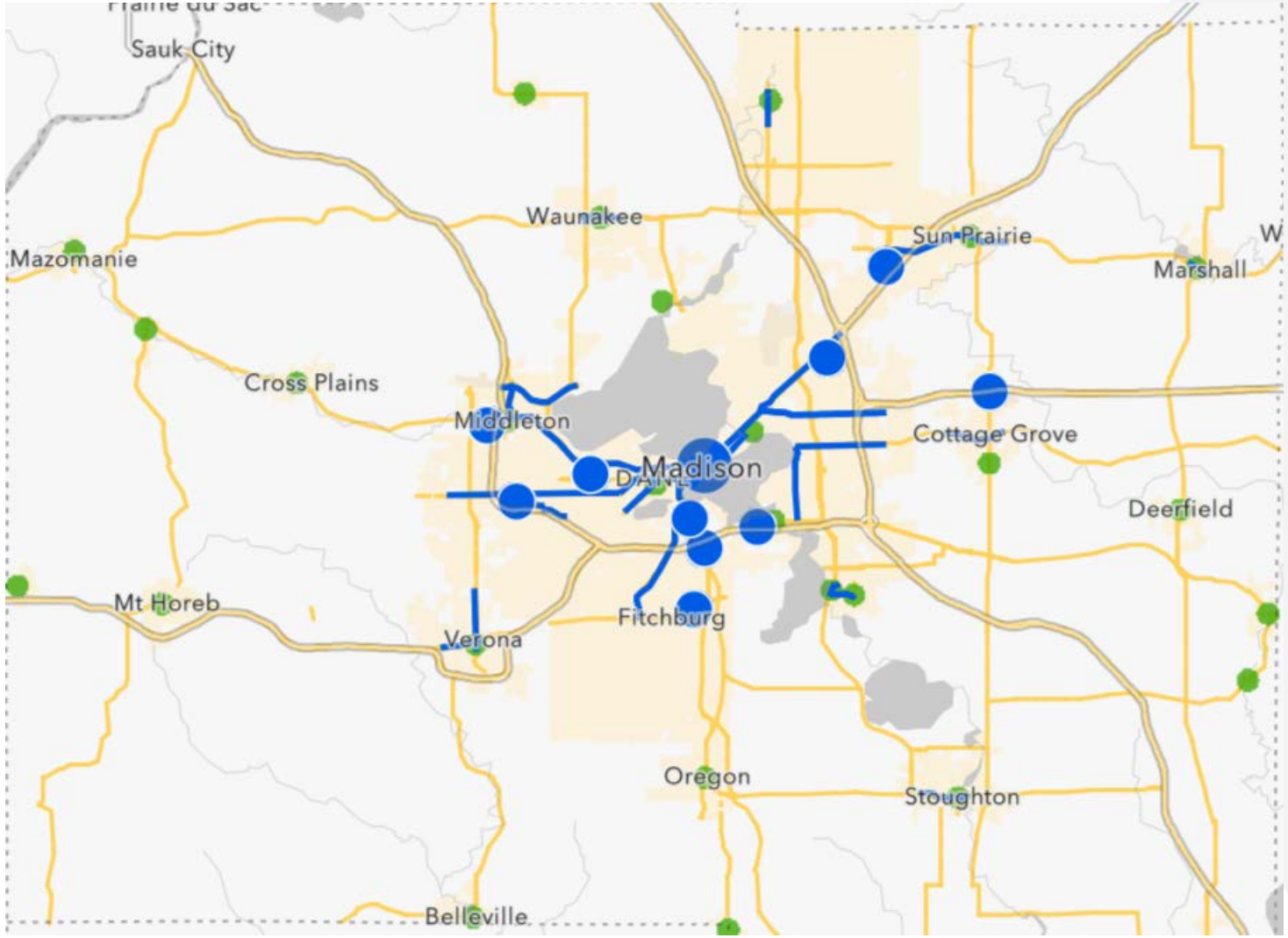
02 Increase access to jobs, housing, and services for all people

03 Conserve farmland, water resources, natural areas, and fiscal resources

Objectives

Objectives	Goals: Climate	Goals: Opportunity	Goals: Conservation
Increase percent of development that is compact, mixed, walkable, and where feasible, transit supportive	●	●	●
Increase the tree canopy	●		
Increase infiltration of precipitation and reduce stormwater runoff	●		
Decrease urban heat island effect	●		
Decrease racial disparities		●	
Generate housing supply to meet demand		●	
Grow business and jobs in targeted sectors		●	
Increase physical access of residents to jobs and services		●	
Enhance stewardship and natural resource areas			●
Designate and protect regional farmland preservation areas			●
Increase density and ensure good connectivity among developments			●

