Planning Minnesota's Transportation Future

Why we're here

Let's talk trends.

We need your help

Statewide Multimodal Transportation Plan Update

Why are we here?

MnDOT is planning for the future of the state's transportation system

We want to understand what you think

We want to **understand** what you think

We're visiting workplaces, events, and standing meetings to hear from you.

In addition to stakeholder forums

Where do we begin?

Minnesota's multimodal transportation system maximizes the health of people, the environment, and our economy.

Minnesota GO 50-year Vision

Prezi

Minnesota GO 50-year Vision

What are we trying to achieve?

Minnesota GO 50-year Vision

Minnesota GO 50-year Vision

What are we trying to achieve?

Statewide Multimodal Transportation Plan

How are we going to achieve it?

Modal and System Plans

What does that mean for each type of transportation?

< Considered as part of the Highway Investment Plan >

Greater Minnesota Transit Investment Plan

Pedestrian Plan

Bicycle Plan

State Highway Investment Plan

Freight System Plan

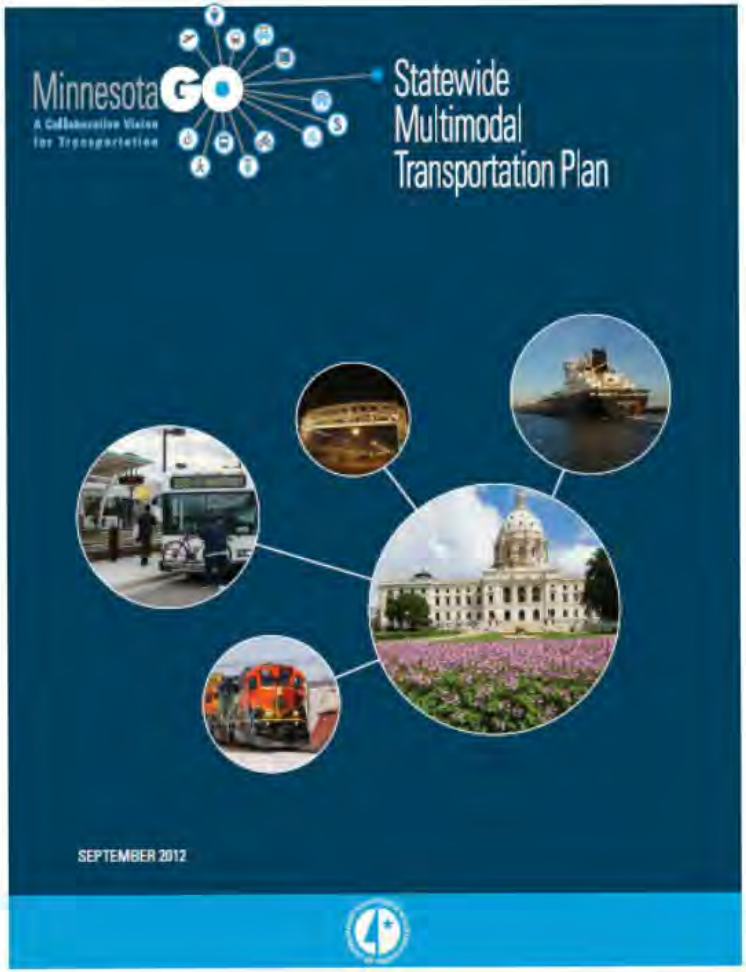
Aviation Plan

Rail Plan

Ports & Waterways Plan

< Considered as part of the Freight System Plan >

What is the SMTP?

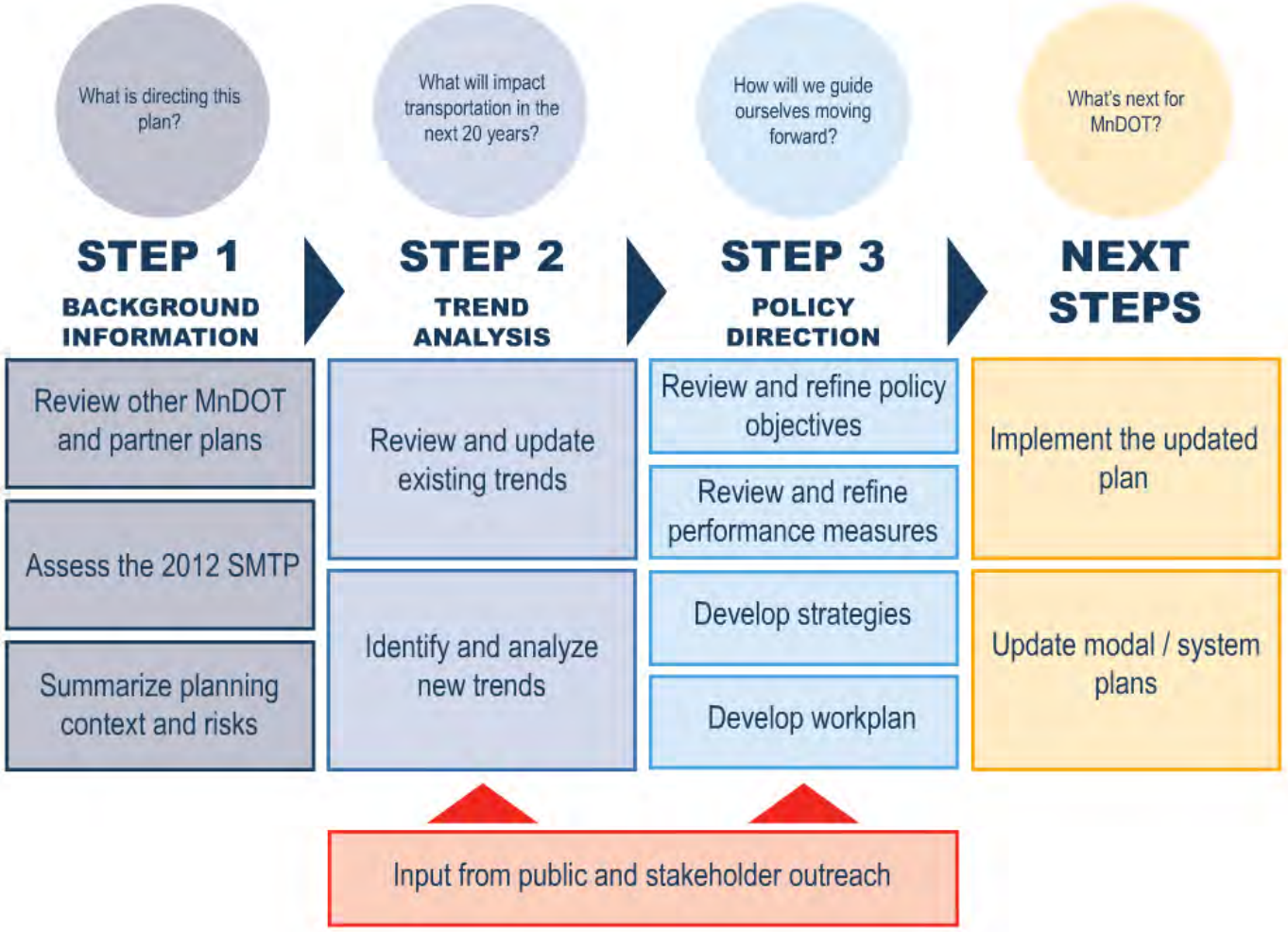


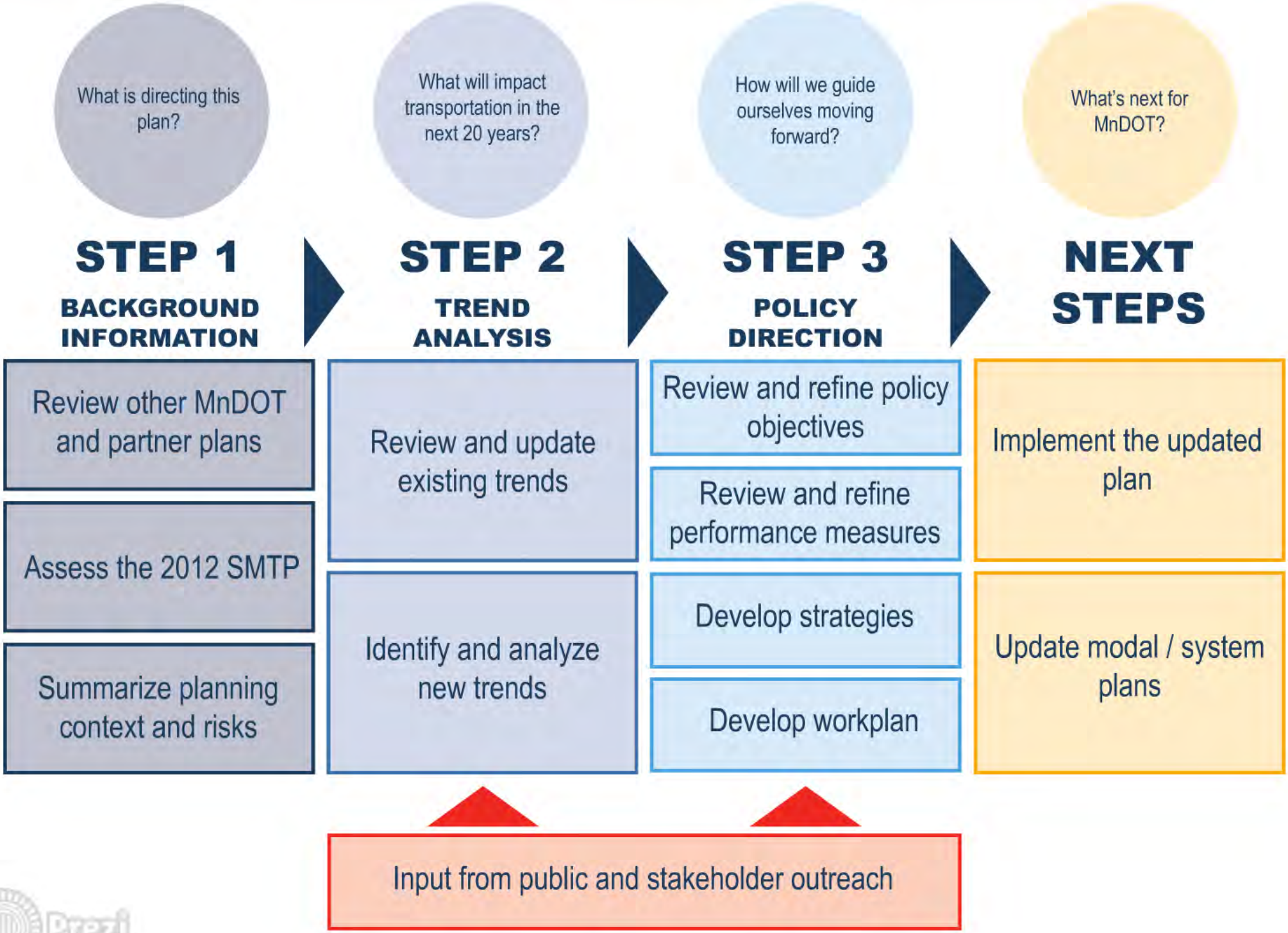
- Statewide Multimodal Transportation Plan
- Plan that translates the 50-year Minnesota GO Vision in to policy direction
- Updated every four years

Policy Objectives

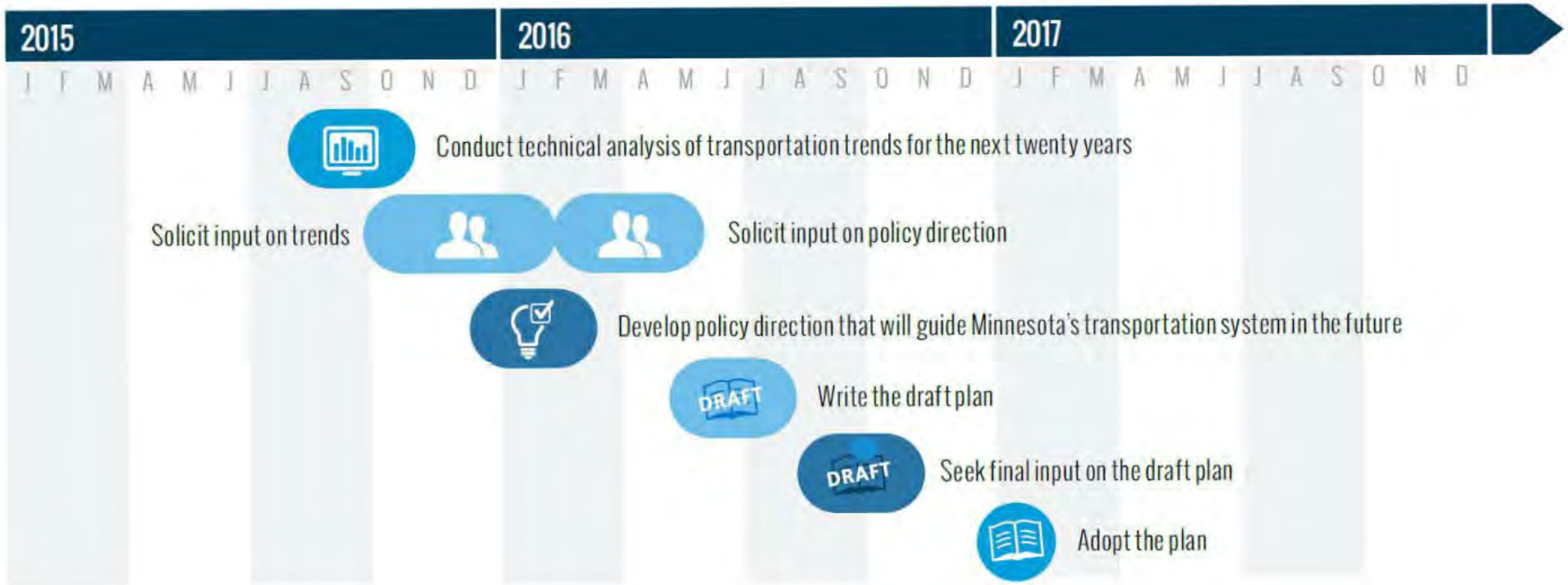
- Accountability, Transparency & Communication
- Traveler Safety
- Transportation in Context
- Critical Connections
- Asset Management
- System Security

Update Process




What is directing this plan?
What will impact transportation in the next 20 years?
How will we guide ourselves moving forward?
What's next for MnDOT?
STEP 1
BACKGROUND INFORMATION
STEP 2
TREND ANALYSIS
STEP 3
POLICY DIRECTION
NEXT STEPS
Review other MnDOT and partner plans
Assess the 2012 SMTP
Summarize planning context and risks
Review and update existing trends
Identify and analyze new trends
Review and refine policy objectives
Review and refine performance measures
Develop strategies
Develop workplan
Implement the updated plan
Update modal / system plans
Input from public and stakeholder outreach

SMTP Update Timeline



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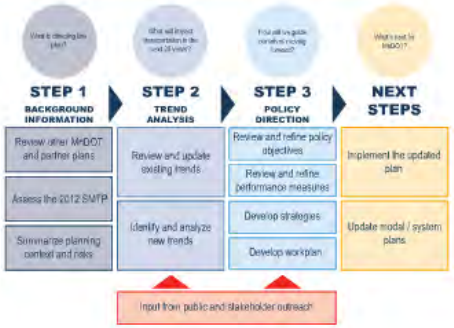

Let's talk trends.

Why focus on trends?

Environment
- Climate Change
- Environmental Quality

Transportation Behavior
- Urban & Rural Population Trends
- Transportation Behavior Changes
- Mobility as a Service
- Teleworking & e-Shopping

Population
- Demographic Trends in Minnesota
- Urban & Rural Population Trends
- Rural Disparities & Equity
- Minnesota's Aging Population
- Health Trends in Minnesota

Economy
- Economic Sectors & Employment Patterns
- Freight Rail in Minnesota
- Aging Infrastructure
- Public-Private Partnerships at MnDOT
- New Logistics
- Dynamic Road Pricing

Technology
- Autonomous Vehicles
- Mobile Telecommunications & Activity in Motion
- Sensors, Monitors & Big Data
- Electrification & Alternative Fuels
- Unmanned Aircraft Systems/Drones

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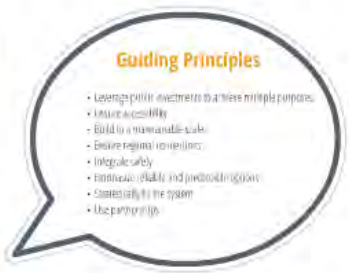

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Minnesota GO
A Collaborative Vision for Transportation

A Transportation Vision for Generations

Minnesota's multimodal transportation system maximizes the health of people, the environment and our economy.

- Connects Minnesota's primary assets—the people, natural resources and businesses within the state—to each other and to markets and resources outside the state and country
- Provides safe, convenient, efficient and effective movement of people and goods
- Is flexible and nimble enough to adapt to changes in society, technology, the environment and the economy

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Guiding Principles

- Leverage public investments to achieve multiple purposes
- Ensure accessibility
- Build to a maintainable scale
- Ensure regional connections
- Integrate safety
- Emphasize reliable and predictable options
- Strategically fix the system
- Use partnerships

Minnesota is changing is ways that will impact how people and goods move throughout the state.

The Statewide Multimodal Transportation Plan is a 20-year plan

Review recent past, make educated guesses about the future

Ask what the changes mean for transportation in Minnesota

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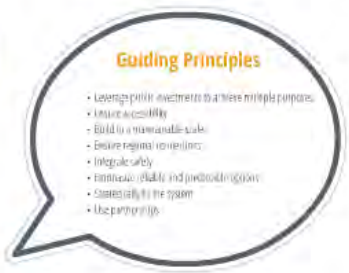

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Trend Analysis

Population

Racial Disparities & Equity

Aging Population

Demographics

Health

Urban & Rural Populations

Economy

Dynamic Road Pricing

Freight Rail

New Logistics

Aging Infrastructure

Public - Private Partnerships

Economy & Employment

Environment

Environmental Quality

Climate Change

Transportation Behavior

Mobility as a Service

MnPASS

Transportation Behavior

Teleworking & e-Shopping

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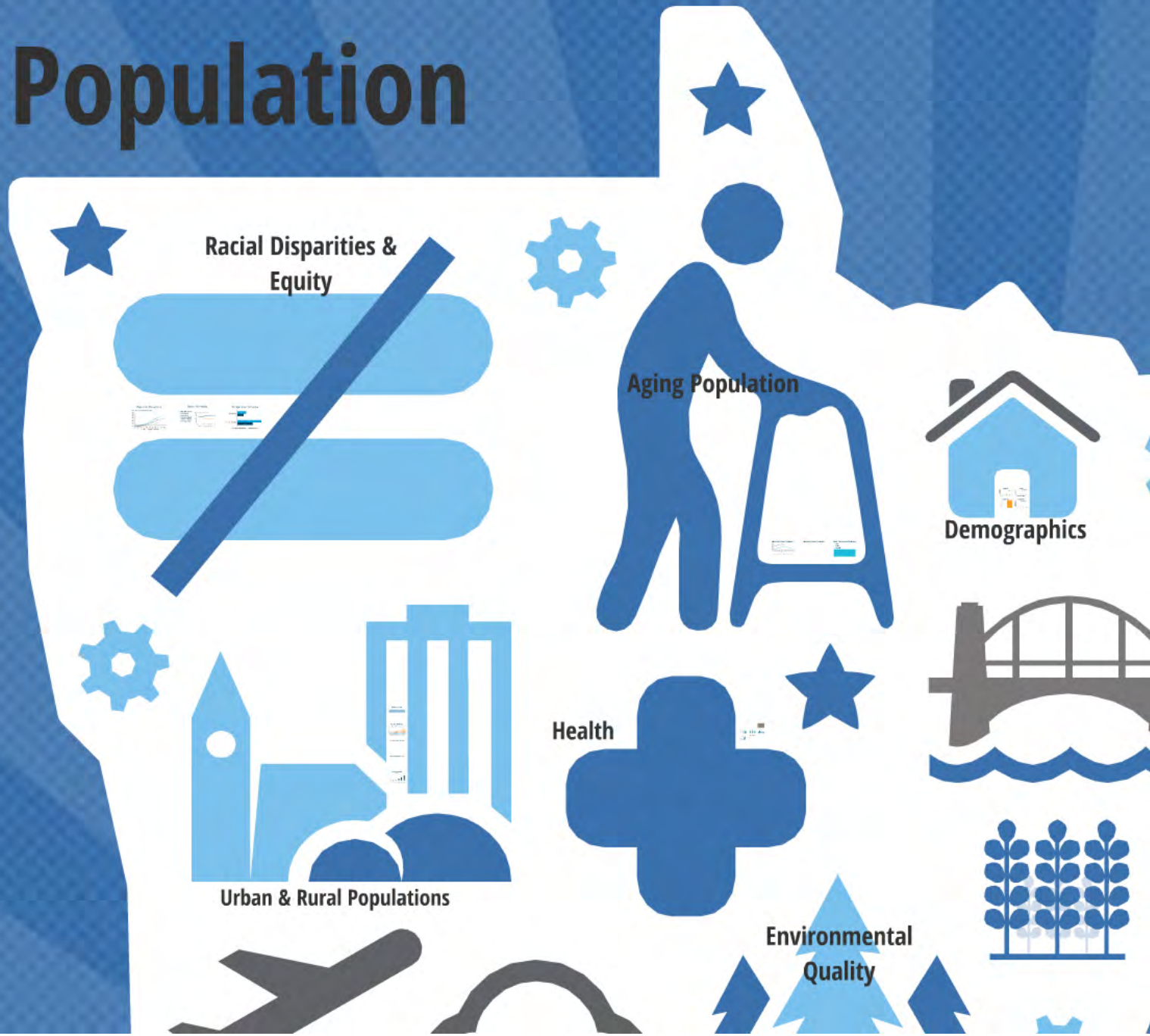
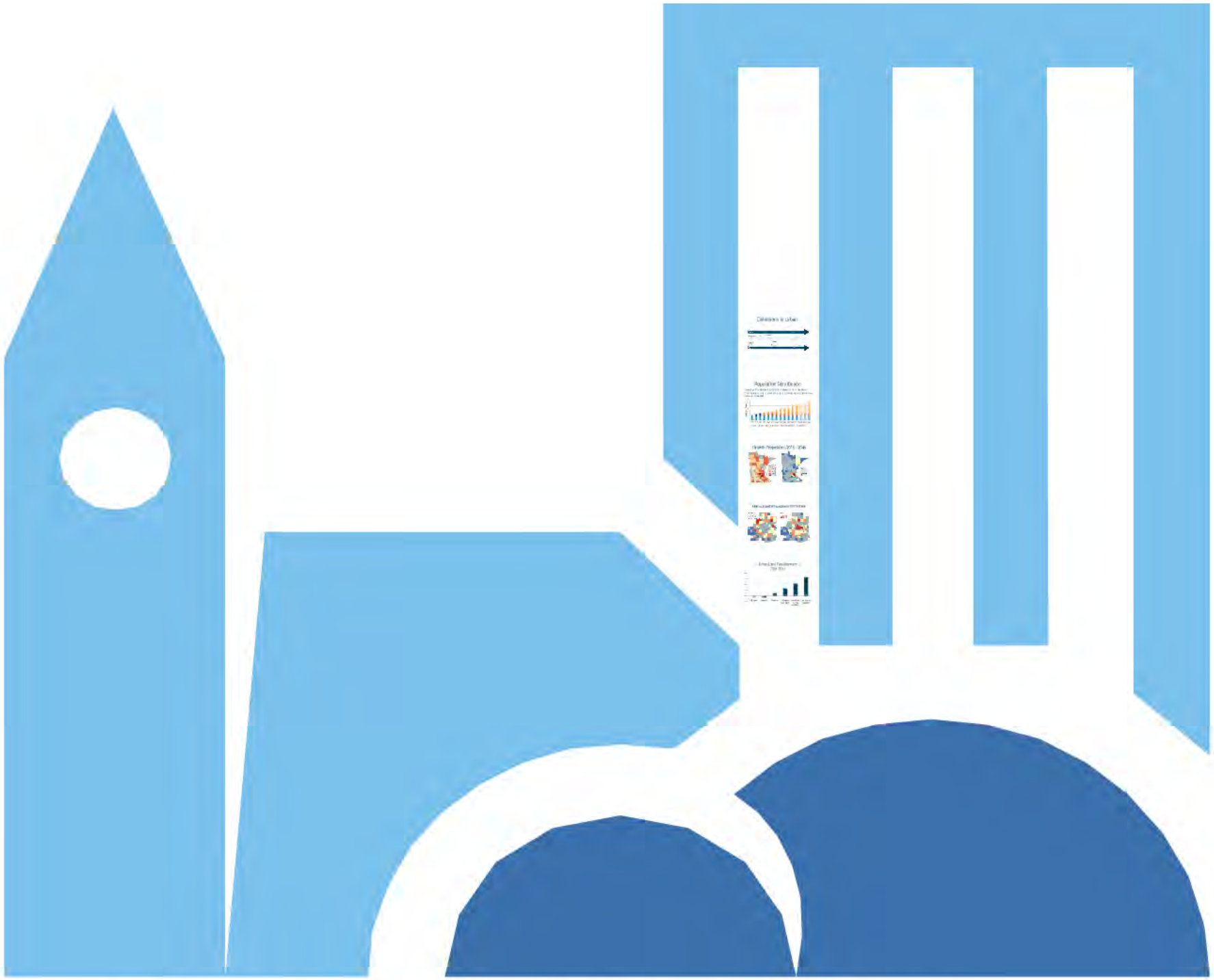
GO

We need you

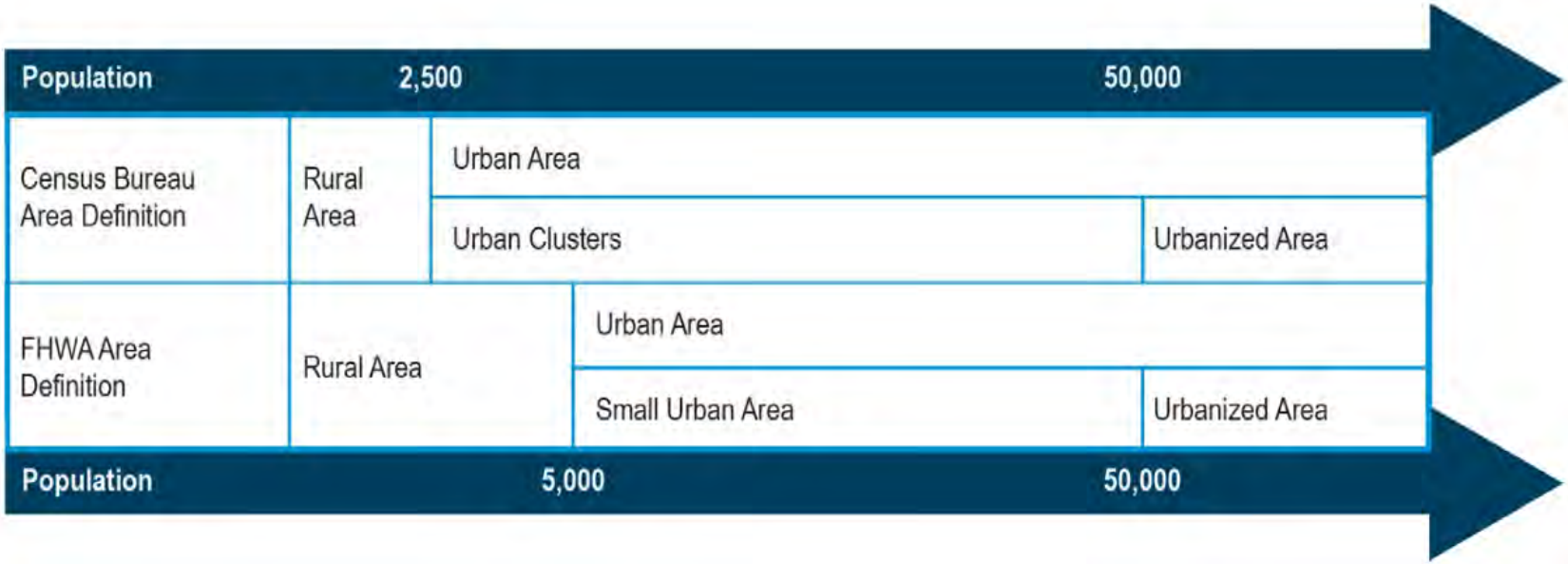
Population





Urban & Rural Populations

Definitions of Urban



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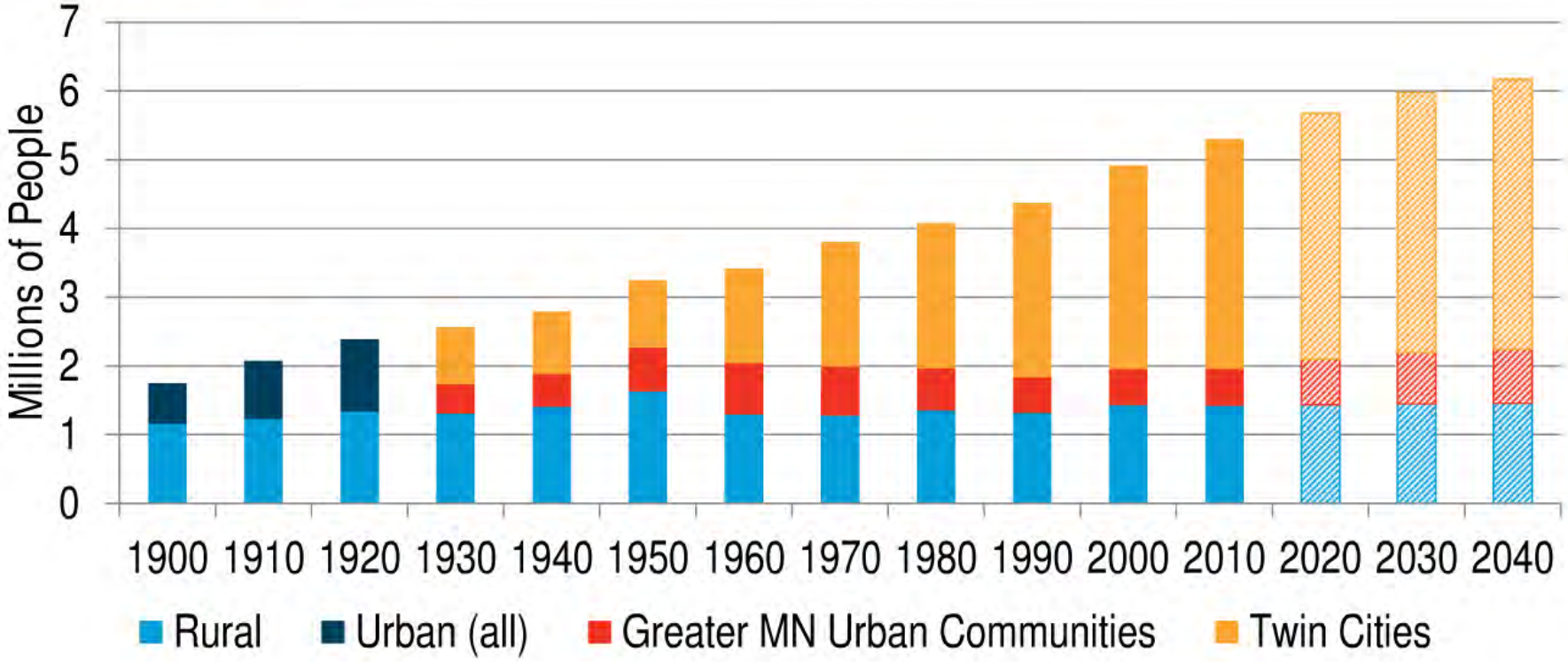

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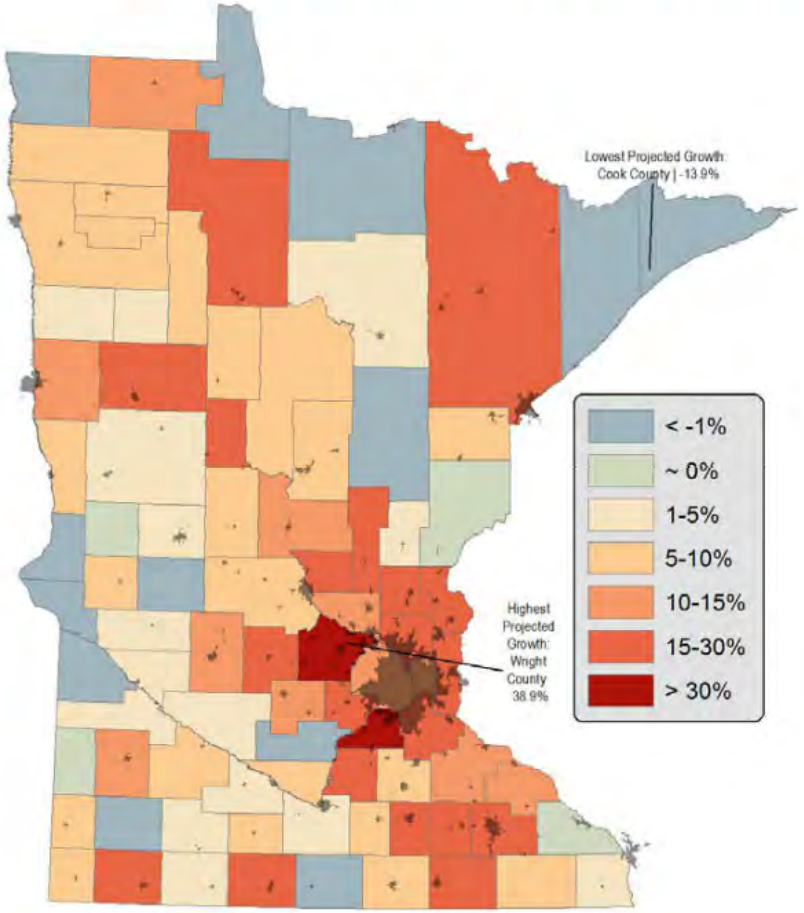

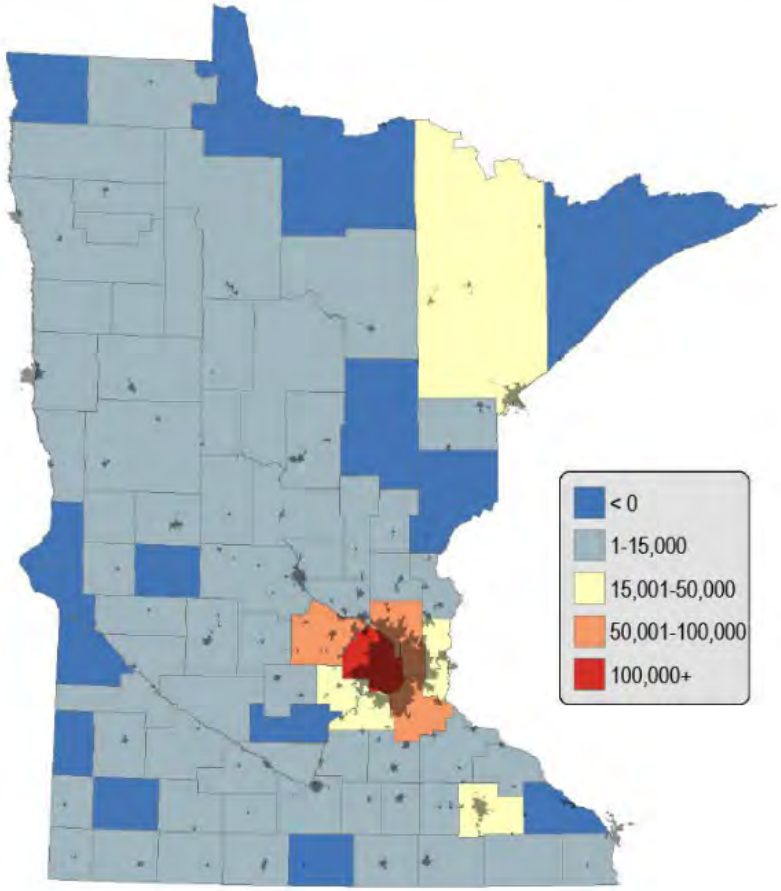

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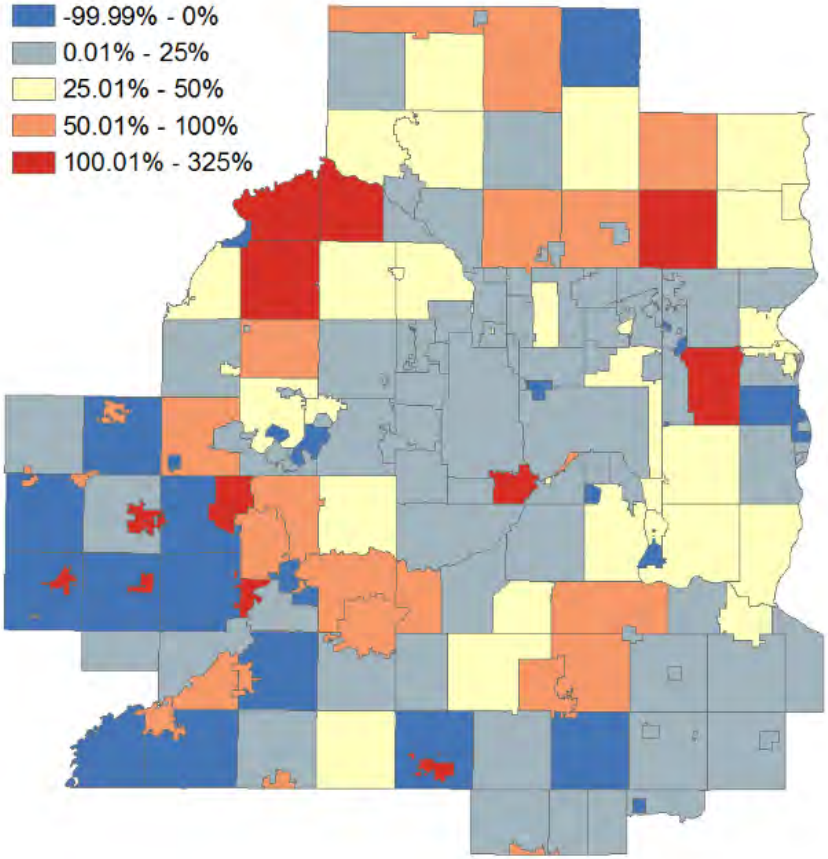
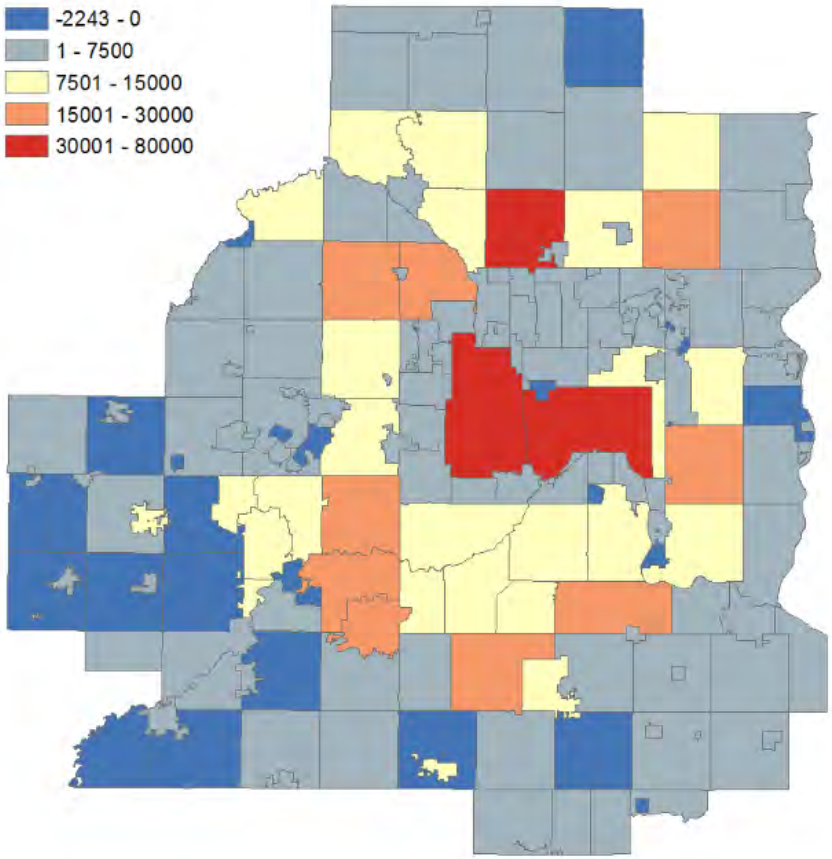
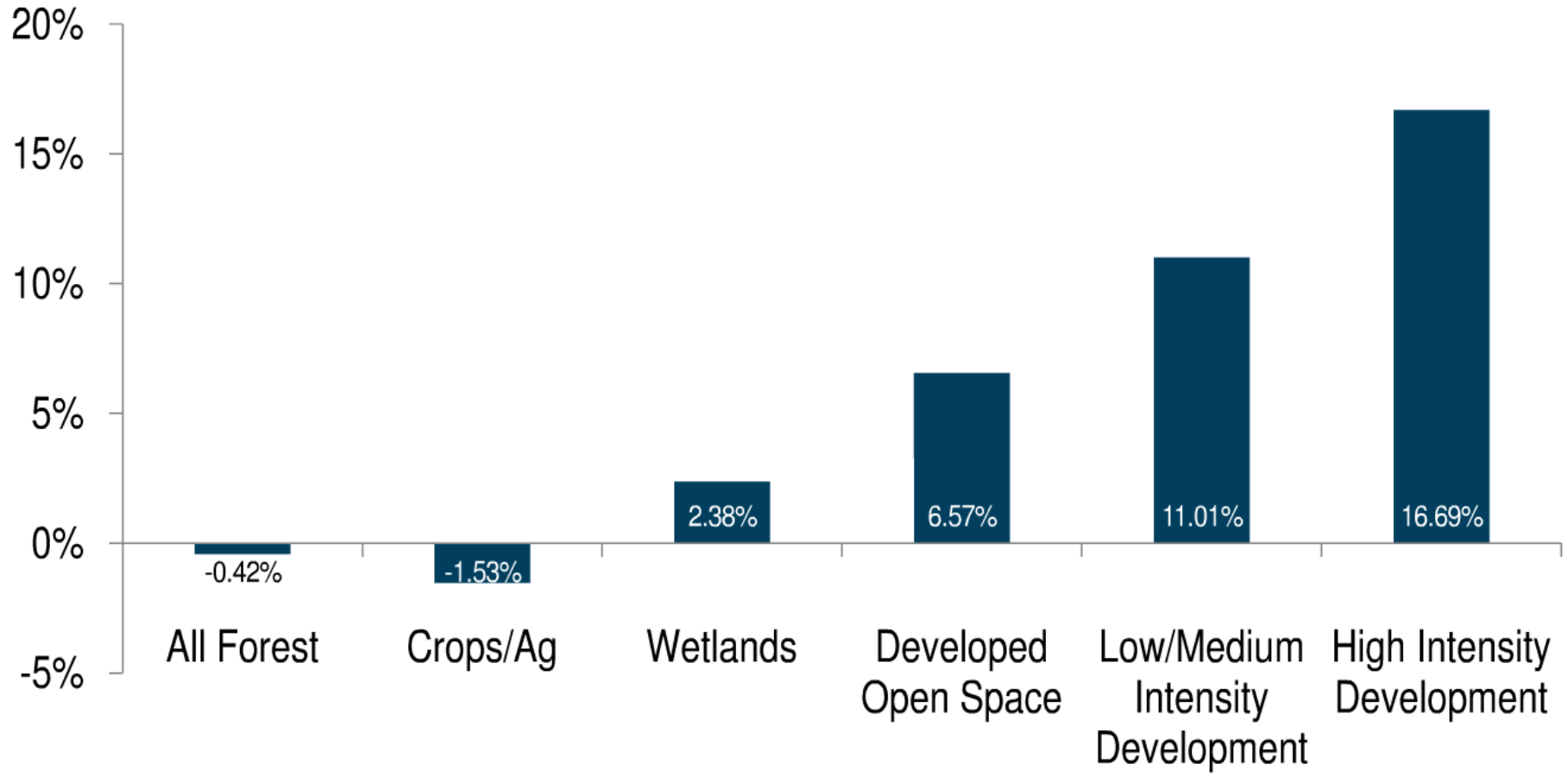




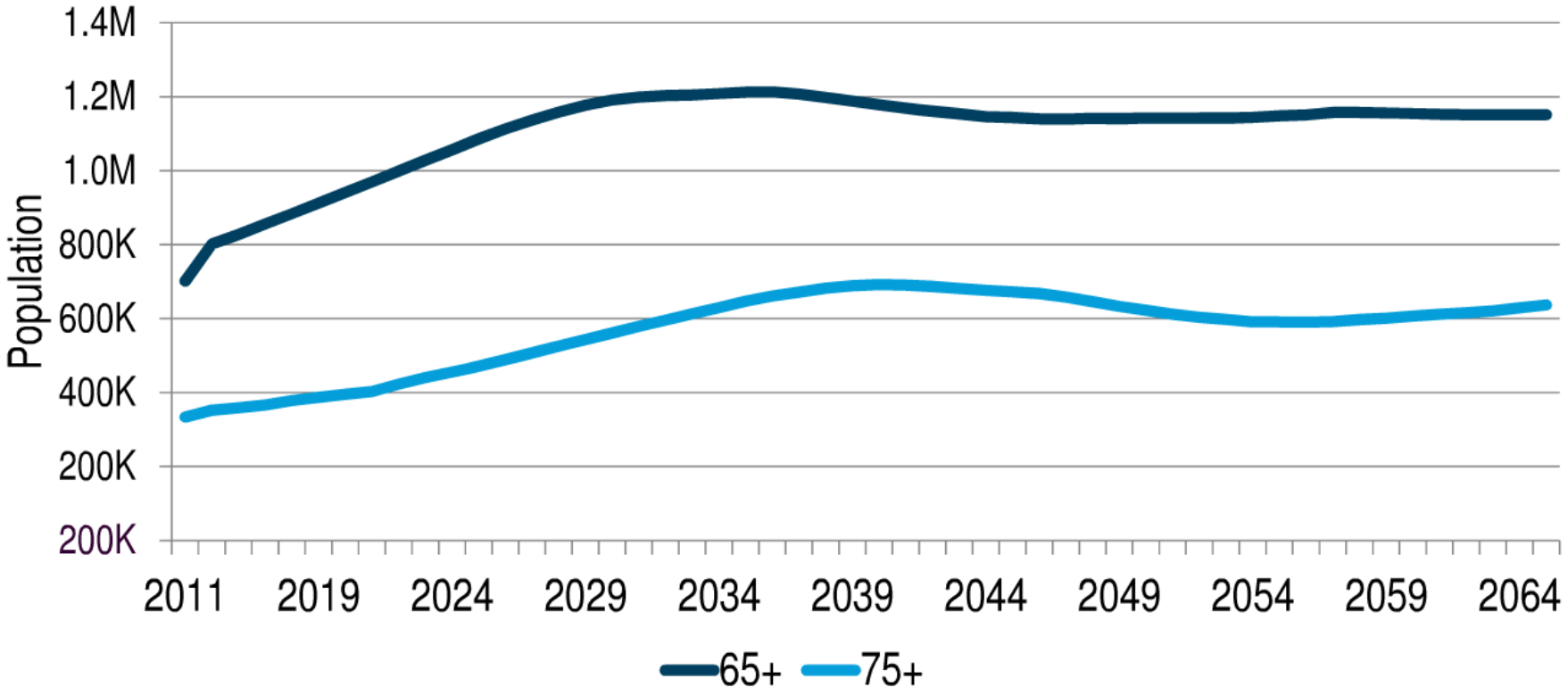
Urban Land Development 2001-2011



Aging Population

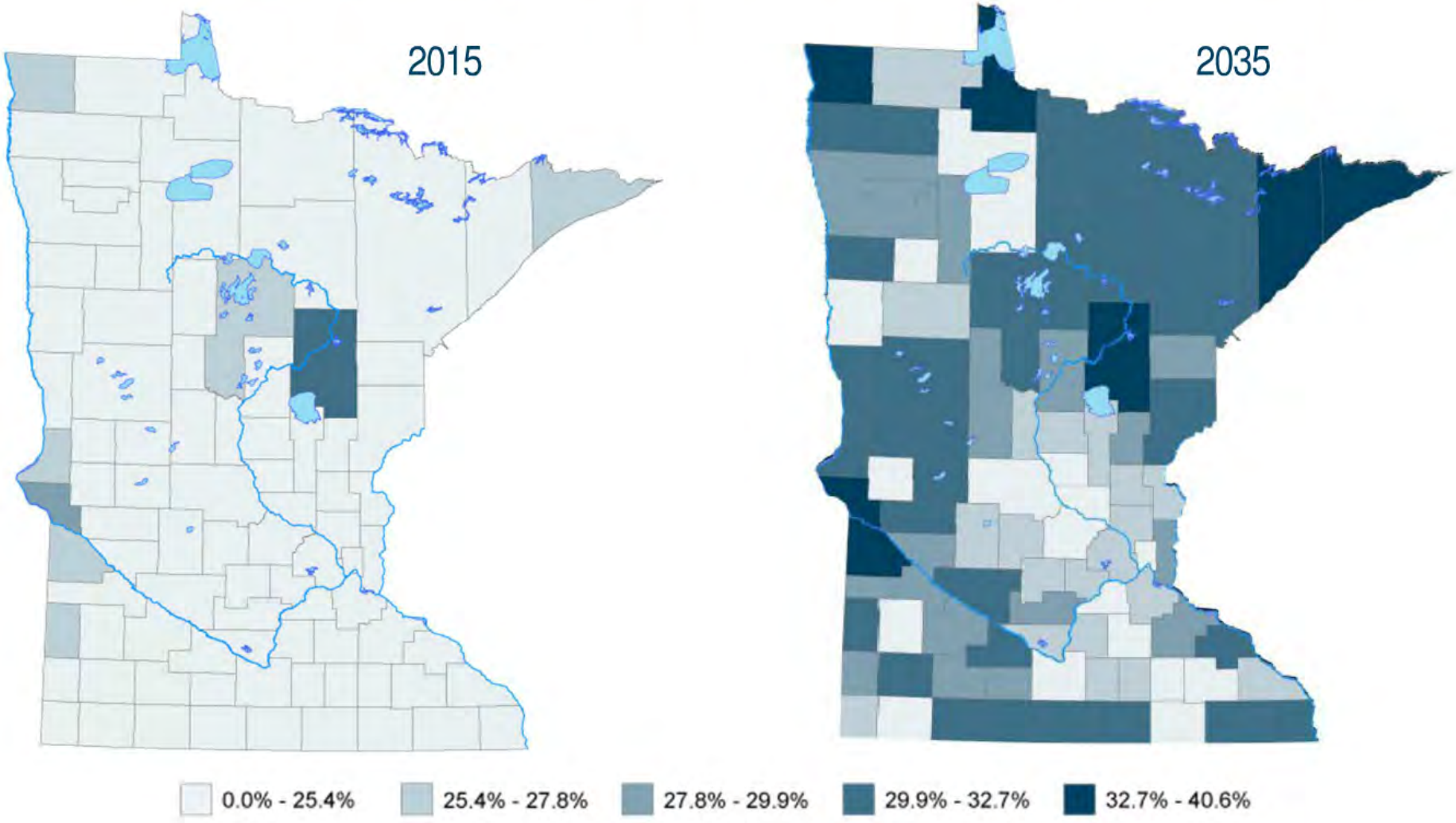
Demog

Minnesota's Senior Population



- By 2035 more Minnesotans will be older than 65 than under 18

Minnesota's Senior Population

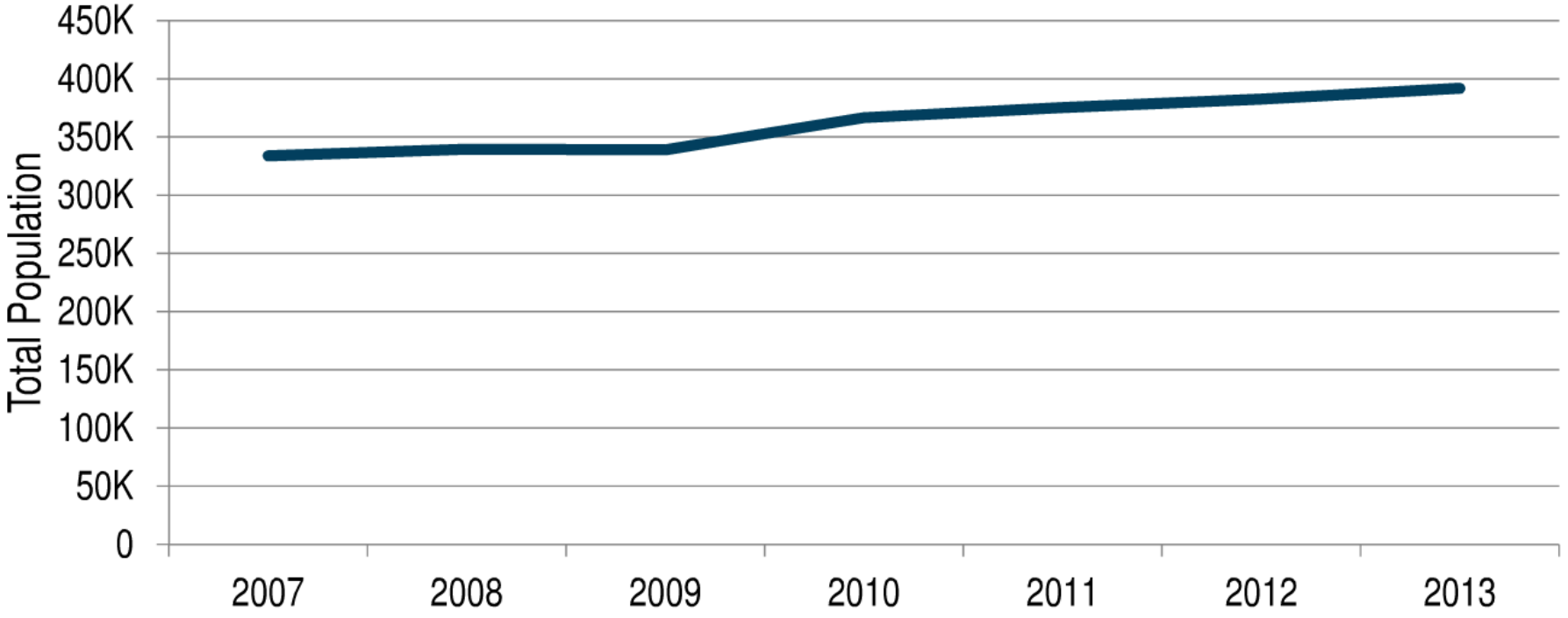


Senior Transportation Challenges

- Safety
- Mobility
- Affordability

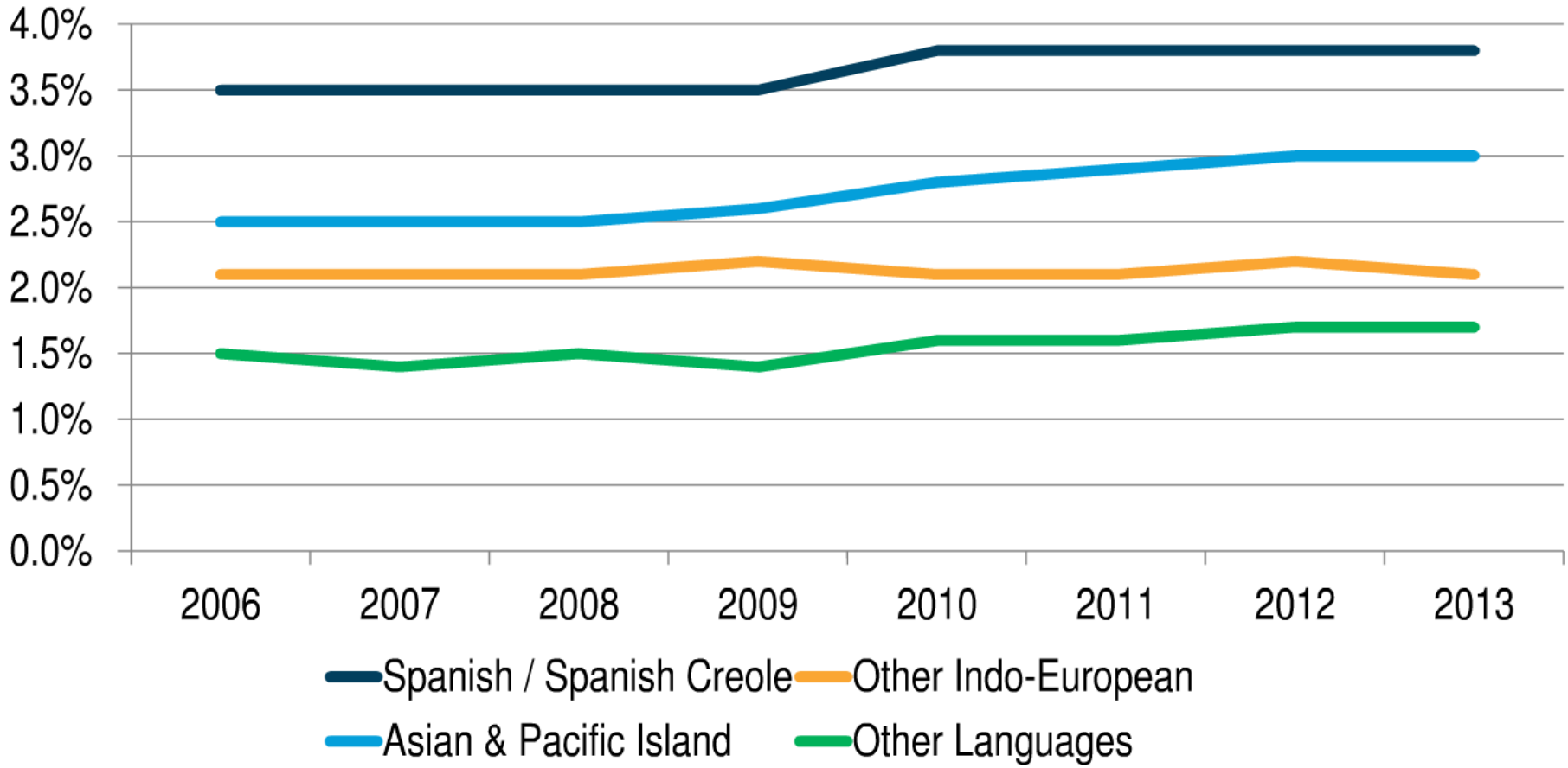
Demographics

Immigration

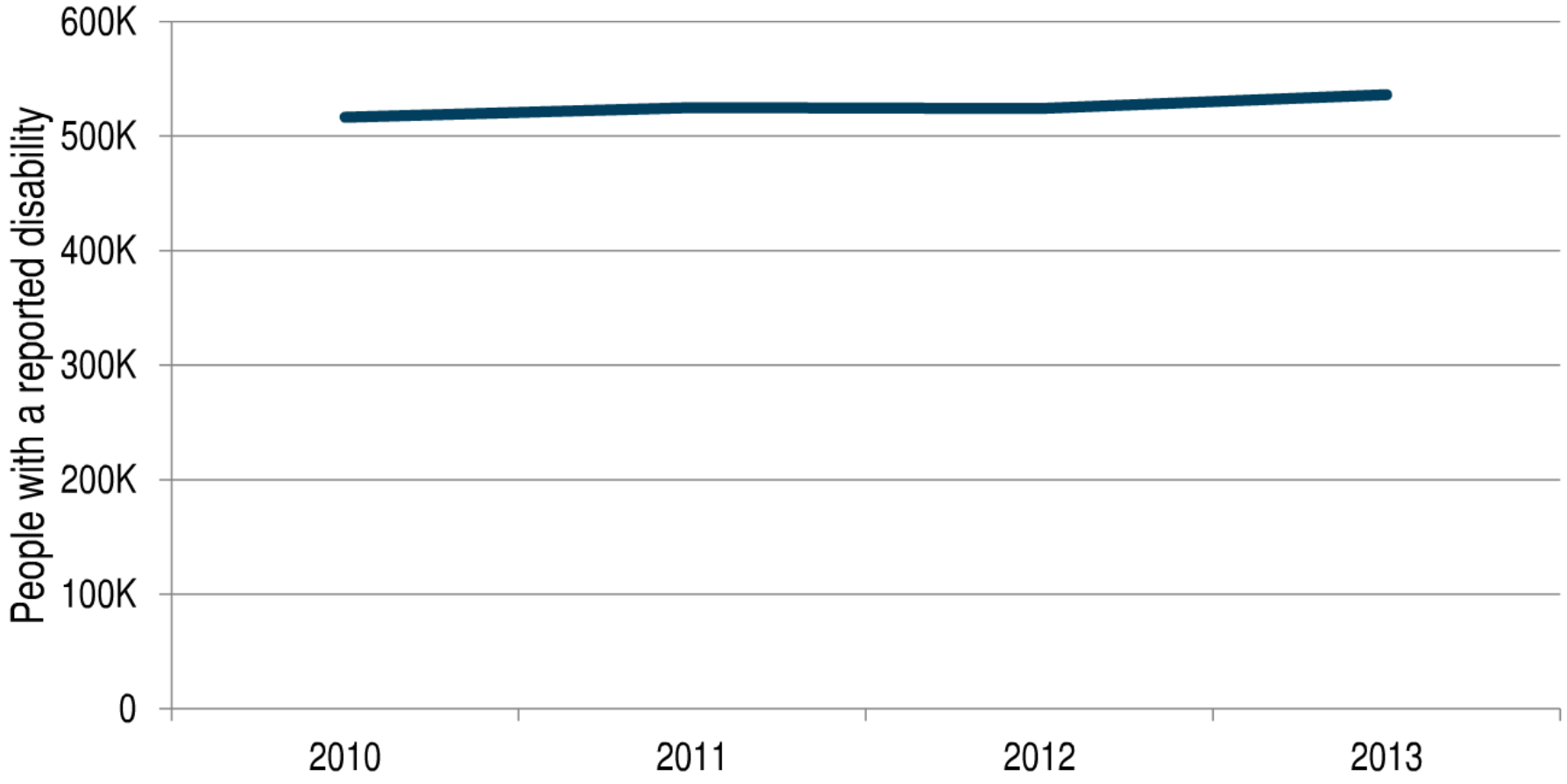


- 7.2% of Minnesota's population is immigrants
- Immigrants are significantly more likely to use transportation modes other than cars

Language



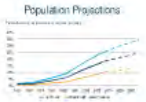
Disability Status

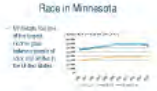


Disability Status

- Minnesota's aging population means increases in the number of persons with disabilities are likely to occur
- Recently completed Olmstead Plan emphasizes full integration for Minnesotans with disabilities

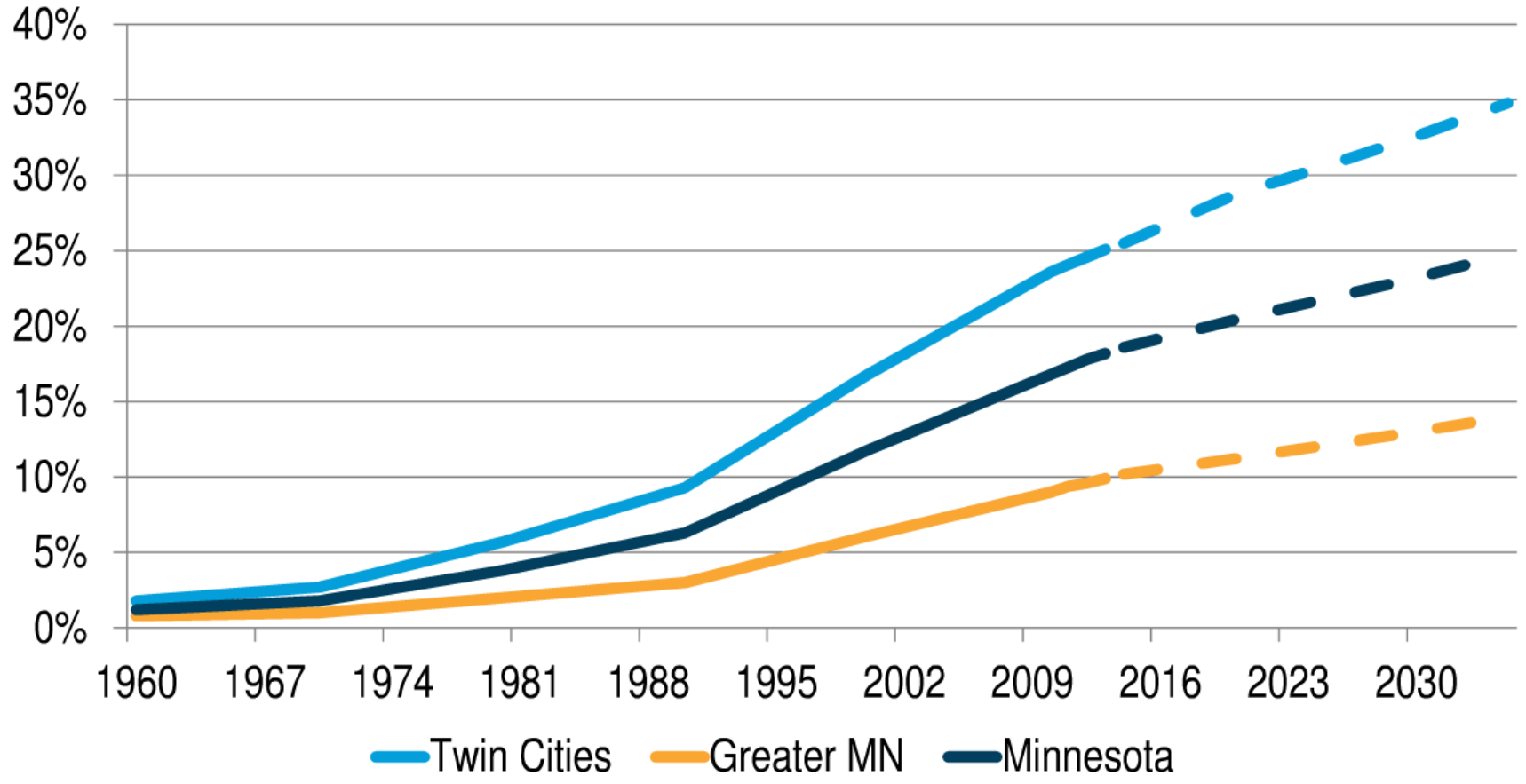
Racial Disparities & Equity





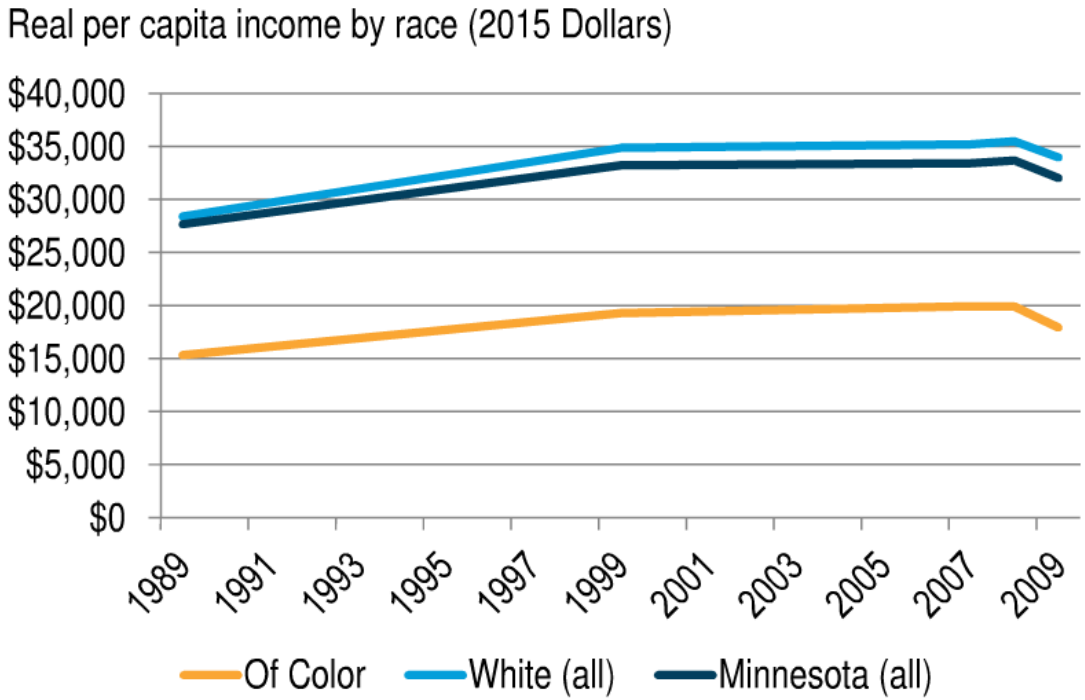
Population Projections

Persons of Color as a percent of the total population

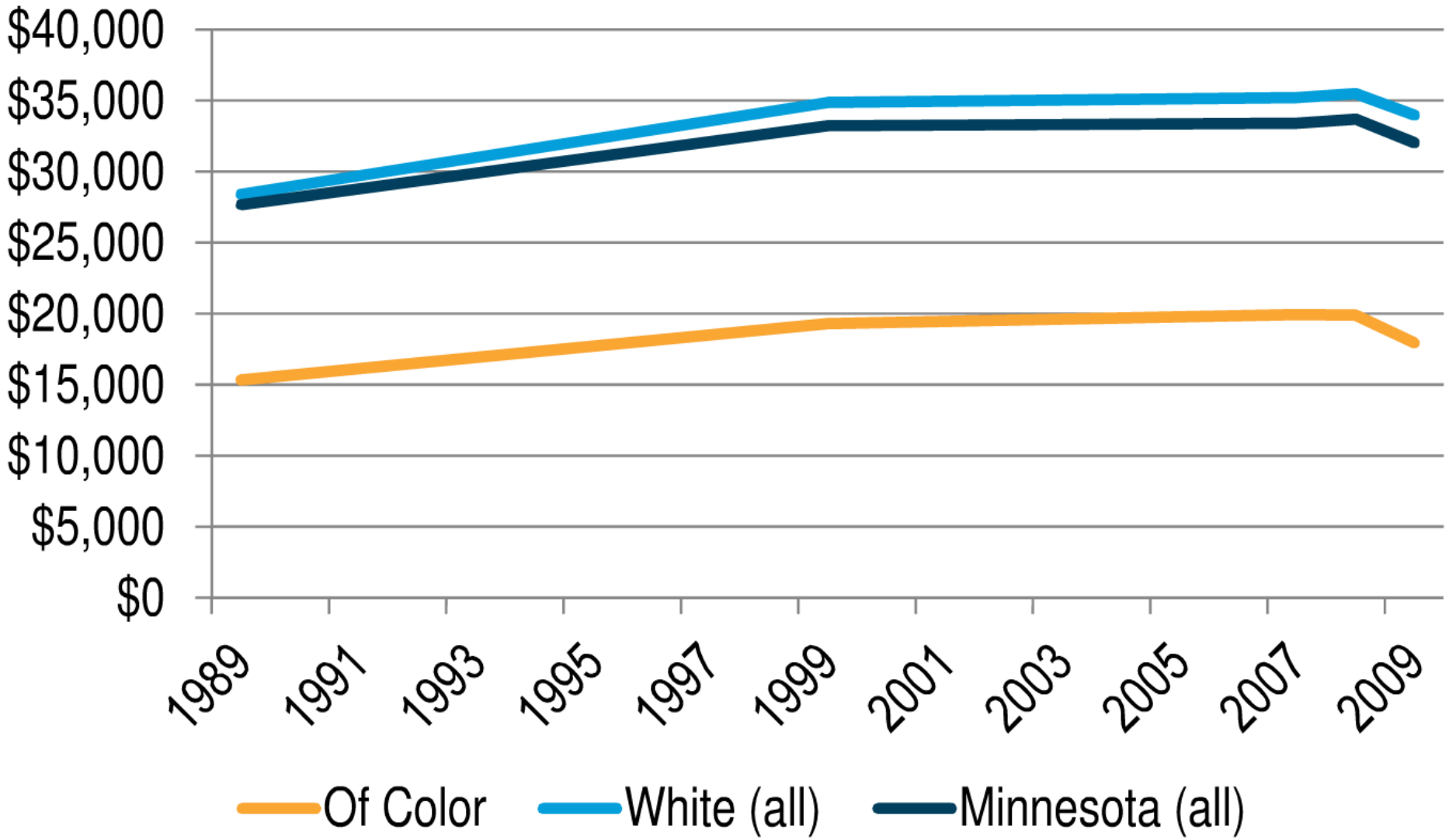


Race in Minnesota

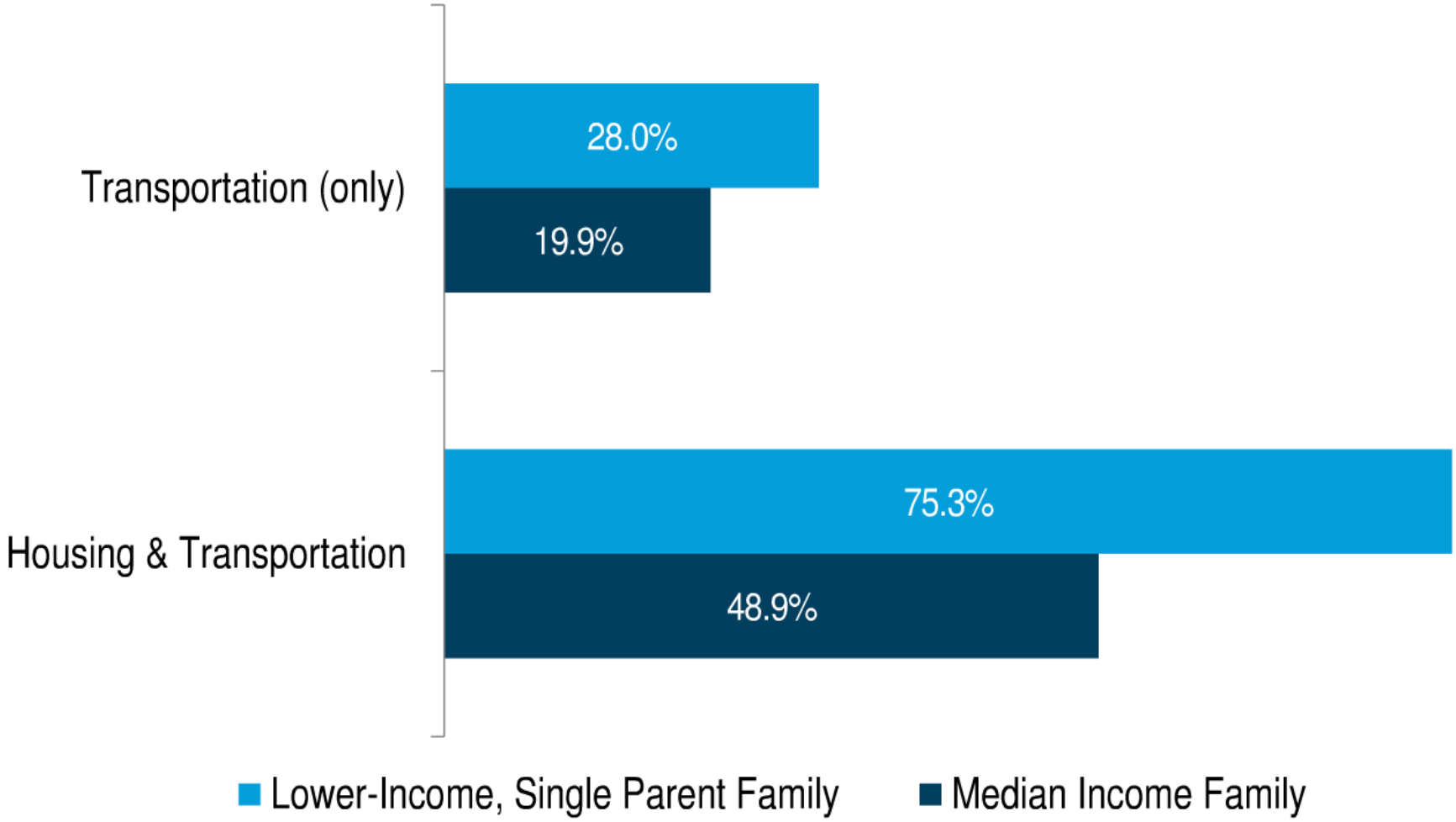
- Minnesota has one of the largest income gaps between people of color and whites in the United States