Focus growth in centers & corridors

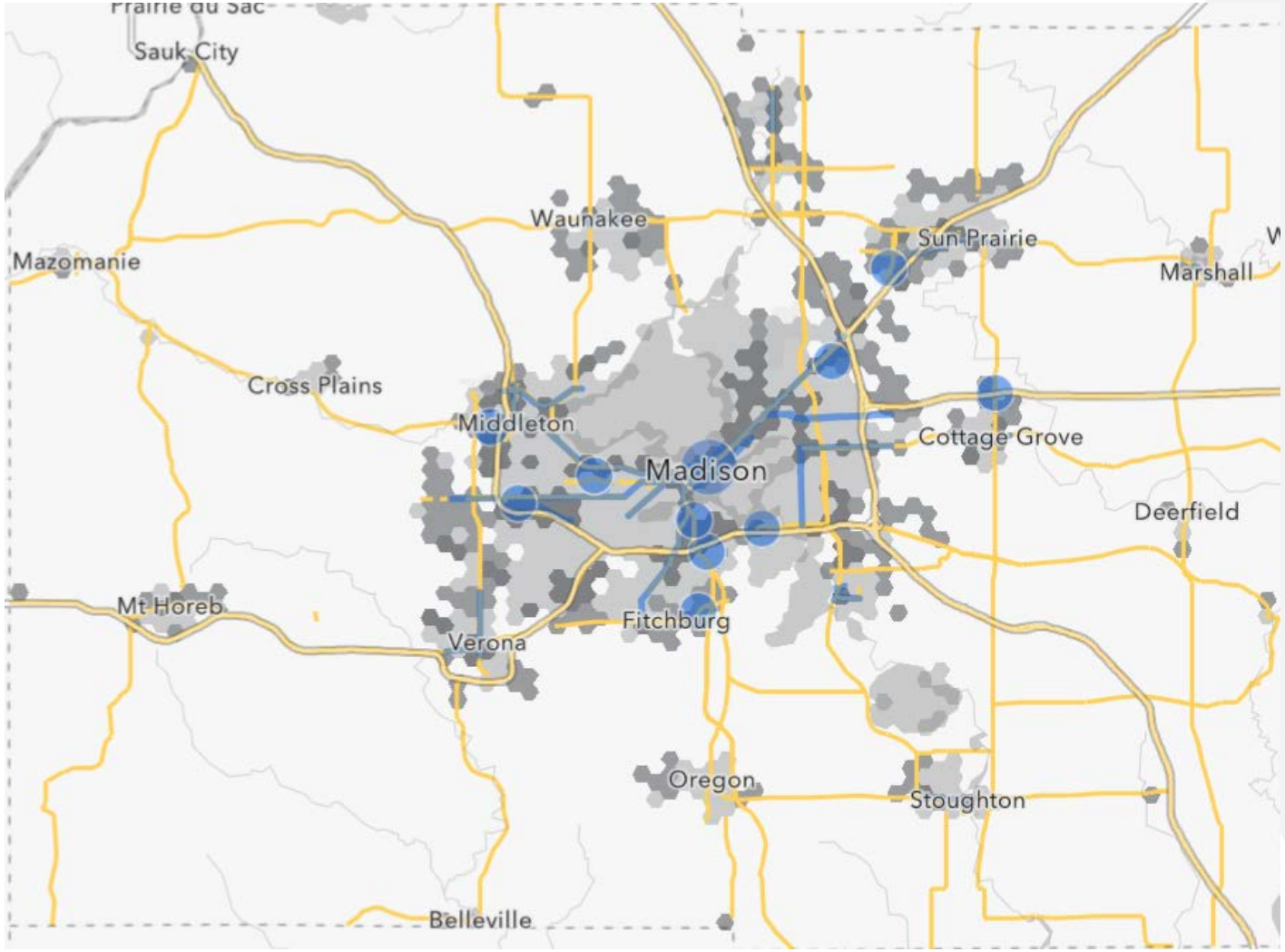


Focus growth in centers & corridors

42%
HOUSEHOLDS

38%
JOBS

Prioritize growth in already developed areas

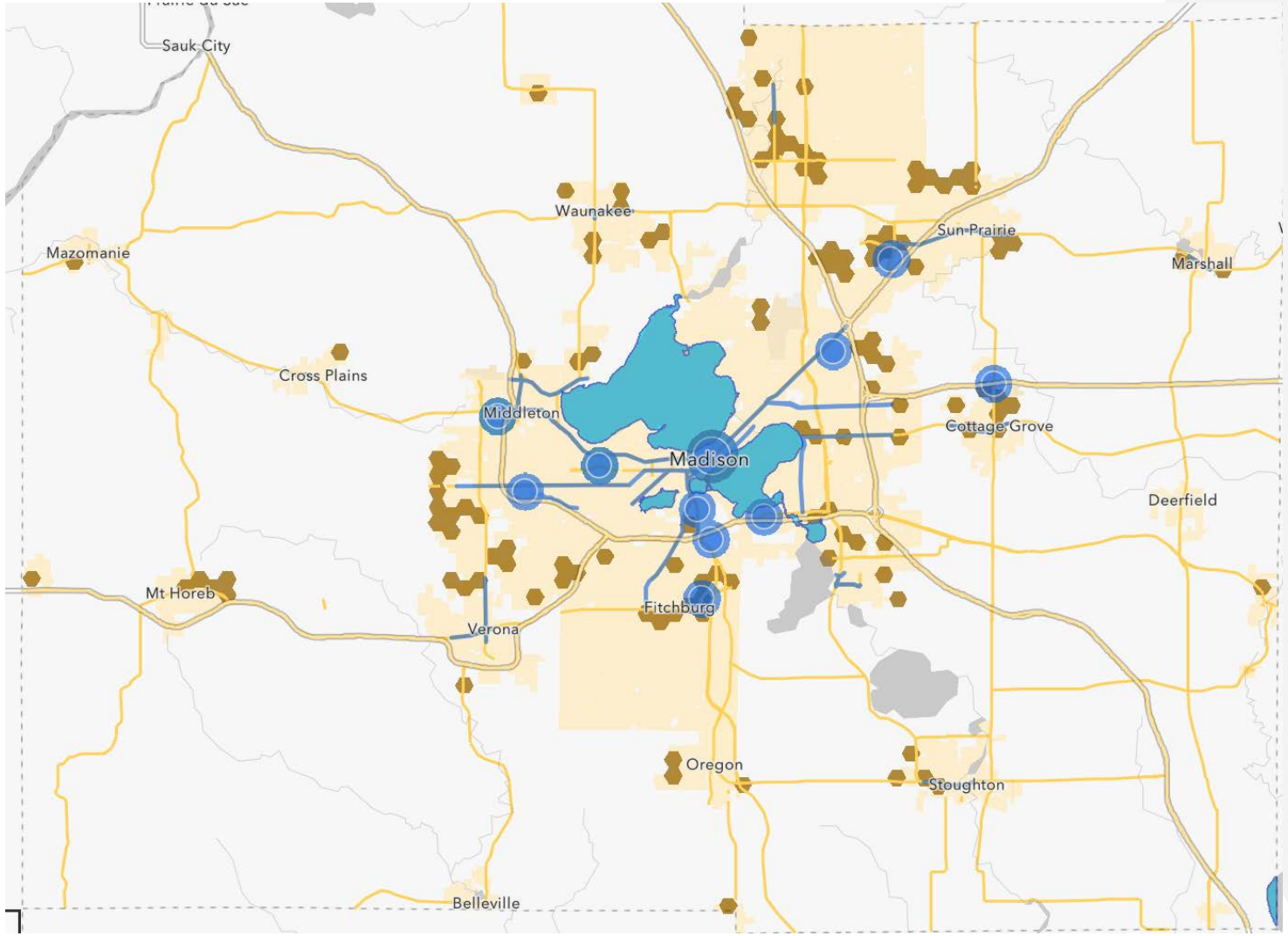


Prioritize growth in already developed areas

42%
HOUSEHOLDS

24%
JOBS

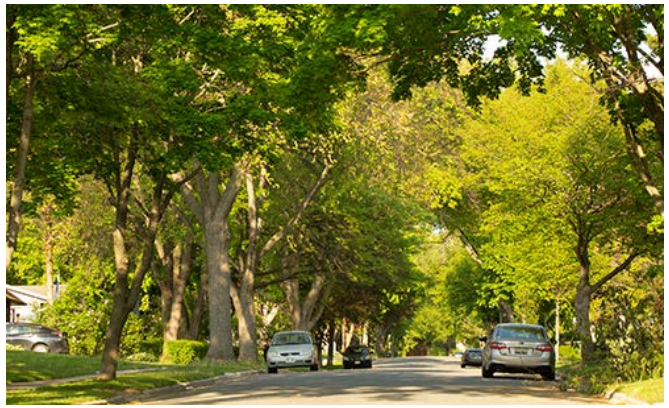
Plan complete neighborhoods



DEVELOPMENT PRACTICES

To further climate-related goals and objectives

01



Encourage tree preservation and planting

02

Encourage practices that reduce stormwater runoff

03

Encourage practices that reduce surface temperatures

Performance Indicators & Metrics

Reduce greenhouse gas emissions and increase climate resilience

Increase percent of development that is compact, mixed, walkable, and transit supportive		
Strategies	**Indicator**	**Metric**
Focus growth in centers and along corridors Prioritize growth in already developed areas Plan complete neighborhoods	Vehicle miles traveled	Total vehicle miles traveled

Example

Green Infrastructure Plan for the Black Earth Creek Watershed

GREEN INFRASTRUCTURE PLAN PURPOSE

This plan was developed to identify specific projects and practices that provide a quantifiable level of flood protection to communities, water quality benefits to Black Earth Creek and its tributaries, and recreational, economic, and ecological benefits to the watershed as a whole. Strategies in this plan use green infrastructure, a nature-based approach that uses soil and vegetation to retain and infiltrate water in urban and rural areas.

Woodlands

Woodlands comprise 37% of the watershed and are especially prevalent on hillslopes. Woodland soils on hillslopes typically have high infiltration capacity and are important for reducing runoff from these steep slopes. They also provide groundwater recharge.

Urban Areas

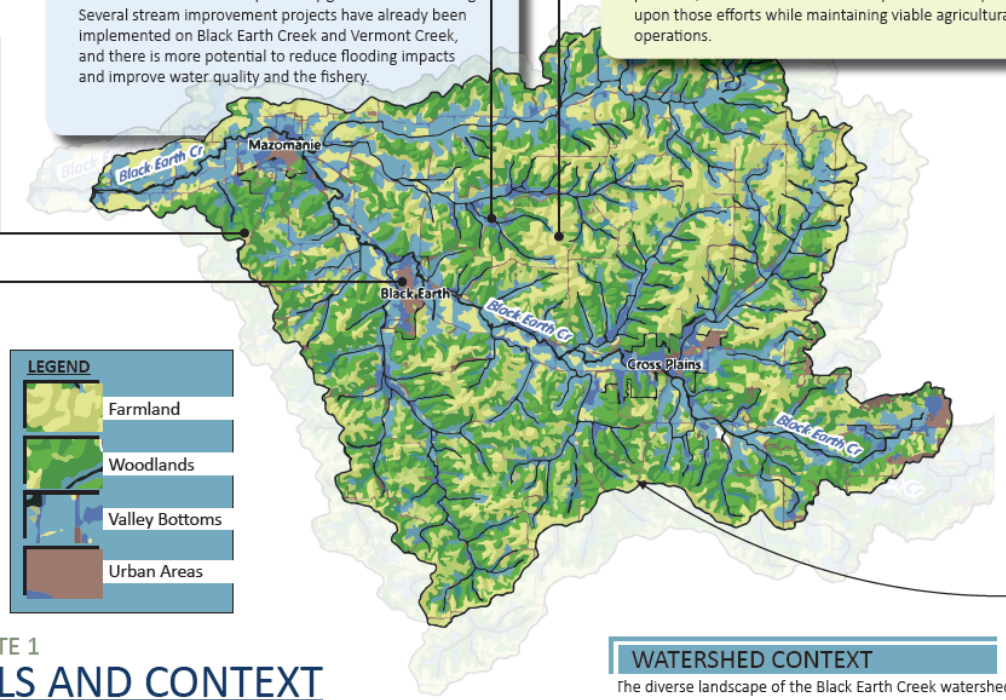
Urban areas make up about 3% of the watershed, including the Villages of Mazomanie, Black Earth, and Cross Plains, plus the western fringe of the City of Middleton. This includes residential areas, and commercial and industrial parks. Much of this development was built years ago without modern stormwater controls, so there is an opportunity to update urban stormwater management to improve water quantity and quality.

Valley Bottoms

Lowlands along Black Earth Creek and its tributaries cross rural and urban areas and include areas of cropland, pasture and woodlands. Common elements of these areas include the stream channels and quality trout fishery they support, flood-prone riparian areas, and wetlands. Many of these areas are also impacted by groundwater flooding. Several stream improvement projects have already been implemented on Black Earth Creek and Vermont Creek, and there is more potential to reduce flooding impacts and improve water quality and the fishery.

Farmland

Cropland and pasture comprise approximately 53% of the watershed primarily on ridgetops and valley bottoms. Most of this area is cropland with cash grain and dairy rotations. Many farmers are already working with Dane County and other partners to implement conservation practices, and there is considerable potential to expand upon those efforts while maintaining viable agricultural operations.



LEGEND

- Farmland
- Woodlands
- Valley Bottoms
- Urban Areas

PLATE 1

GOALS AND CONTEXT

Black Earth Creek Watershed

Green Infrastructure Plan

WATERSHED CONTEXT

The diverse landscape of the Black Earth Creek watershed includes different settings suitable for unique sets of green infrastructure practices. For this plan, the watershed was divided into urban areas, cropland, woodlands, and valley bottoms. More information about these settings is shown below.

Black Earth Creek Green Infrastructure Plan

Examples

Corridor, Infill, and Neighborhood Development

CITY OF MIDDLETON
University Avenue

As a major thoroughfare into and out of Madison, University Avenue in Middleton has the potential to be a vibrant regional corridor. Middleton's Comprehensive Plan identifies the opportunity to address current challenges like traffic congestion by improving walkability, adding housing, and expanding transit.

In 2021, Middleton launched a planning process to identify challenges and recommend long-term improvements for the corridor. The plan's recommendations address four vision areas identified via public input and an Ad Hoc Committee.

The resulting plan defines a future vision for University Ave, including bike and pedestrian safety, redevelopment opportunities, design guidelines, and regional transit connections.

CITY OF MADISON
Capitol East District

Since 2013, several major redevelopment projects have transformed Madison's Capitol East District. Following the blueprint laid by the 2007 Capitol Gateway Corridor Plan, the 11-block long corridor has added 2,127 new apartments and 1.1 million square feet of commercial space, along with a 2,500-capacity concert venue, renovated soccer field, and 144-room hotel.

Once the site of an auto dealership, the 14-floor mixed-use Galaxie building now contains a major grocery store and 248 apartments. The five-floor mixed-use Marling building replaced a lumber yard of the same name with 228 apartments and 26,500 square feet of commercial space. Constructed along the Yahara River, residents of the building have easy access to nearby bicycle trails and greenspace.