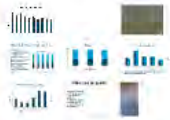
Real per capita income by race (2015 Dollars)



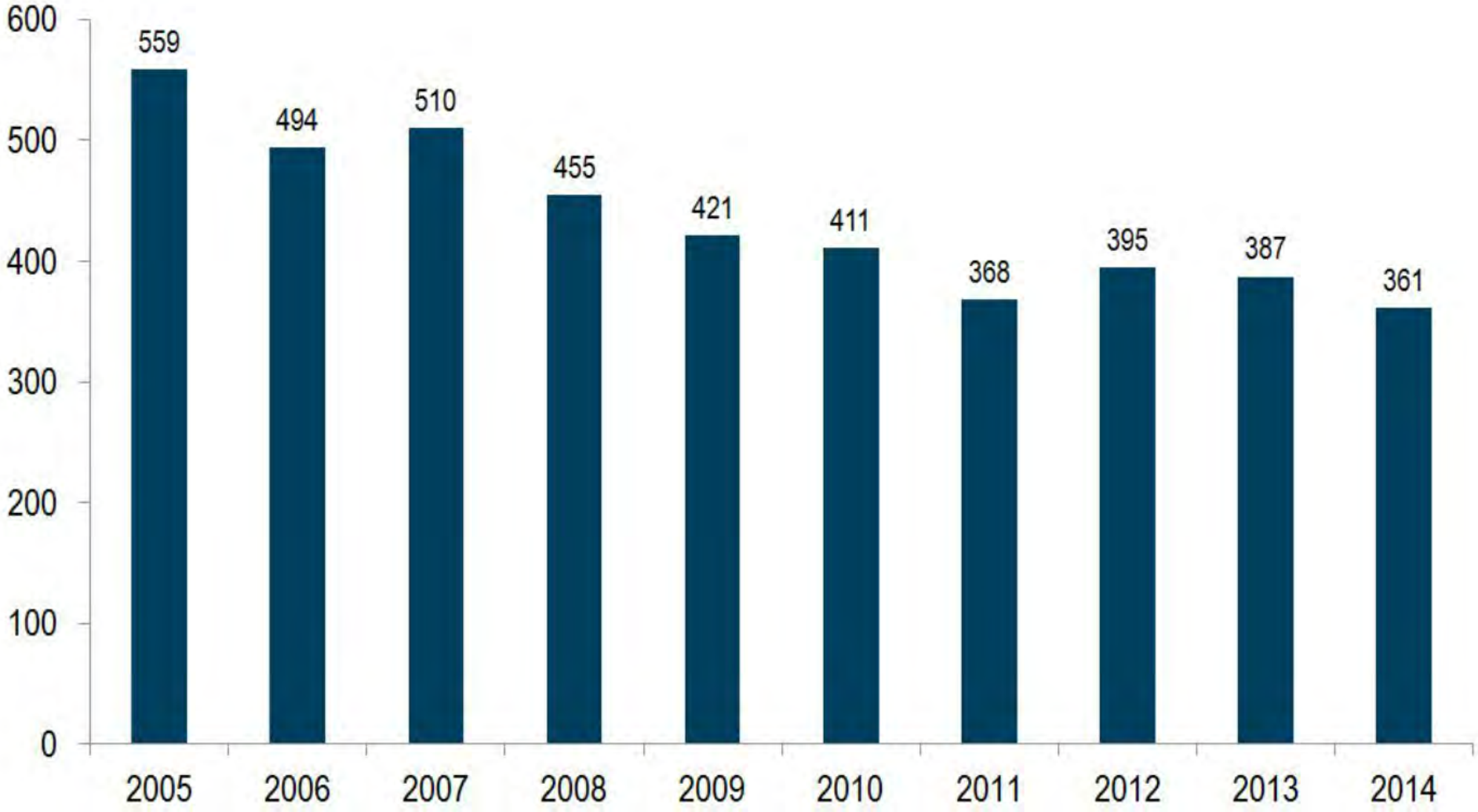
Transportation & Income



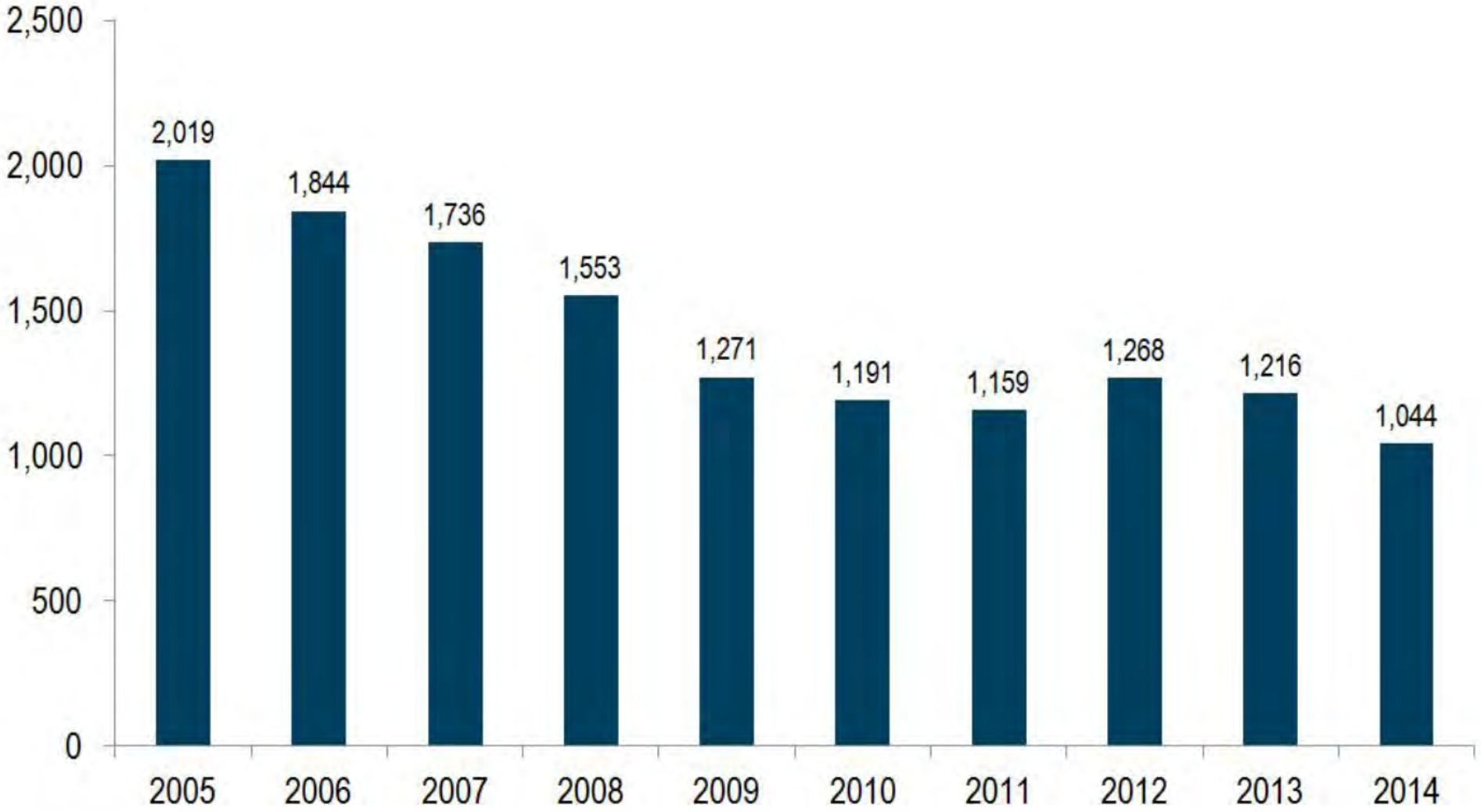
Health



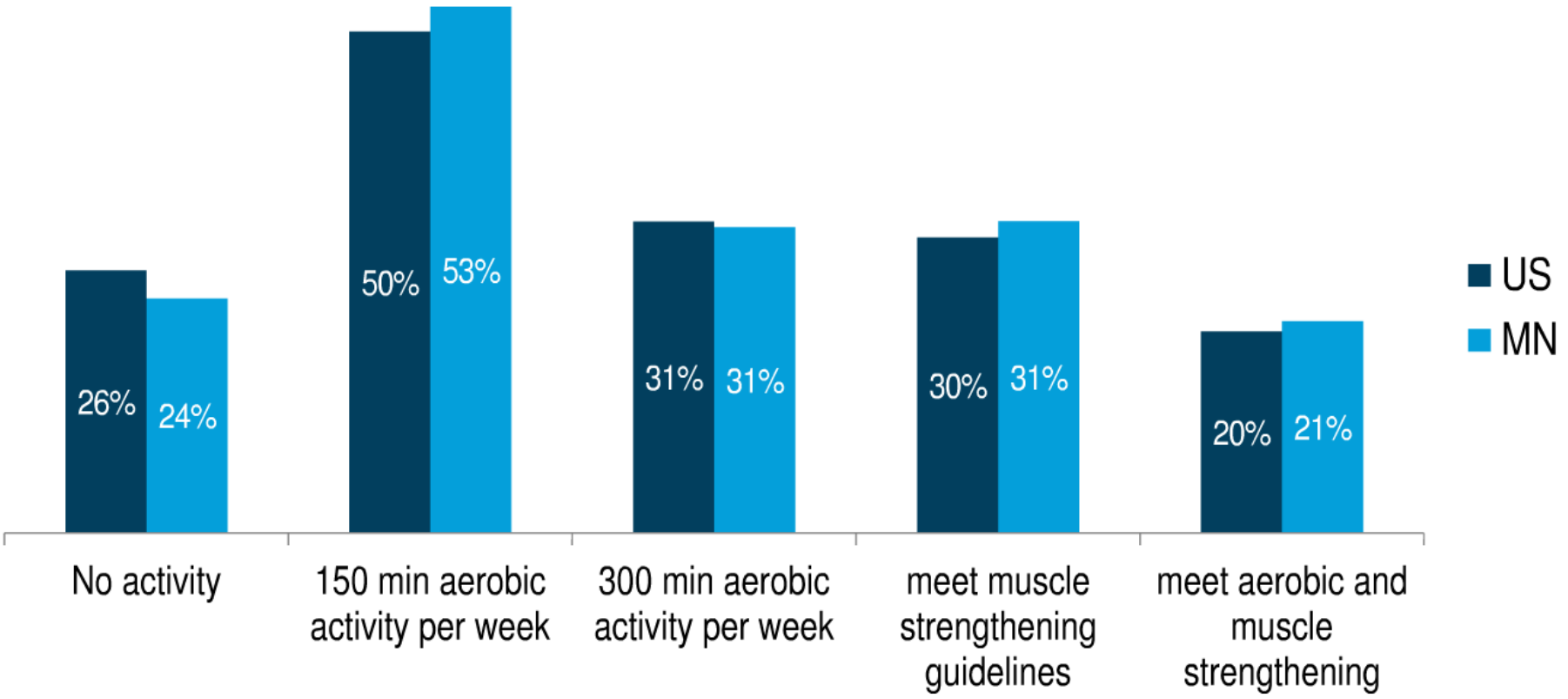
Traffic Fatalities



Traffic Injuries

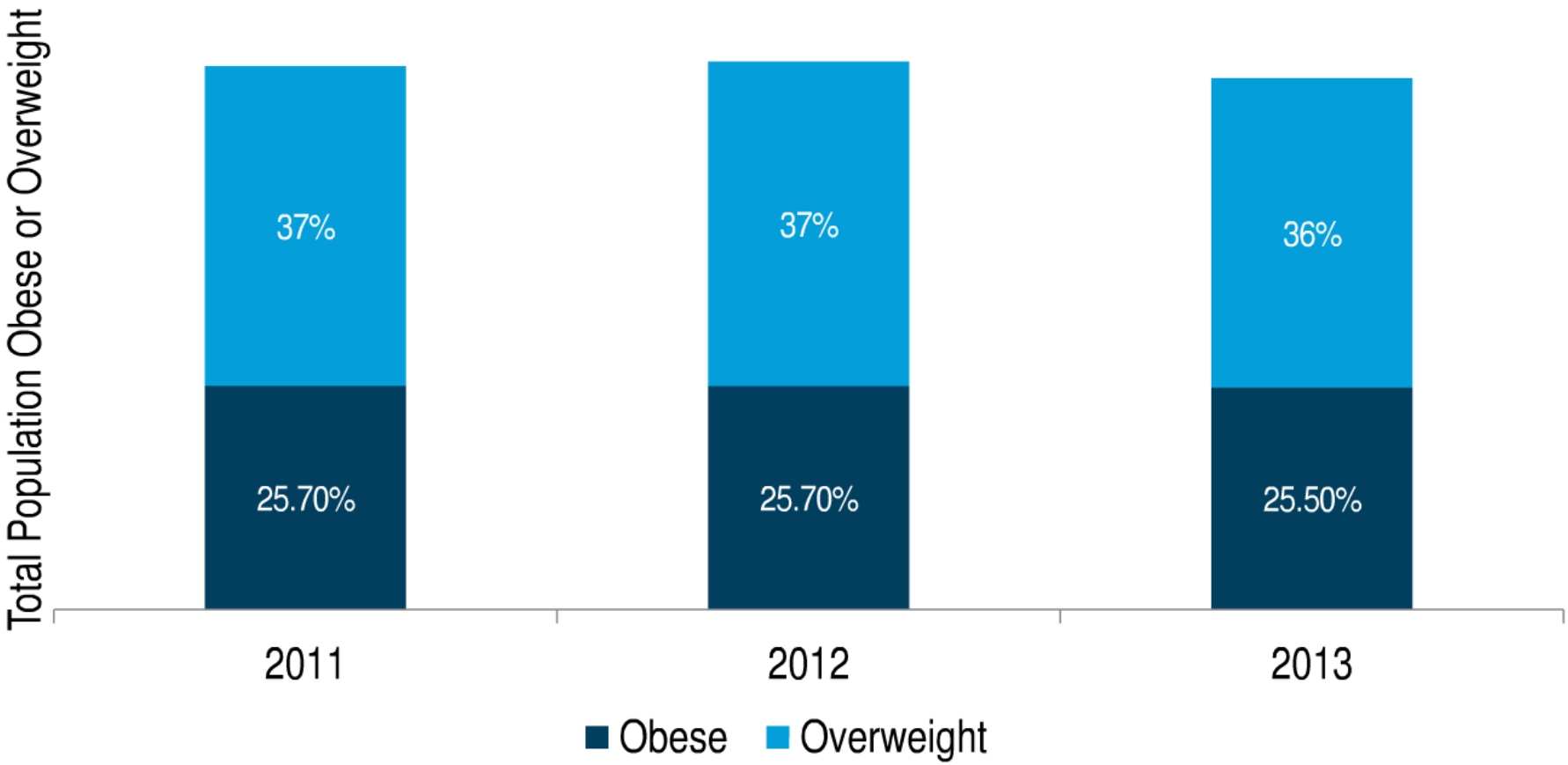


Physical Activity



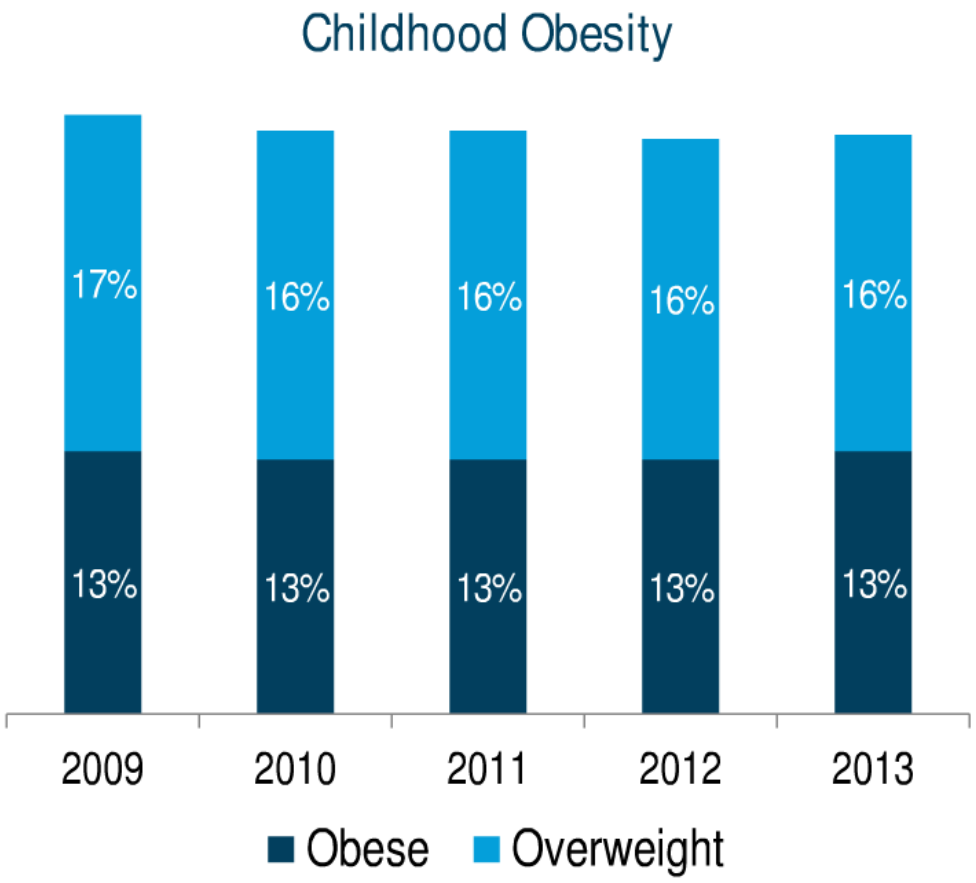
- Investments in non-motorized transportation and public transit increase rates of physical activity

Obesity

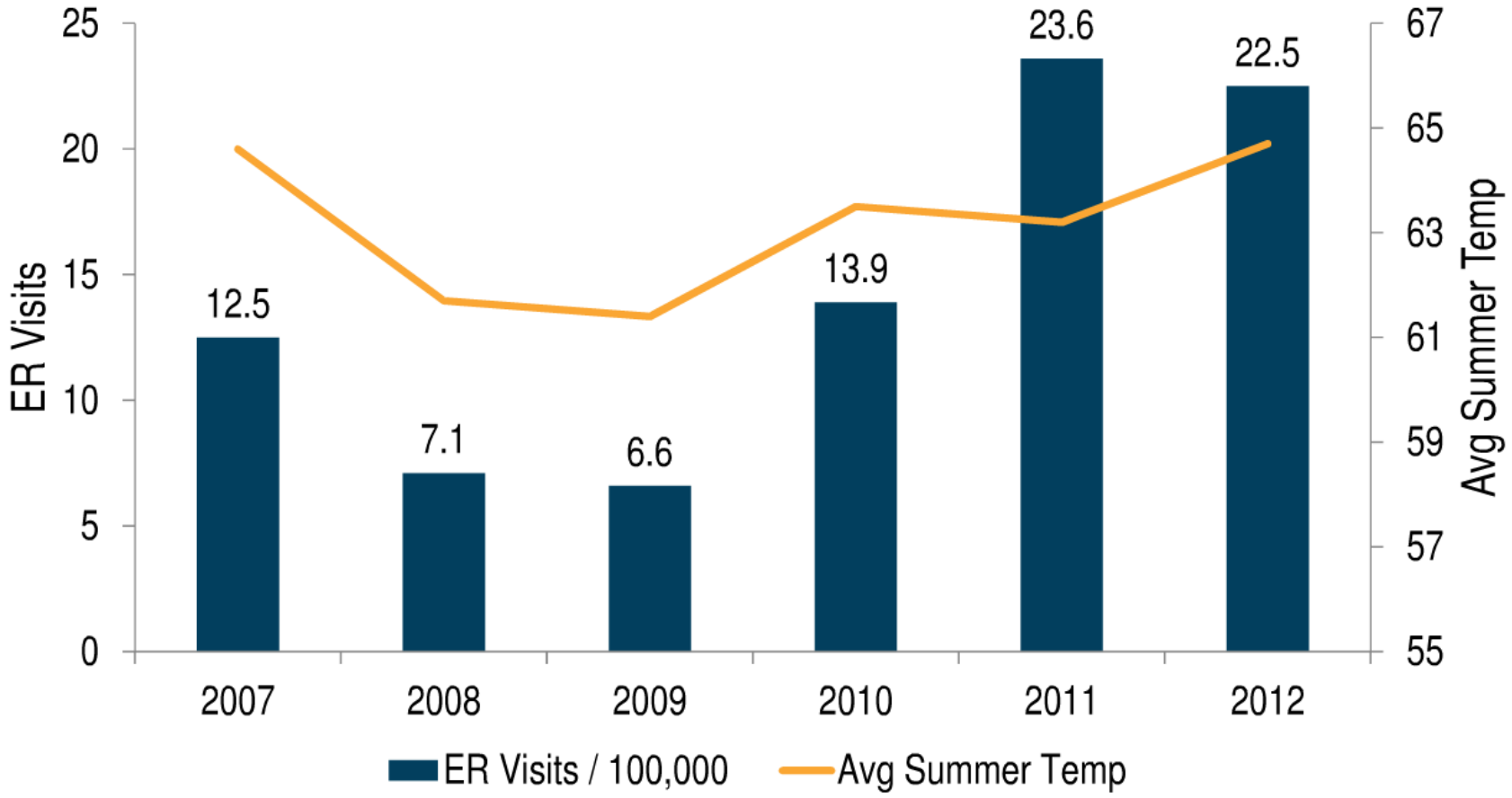


Obesity & Other Complications

- Heart attacks occur more frequently in individuals who are overweight or obese
- Heart disease is the second-most common cause of death in Minnesota, behind cancer
- Minnesota is making progress towards reducing the prevalence of unhealthy weights- active transportation can help

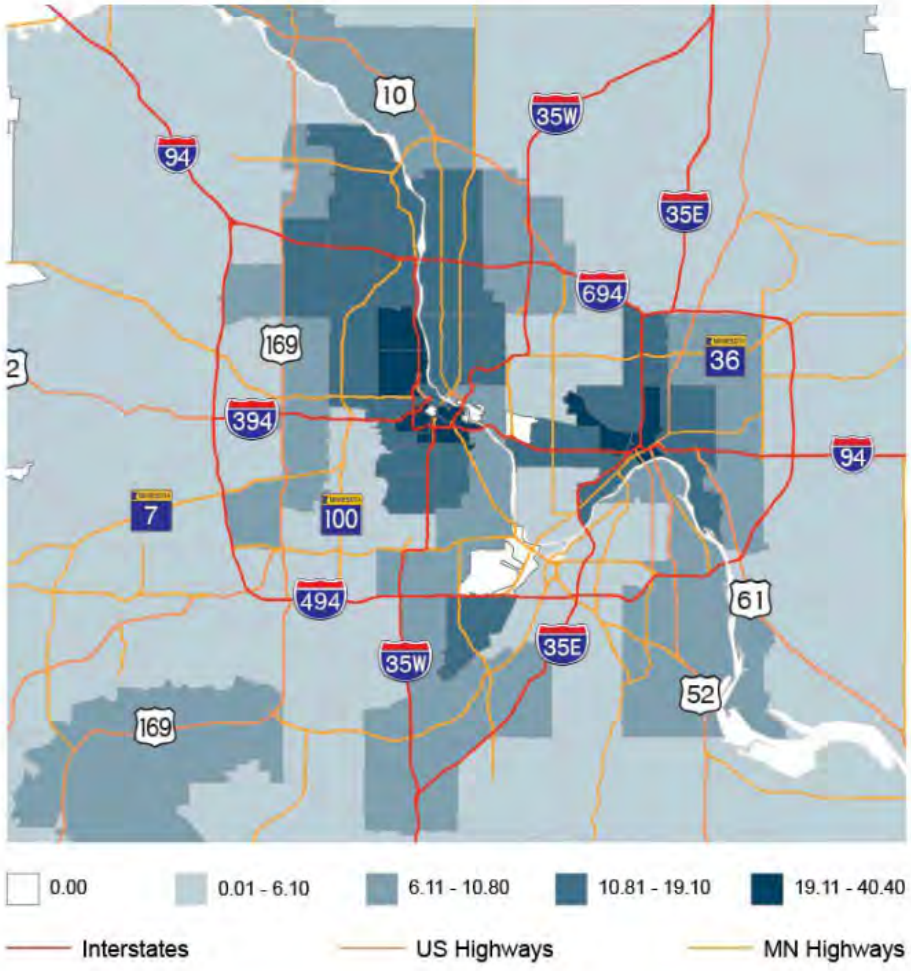


Heat-Related Illness

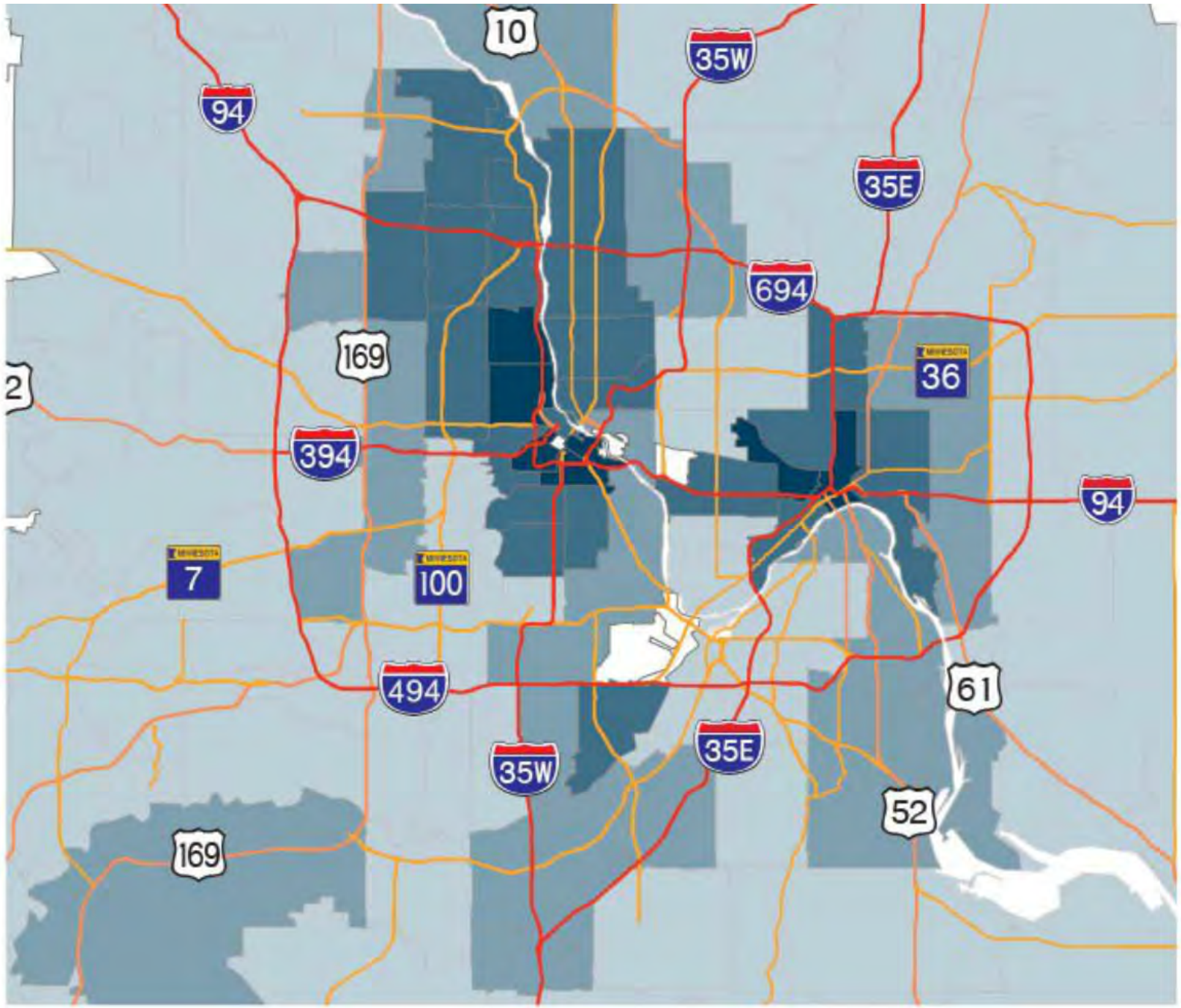


Asthma and Air Quality

- Asthma rates are higher in communities located near to major air pollutant generators
- The prevalence of asthma hospitalizations is high around major highways in the Twin Cities



Asthma hospitalization rates per 10,000 people



0.00 | 0.01 - 6.10 | 6.11 - 10.80 | 10.81 - 19.10 | 19.11 - 40.40

Interstates | US Highways | MN Highways

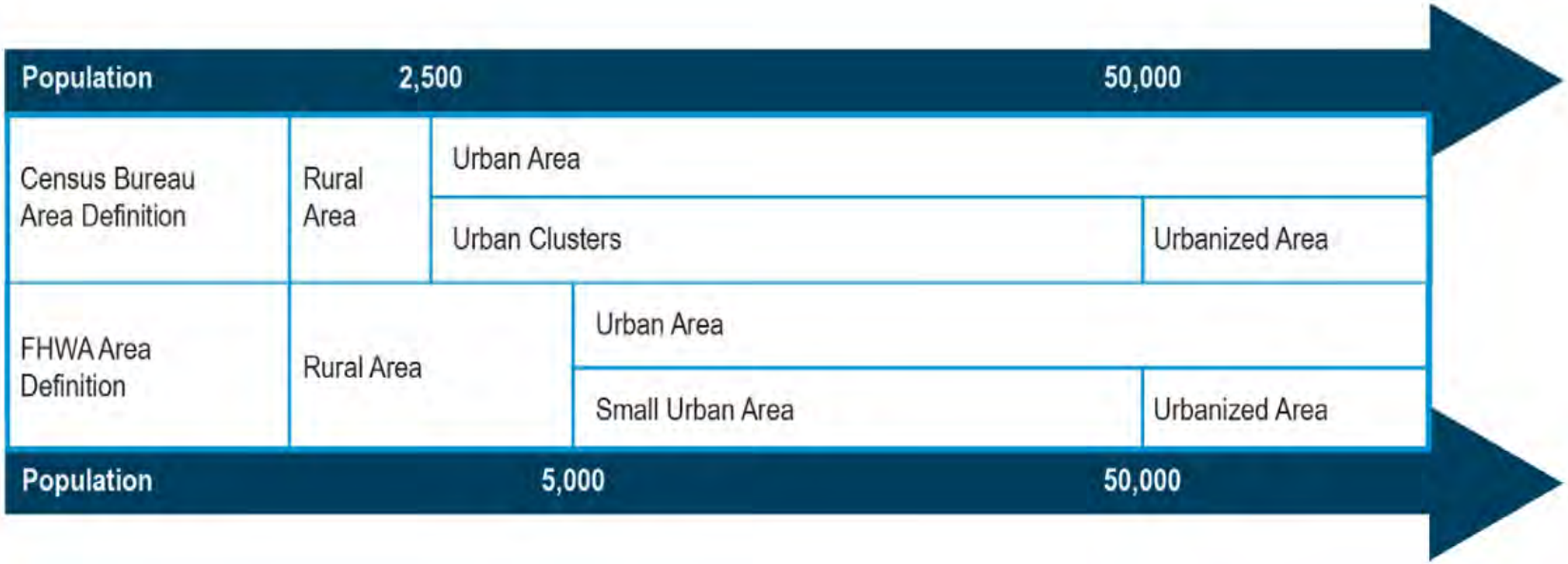
Transportation & Disease

- Travel and global connections make it easy for diseases to spread
- Drug-resistant diseases may make containment more difficult
- Recent bird flu epidemic in MN shows the impact that disease spread amongst livestock can have on the economy

Transportation Behavior

Urban & Rural Populations

Definitions of Urban



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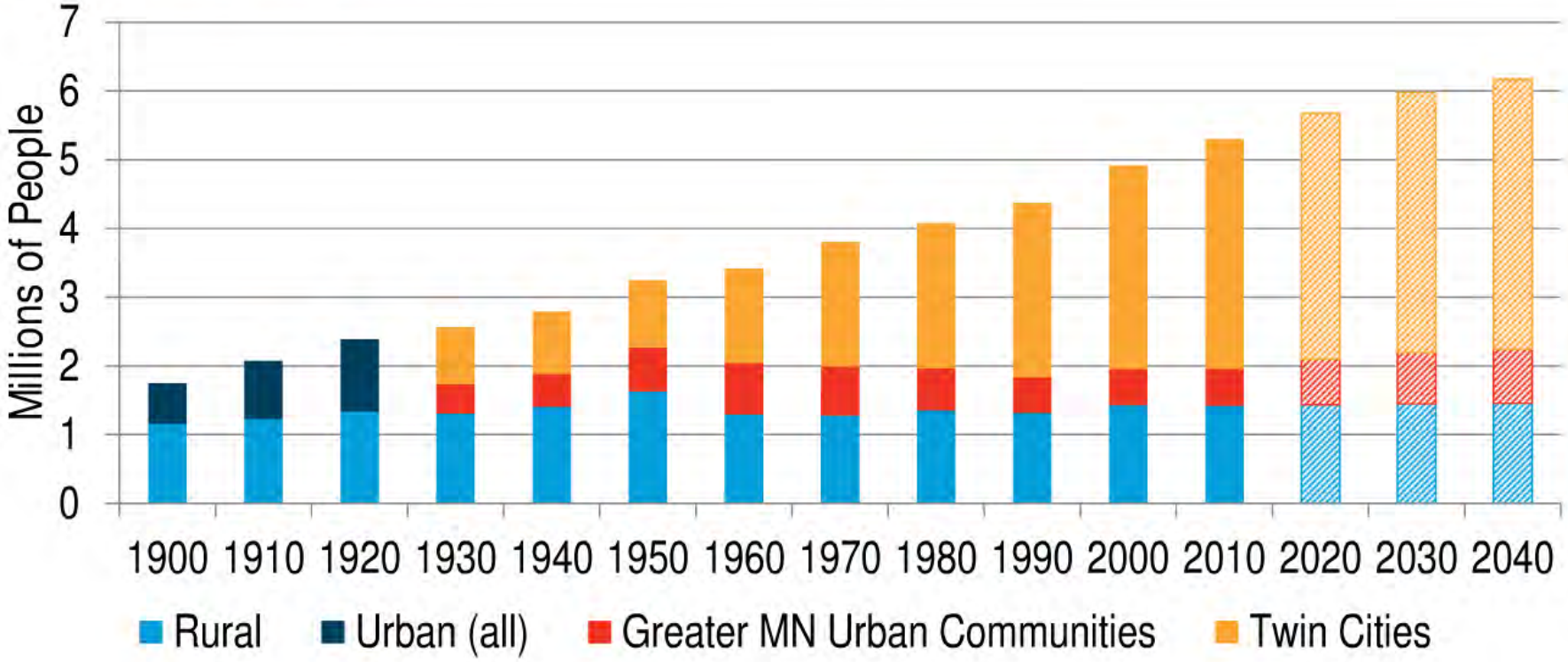
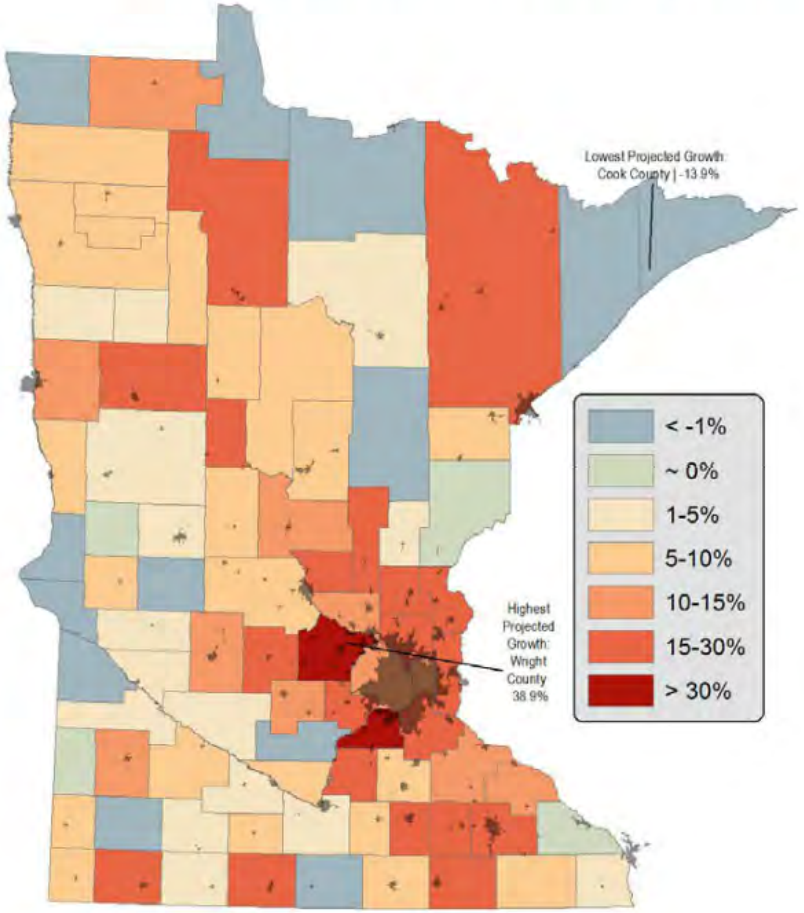
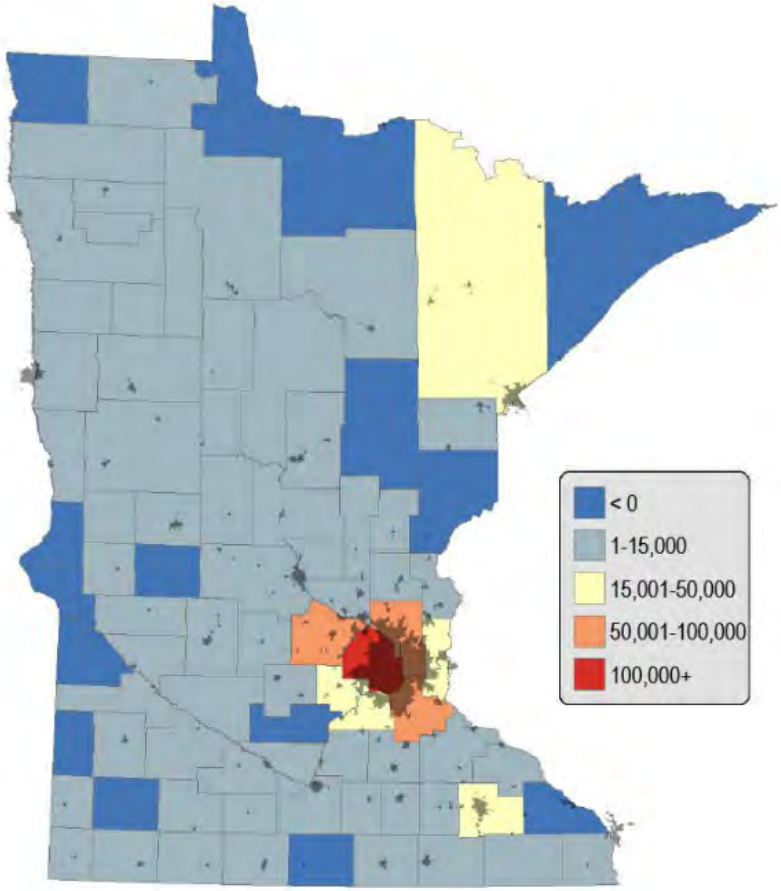
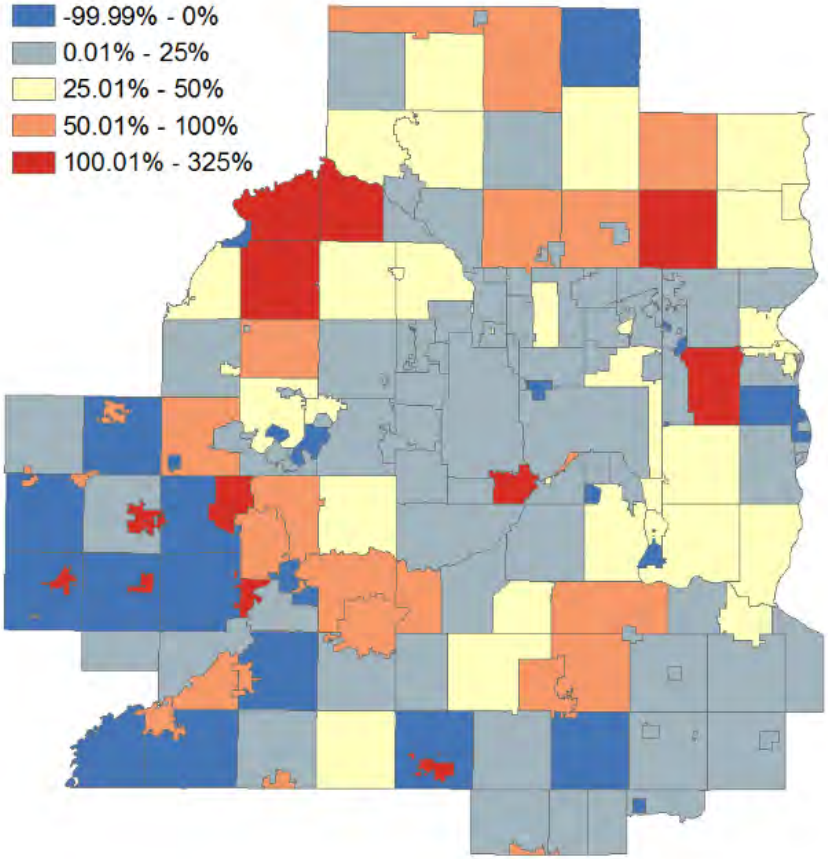


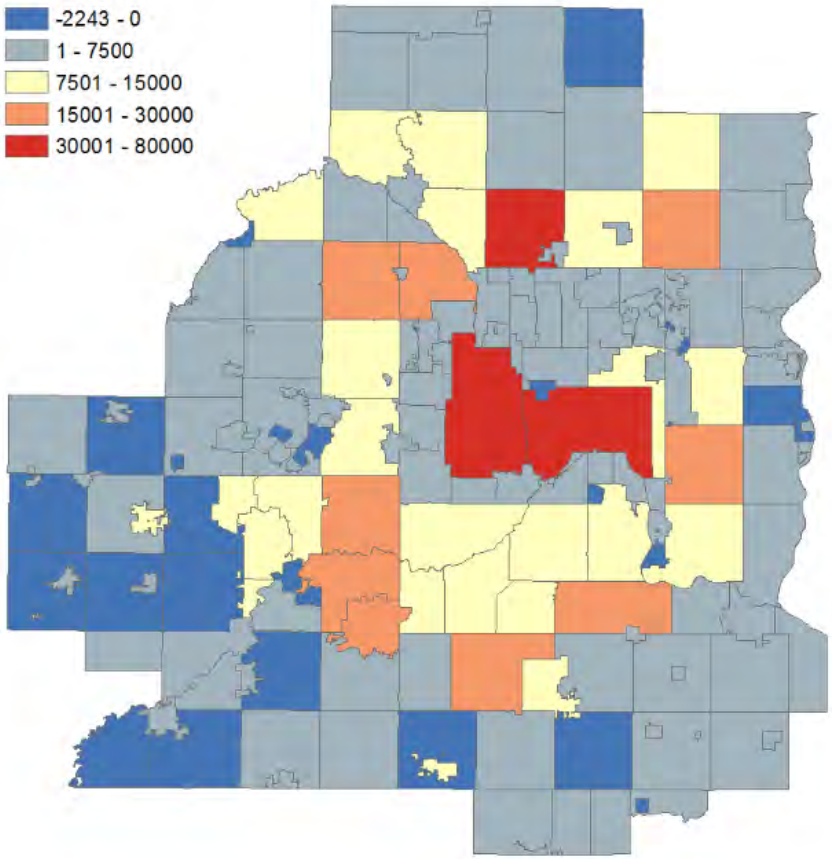
Growth Projections 2015 - 2045



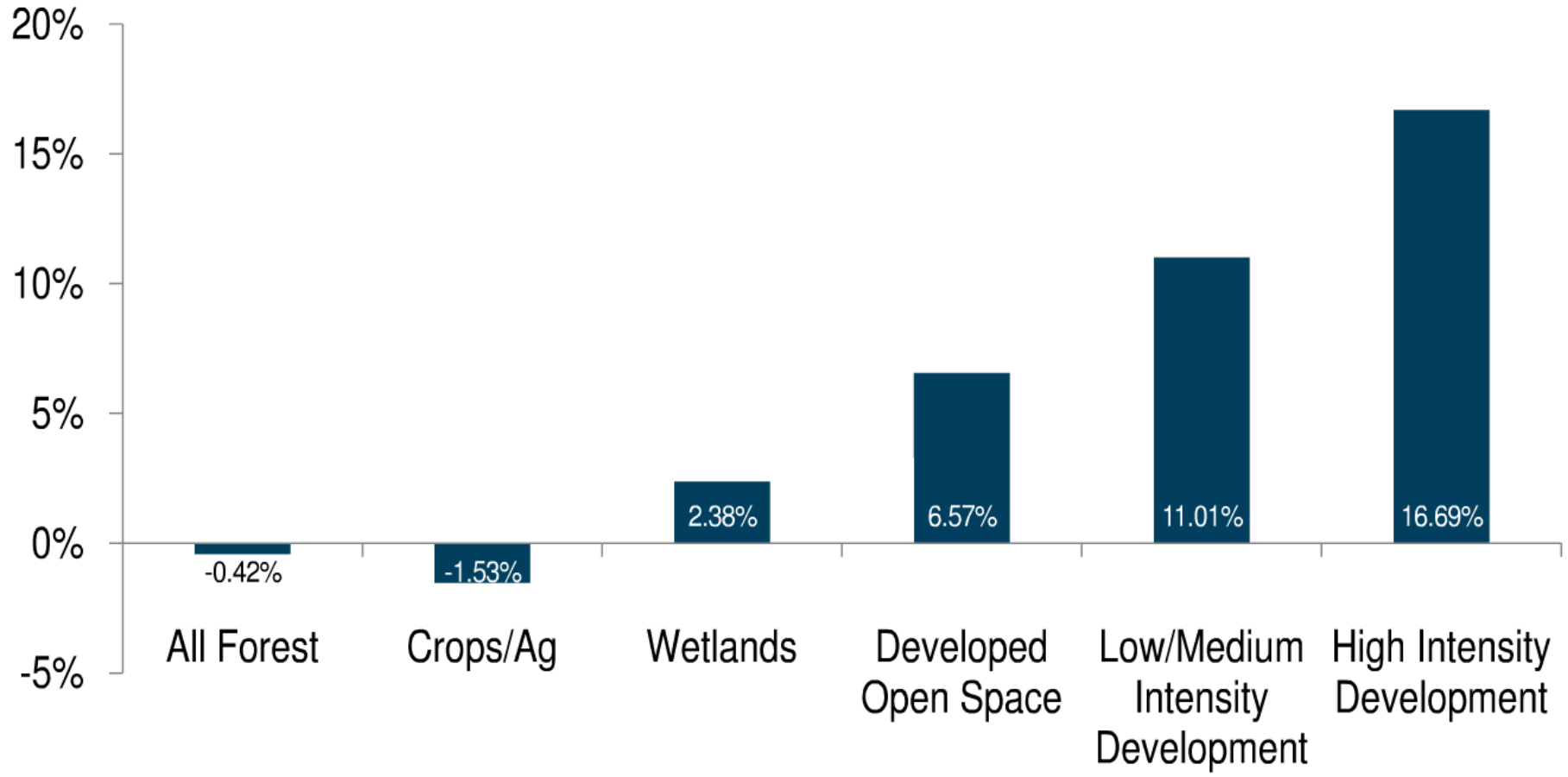


Metro Growth Projections (2010-2040)

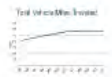


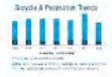


Urban Land Development 2001-2011



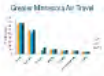
Transportation Behavior



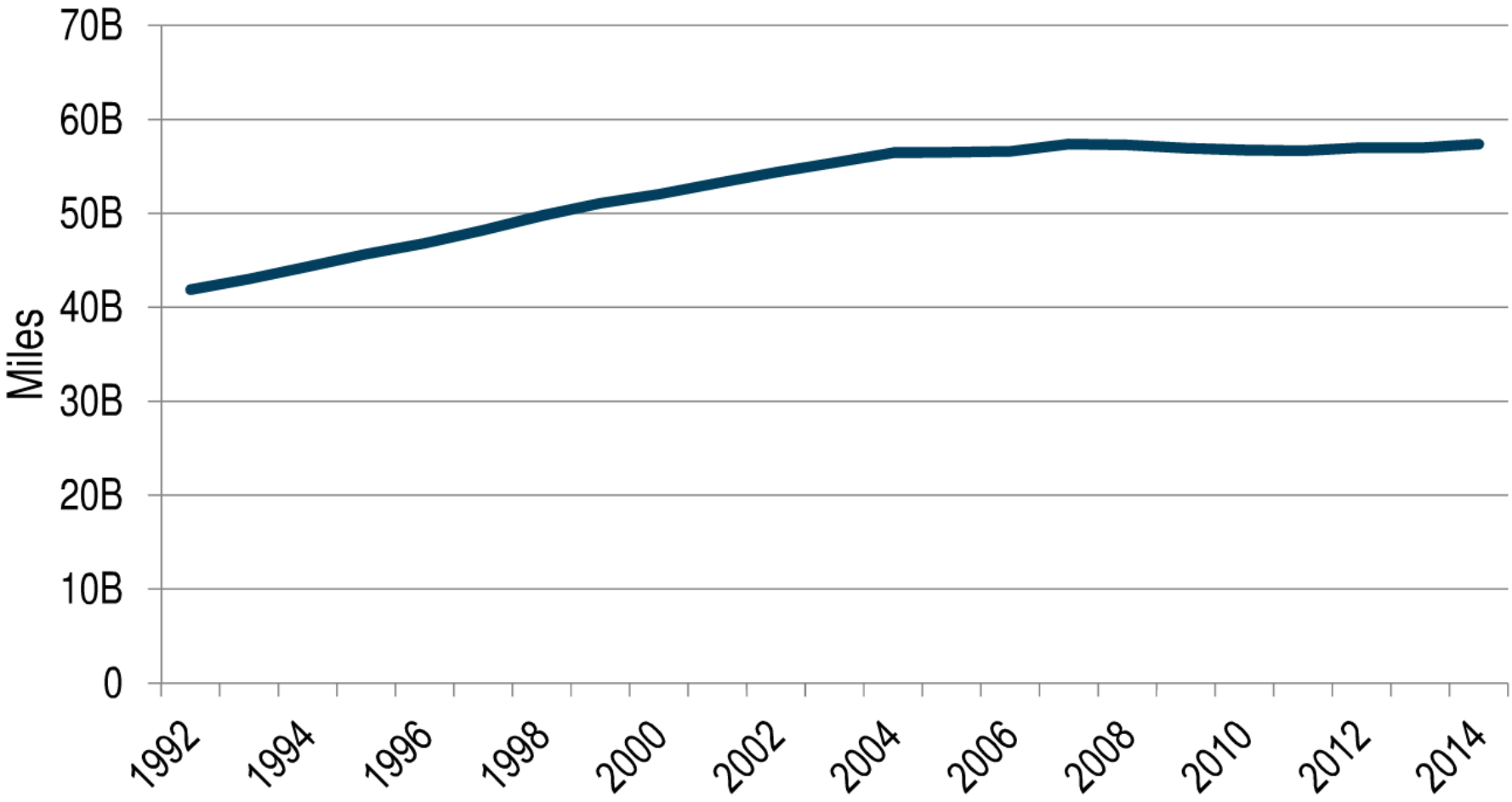


Twin Cities Metro

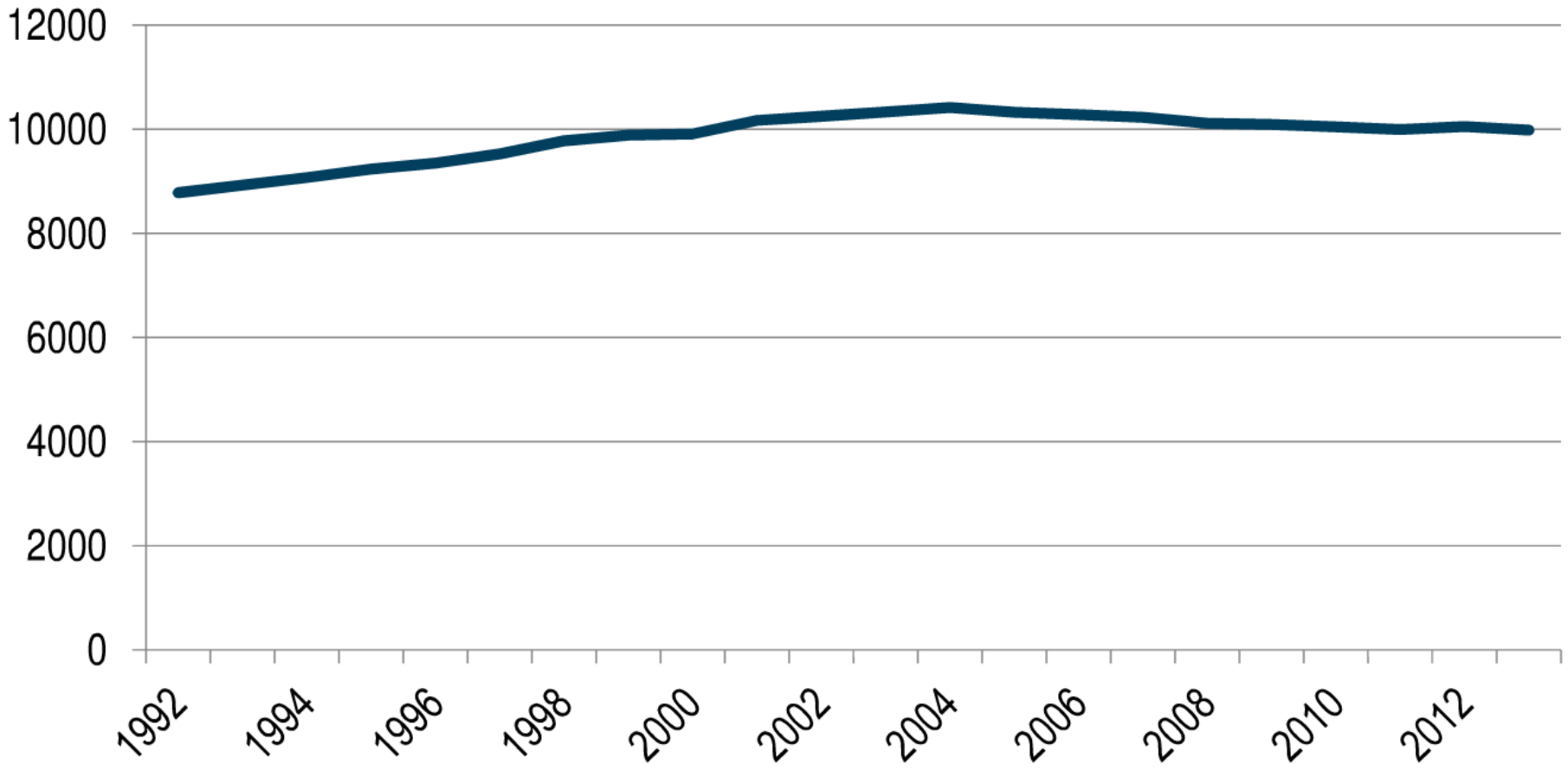
Greater Minnesota



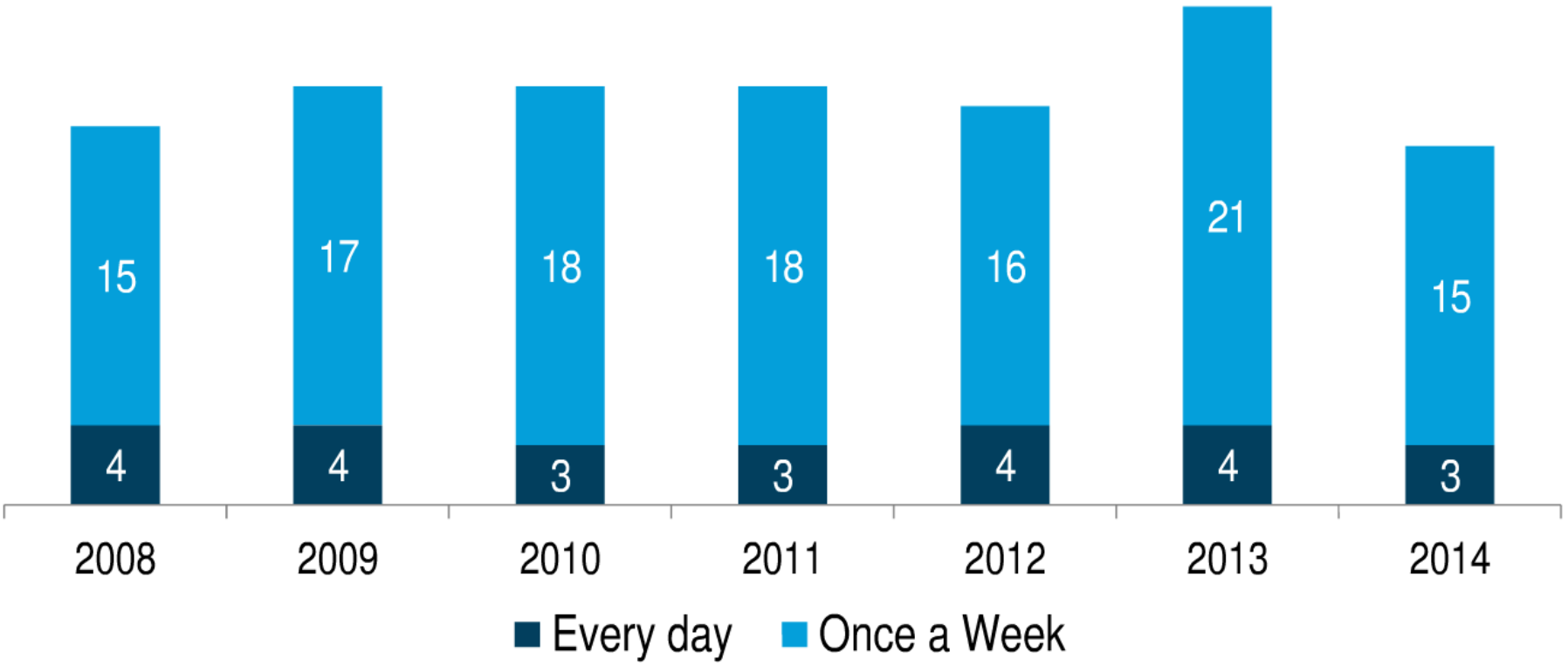
Total Vehicle Miles Traveled



Per Capita Vehicle Miles Traveled



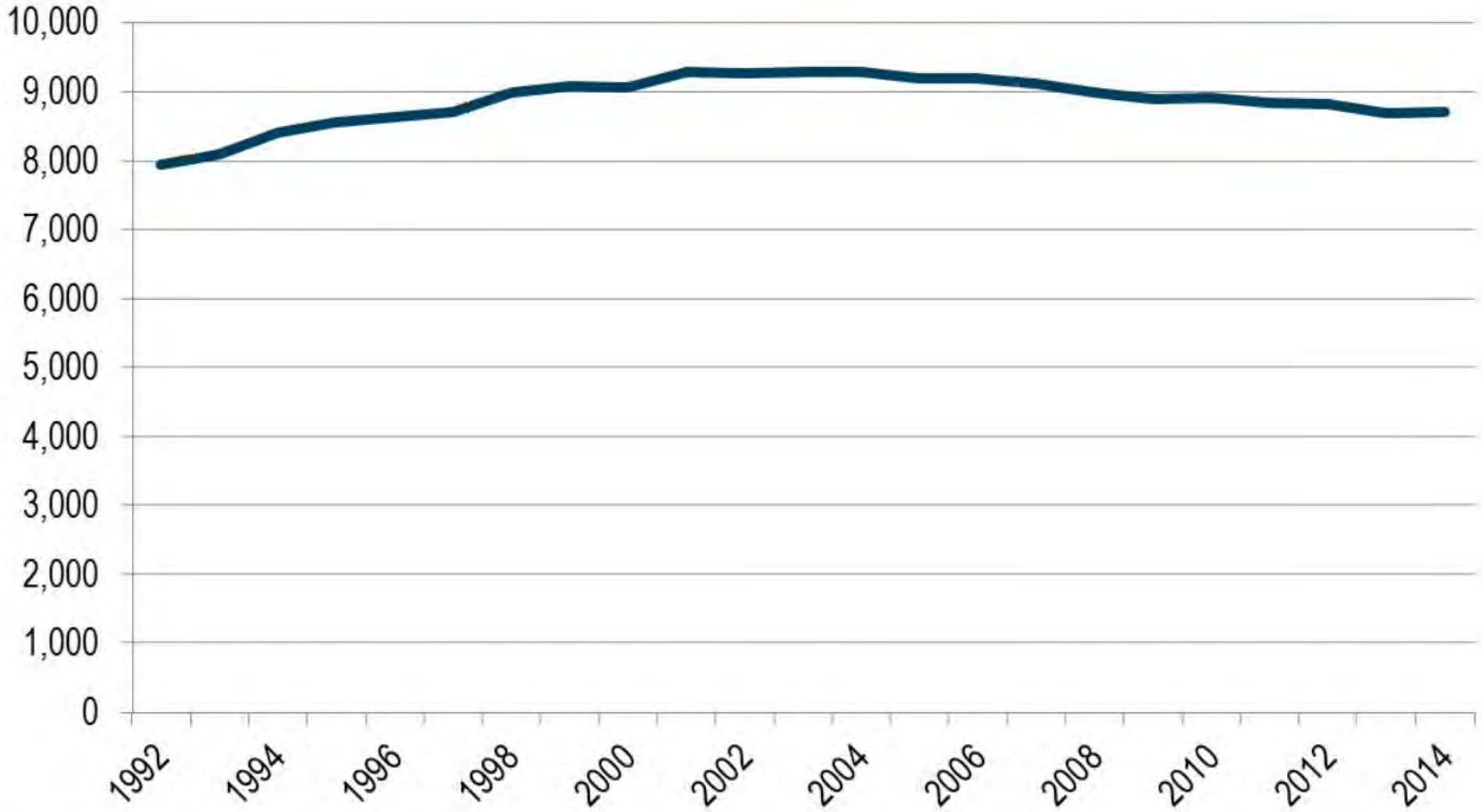
Bicycle & Pedestrian Trends



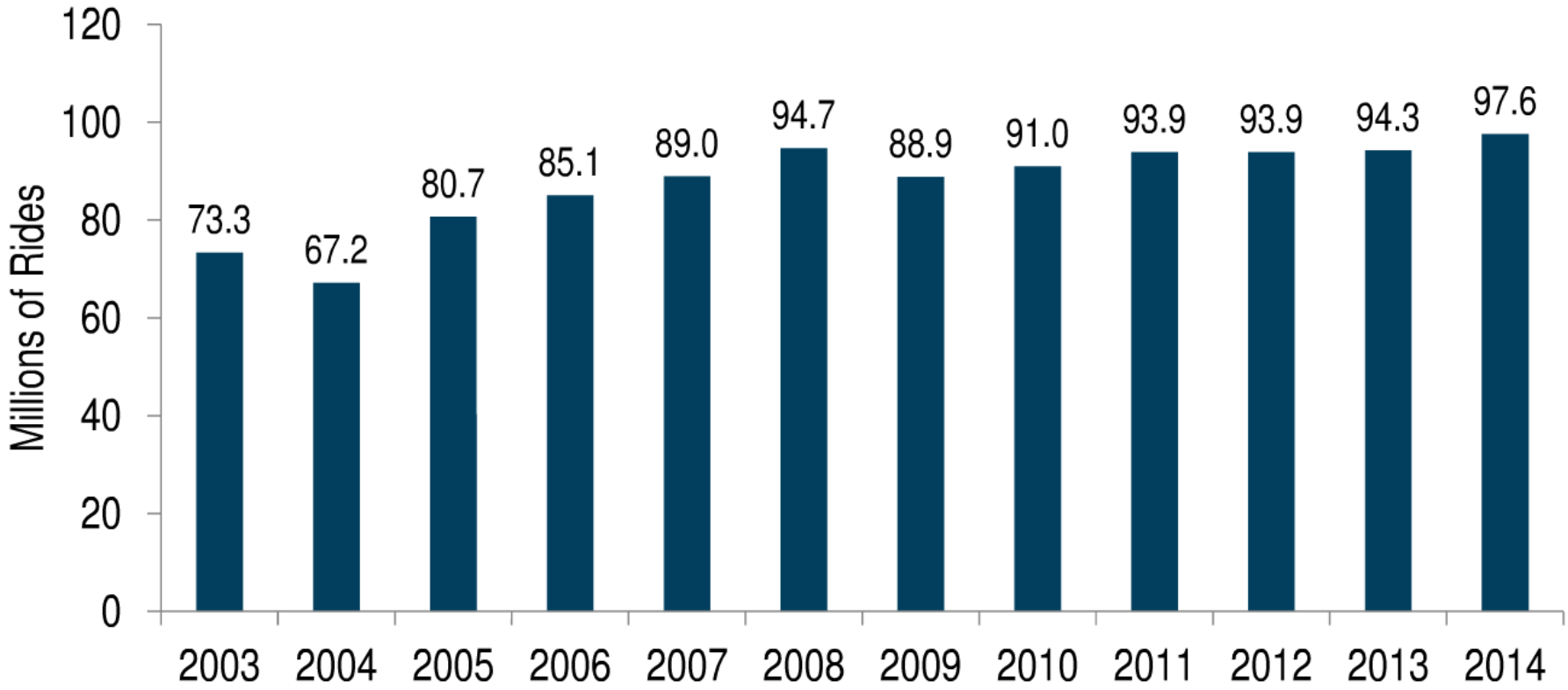
- Trend relatively consistent since 2008
- Debate continues as to whether or not people are actively seeking to live in walkable, bikeable communities over traditional locations.

Twin Cities Metro

Per Capita VMT

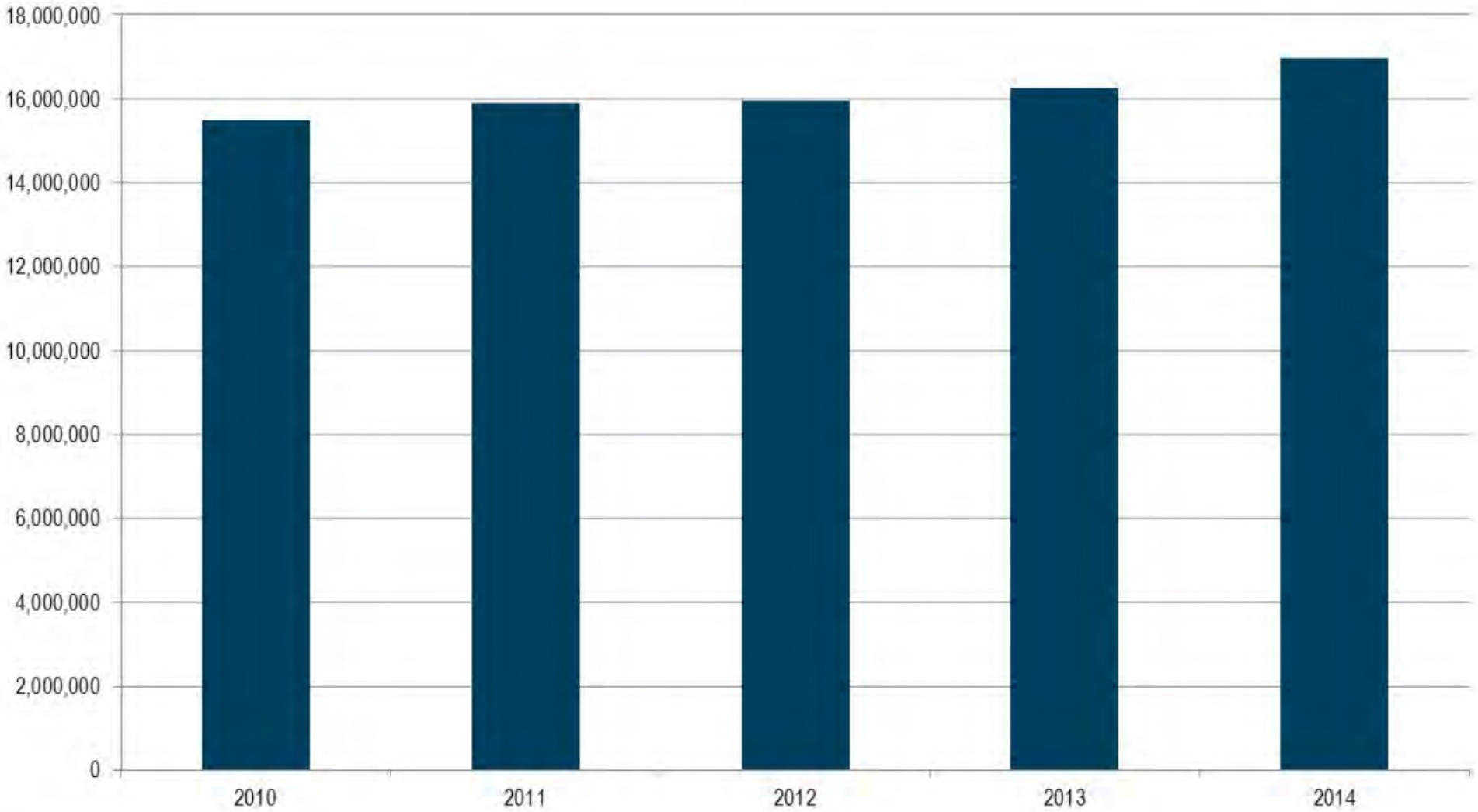


Twin Cities Transit Trends



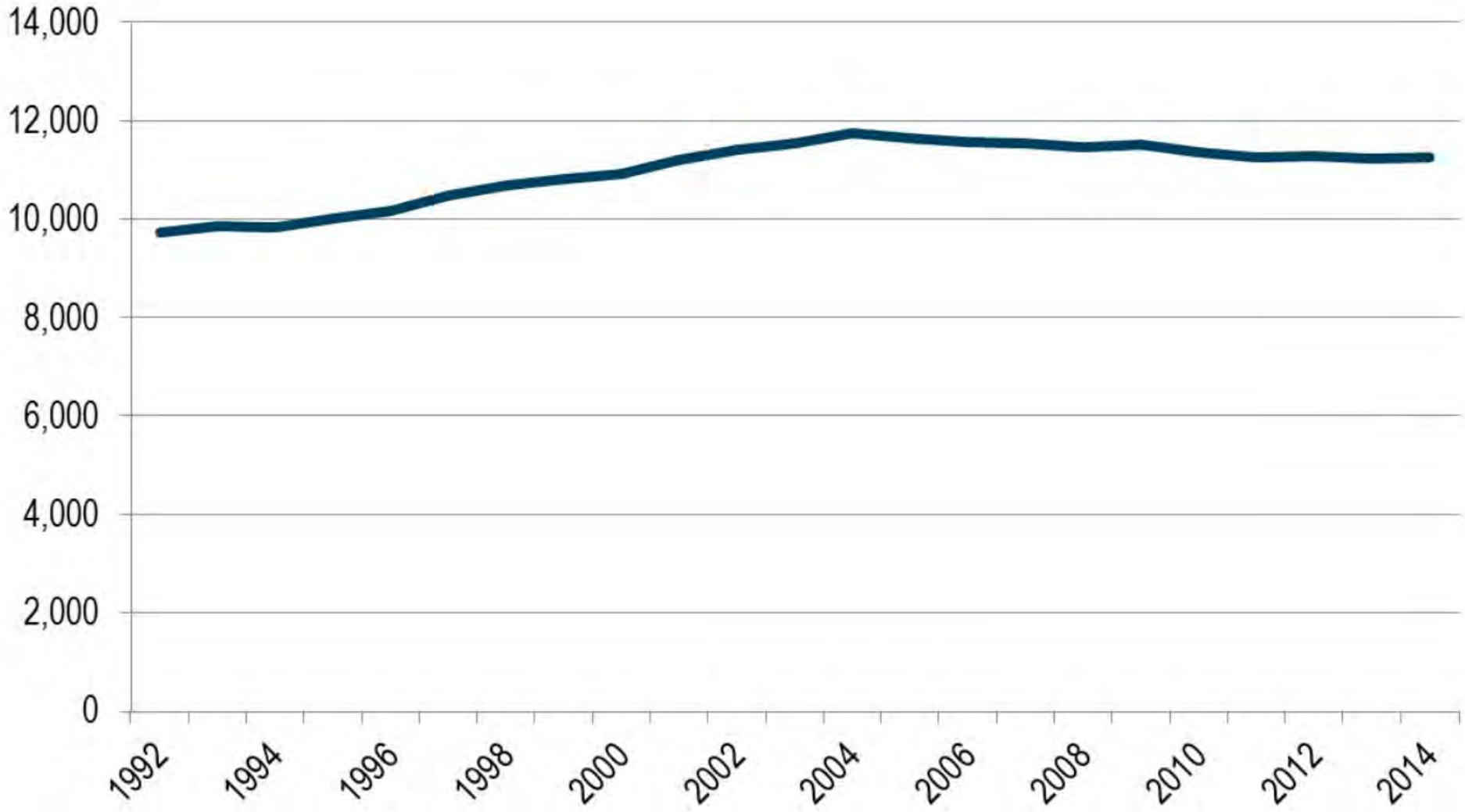
- Twin Cities Transit ridership has increased by ~24 M since 2003

MSP Air Travel

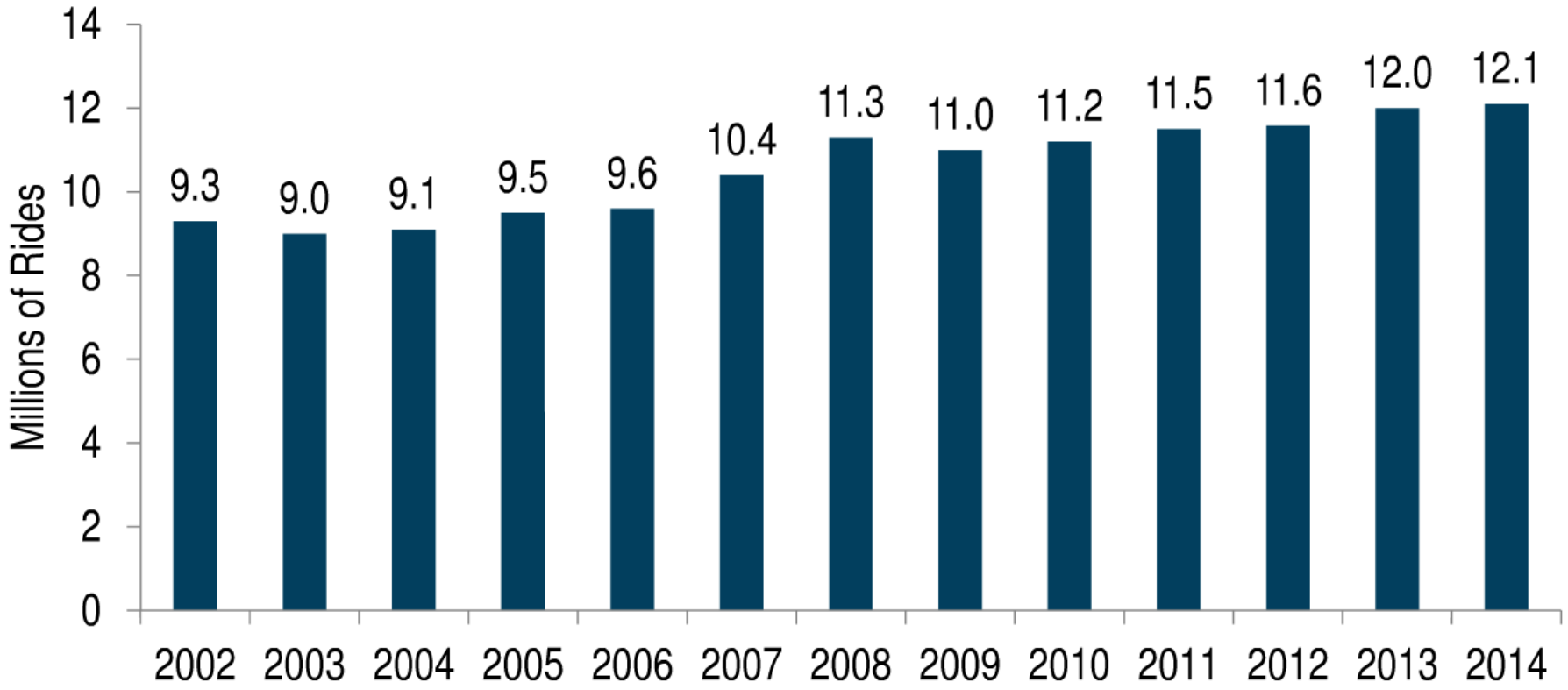


Greater Minnesota

Per Capita VMT



Greater Minnesota Transit Trends

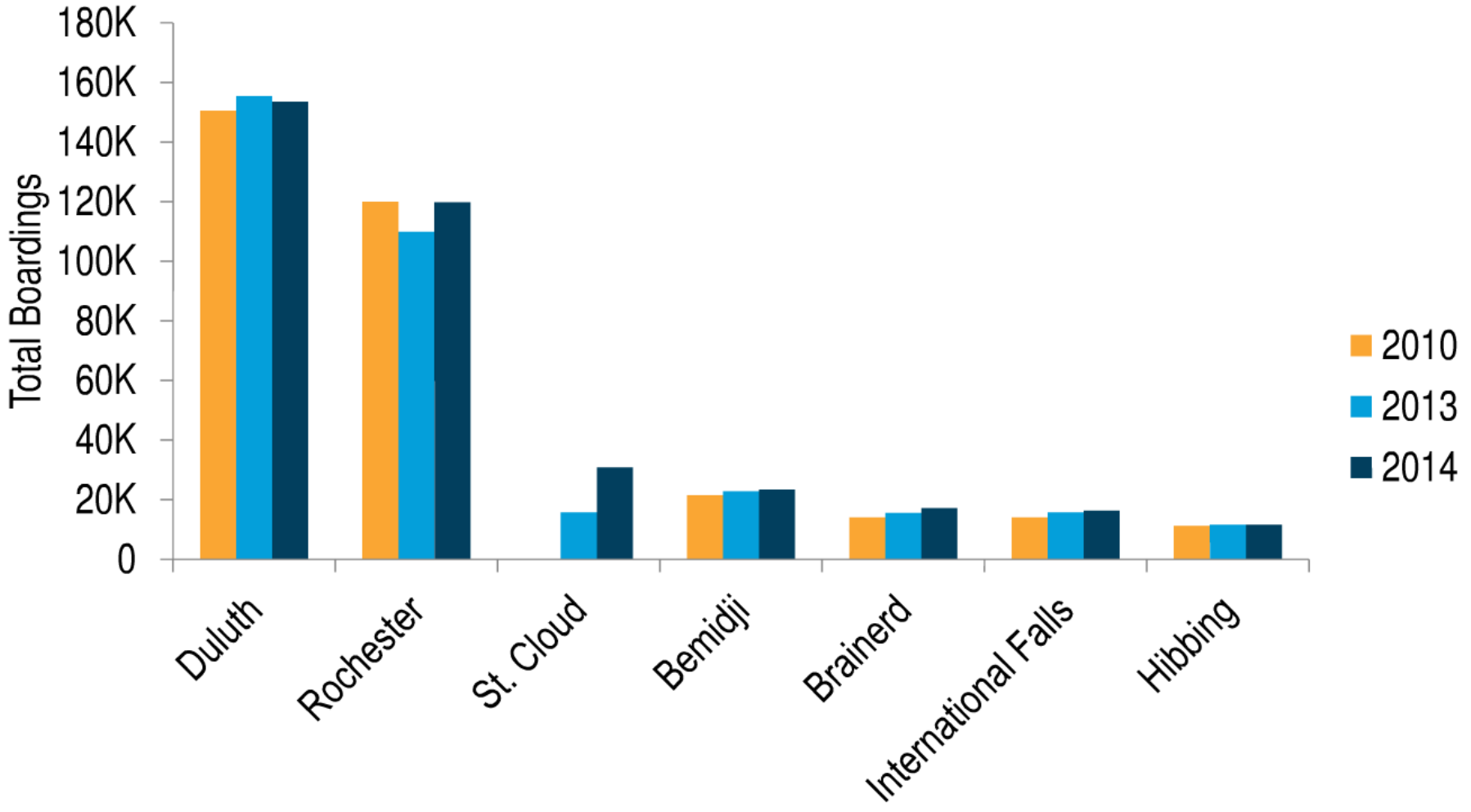


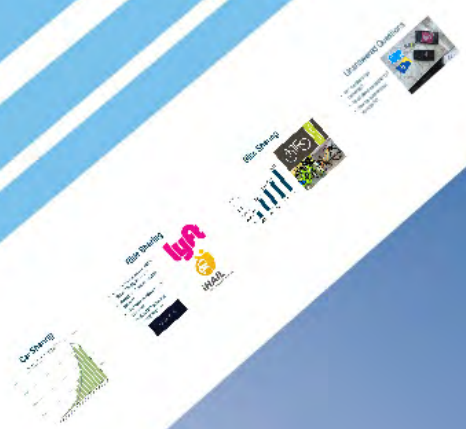
- Greater Minnesota Transit ridership has increased by ~3 M since 2002.