VILLAGE OF WAUNAKEE
Heritage Hills Neighborhood

The Village of Waunakee's new Heritage Hills neighborhood offers a mix of home prices and types with the ability to walk, bike, or drive to a variety of destinations.

Land uses include single and two-family housing along with mixed-use and park/open space areas. Residents can walk or bike to shops, restaurants, and a library. Schools, a business park, and the Waunakee Village Center are all within a roughly one-mile radius.

This approach to development supports Waunakee's goals of fostering social interaction, providing bike and pedestrian access, providing parks and recreation facilities, and locating housing in areas that are readily accessible to schools, parks, and neighborhood business districts.

Average household greenhouse gas emissions

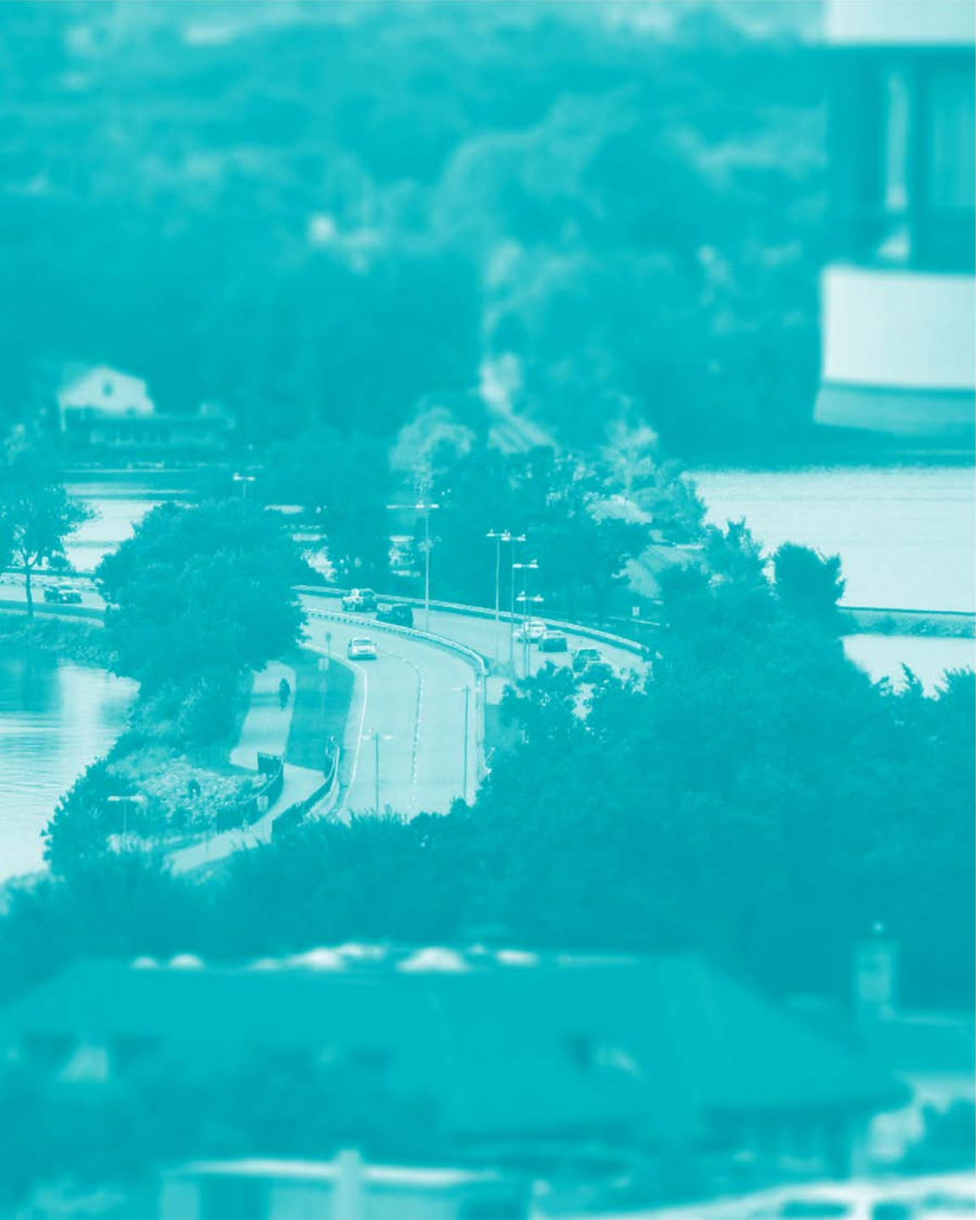
FROM 2020 – 2050

7% REDUCTION

LOOKING BEYOND LAND USE

Achieving climate goal

Reduce transportation greenhouse gas emissions



Climate Change & Transportation Planning

Bill Schaefer
Director/Planning Manager

GREATER MADISON mpo

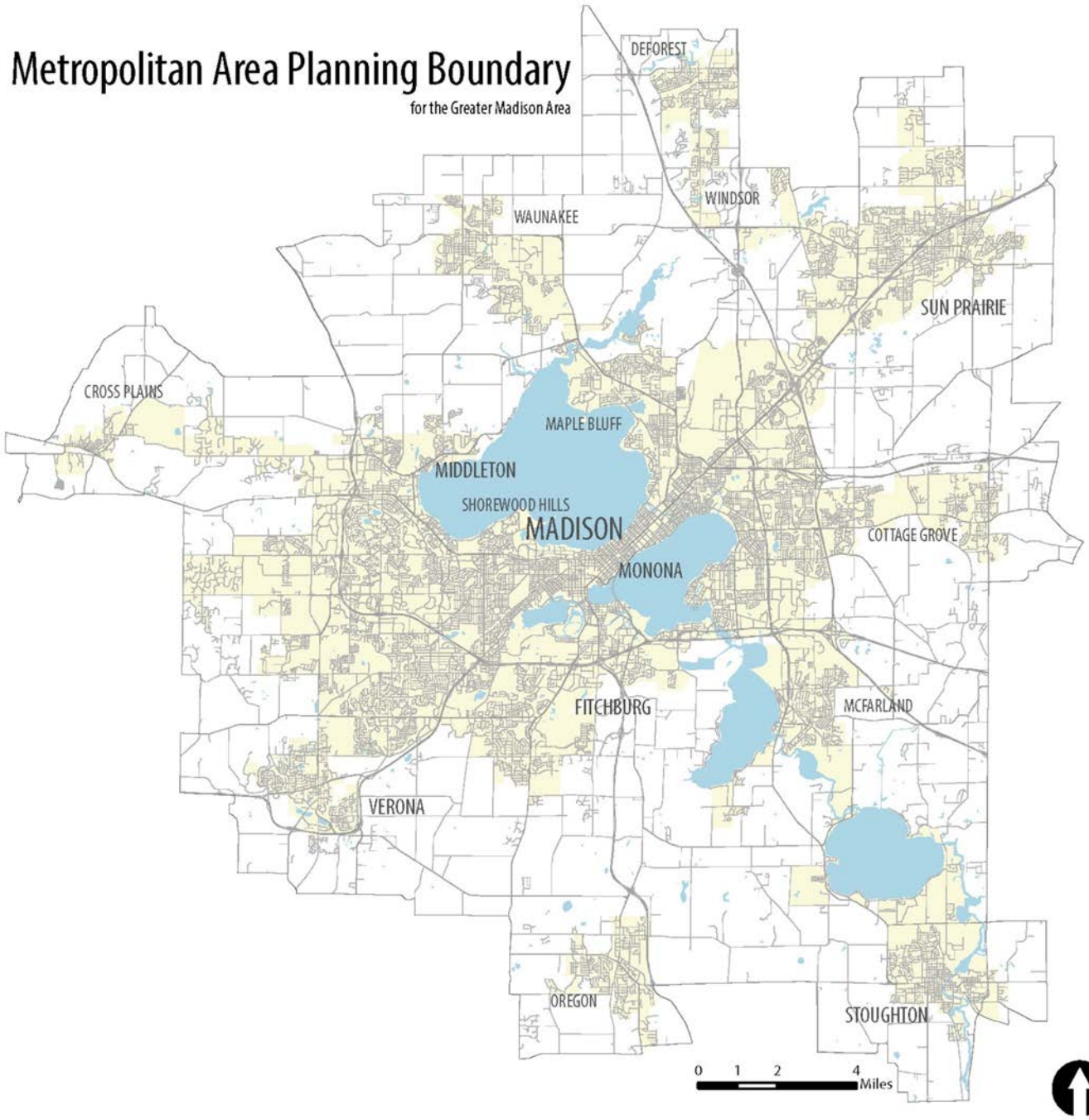
ABOUT THE MPO

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.