Air Travel Trends

- Air travel is growing in urban and rural Minnesota
- Challenges to air travel include pilot shortages, the use of larger planes, and changing airline business models

Greater Minnesota Air Travel

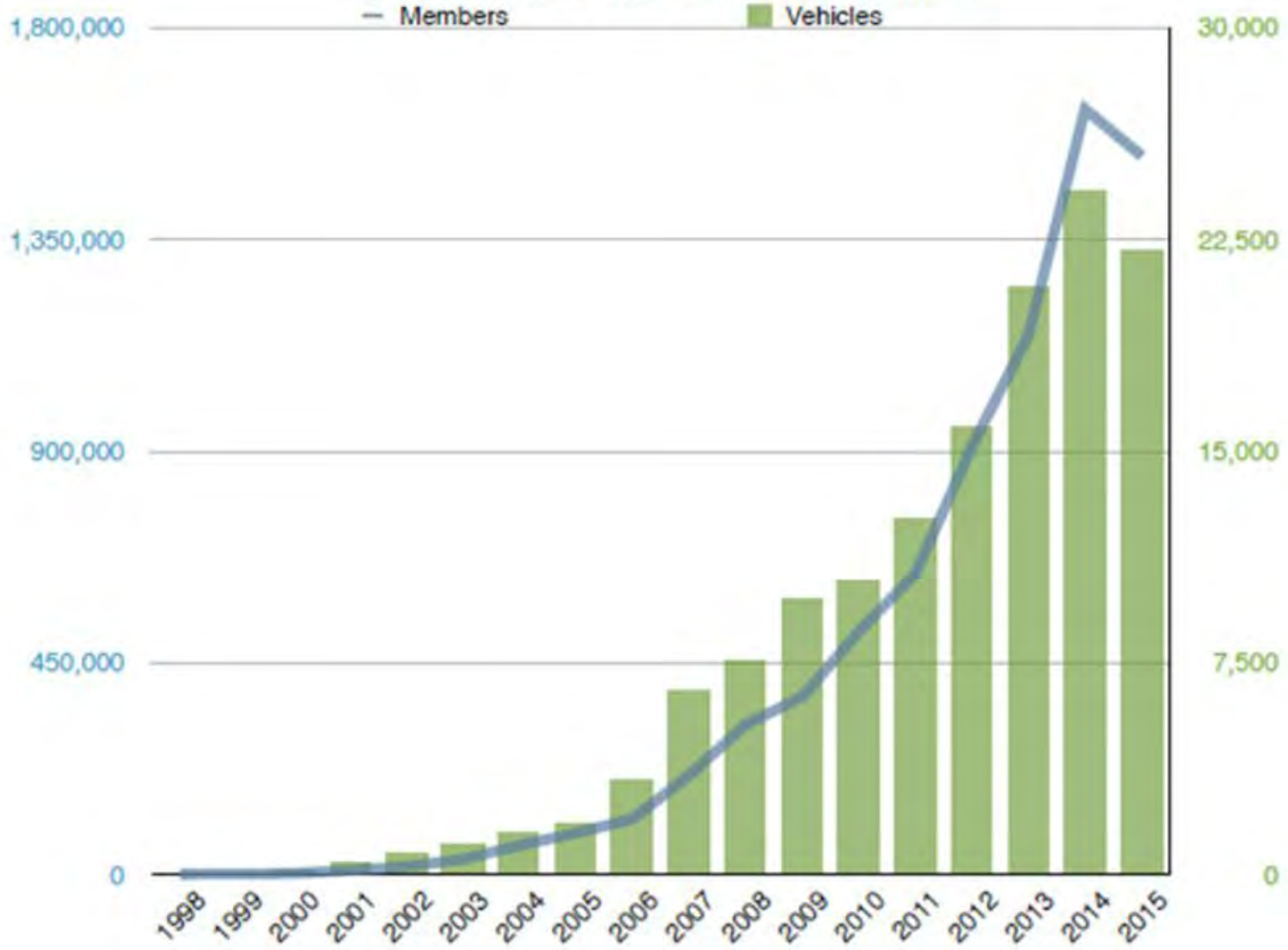




Mobility as a Service

Car Sharing

Figure 8.1 North American Carsharing Growth



Ride Sharing

- Essentially a taxi service, riders "donate" to pay for service
- Shared van & senior focused services
- Uber recently valued at over $50 billion
- iHAIL in MSP is the taxi company response

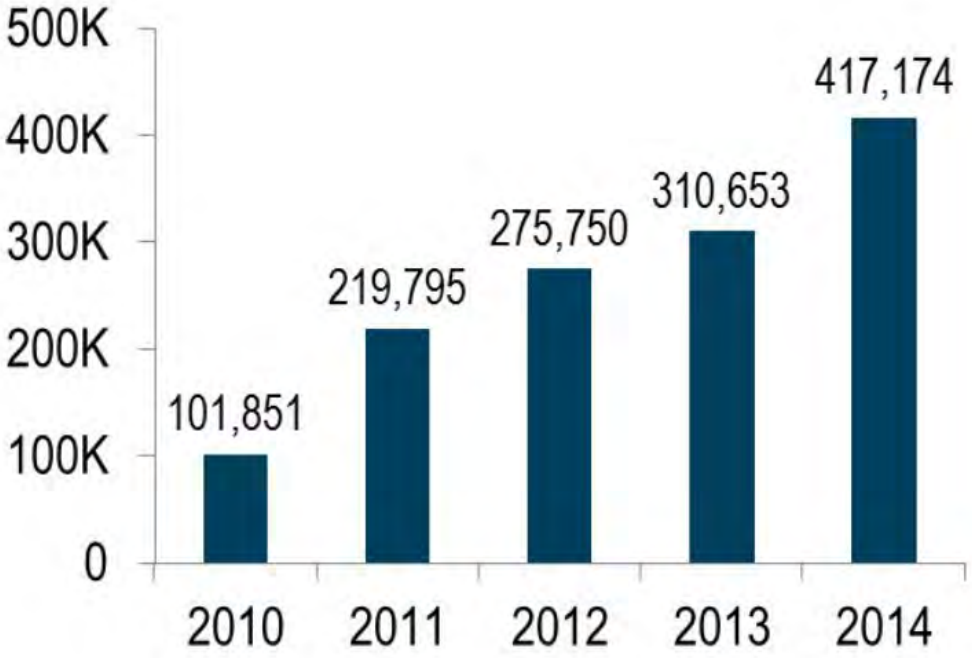
UBER

lyft

iHAIL™

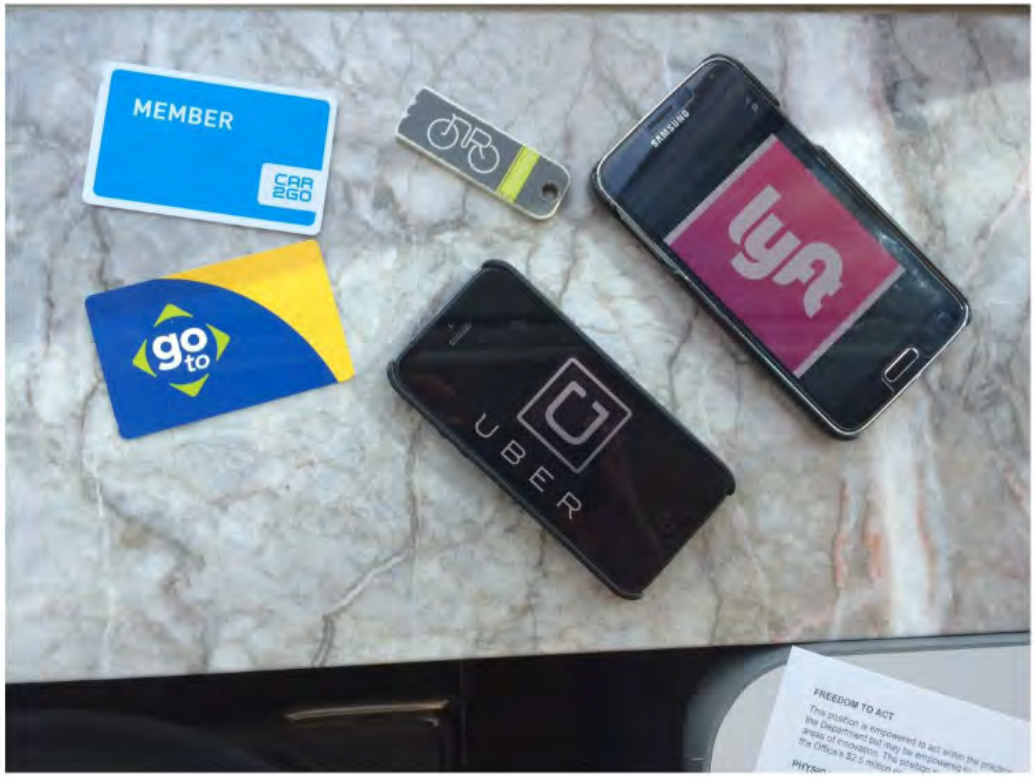
Twin Cities Taxi Booking App

Bike Sharing



Unanswered Questions

- Will memberships converge?
- What about compatibility?
- How do autonomous vehicles fit?

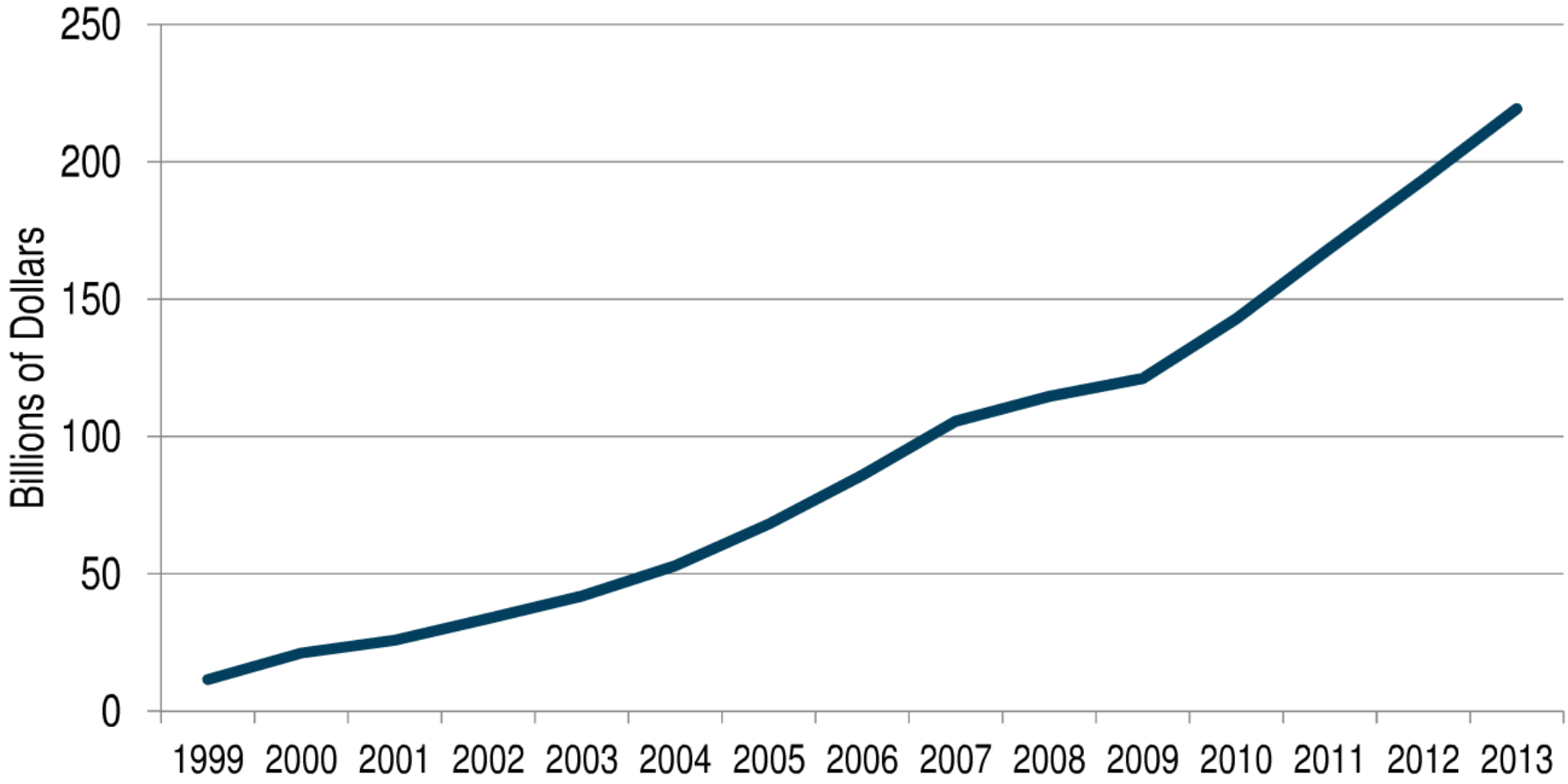



Teleworking &
e-Shopping

Telecommuting and Transportation

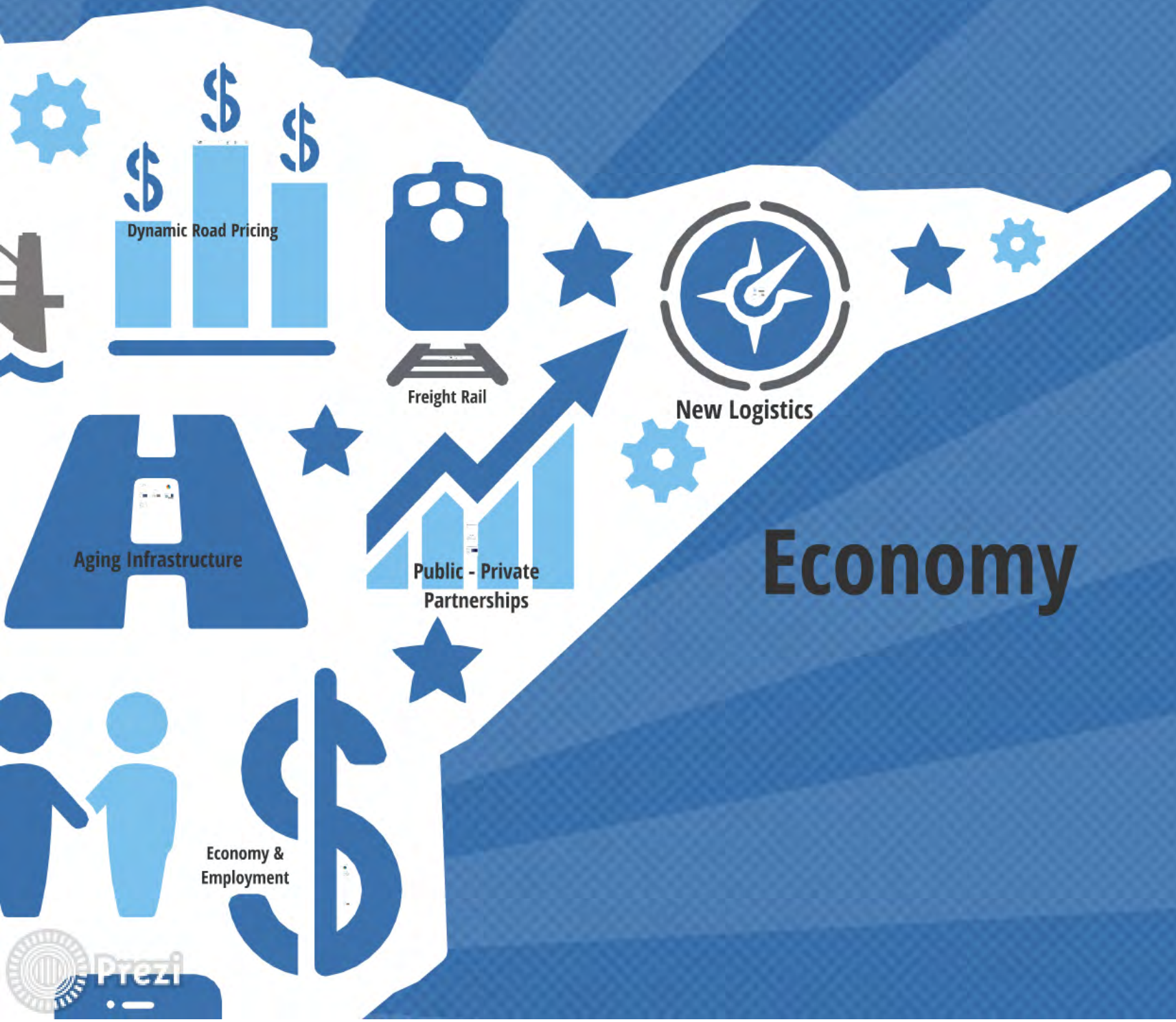
- Increases in telecommuting seem to be occurring in situations where individuals telecommute only on a part-time basis
- Telecommuting shifts trip time, but does not appear to significantly reduce the total number of trips

E-Shopping



E-Shopping

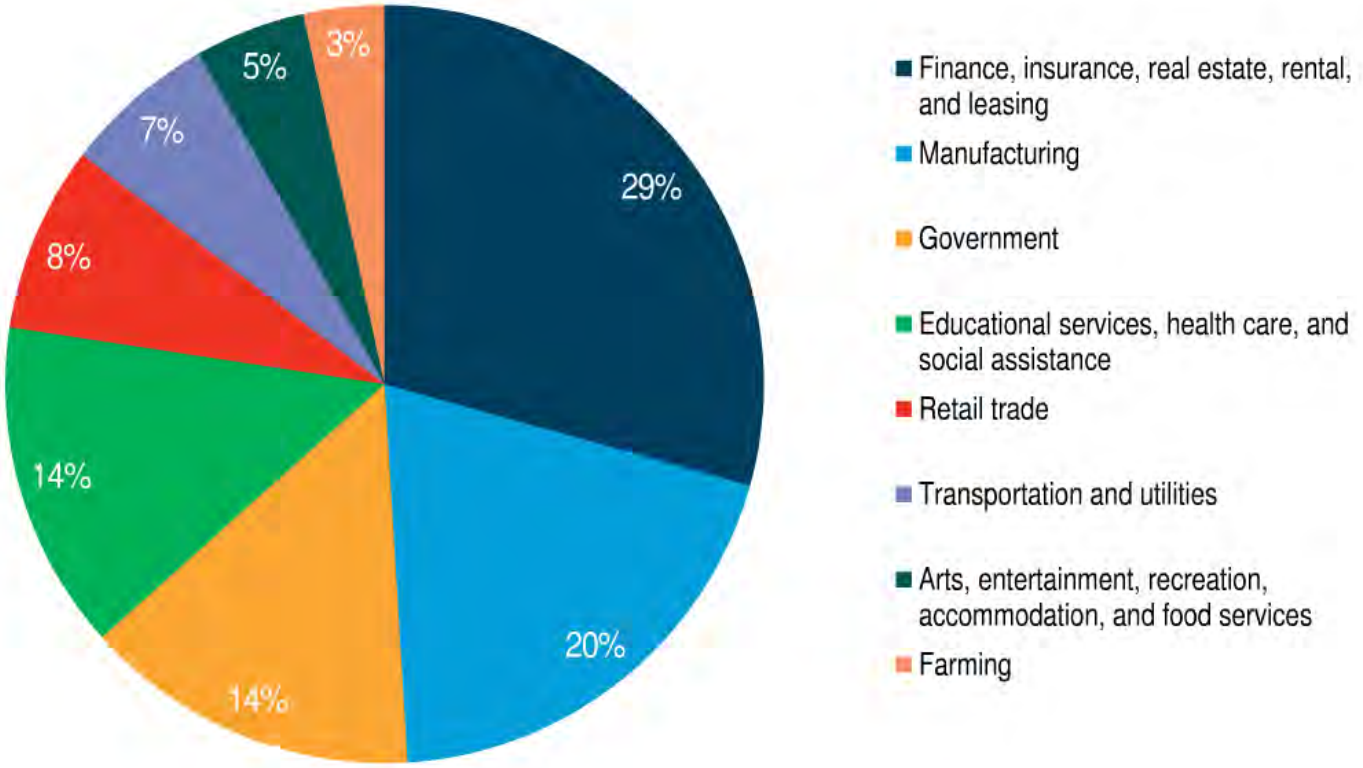
- There is no persuasive evidence that e-shopping reduces individuals' shopping trips to stores
- Growth in e-shopping will result in need for new and improved delivery services


Dynamic Road Pricing
Freight Rail
New Logistics
Aging Infrastructure
Public - Private
Partnerships
Economy &
Employment

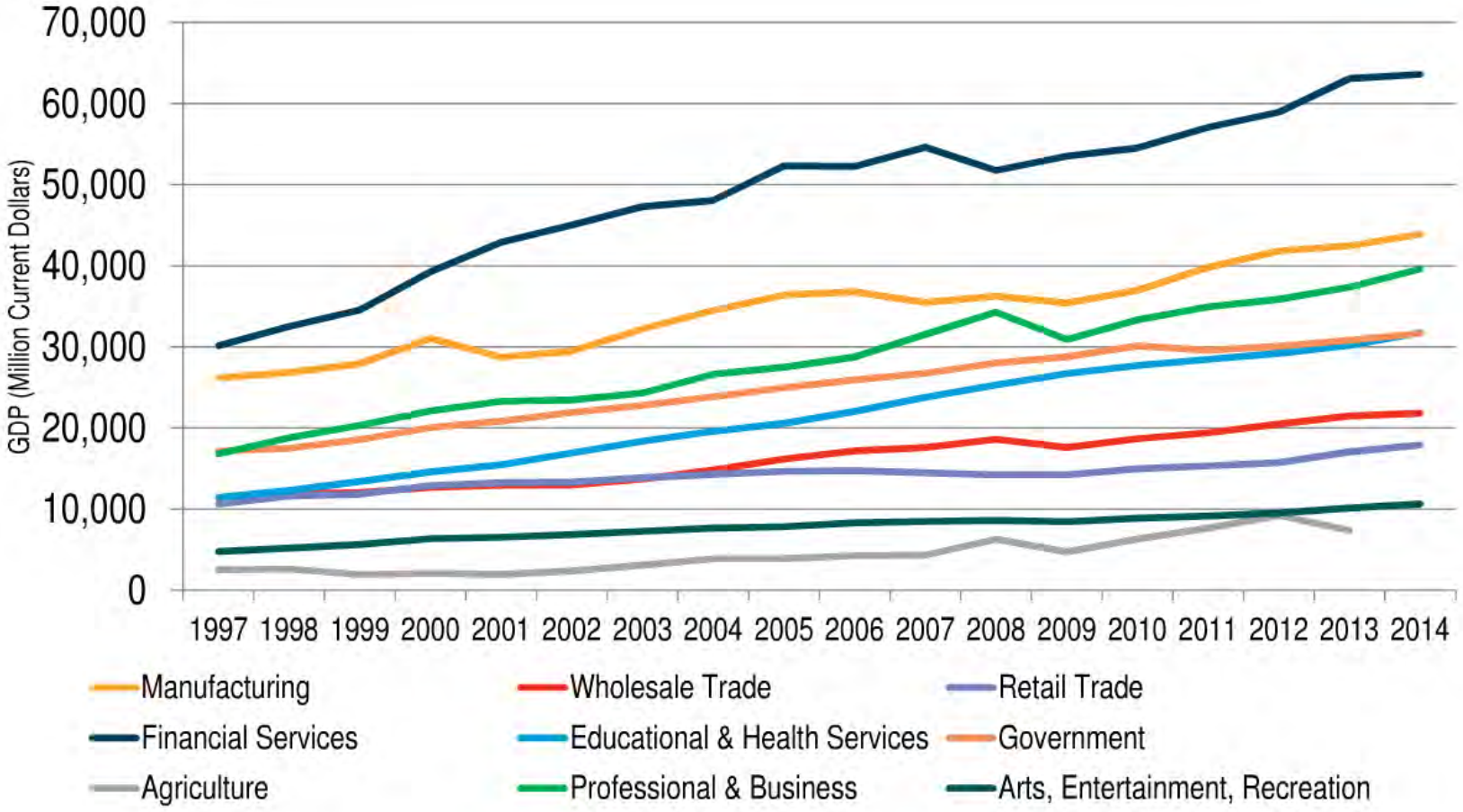
Economy

Economy & Employment

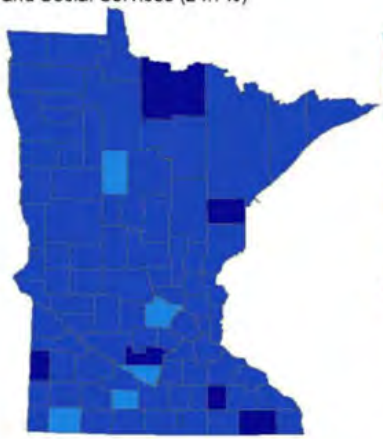
Minnesota GDP 2013



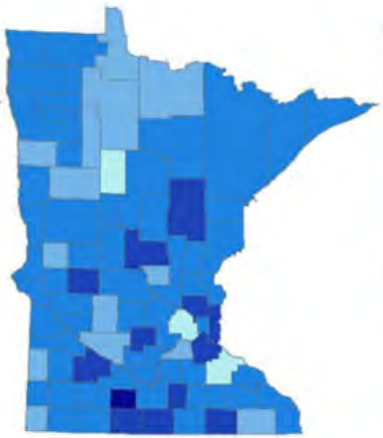
GDP Since 1997



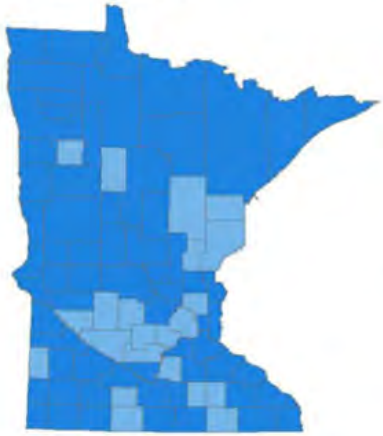
Educational, Health, and Social Services (24.7%)



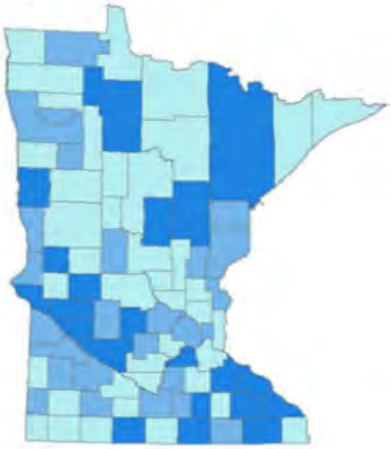
Manufacturing (13.6%)



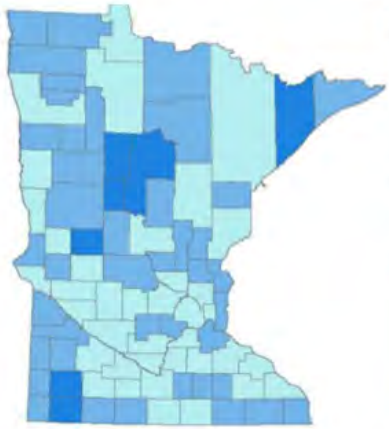
Retail Trade (11.5%)



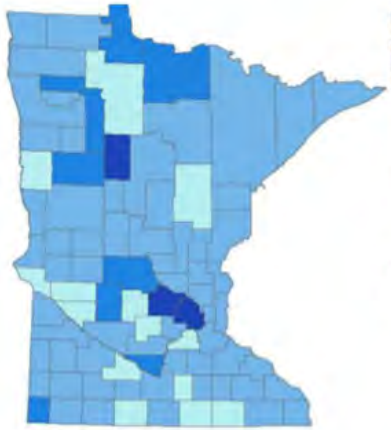
Agriculture (2.4%)



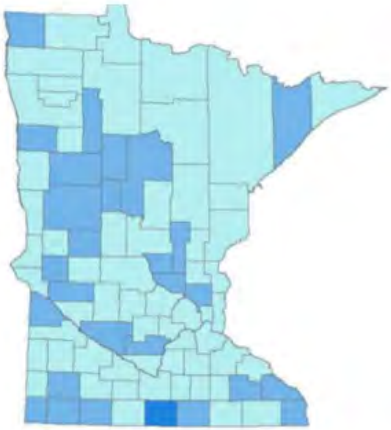
Professional, Management, Administrative Services (9.7%)



Arts, Entertainment, Recreation, Accommodation, Food Services (8.2%)



Finance, Insurance, Real Estate (7.2%)



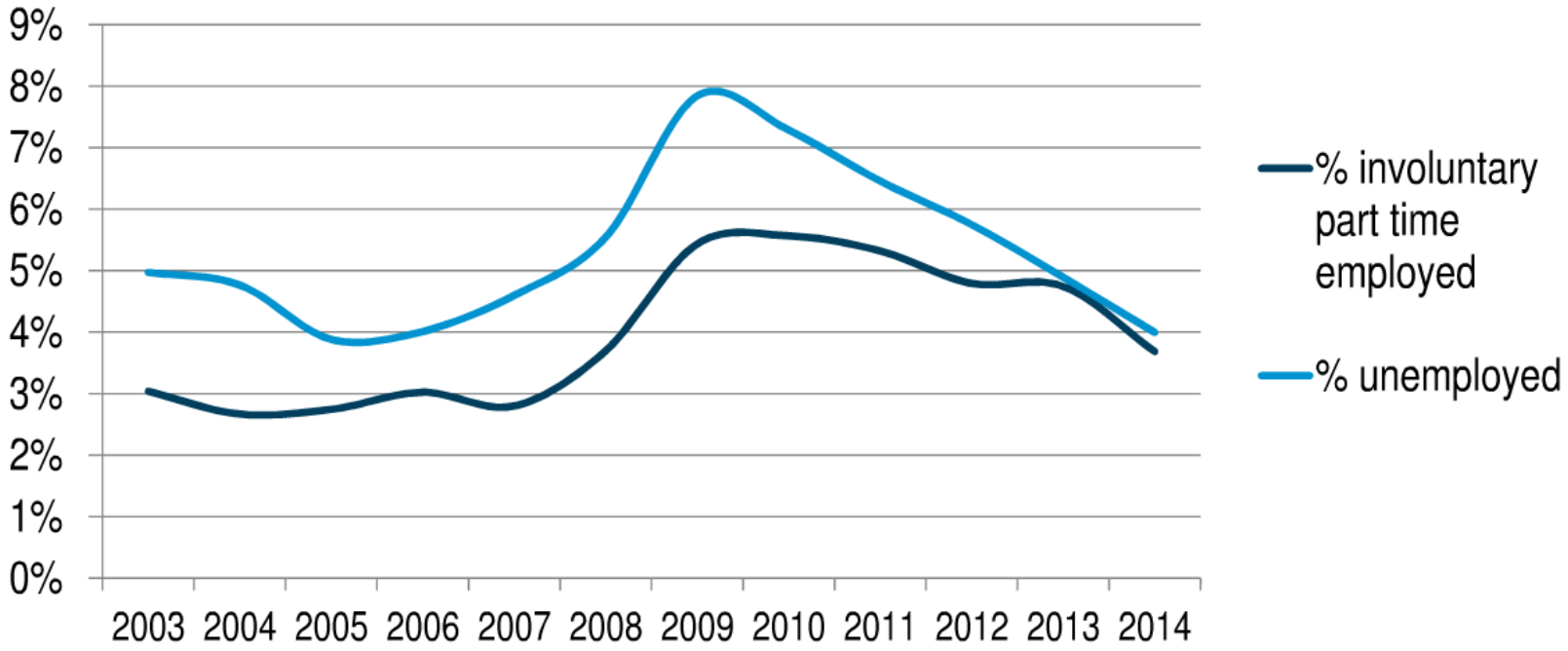
Percentage of county workforce employed in industry (2009-2013)

Workforce employed in sector

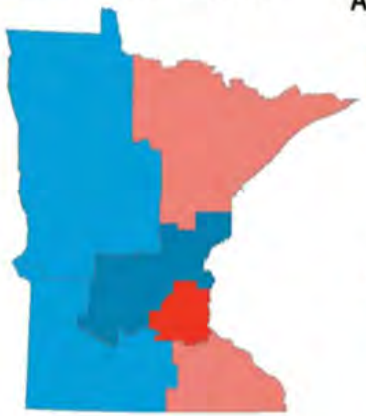
- < 5%
- 5 - 10%
- 10 - 20%
- 20 - 30%
- 30 - 100%

Unemployment

- As of 2014 unemployment and underemployment in Minnesota was significantly lower than the national average



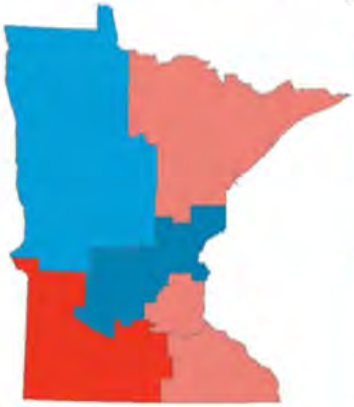
Manufacturing (-1.3%)



Health Care & Social Assistance (22.9%)

Construction (25.0%)

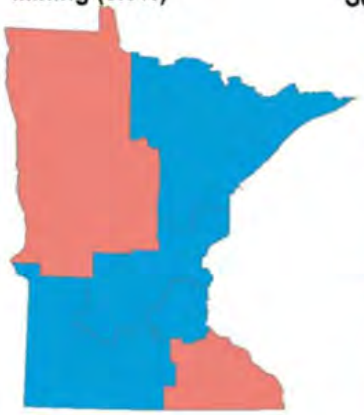
Total Government (-0.2%)



Professional & Technical Services (14.5%)

Agriculture, Fishing, Hunting (2.6%)

Mining (8.3%)



Administration & Waste Services (12.9%)

Projected Job Growth through 2022

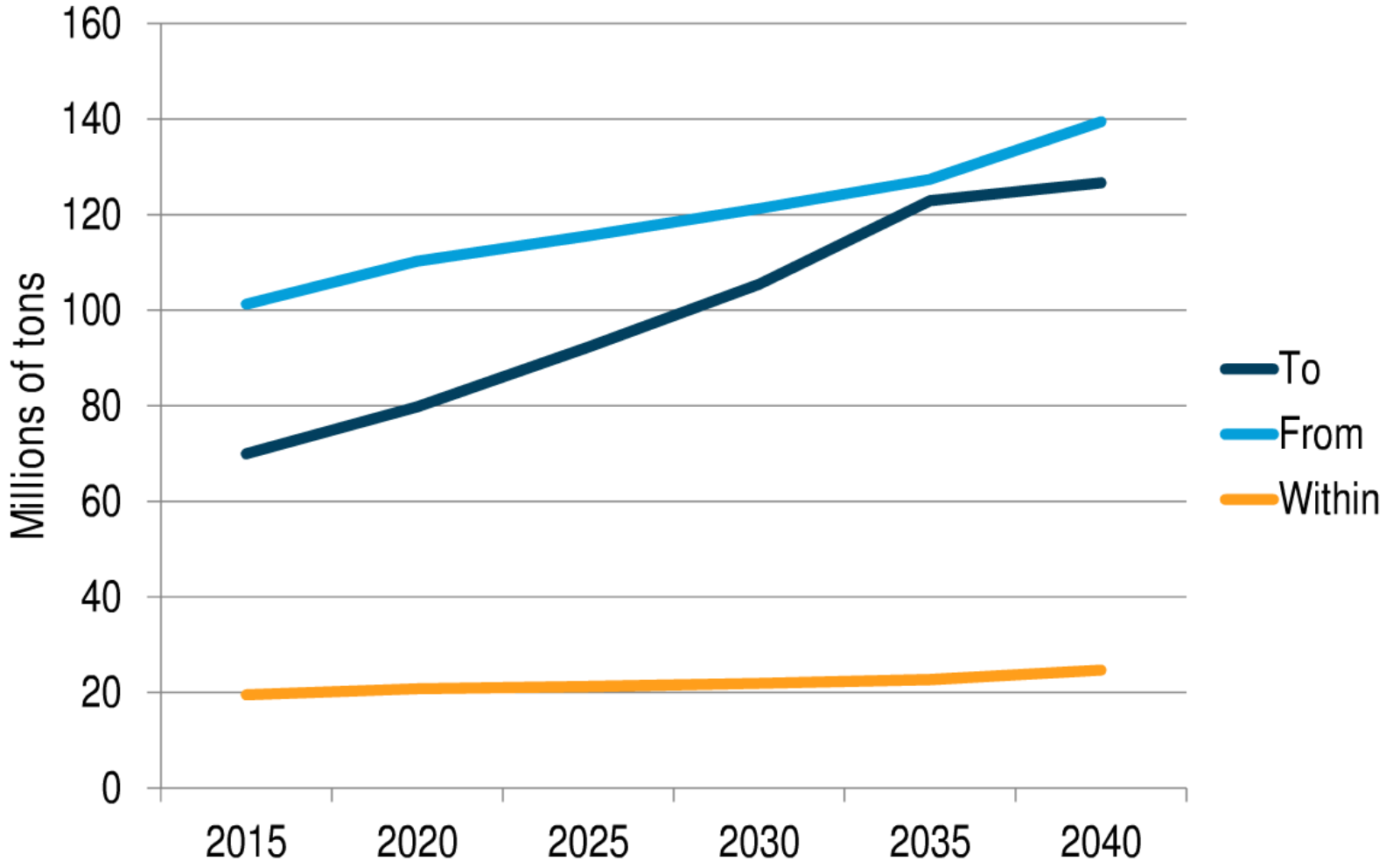
- 1,001+ Loss
- 0 - 1,000 Loss
- 0 - 1,000 Gain
- 1,001 - 10,000 Gain
- 10,001+ Gain

Minnesota's Workforce

- Minnesota's economy continues to shift from agriculture and manufacturing toward services
- Employment in manufacturing declined dramatically between 2001 and 2014
- Minnesota is the fifth largest agricultural producer in the nation
- Farms are consolidating

Freight Rail

Freight Rail Projections



Freight Rail's Resurgence

- Cereal grains and metallic ores make up the majority of commodities shipped in Minnesota
- Freight rail partly attributable to:
  - Motor carrier regulations are becoming more strict
  - Booming crude oil industry in North Dakota and Canada
  - Industry-wide truck driver shortage

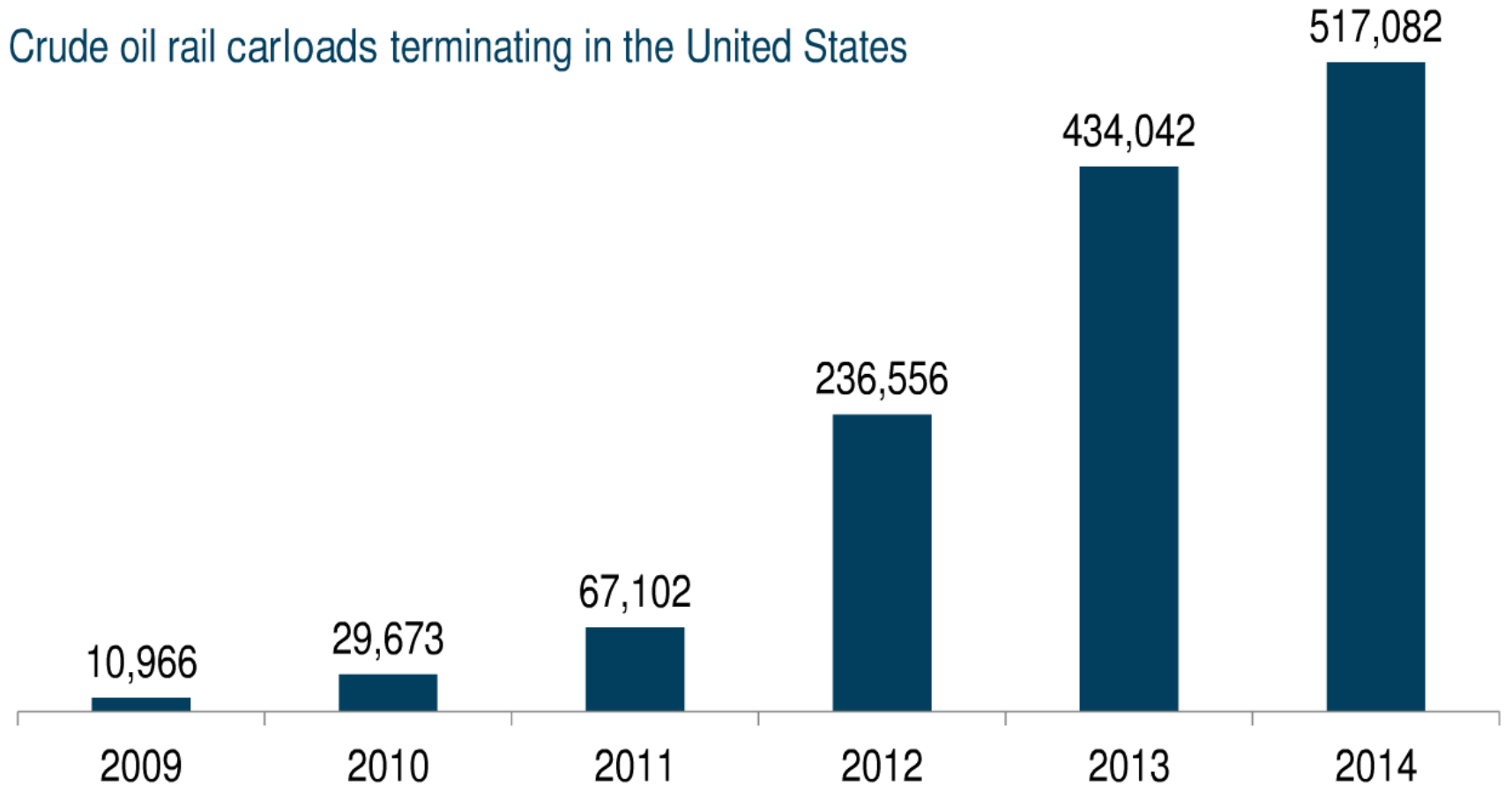
Advantages and Challenges

Advantages of Freight Rail

- Connectivity
- Efficiency

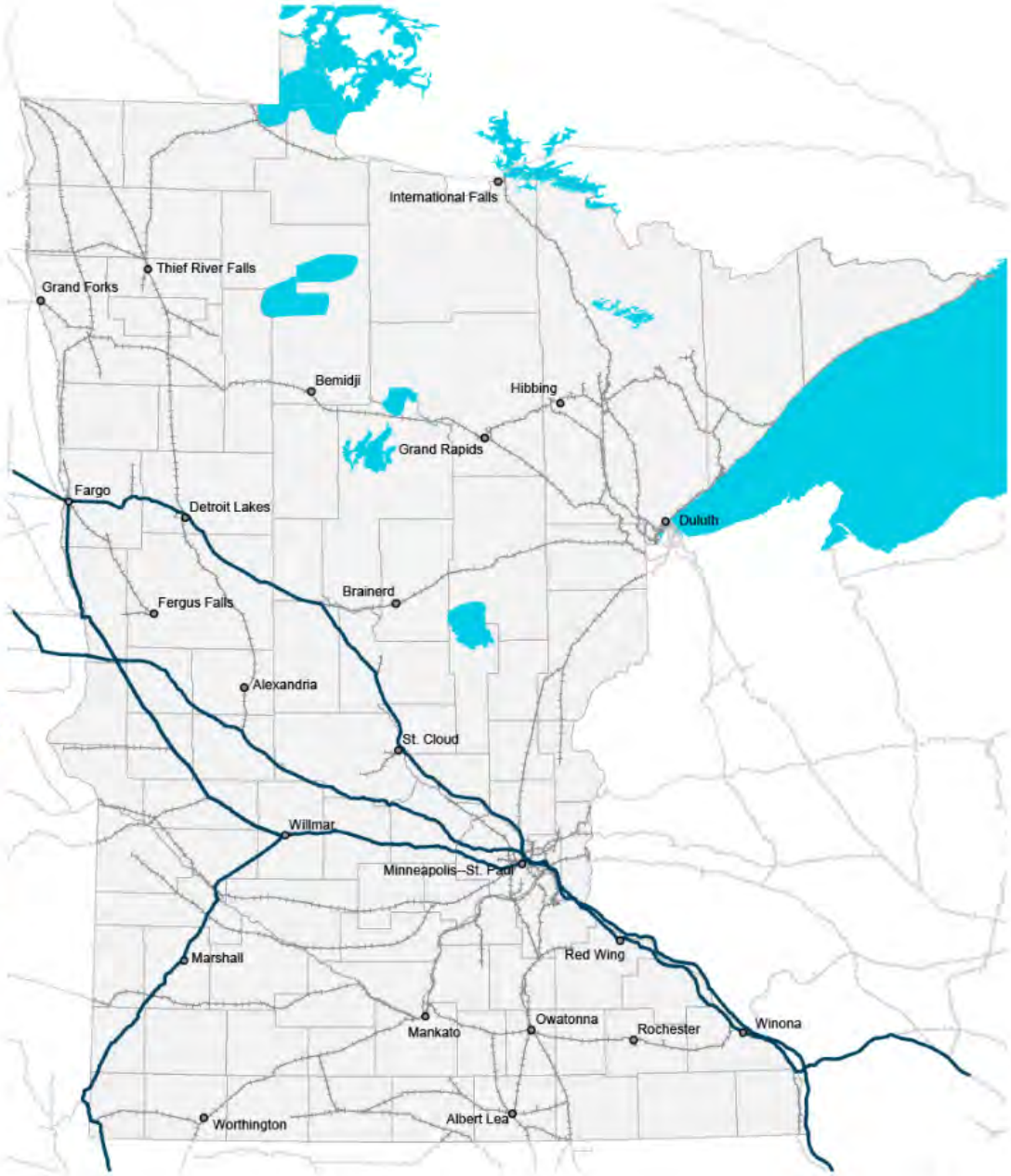
The Challenge: Safety

Crude-by-Rail



Crude-by-Rail

- Total of 683 at-grade crossings along Bakken routes
- Share of all goods shipped on MN's rails is small
- Other more dangerous products frequently shipped as well



New Logistics

Global Trade

- Nearly a third of world transport energy is dedicated to the movement of freight within and between countries by trucks, ships, and rail
- Nearly 70% of all the freight tonnage moved in the US goes on trucks
- Freight shipment impacts the environment, roads, and other transportation infrastructure.

Freight and Truck Use

- In the Midwest, trucking is the primary means of delivering goods to businesses and customers
- The amount of freight carried by trucks has steadily increased since 2010
- Of the freight shipped within the US, the total domestic weight of shipments has increased by 4.15% over the last five years and is projected to increase by 45% by 2040

Freight Logistics Trends

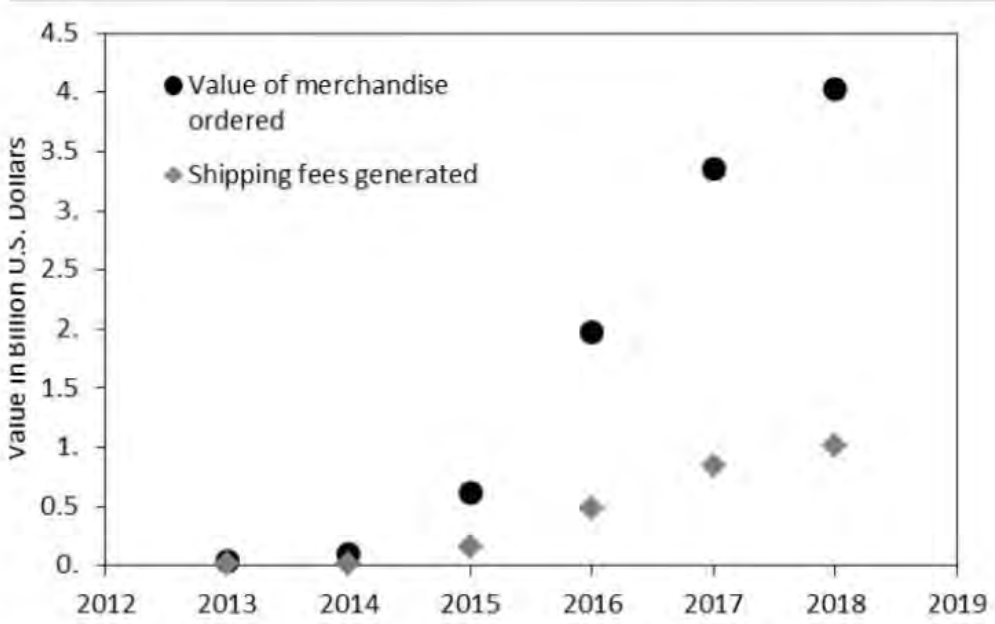
- Shift to regional hubs and centers
- A new model of logistics is being explored in Europe and elsewhere called the “physical internet” or something similar

Containerization

- Global trade increasingly relies on shipping containers to move goods
- Duluth harbor exploring container shipping opportunities
- Intermodal facilities in MN will help economy to adapt

Delivery Trends

Increases in same-day deliveries are changing costs and patterns of shipping.

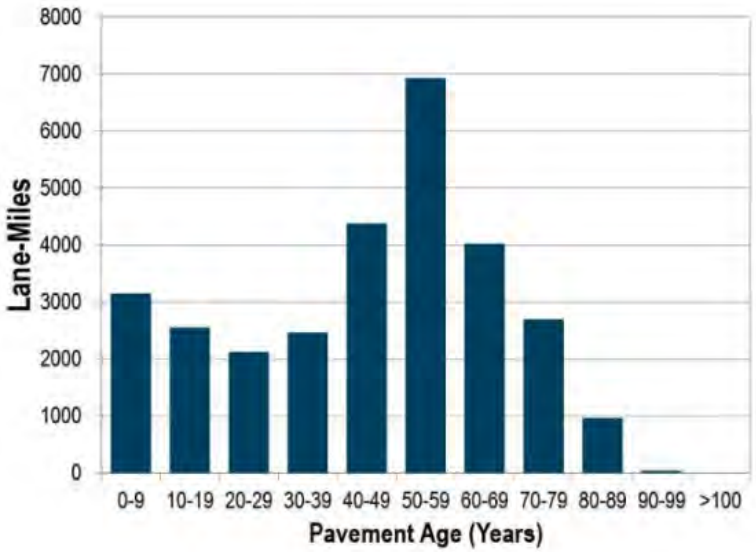


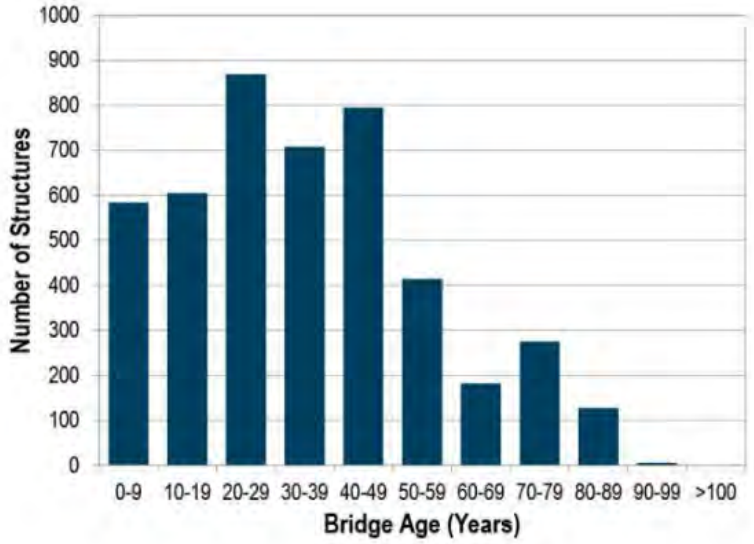
Same-day delivery merchandise value and shipping fees generated in the United States from 2013 to 2018 (in billion US dollars) [14]

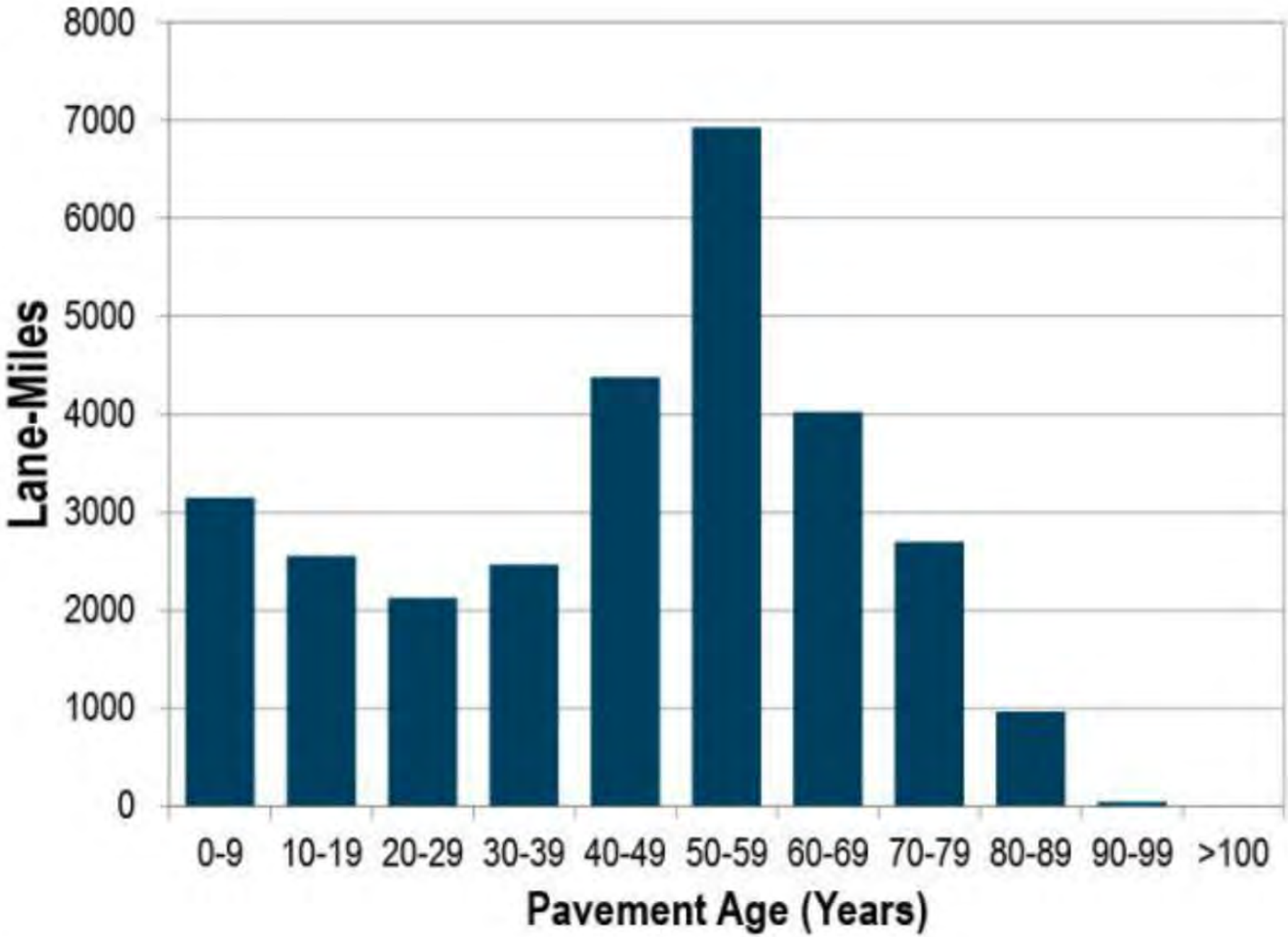
Aging Infrastructure

Age of the Highway System

The bulk of Minnesota's highway system was originally constructed 40-69 years ago.



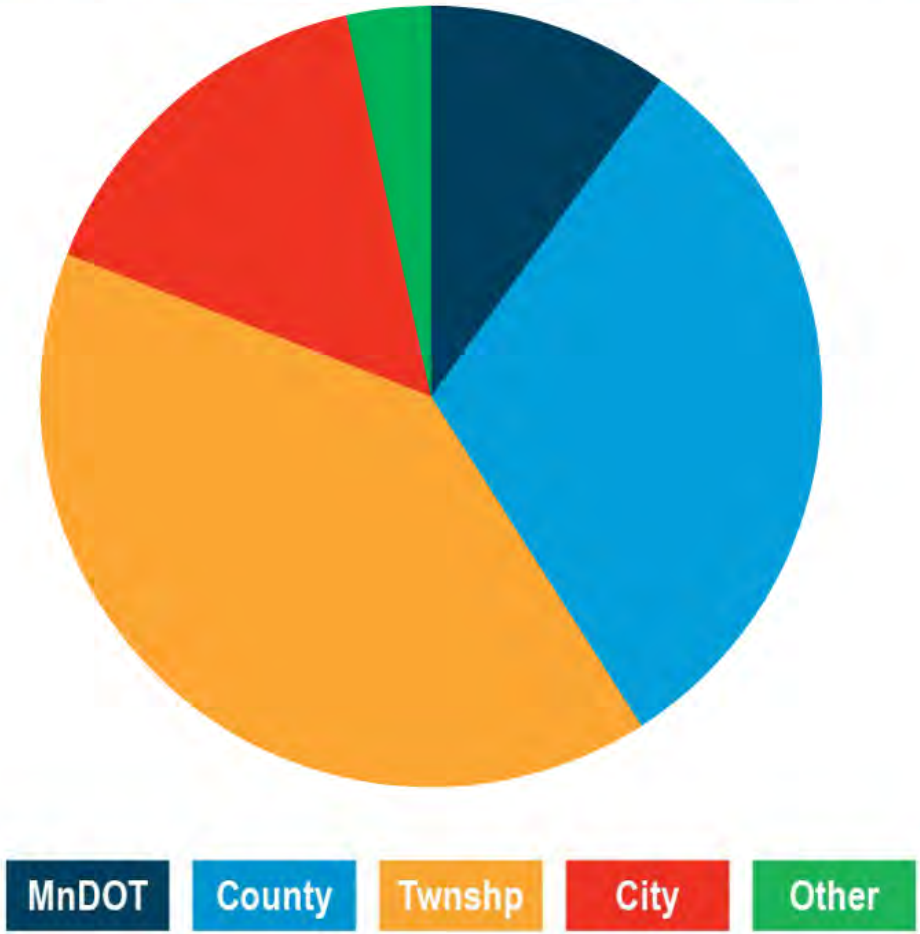



8000
7000
6000
5000
4000
3000
2000
1000
0
Lane-Miles
0-9
10-19
20-29
30-39
40-49
50-59
60-69
70-79
80-89
90-99
>100
Pavement Age (Years)

Typical Investment Pattern

Note: Varies dramatically based on field conditions

Local Road Infrastructure



Airports

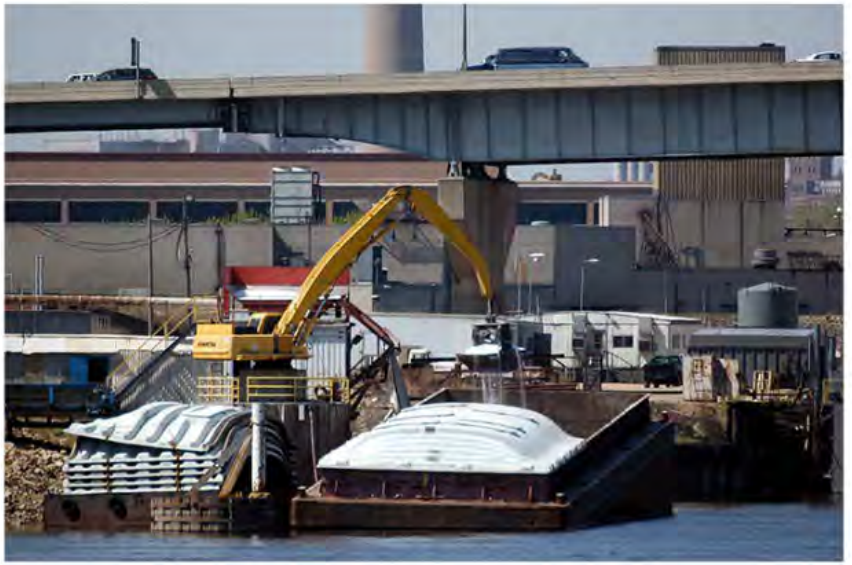
- State Aviation System Plan includes estimated maintenance costs
  - Projected costs of $2.46 B between 2012 and 2030
  - About 40% of this total billed for general improvements
  - Allocated funding meets about 1/3 of need

Railroads

- 270 of 1,400 rail crossing warning devices have exceeded their useful life
- $244 M in maintenance needed along Bakken rail corridor alone

Ports & Waterways

- Applications for MnDOT's Port Development Assistance Program showed needs over $34M
- Dredging costs in Minnesota's navigable waterways and ports amounted to $14.3M in 2012 while lock and dam maintenance added $9.2M
- Total need for more than $110M on the St. Paul District's system (from Minneapolis to Guttenberg, IA)



Other Infrastructure

- Drinking Water
  - Nationwide, the maintenance bill for drinking water infrastructure is more than $1T over the next 25 years
- Wastewater
  - $298B needed throughout the country over the next 20 years
  - Clean Water Act requirements have resulted in an accelerated timeline for maintenance activities

Public - Private Partnerships

Benefits of Private Partnership

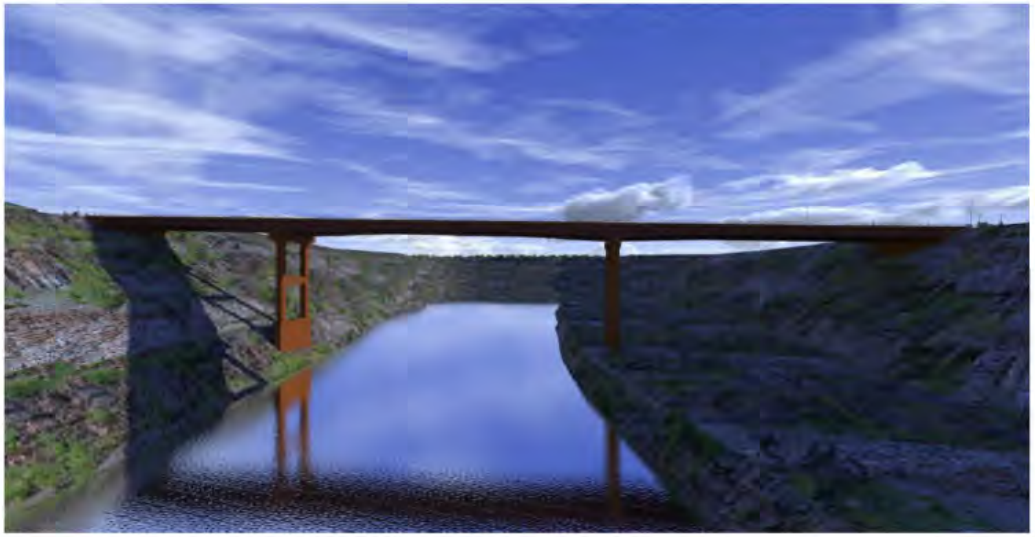
1. Alternative source of revenue
2. Opportunity for flexibility
3. Potential cost savings
4. Project acceleration

History of P3s

- MnDOT's experience with public-private partnerships began over 20 years ago
- In response to the authorization, MnDOT created "TranSmart," the brand-name for a statewide P3 tolling initiative

Current and Future Partnerships

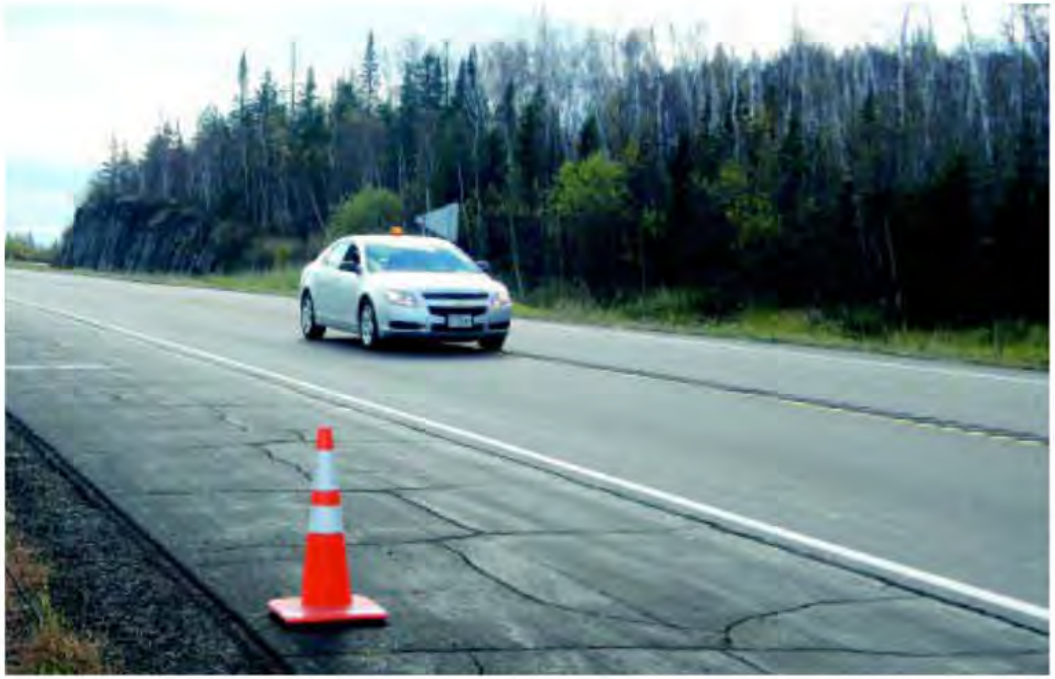
- Transportation & Economic Development (TED) program:
- Unsolicited proposals
- Innovative contracting strategies
  - Indefinite Delivery / Indefinite Quantity
  - Contract Manager / General Contractor




Dynamic Road Pricing

Transportation Funding

- Nationally, general revenue is the largest source of funding for roads
- General tax revenues spread the cost of road maintenance and construction to both users and non-users

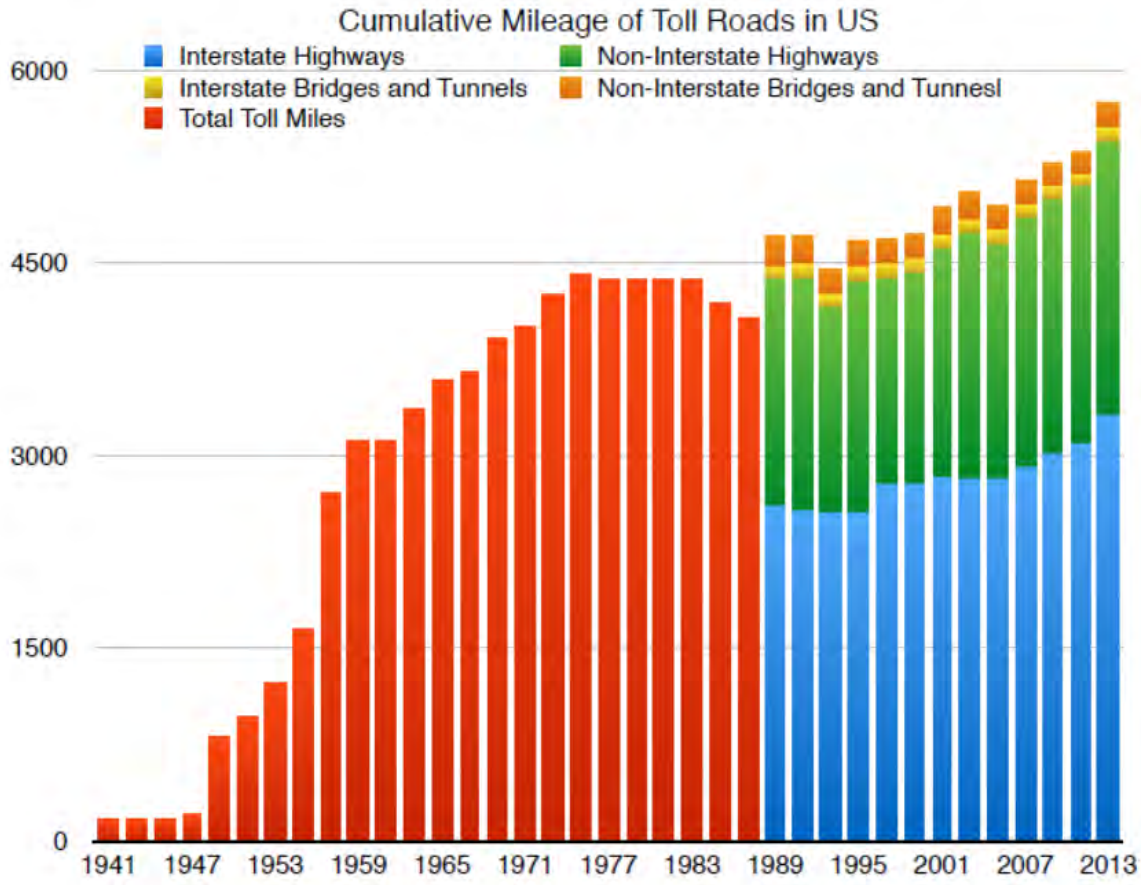


Gas Tax Limitations

- Gas tax is the current standard but does not account for several issues
  - cost inflation
  - fuel efficiency & alternative fuels
  - local road costs
  - pollution & crashes
  - recover pavement damage from heavy vehicles.
  - address congestion

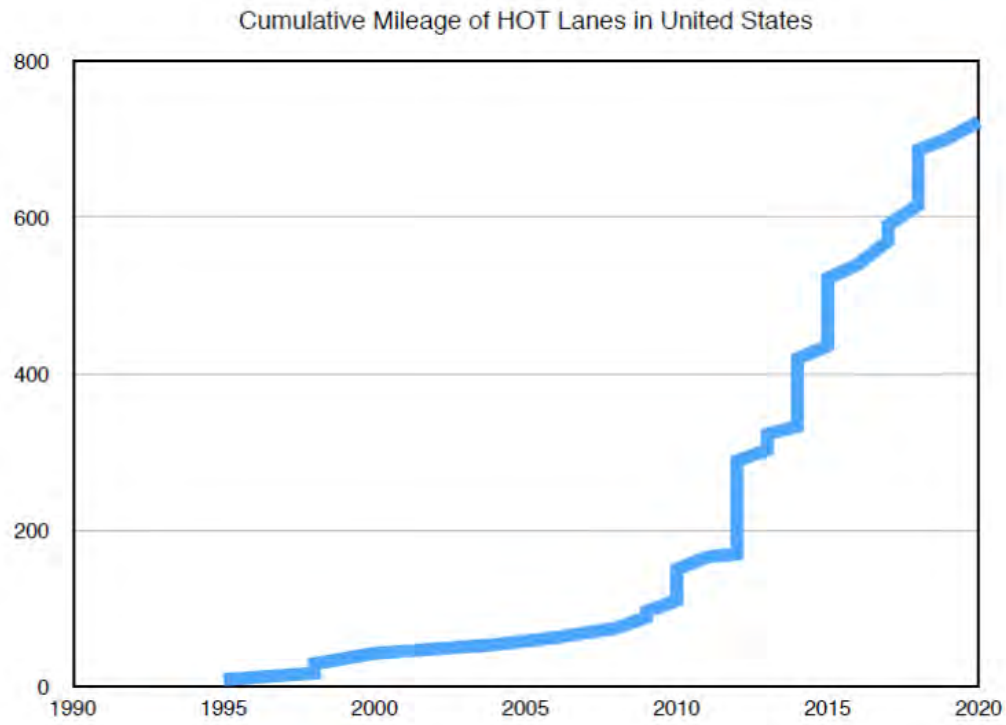
Toll Roads

- Toll roads manage traffic and generate revenue by billing infrastructure users.
- The number of toll roads in the US is slowly growing