Our Regional Transportation Plan

Framework for the future of transportation in the Madison region

Guides federal transportation funding

Updated every 5 years

20+ year planning horizon

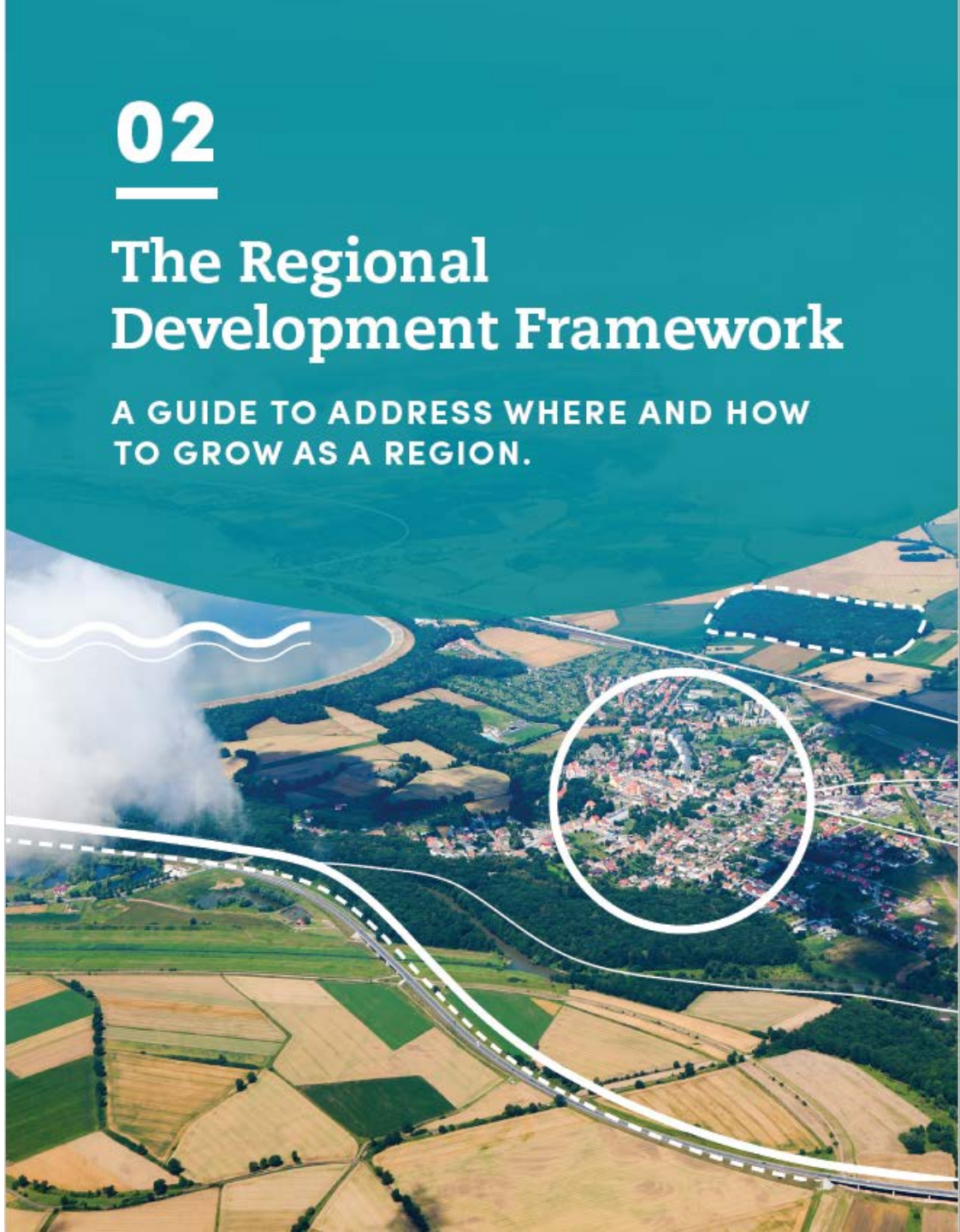
Supports the Regional Development Framework (Land Use Policy Plan)

Connection to the Regional Development Framework

CAPITAL AREA rpc

Sets the vision for future growth and development

Sustainable development is only possible when land use and transportation work together.



Regional Transportation Plan 2050 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 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 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 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.

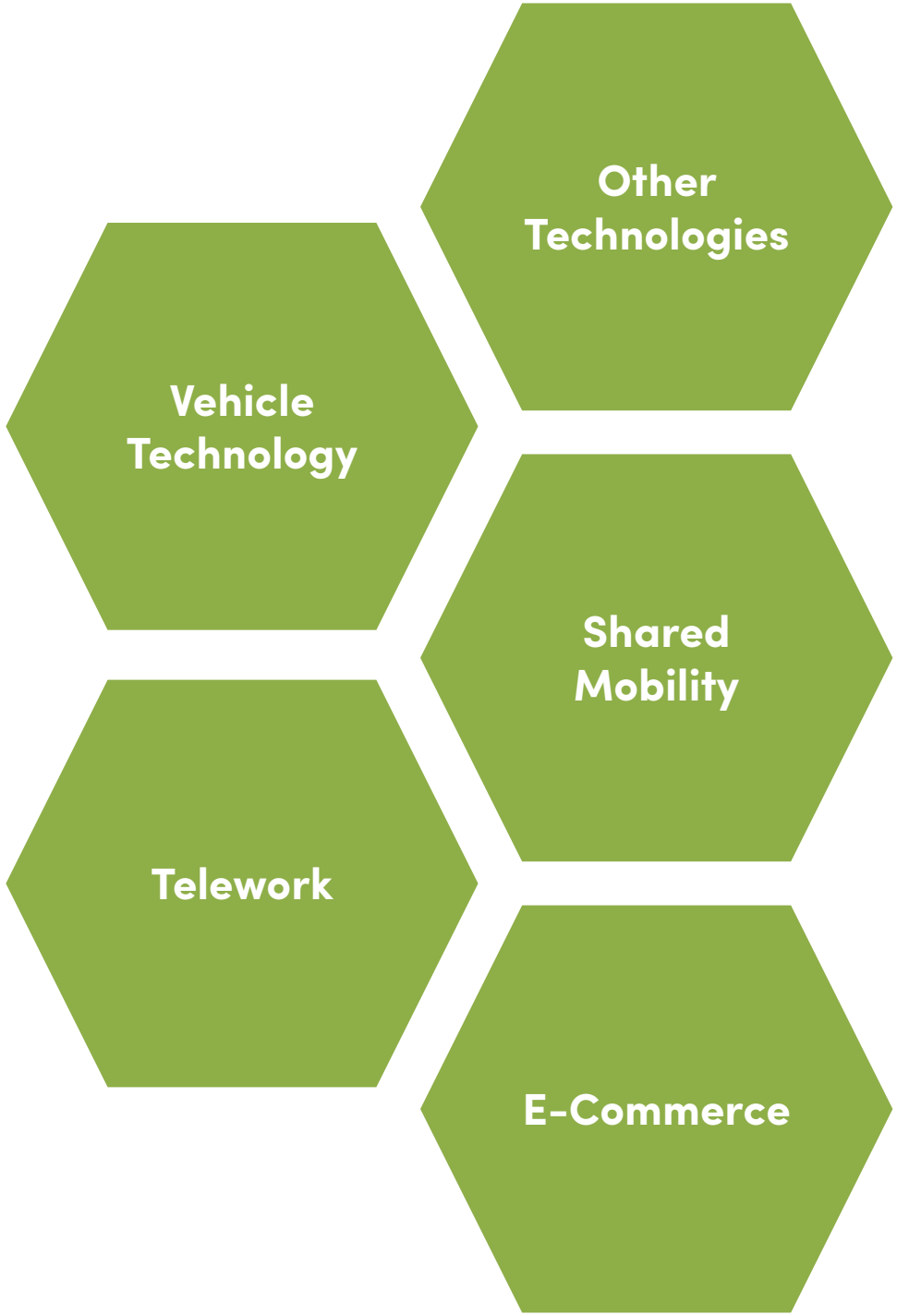
Critical Issues:

Confronting Climate Change and Improving System Resiliency

Drivers of Change

Recommendation:

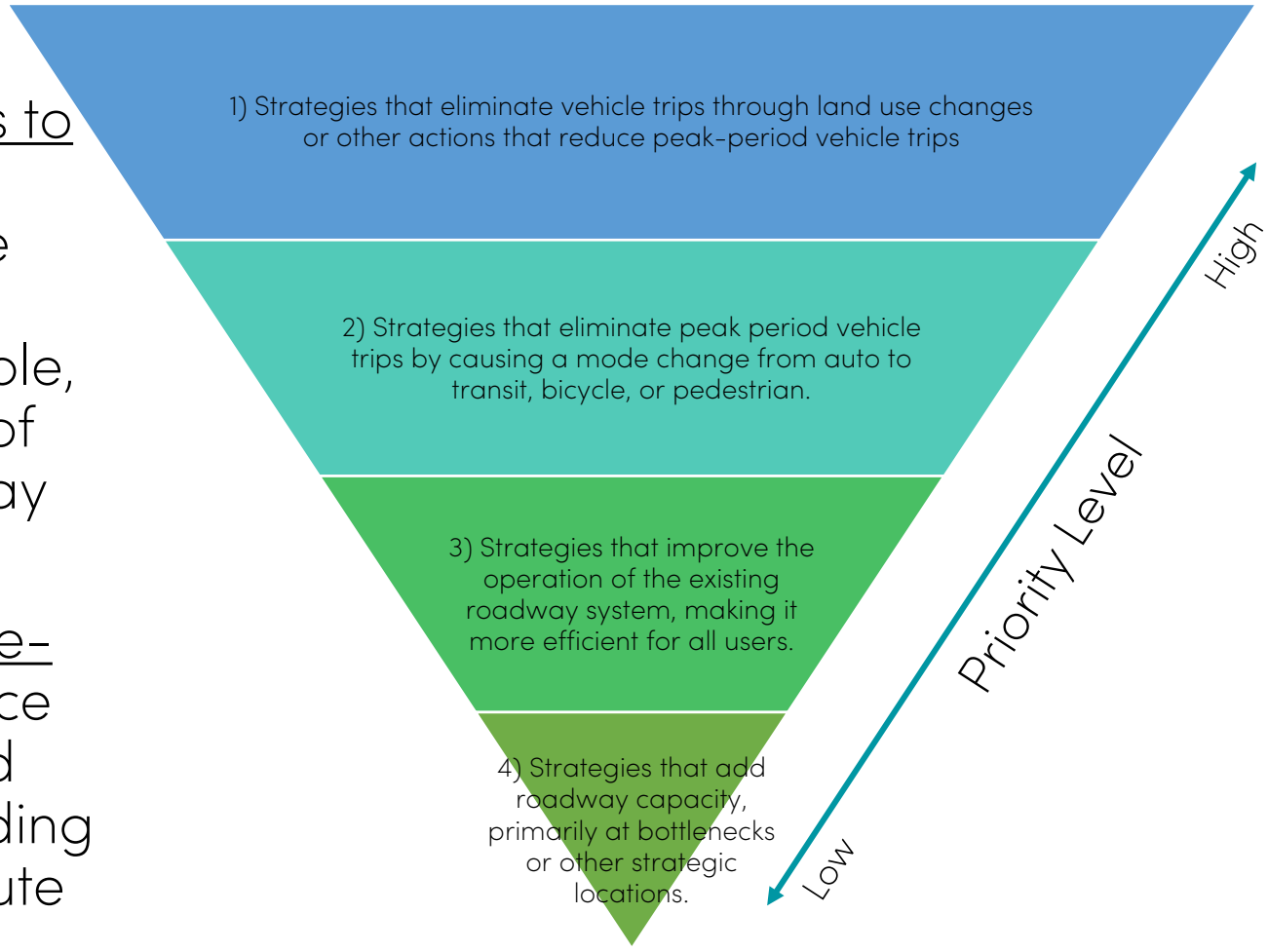
Monitor and evaluate how new technology and changing trends will impact how we use the transportation system – and its effects on climate