HOT Lanes

- HOT lanes vary user fees, depending on time of day/traffic
- HOT lanes can be added to some regional highways as they are expanded or reconfigured with narrower lanes



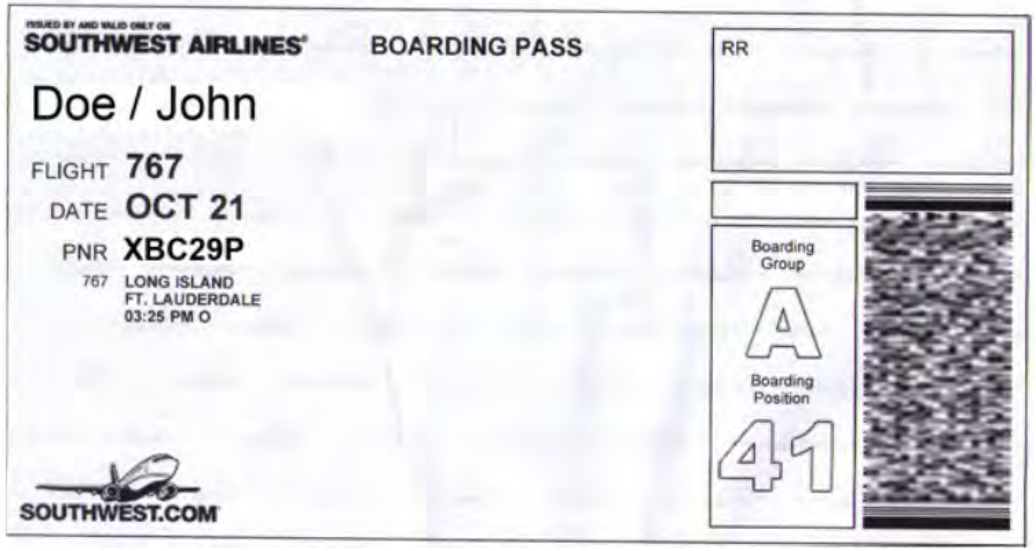
MnPASS Lanes

- MnPASS uses electronic transponders to charge single-occupancy drivers during congested periods
- Currently used on I-35W, I-394, and soon to be used on I-35E

Other Dynamic Pricing

- Parking rates
- Surge pricing for Uber & Lyft users
- Dynamic pricing already occurs in ticketed travel scenarios

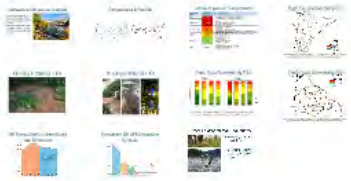
Southwest Airlines Boarding Pass



Mileage Charges

- Minnesota has studied mileage-based user fees, but the future of these techniques is uncertain

Environment

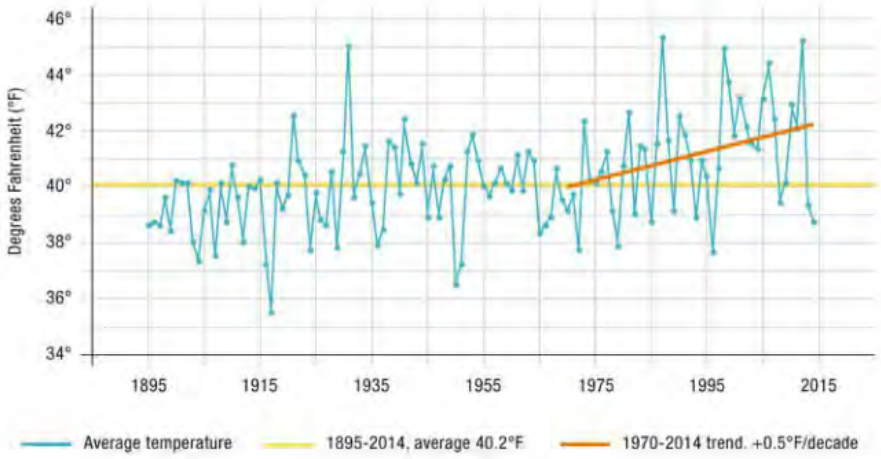


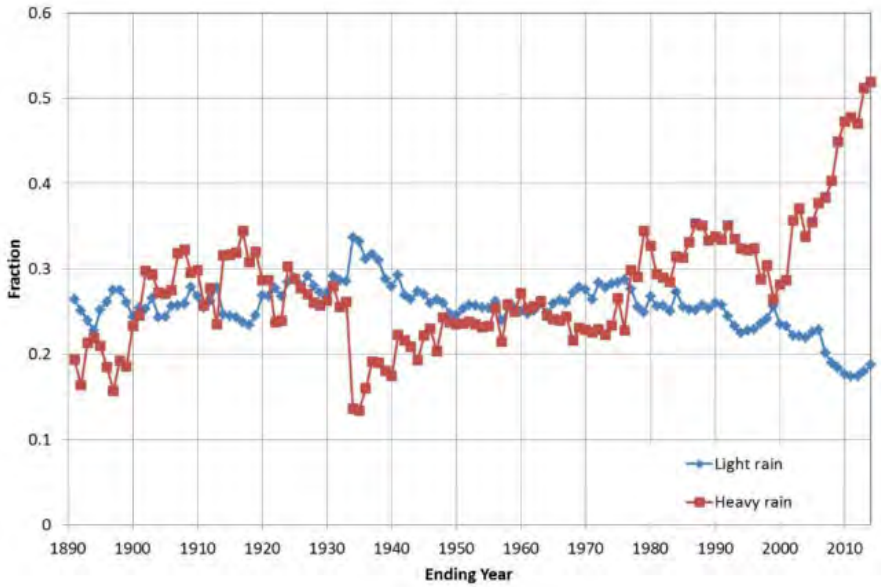
Climate Change

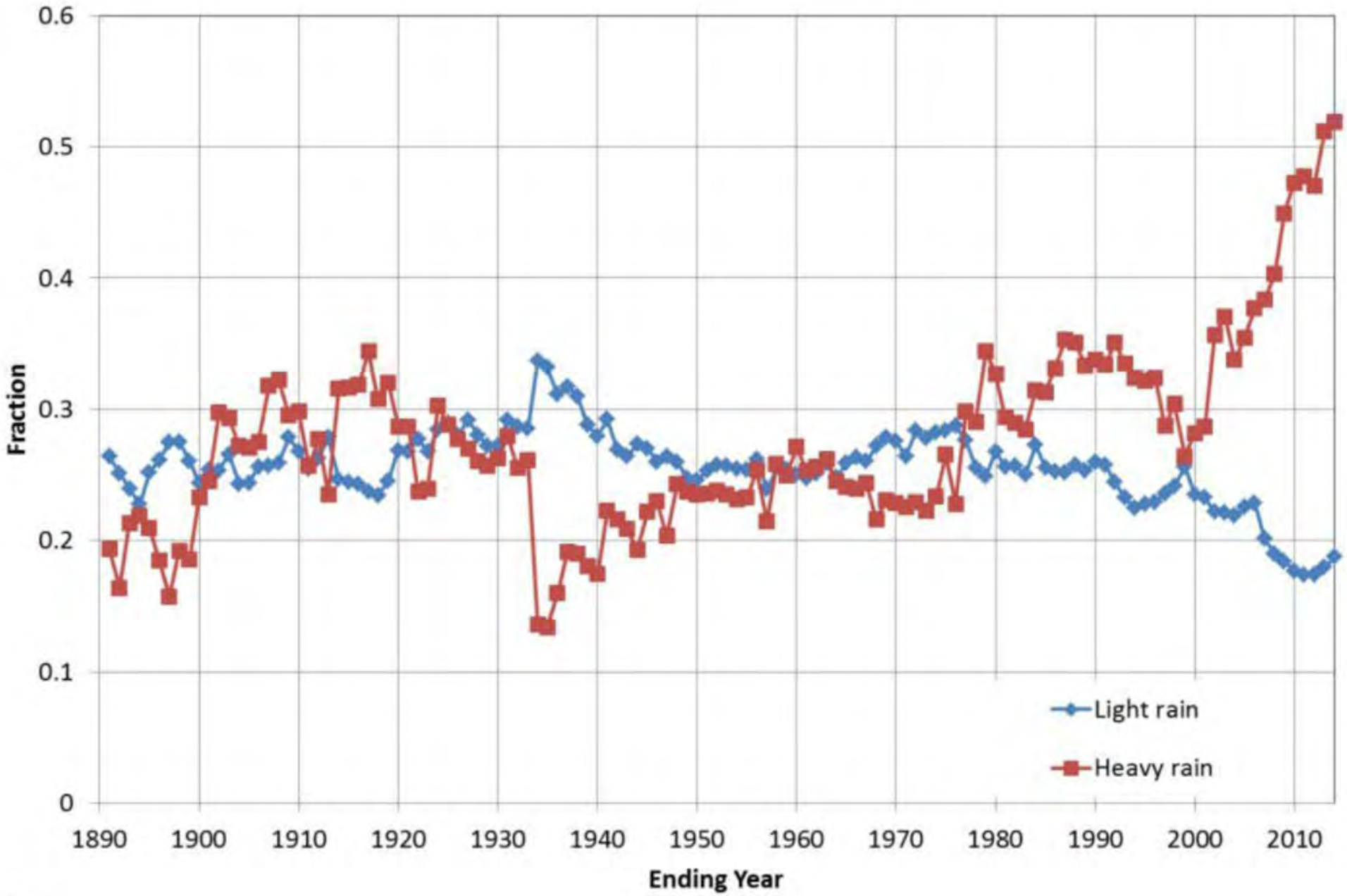
Minnesota's Climate has Changed

- Temperatures in Minnesota have risen 2 – 3˚F over the past 100 years, 25% more than the global average
- Minnesota's winter temperatures have risen more than any other state on average over the past 40 years.

Temperature & Rainfall



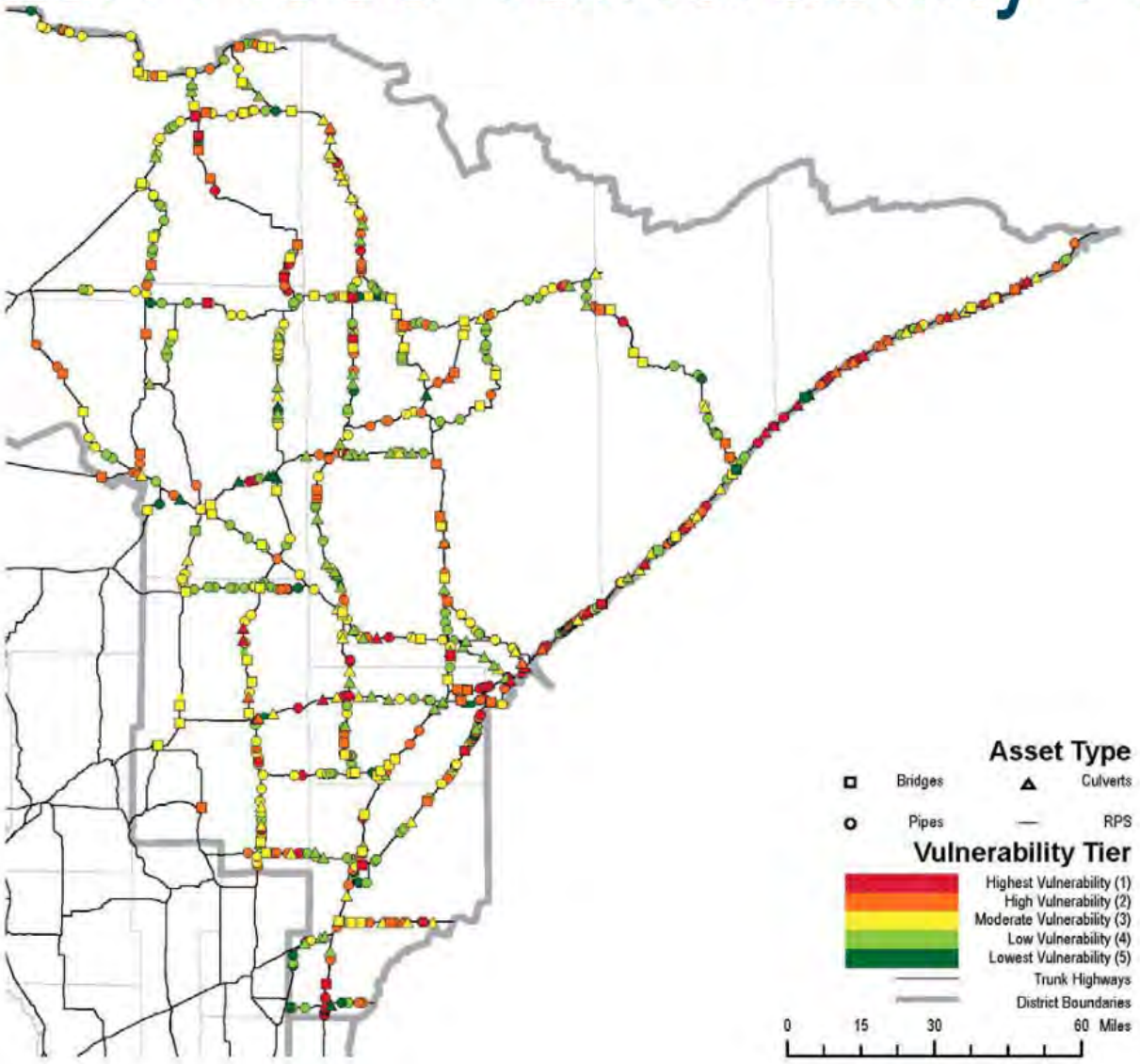



0.6
0.5
0.4
0.3
0.2
0.1
0
Fraction
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
2010
Ending Year
Light rain
Heavy rain

Climate Impacts to Transportation

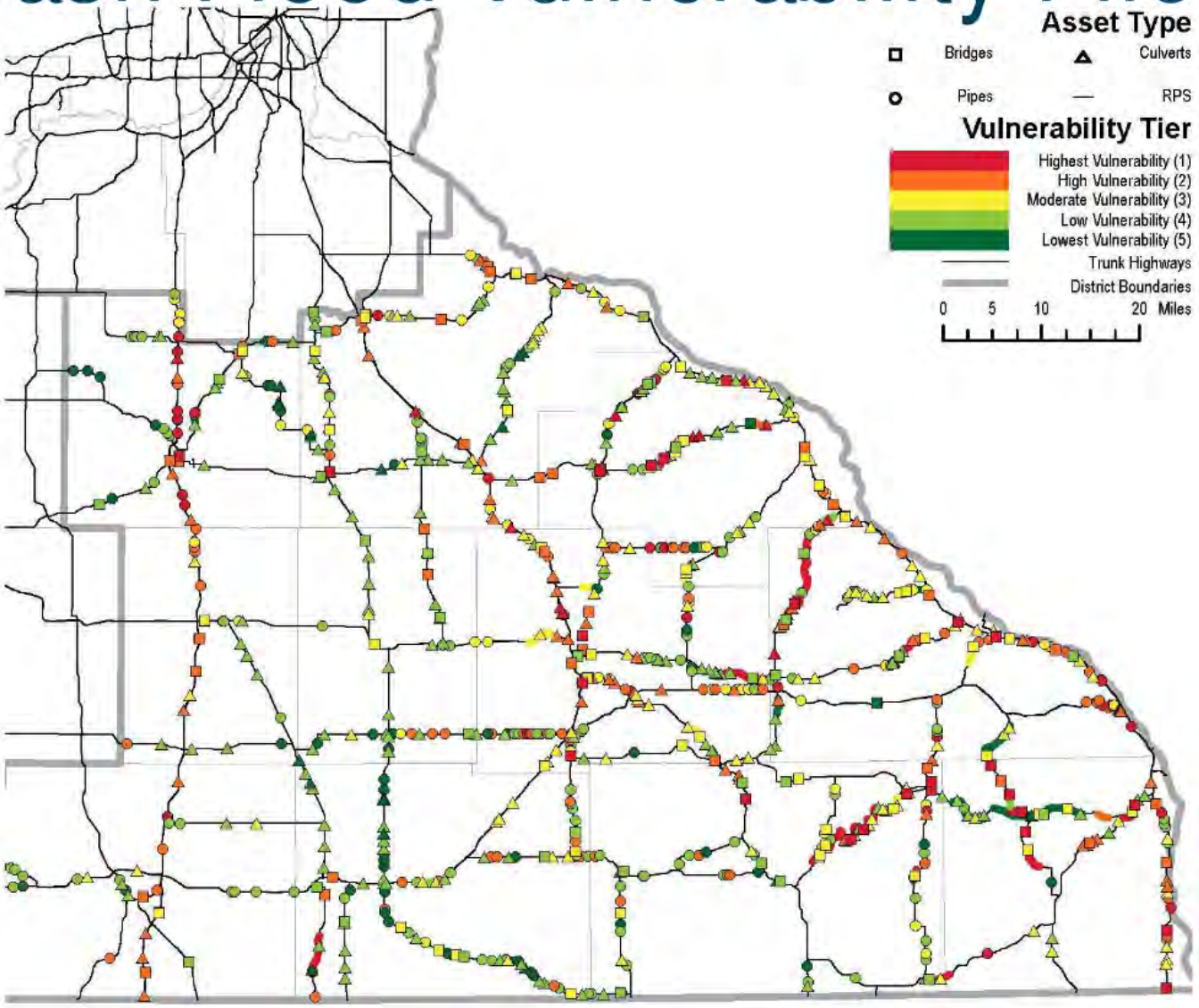
Climate Change Impact	Confidence In Change for MN in next 20 years	Effect to Transportation System
Heavy Precipitation/Flooding	Very High	• Damage to highway and rail infrastructure, airport runways • Overtopping roads will slow operations and performance
Warmer Winters	Very High	• More ice • Reduced pavement conditions and life cycles • Downed power lines with ice storms
New species ranges	High	• Changes in roadside vegetation mixes • Soil erosion • Increase in invasive species populations • Increased exposure of construction and maintenance crews to vector-borne diseases
Drought	Medium	• Reduced river navigability for barges • Stress roadside vegetation, which may reduce rainwater storage and increase soil erosion in the long-term
High Heat	Low	• Pavement and rail buckling • Vehicles overheating • Electrical system malfunctions • Limitations on construction hours
Wildfires	Unknown	• Road closures • Immediate and significant threat to human safety • Damage to roadside infrastructure

Flash Flood Vulnerability Pilot



Highly vulnerable (Tier 1 and 2) assets are not necessarily in imminent danger of flooding, nor are lower vulnerability assets immune from flooding. Values are indicators of relative vulnerability compared with other assets in the same district.

Flash Flood Vulnerability Pilot



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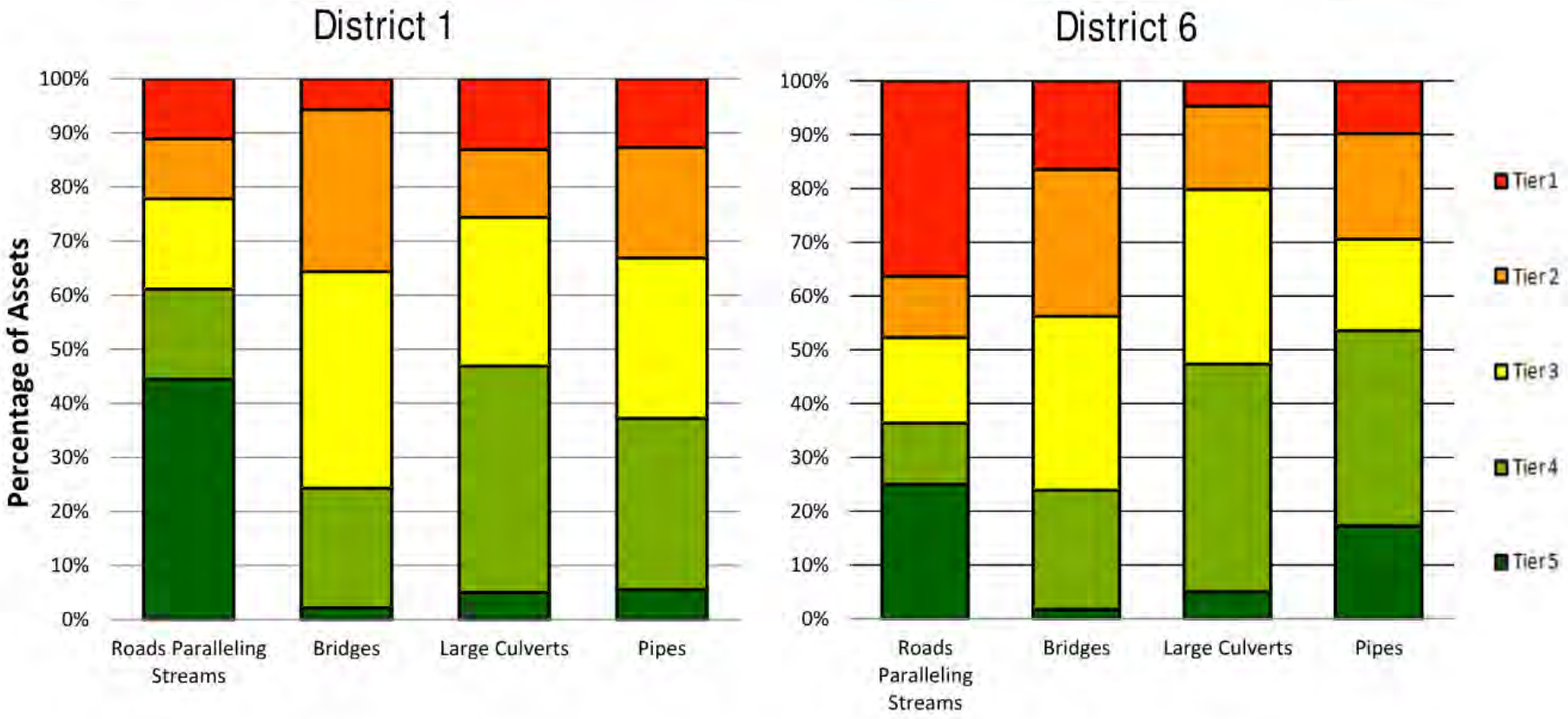

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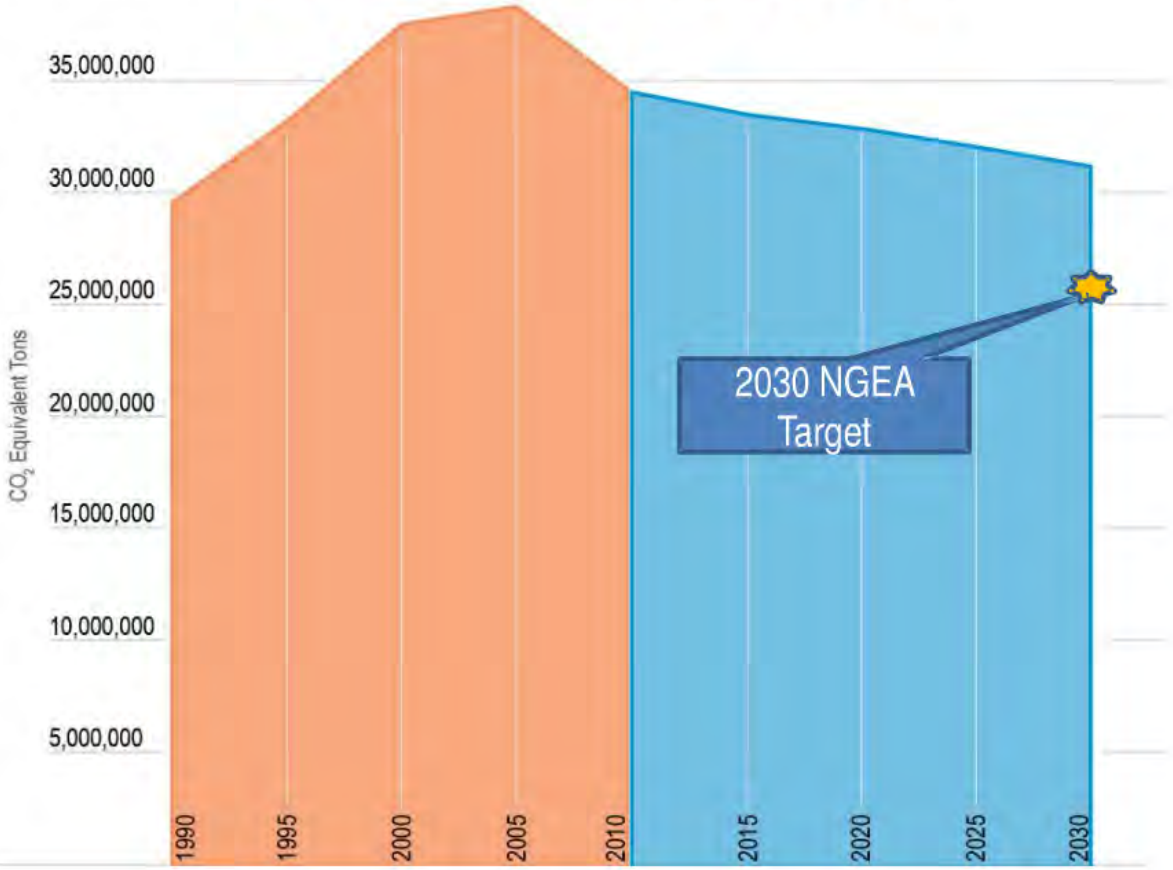
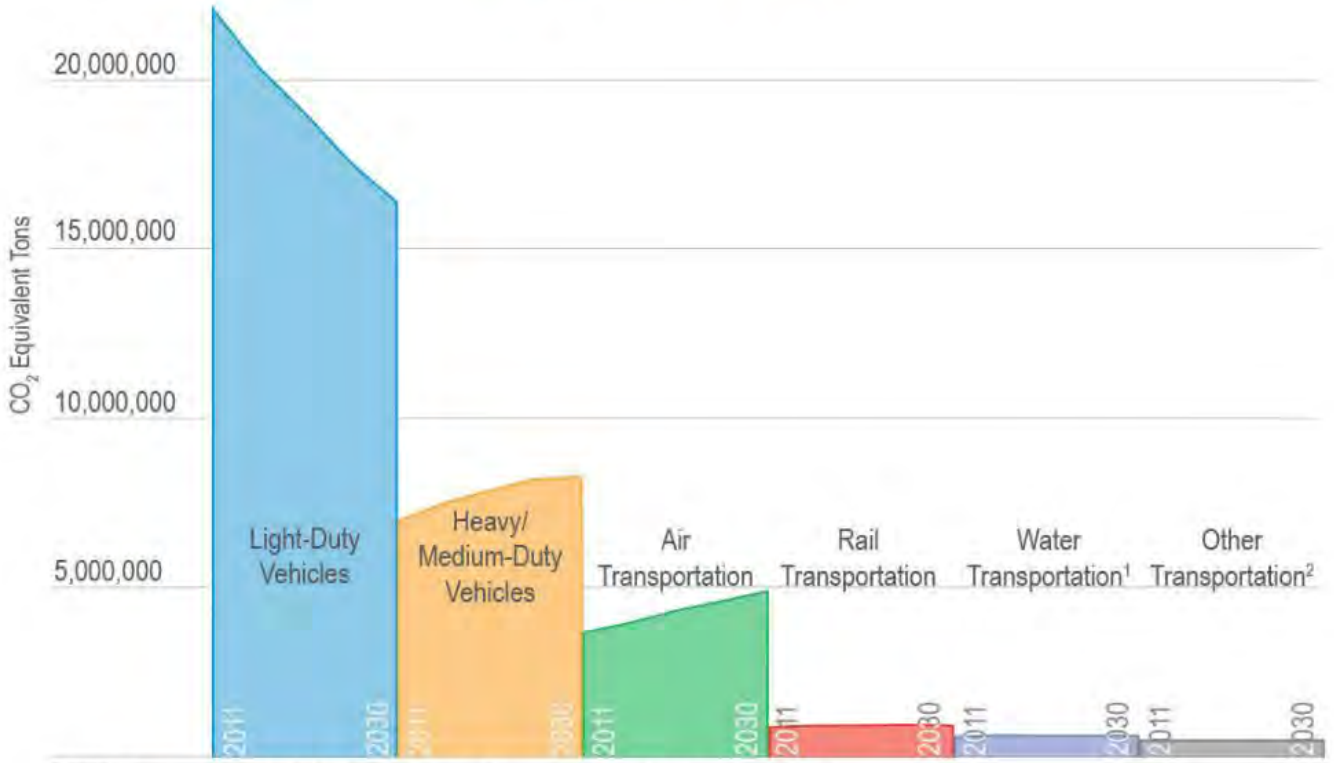
Flooding in Districts 1 & 6

Flooding in Districts 1 & 6

MN Transportation Greenhouse Gas Emissions



Forecasted MN GHG Emissions by Mode



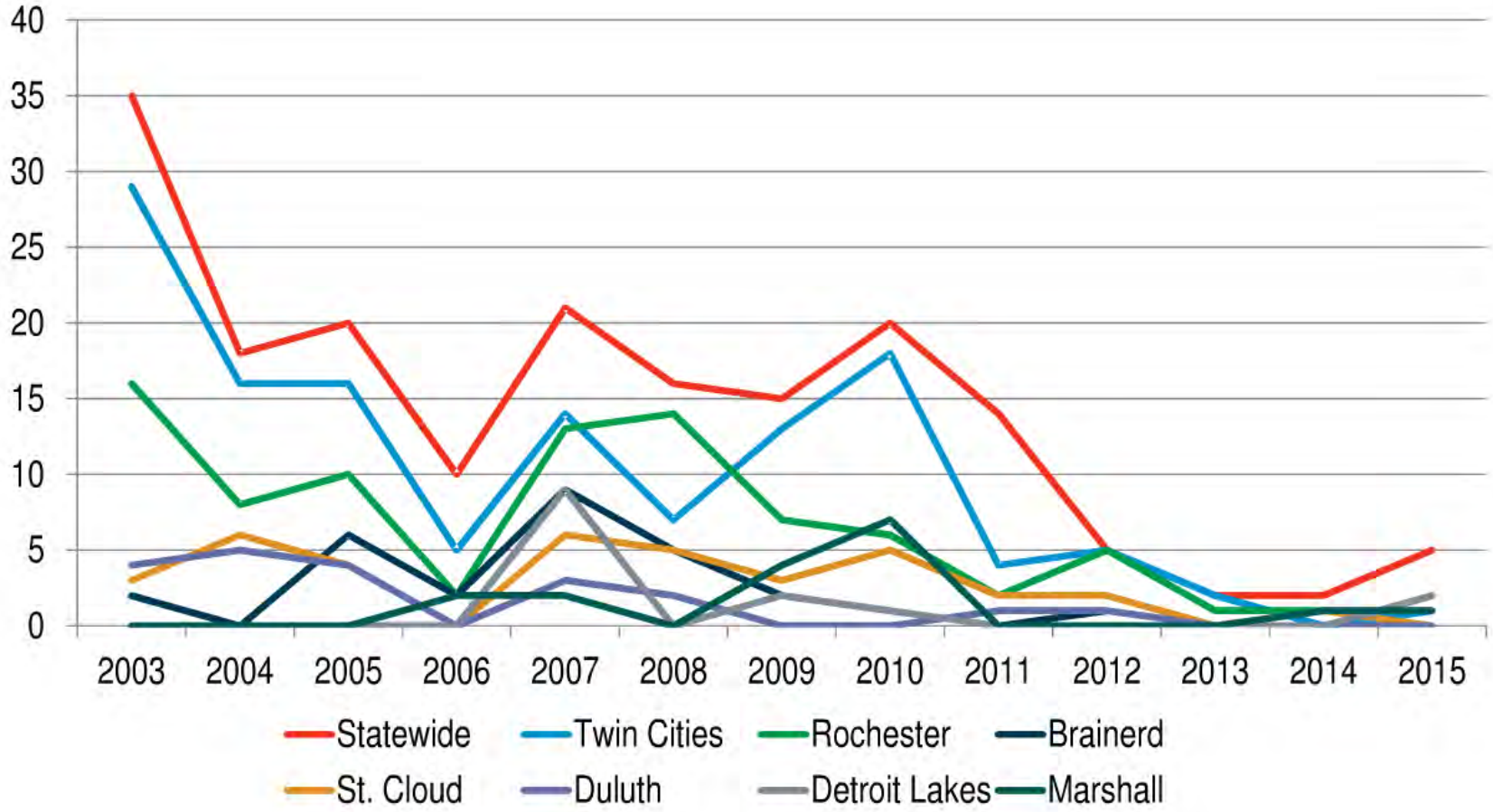
1: Water transportation includes lake shipping, barge, and recreational marine travel.
2: Other transportation includes emissions from tires and lubricants, military transportation, and miscellaneous off-highway travel.

Other Environmental Challenges

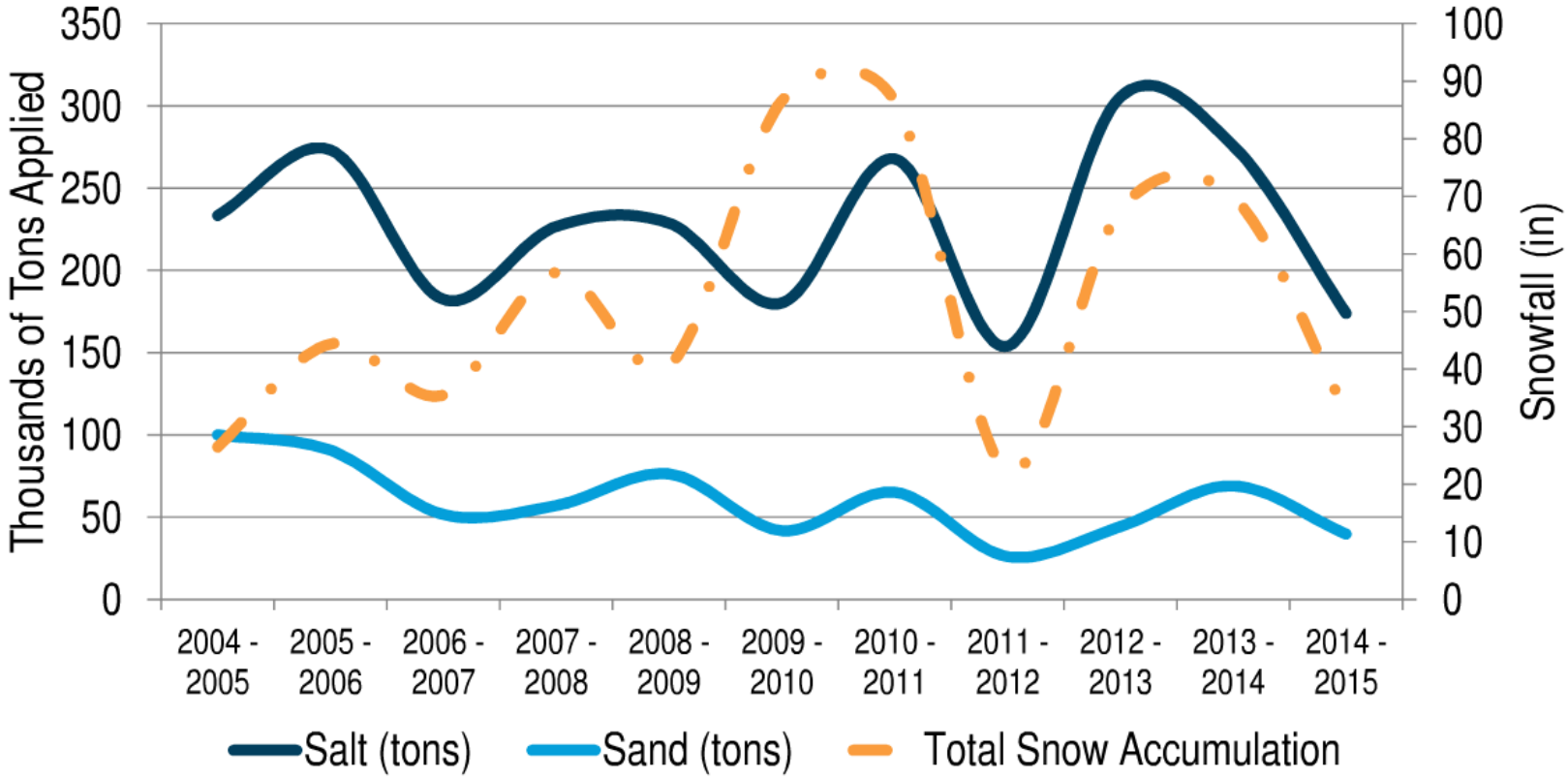
- Preserving pollinator populations
- Controlling invasive species and noxious weeds

Environmental Quality

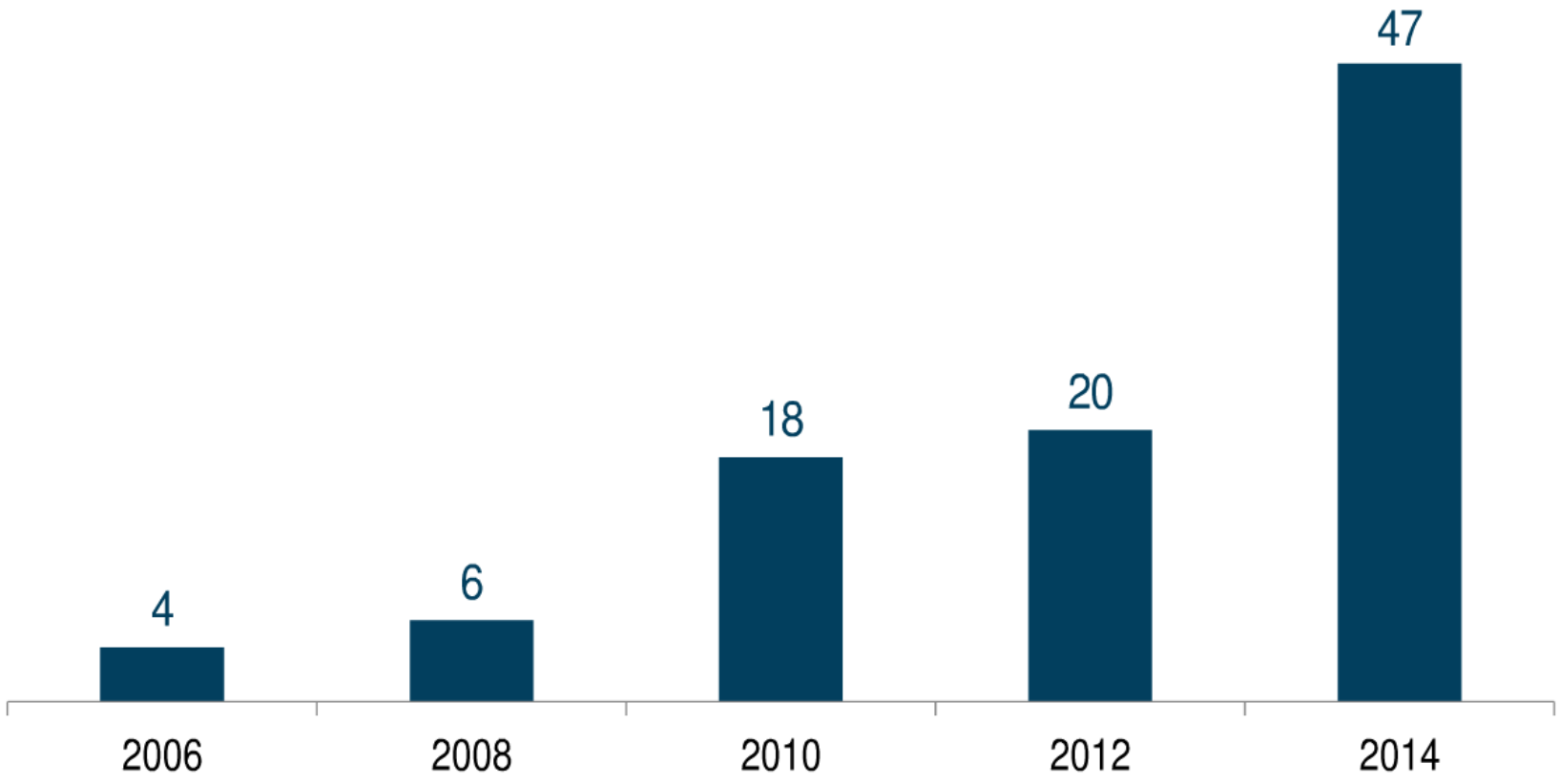
Air Quality



De-icing & Chloride Levels



Chloride Impaired Bodies of Water



Wetlands

- Since 2006, Minnesota gained wetland acreage through man-made construction.
- Increasing trends in high density development allows for greater preservation of open space and rainfall filtration


Mobility as a Service
MnPASS
portation
navior
Mobile
Technology
Technology
Teleworking &
e-Shopping
Sensors, Monitors
& Big Data
Urban & Rural
Populations
Autonomous
Vehicles
Unmanned Aircraft
Systems/Drones
GO
Electrification &
Alternative Fuels
Prezi

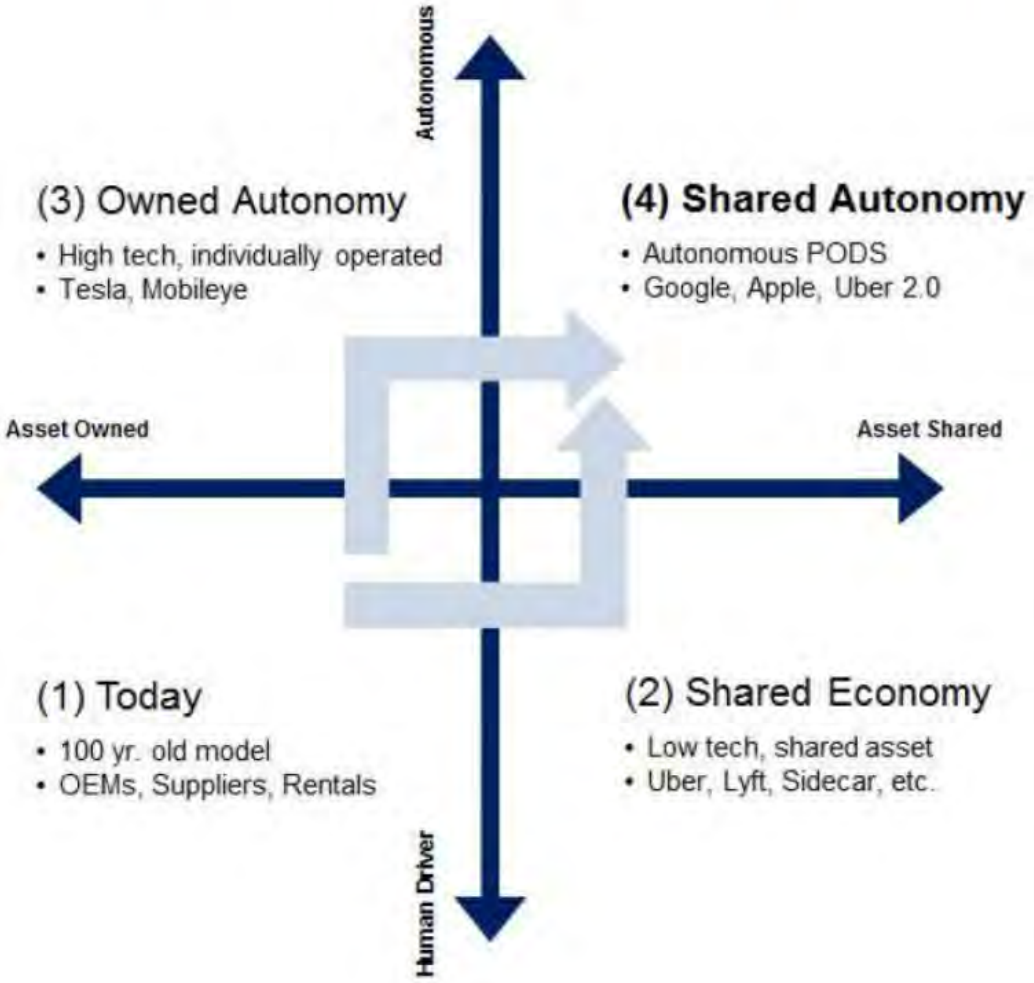
Autonomous Vehicles

Types of Automation

Type	Year*	Description
No-automation	Now	The driver is in complete and sole control of the primary vehicle controls at all times.
Function-specific automation	Now	Automation involving one or more specific control functions. (ex. electronic stability control)
Combined-function automation	2017	Automation of at least 2 primary control functions that work in unison. (ex. adaptive cruise control + lane centering)
Limited self-driving automation	2020	Vehicles enable driver to cede full control of all safety-critical functions under certain conditions. The driver is expected to be available for occasional control.
Full self-driving automation	2025	The vehicle is designed to perform all safety critical driving functions and monitor roadway conditions for an entire trip.

*Anticipated year of availability by University of Minnesota Researchers

Four Stages of Mobility



"Telling the story of this chart will occupy the remainder of my professional life."

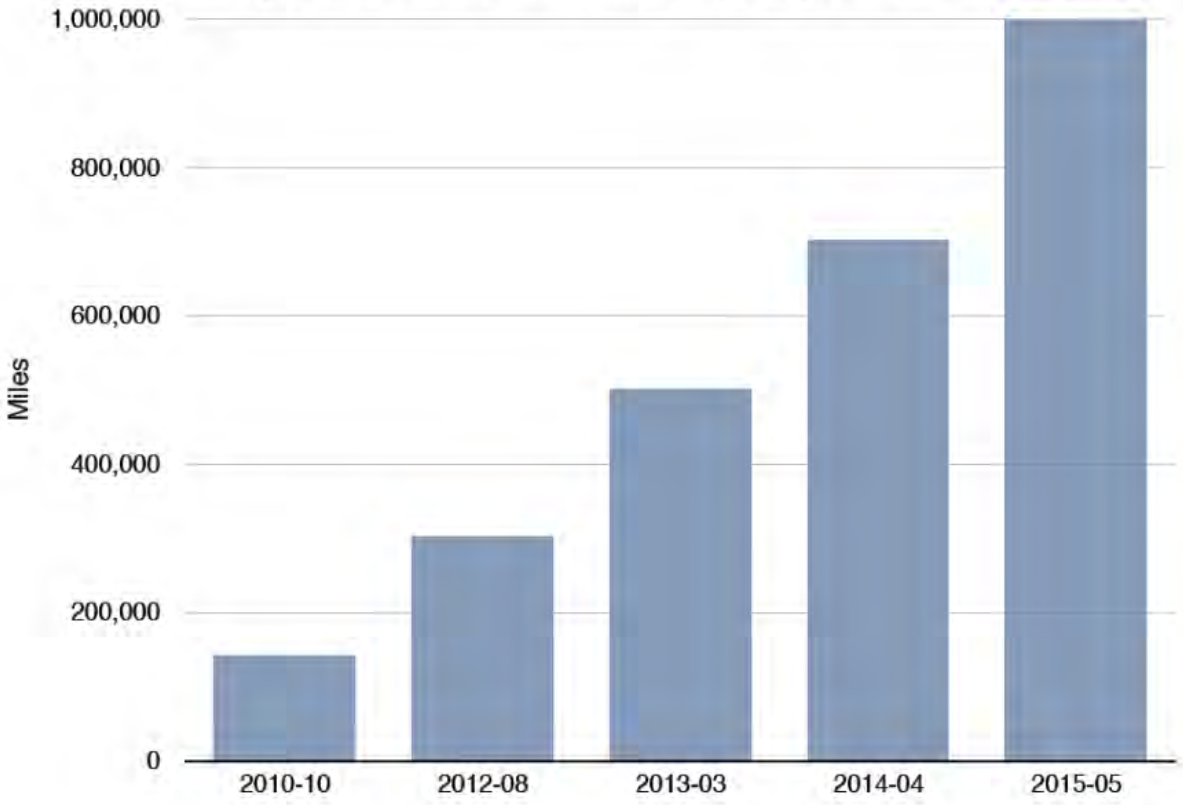
- Adam Jonas, Morgan Stanley auto analyst

Autonomous Vehicle Implications

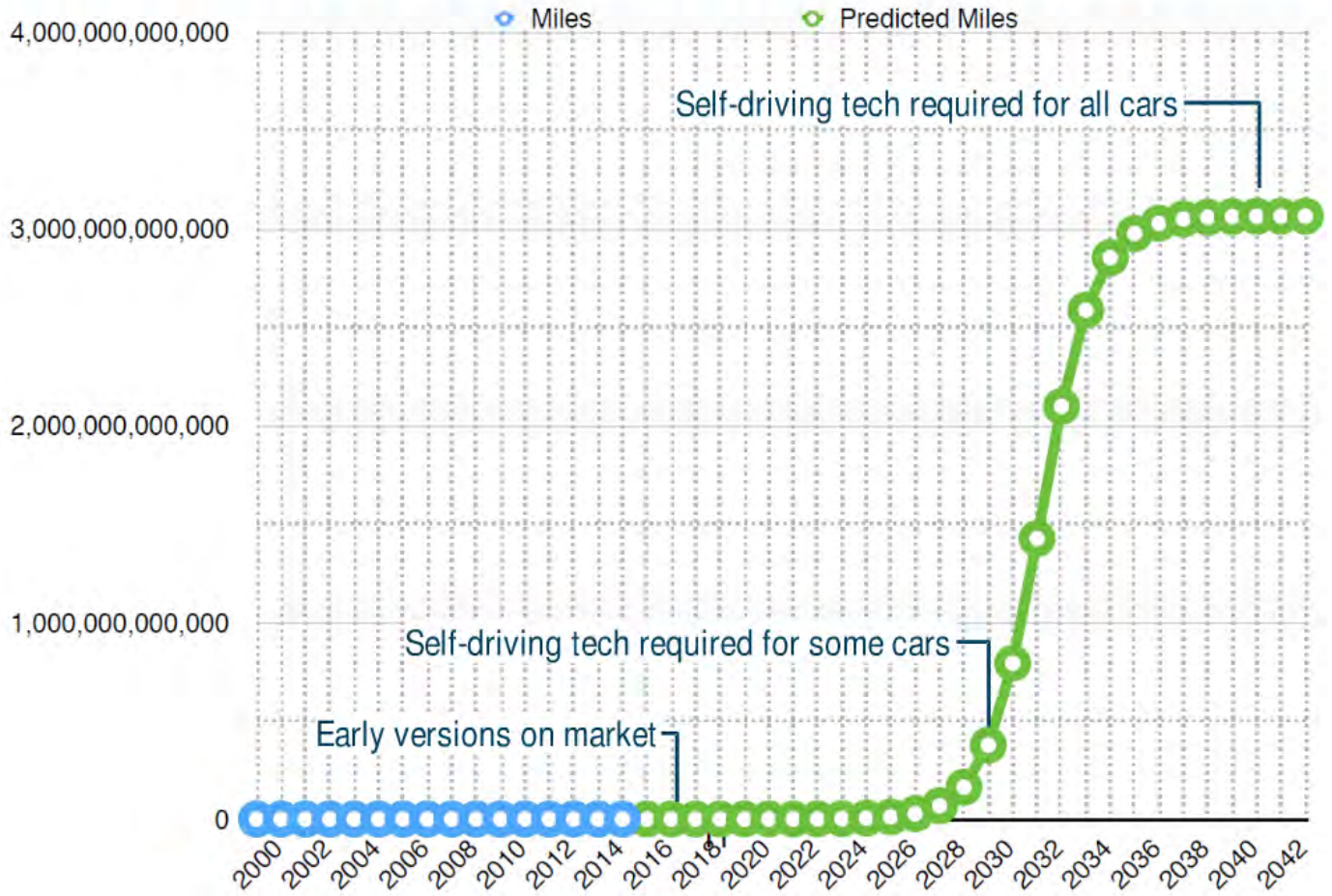
- Safety
- Insurance
- Capacity
- Automated pickup and delivery
- Mobility for the Immobile

Google's Progress

Figure 1 Cumulative miles traveled by Google Autonomous Vehicles



Autonomous Vehicle Adoption



Mobile Technology

Distracted Driving

- In Minnesota, distracted driving is a factor in 1 in 4 crashes
- Results in around 70 deaths & 350 injuries

The Rise of Mobile Tech

- Mobile technologies have led to increased multitasking behavior while traveling
- This may make travel time more useful, and may increase willingness to travel

Impacts of the New Technologies

Bigger and smaller cars:

- Current prototypes of self-driving cars are small.
- As tech matures, there may be demand for more space accommodate in-car activity.

Societal implications:

- Easier travel may reduce the emphasis on commute times when choosing a place to live.

Sensors, Monitors & Big Data

Personal Data

- Apps track movement, health, homes, and more
- Collected data tells a story about us
- How is this data used and for what purposes?

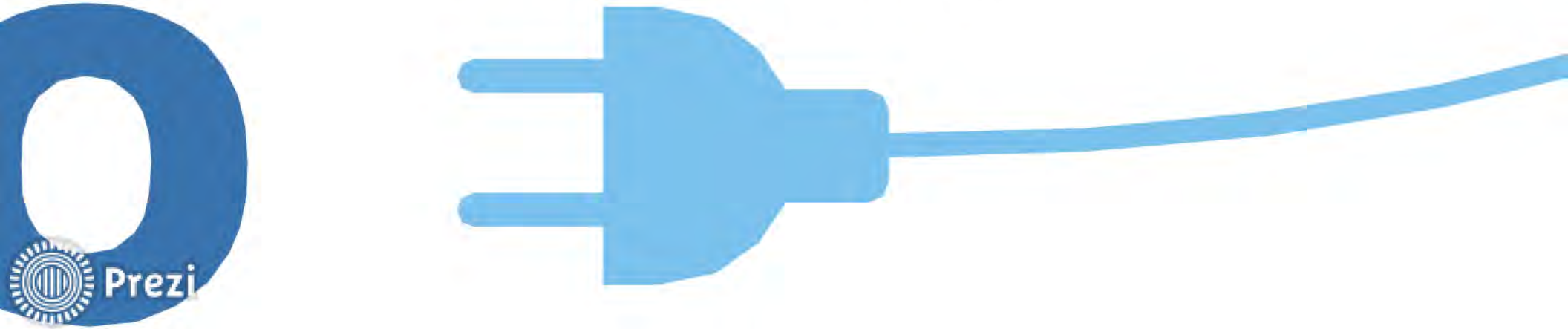
Smartphone-Based Sensing Apps

- Some believe that the smartphone is the most important transportation innovation of the decade
- Provides ability to compare modes, routes, costs, and travel times instantly

System Data

- Roadway sensors collect environmental conditions for maintenance and research
- Smartphones can gather pedestrian and bicycle data
- Smartphone sensors can track travel patterns and routes

Electrification & Alternative Fuels

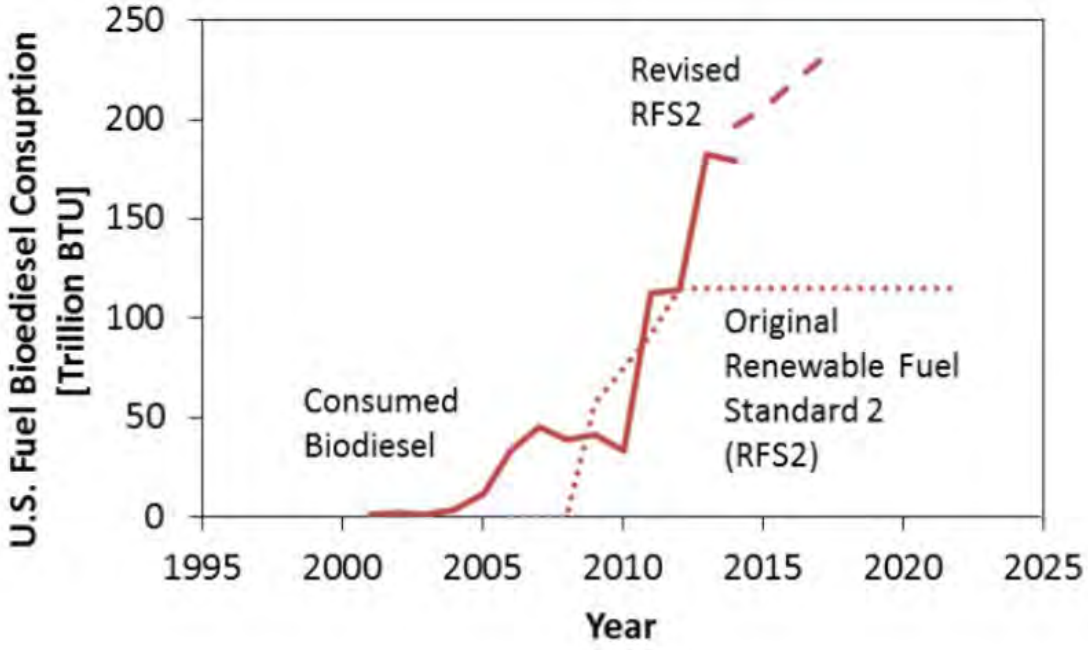


Alternative Fuels

- A variety of alternative fuels have been studied and used in Minnesota
  - Biofuels (ethanol, biodiesel)
  - Compressed Natural Gas
  - Electric Vehicles
- Subsidies matter for alternative fuels

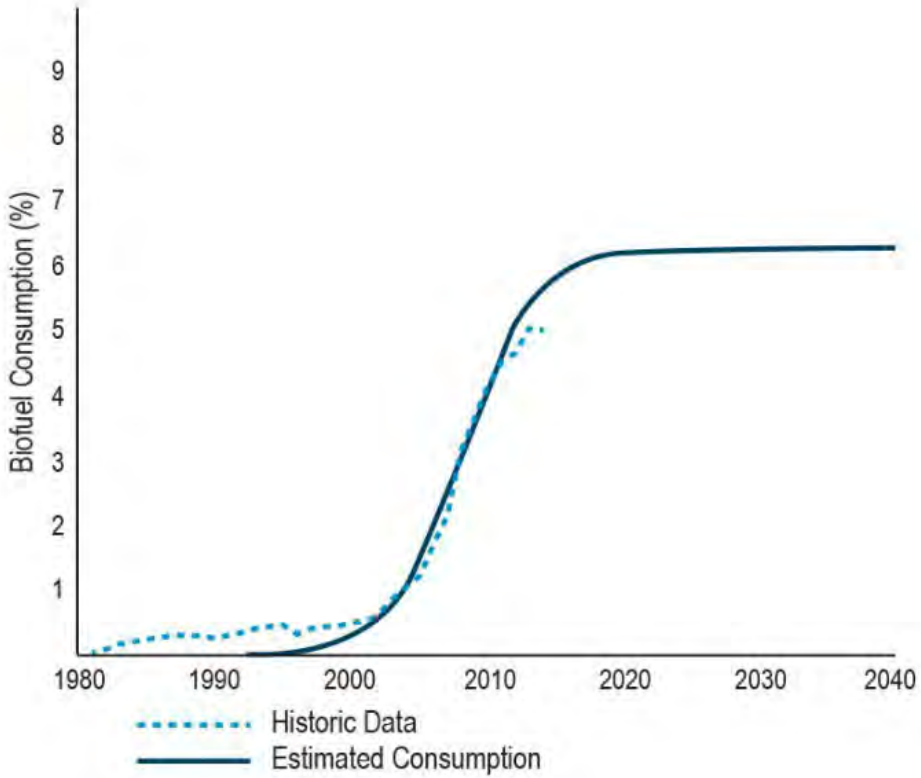
Drop-in Biofuels

- A law, passed in 2005, requires all gasoline to be 20% ethanol or have maximum EPA allotment of ethanol
- Nearly 20% of Minnesota's corn crop is devoted to ethanol production
- Minnesota leads the nation in biofuel use



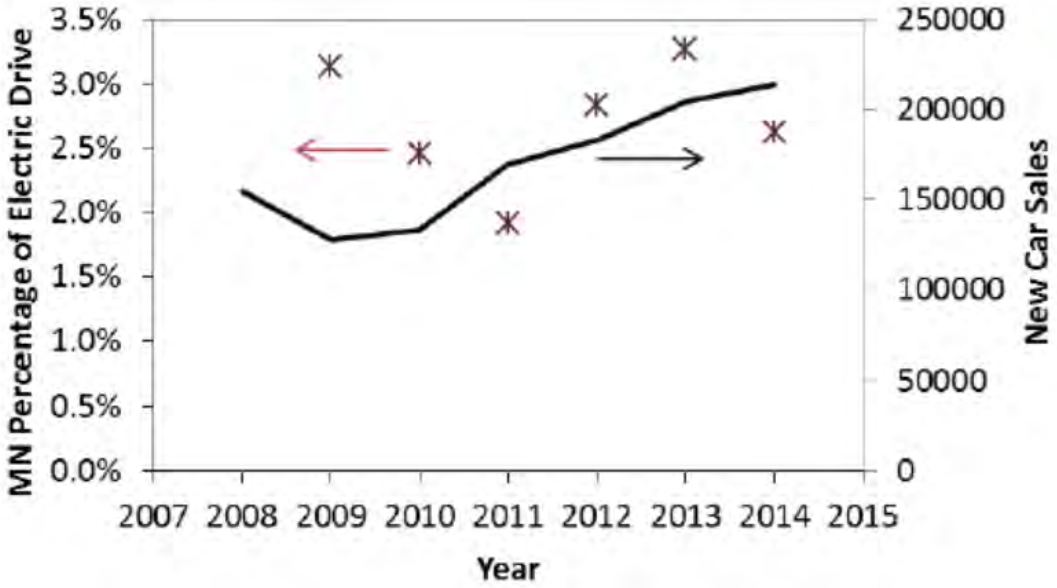
Biofuel Consumption

- National biofuel consumption is plateauing
- As tech develops, incentives to produce fuels from non-food sources may emerge



Electric Vehicles

National sales of vehicles with electric drives have increased steadily since 2000



Types of electric vehicles

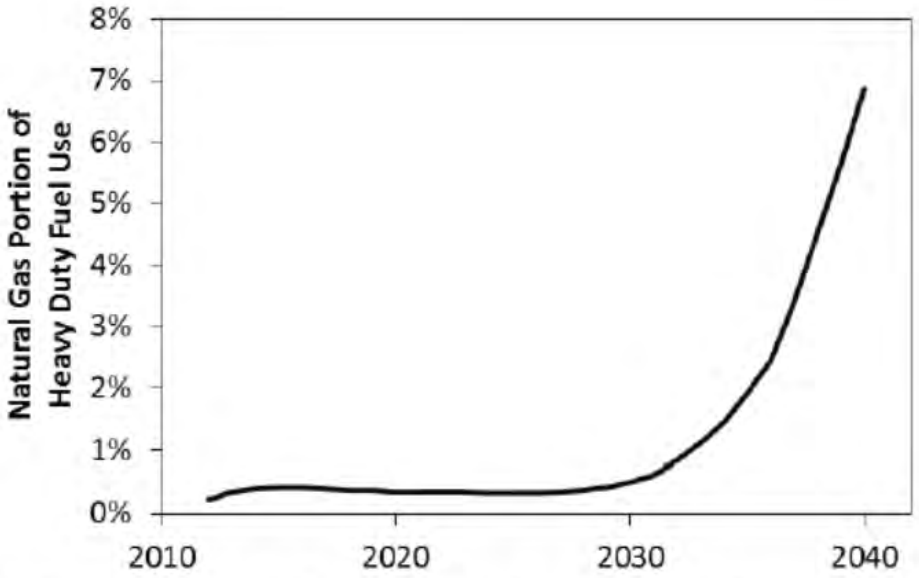
1. Hybridized Electric Vehicles (HEVs)
2. Fully Electric Vehicles (EVs)
3. Plug- in Hybrid Electric Vehicles (PHEVs)

Electric Vehicles

- Four key issues emerge when considering electric vehicles in Minnesota
  - Vehicle cost
  - Range of vehicles
  - Effects of winter on battery systems
  - Availability of charging stations

Natural Gas

- Advantages of Natural Gas:
  - Lower CO2 emissions than diesel fuel
  - Fewer PM emissions than diesel fuel
  - 20-40% cheaper than diesel
- Disadvantages of Natural Gas:
  - Lower energy density than diesel
  - Emits significant quantities of methane



Natural gas portion of heavy duty fuel use projection from 2012 to 2040 |

Heavy duty vehicles are more likely to use natural gas than electric power, creating heavier vehicles.

Other Alternative Fuels

- Dimethyl ether
  - Can be produced from renewable sources, used extensively in Sweden
- Further research may lead to additional alternative fuel solutions

Unmanned Aircraft Systems/Drones

UAS / Drones

- Uses of UAS / Drones in Minnesota include:
  - Crop monitoring
  - Precision agricultural spraying
  - Aerial photography
  - Infrastructure and utility inspection
  - Law enforcement
  - Search and rescue
  - Recreation

Planning Minnesota's Transportation Future

Why we're here

Let's talk trends.

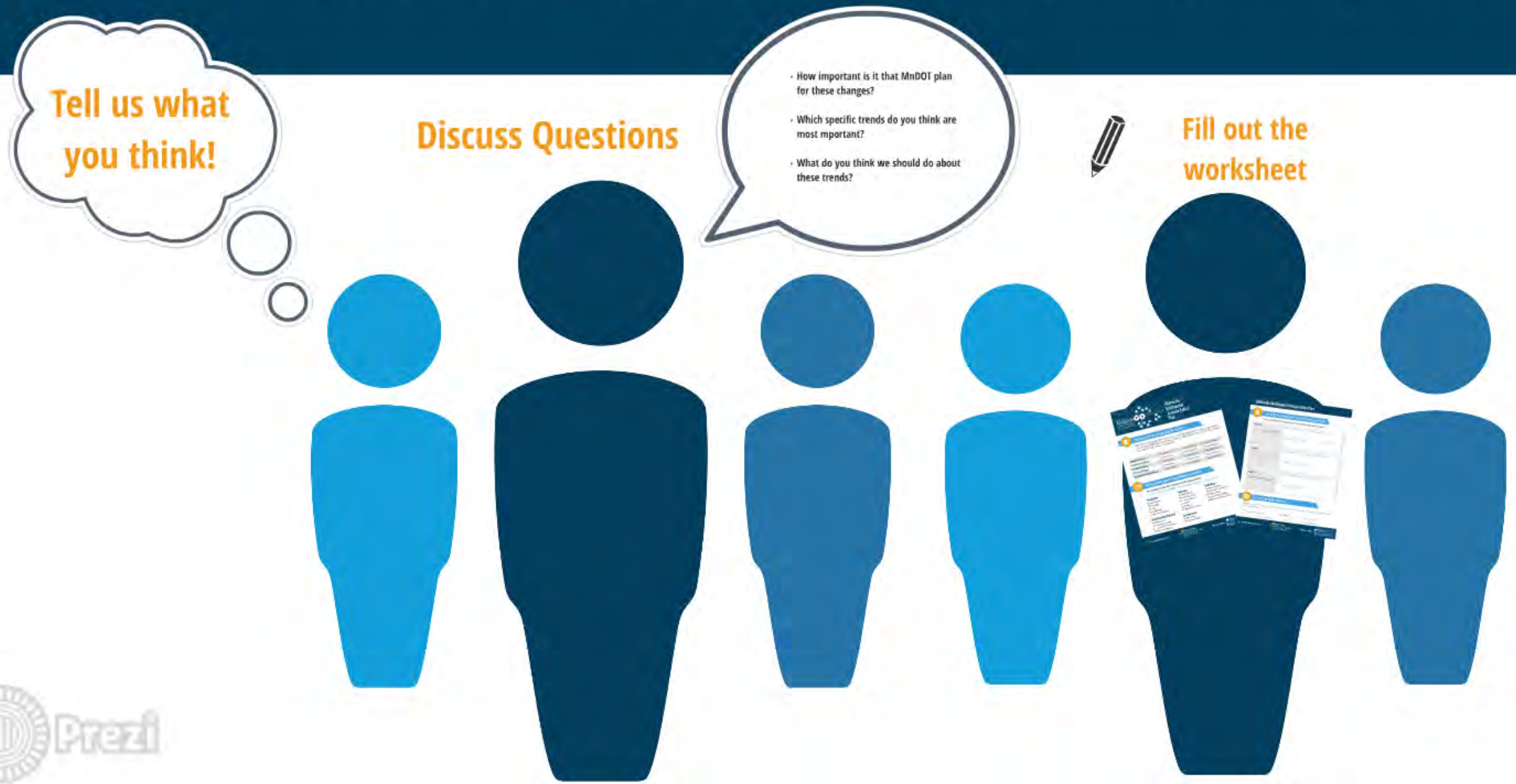
We need your help

Statewide Multimodal Transportation Plan Update

What does all of this mean?

Trends shape the way that the transportation system is used.

We want to know what trends you think are most important for us to plan for.



- How important is it that MnDOT plan for these changes?
- Which specific trends do you think are most mportant?
- What do you think we should do about these trends?

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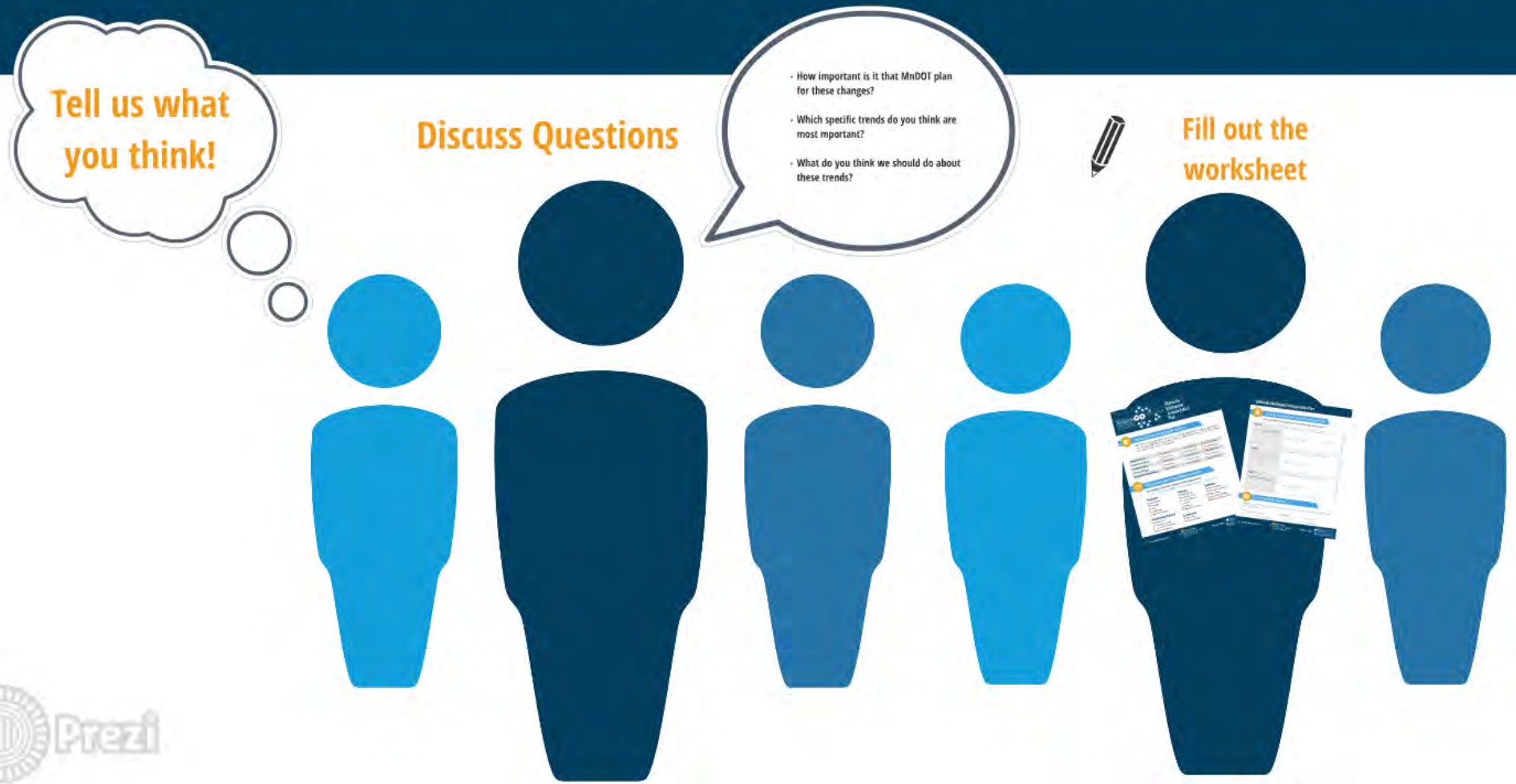
We want to know what trends you think are most important for us to plan for.



MinnesotaGO
A Collaborative Vision for Transportation

Statewide Multimodal Transportation Plan

MINNESOTA DEPARTMENT OF TRANSPORTATION

Help us plan for a changing Minnesota

Over the next twenty years, Minnesota is going to change in ways that affect how people and goods move throughout Minnesota. For each area of change, tell us how important it is for MnDOT to consider when planning for the future of transportation.

Economic Changes	☐ Very important	☐ Somewhat important	☐ Not at all important
Environmental Changes	☐ Very important	☐ Somewhat important	☐ Not at all important
Population Changes	☐ Very important	☐ Somewhat important	☐ Not at all important
Technology Changes	☐ Very important	☐ Somewhat important	☐ Not at all important
Transportation Behavior Changes	☐ Very important	☐ Somewhat important	☐ Not at all important

Tell us about your transportation priorities

How important is it that MnDOT plan for each of the following trends?

Check the boxes next to **ONLY THREE** of the trends that are most important for MnDOT to plan for

Population
- ☐ Aging Population
- ☐ Demographics
- ☐ Health
- ☐ Racial Disparities
- ☐ Urban & Rural Populations

Transportation Behavior
- ☐ Mobility as a Service
- ☐ Teleworking & e-Shopping
- ☐ Transportation Behavior Changes
- ☐ Urban & Rural Populations

Economy
- ☐ Aging Infrastructure
- ☐ Dynamic Road Pricing
- ☐ Economy & Employment
- ☐ Freight Rail
- ☐ New logistics
- ☐ Public-Private Partnerships

Environment
- ☐ Climate Change
- ☐ Environmental Quality

Technology
- ☐ Autonomous Vehicles
- ☐ Electrification & Alternative Fuels
- ☐ Mobile Technology
- ☐ Sensors, Monitors & Big Data
- ☐ Unmanned Aircraft Systems/Drones

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Saint Paul, MN 55155

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Statewide Multimodal Transportation Plan

Tell us more about your transportation priorities

For each of the three trends you selected on the previous page, please tell us more!

Trend #1:

Write your selected trend from the previous page here

What do you think MnDOT and its transportation partners should do about this trend?

How do we know what success looks like?

Trend #2:

Write your selected trend from the previous page here

What do you think MnDOT and its transportation partners should do about this trend?

How do we know what success looks like?

Trend #3:

Write your selected trend from the previous page here

What do you think MnDOT and its transportation partners should do about this trend?

How do we know what success looks like?

Tell us more about yourself

We'd like to learn a little more about you! The questions below are entirely optional and anonymous. They will help us make better plans that work for everyone.

Zipcode: _____

Gender: _____ Race/ethnicity: _____

Age: _____

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Katie Caskey
395 John Ireland Blvd., MS 440
Saint Paul, MN 55155

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Catch us at an event

Request a presentation

Upcoming events

Send us your ideas for workplaces

- November 12 - Autumn Market - Glenwood, MN
- November 14 - Holiday Art Show - Fergus Falls, MN
- November 21 - Made in MN Expo - St. Cloud, MN
- November 21 - Beneath the Village Wreath - Morton, MN
- December 3 - Montevideo Light Parade - Montevideo, MN

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