Congestion Management Process

Objectives and Priorities

- ❑ Increase system reliability for all modes to provide for the safe and efficient movement of people and goods on the region's arterial roadway network, reducing excessive delays where possible, prioritizing operational improvements of existing infrastructure over new roadway capacity expansion
- ❑ Prioritize TDM and alternatives to single-occupancy vehicle (SOV) travel to reduce roadway demand, increase equity, and minimize environmental impacts, including greenhouse gas emissions that contribute to climate change
- ❑ Support the Regional Dev. Framework



Our System Tomorrow: Needs Analysis and Recommendations

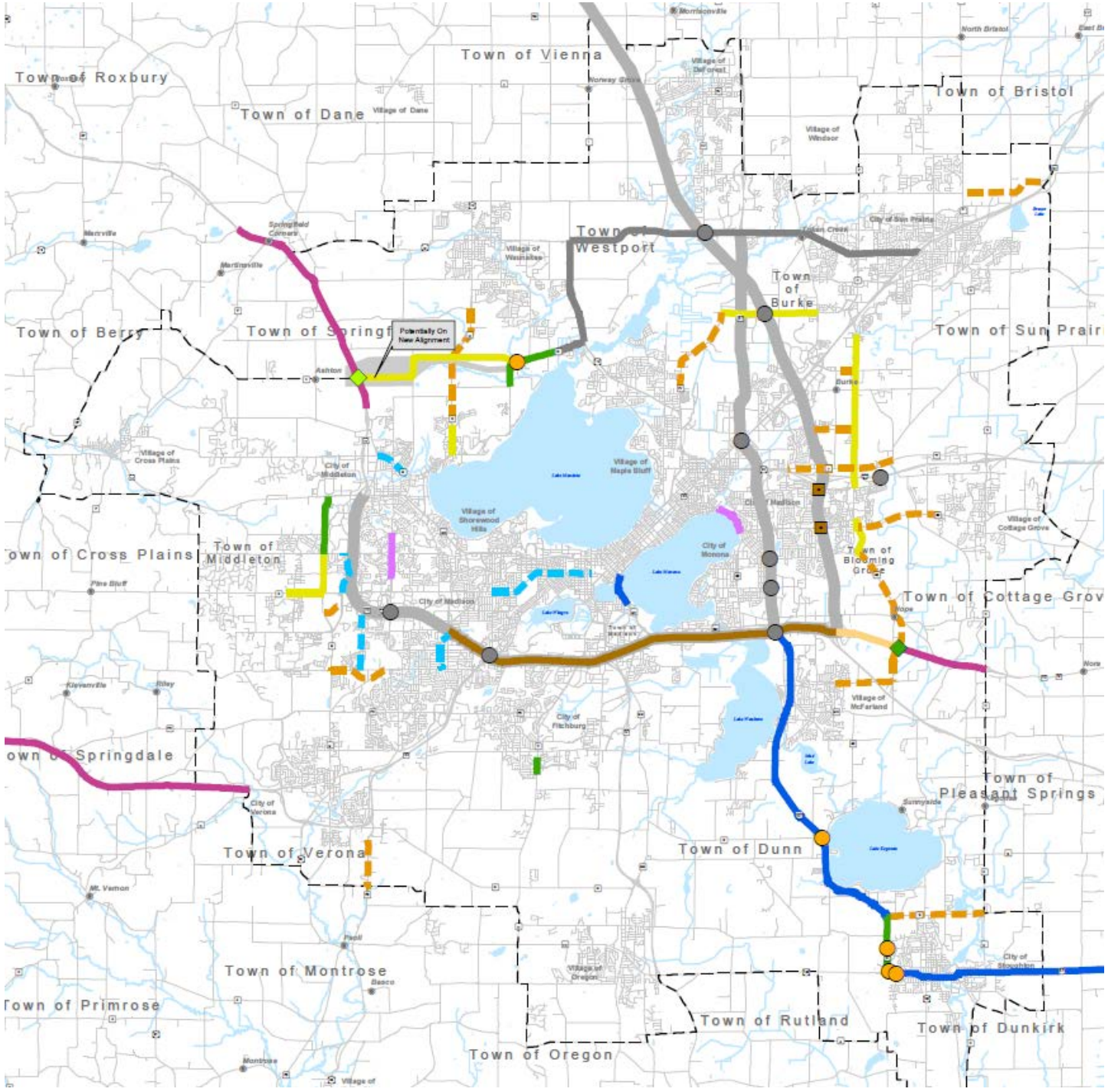
Streets and Roadways

Major Roadway Projects and Studies

Recommendations

- Bridge Capacity Expansion (Planned)
- Major Intersection Improvement (Programmed)
- New or Improved Interchange (Programmed)
- New or Improved Interchange (Planned)
- Study Potential Interchange or Intersection Improvement

- Freeway Capacity Expansion: Flex Lanes (Programmed)
- Freeway Conversion (Programmed)
- Official Map For Potential Freeway Conversion
- Major Arterial Roadway Reconstruction (Programmed)
- Major Corridor Studies (Current)*
- Major Corridor Studies (Recommended)
- Arterial Roadway Capacity Expansion (Programmed)
- Arterial Roadway Capacity Expansion (Planned)
- Reserve ROW Official Map, Manage Access
- Arterial Roadway Capacity Reduction (Programmed or Planned)
- Study Potential Capacity Reduction



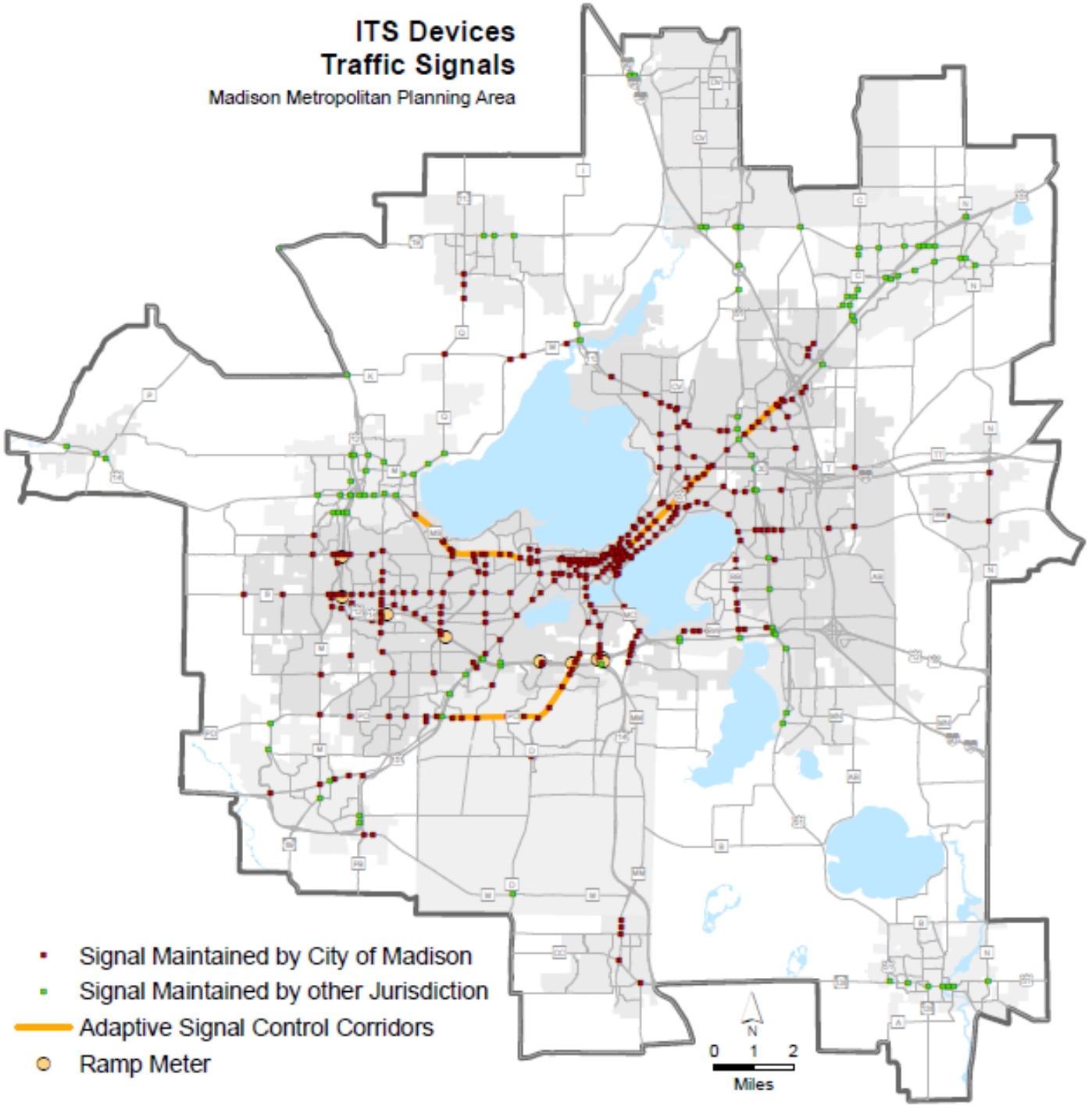
TSM and Technology

Transportation Systems Management

Recommendations

Develop a Regional Transportation Systems Management and Operations (TSMO) Plan.

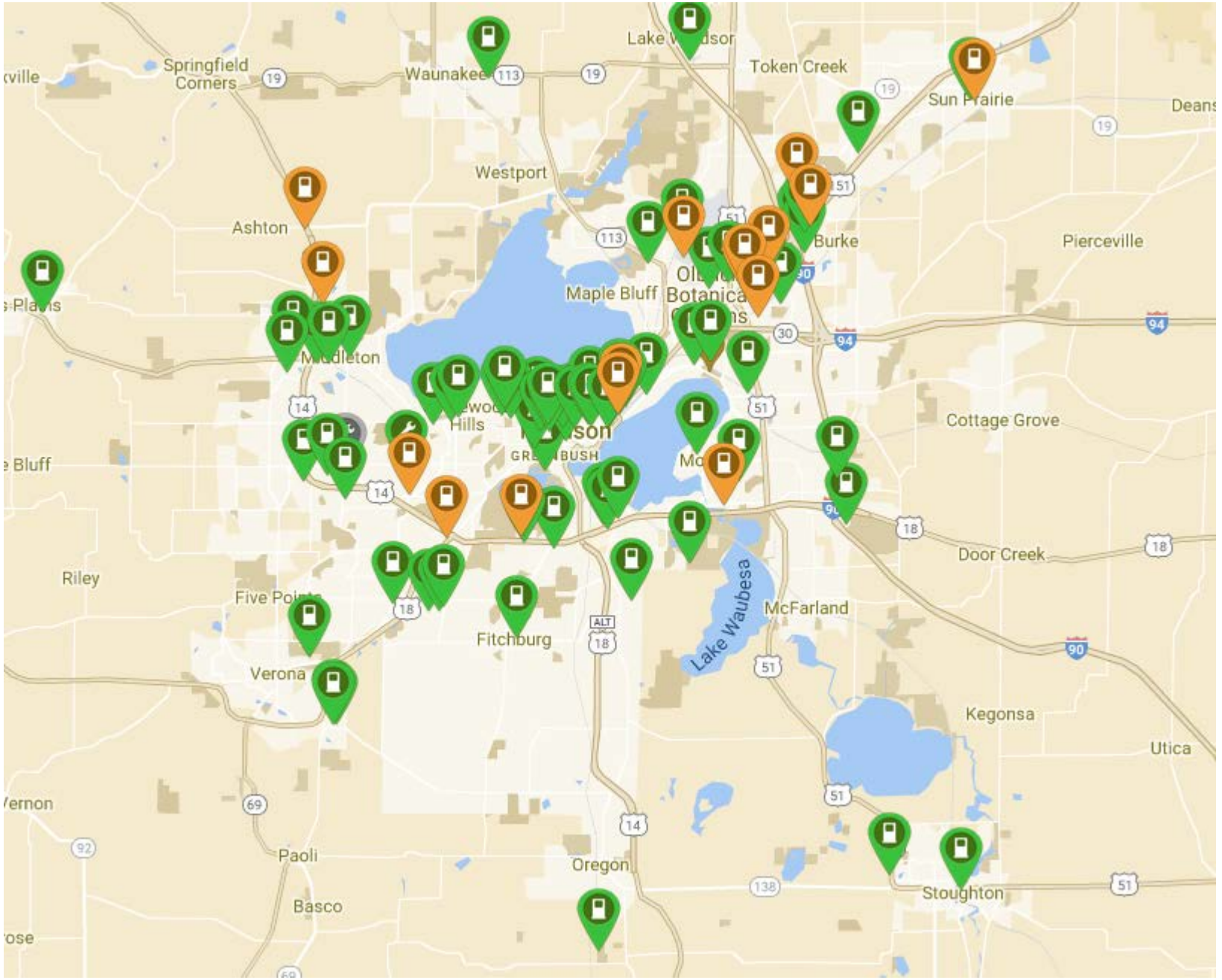
Implement and update the Regional Intelligent Transportation Systems Strategic Plan.



Vehicle Electrification

Recommendation

Promote transition towards electric vehicles to reduce greenhouse gas (GHG) emissions by developing charging infrastructure.



Public Transit

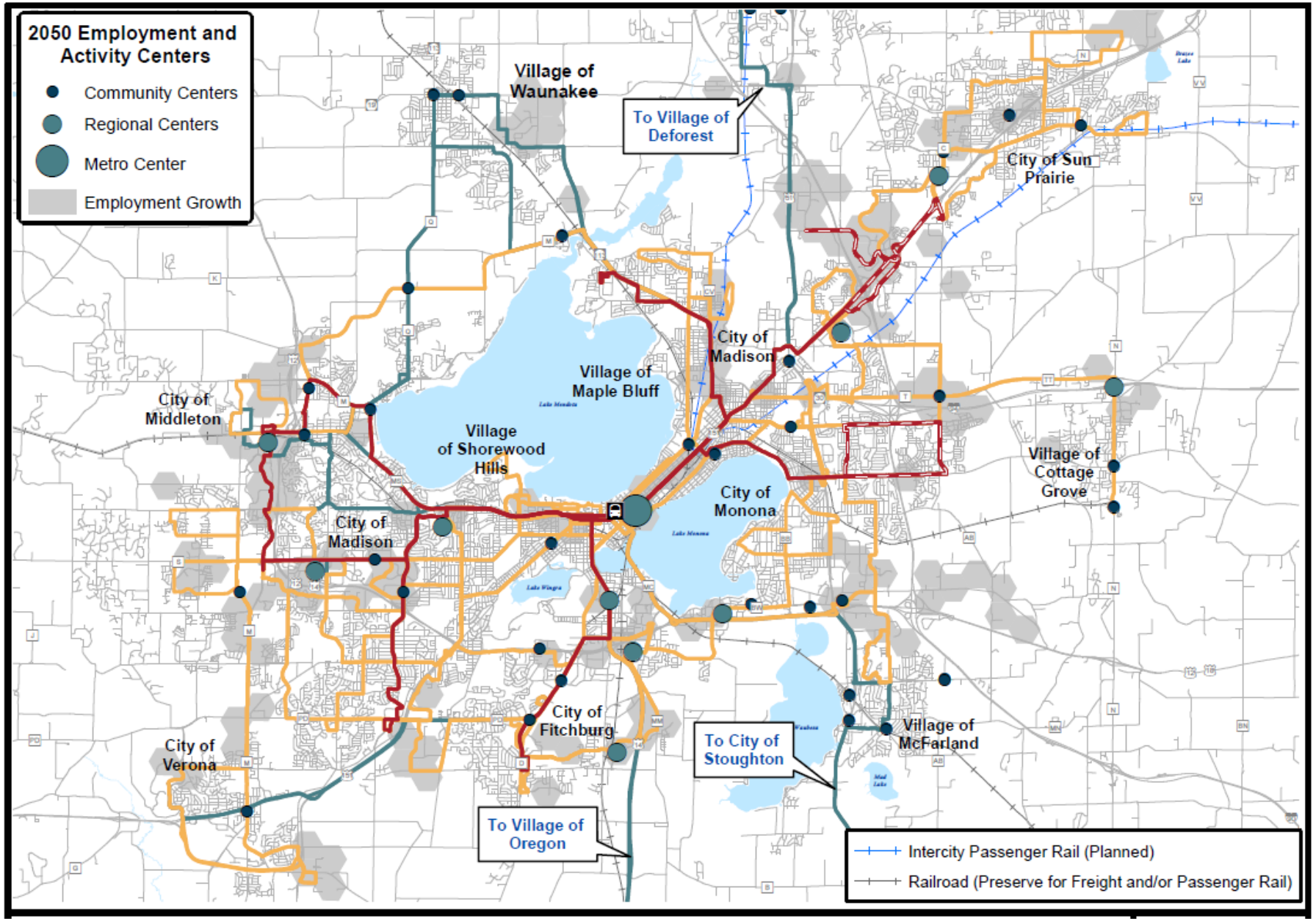
Future Network – Service Types

Recommendations

Implement BRT System Vision

Implement regional express network

Add service in developing neighborhoods



Bus Rapid Transit (BRT) Route

BRT Route- Local Service

Express/Commuter Route

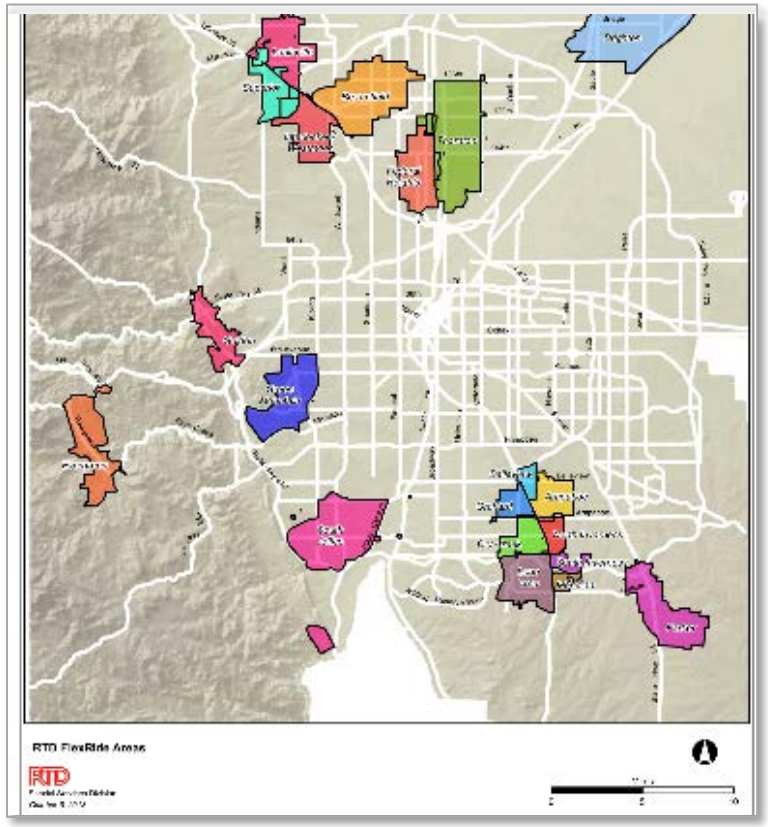
Local Route

Microtransit, Mobility Hubs, and Micromobility

Microtransit

Deviated route or demand-response

Limited service area



RTD FlexRide (Denver, CO)

Mobility Enhancements – Combined as "Mobility Hubs" at Transit Stops

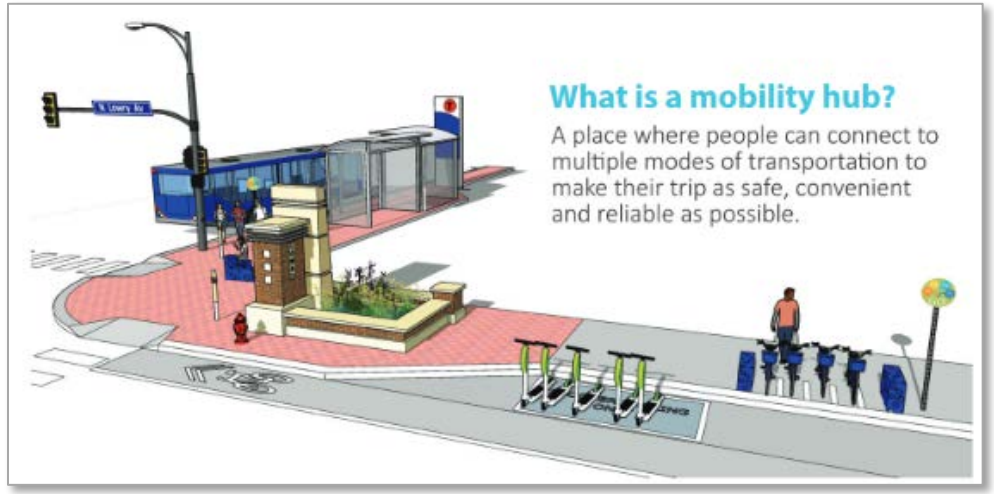
Taxi/TNC* stand

Micromobility options (e.g. BCycle, e-scooters)

Covered bicycle storage, fix-it stations

Car share (e.g. Zipcar)

*Transportation Network Company (Uber, Lyft, Carepool)



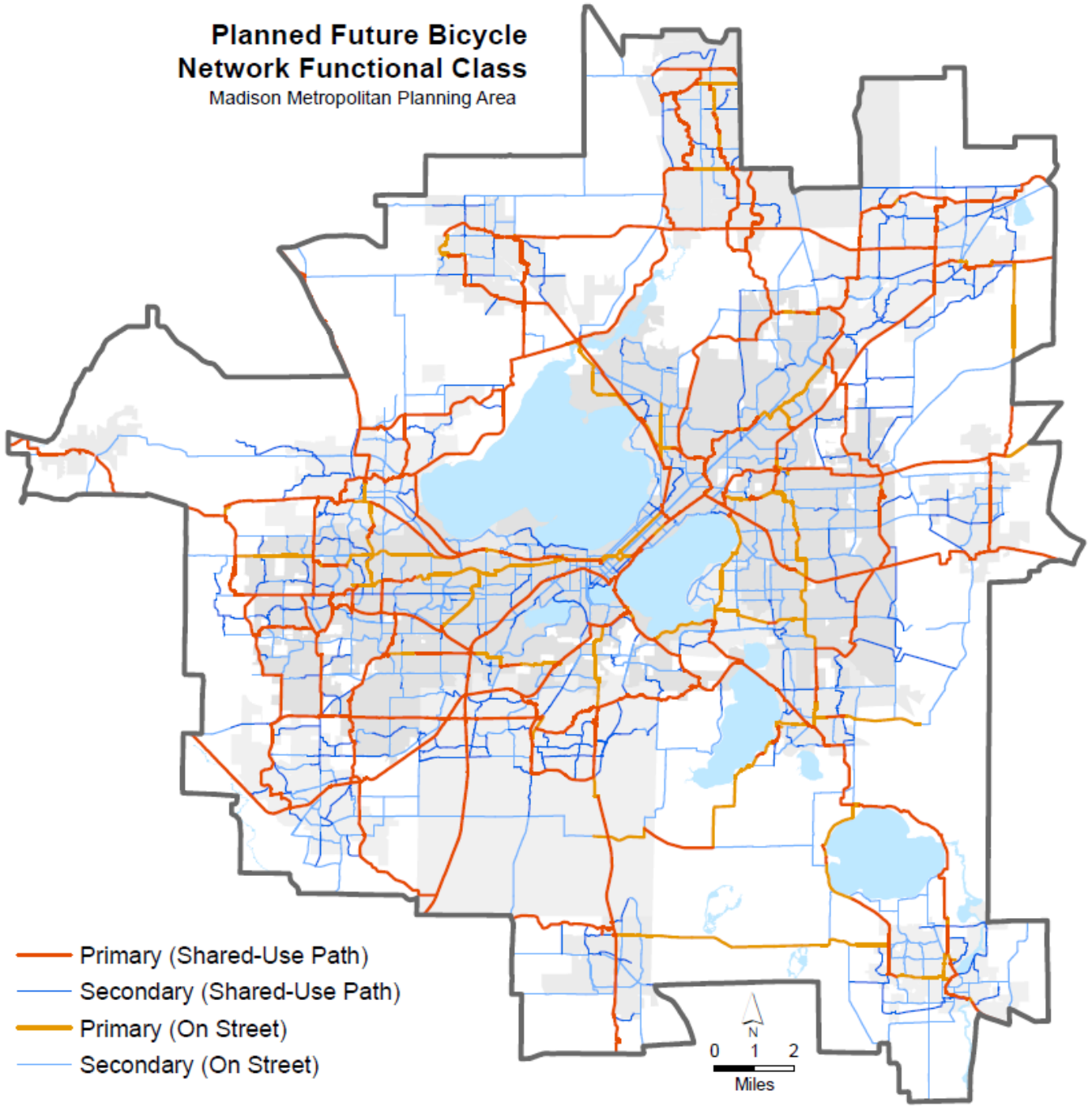
Minneapolis, MN

Bicycle Network

Existing and Planned Bike Facilities

Recommendation

Expand the bikeway system with new shared-use paths and on-street facilities.



Pedestrian Network

Pedestrian Network

Key Recommendations

Provide sidewalks and appropriate pedestrian amenities in developing neighborhoods

Retrofit regional streets with modern, safe, and accessible pedestrian accommodations

Improve safety and usability for pedestrians at intersections and crossings

Maintain sidewalks and pedestrian facilities for year-round use

Design new streets and retrofit existing streets to reduce speeding

Transportation Demand Management (TDM)

TDM Program & Recommendations

The MPO's TDM program, **RoundTrip**, uses information, encouragement and incentives to promote alternatives to driving alone in Dane County.

Key Recommendations

Increase regional capacity to implement TDM.

Support shared mobility (ridesharing programs, park & rides, bike share, car share, etc.).

Work with municipalities, employers, and institutions.

Expand financial incentives and encouragement programs.

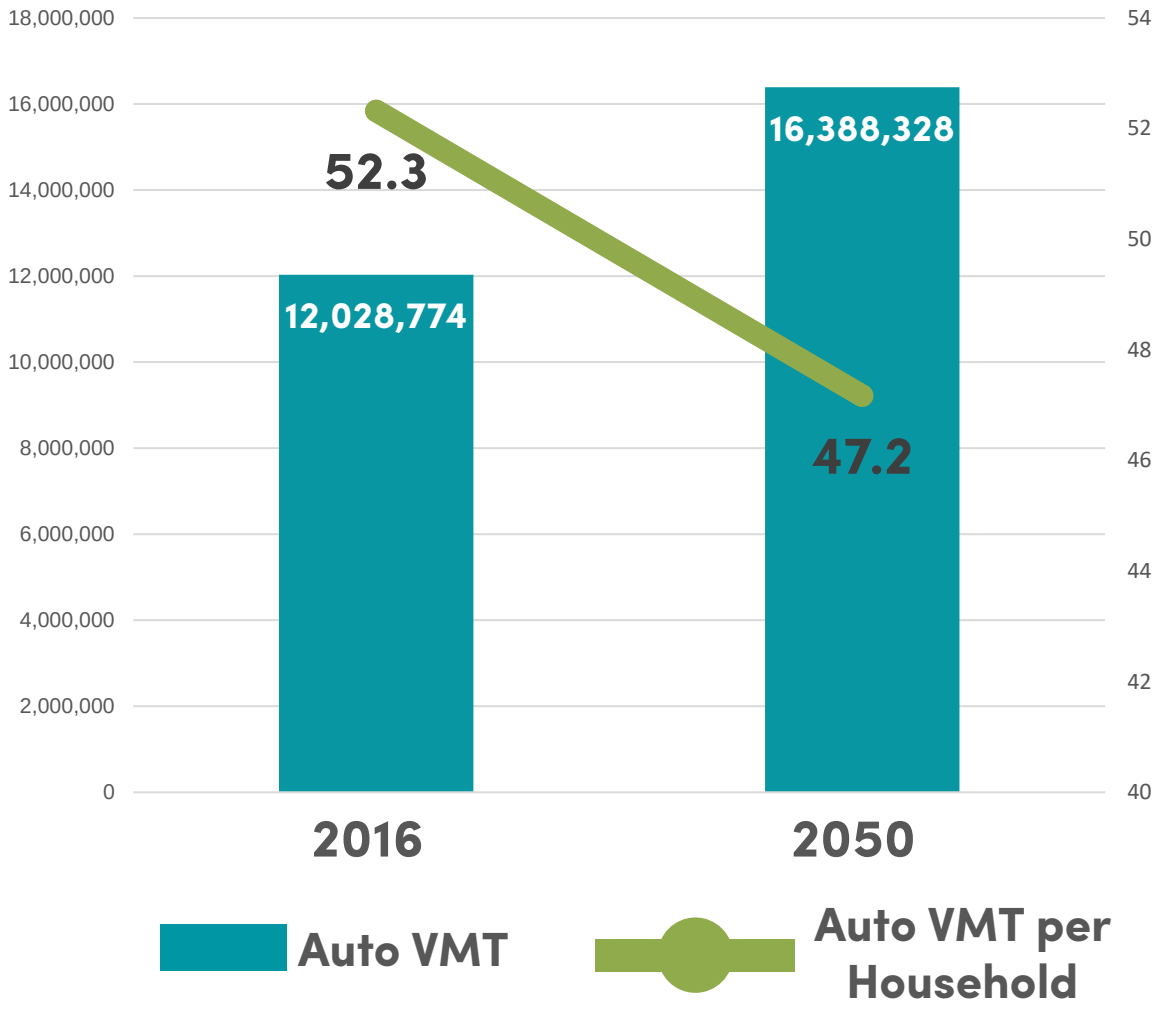
Support Safe Routes to School and other school-based strategies.

Other Plan Components and Recommendations

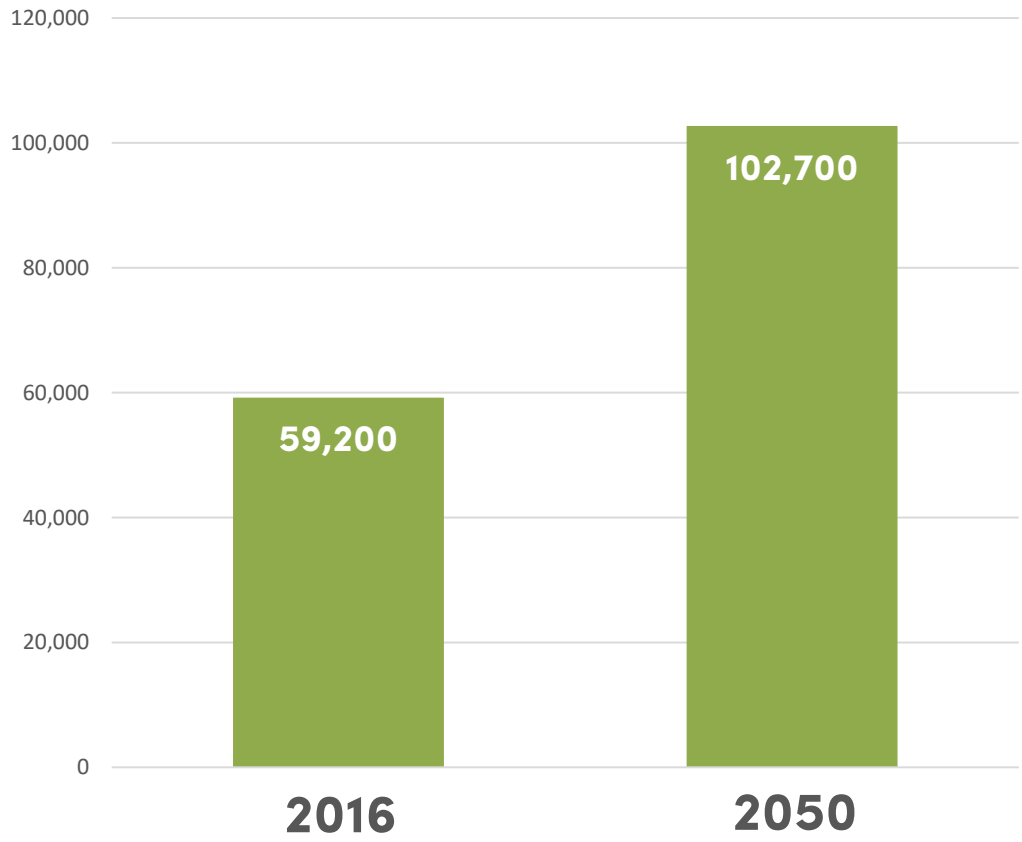
Plan Performance Measures

Vehicle Miles Traveled and Transit Boardings

Vehicle Miles Traveled



Daily Transit Boardings



Funding

Funding

New Opportunities through IIJA/BIL

Carbon Reduction Program (CRP)

New funding programs for EV charging

New funding programs for passenger rail

Challenges

State prohibition against regional transportation/transit authorities (RTAs)

Reliance on gas tax (also creates opportunities)

MPO-Administered Funding

STBG-Urban: $9 million annually

- Funds most all capital projects and TDM

Transportation Alternatives: $1.2 million annually

- Funds primarily bicycle projects

Carbon Reduction Program (*NEW*): $1.1 million annually

- Funds projects that reduce transportation emissions

5310 (Specialized Transp.): $500,000 annually

- Funds projects that enhance services for seniors and people with disabilities

2021 Revisions to STBG-Urban Project Scoring System

STBG-Urban Project Scoring System

	Category	Scoring System			
		Roadway	Transit (Infrastr.)	ITS	Bike
1	Importance to Regional Transportation System and Supports Regional Development Framework	18	25	15	25
2	System Preservation	20	15	5	5
3	Congestion Mitigation/TSM *	12	15	20	5
4	Safety Enhancement	20	5	20	20
5	Enhancement of Multi-modal Options/Service	12	15	15	25
6	Environment	8	10	15	5
7	Equity	10	15	10	15
	Total	100	100	100	100

Call to Action

What actions can communities, businesses, and individuals take to reduce emissions and foster resilience at the local level?

CALL TO ACTION

Local Governments

Lead by example in your operations (facilities and fleet)

Make it easy for residents and businesses to make sustainable choices

- Land use planning
- Transportation options
- Parking policies
- Permitting

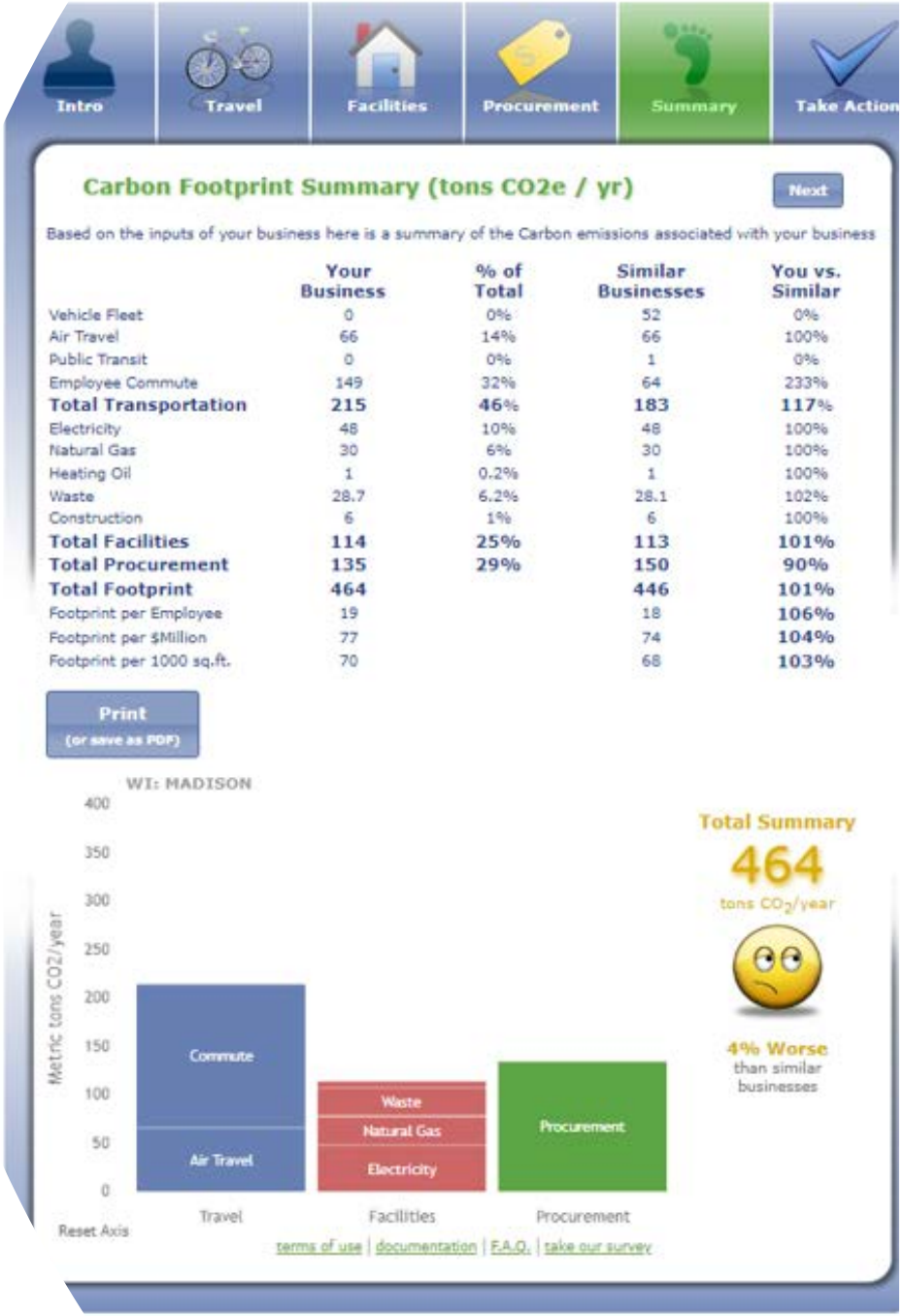
CALL TO ACTION

Businesses

Calculate your total emissions

- Calculating business emissions

Then focus on reducing the top 2-3 sources



CALL TO ACTION

Businesses

Reduce wasted energy, resources

Support sustainable employee and customer transportation options

- RoundTrip
- League of American Bicyclists Bicycle Friendly Businesses

Strategic facility siting

CALL TO ACTION

Individuals

Flex your Climate Superpowers as a

- **Consumer** – make sustainable purchases and housing and transportation choices
- **Investor** – invest your money in climate friendly businesses
- **Role Model** – talk about climate action, celebrate leadership
- **Employee/Student** – encourage climate friendly policies and options at school and work
- **Community Member** – share your ideas, vote your values, be a YIMBY

Superpower categories from Kimberly Nicholas

Questions?

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