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Thrive MSP 2040

TRANSPORTATION POLICY PLAN

Highway and Freight Current Investment Direction and Plan

TAC Planning

July 13, 2017

Today's Topics – Highway & Freight

- Where are we now?
  - The Highway Story
  - What are the issues?
  - How is the system performing?

- Where are we headed?
- How will we get there?

- What are the changes expected in this update?

What Feedback are We Looking for Today?

- Reactions to high-level concepts
- Ideas for clarifying the “story”
- Ideas on things that should change
- Items to bring back for future discussion

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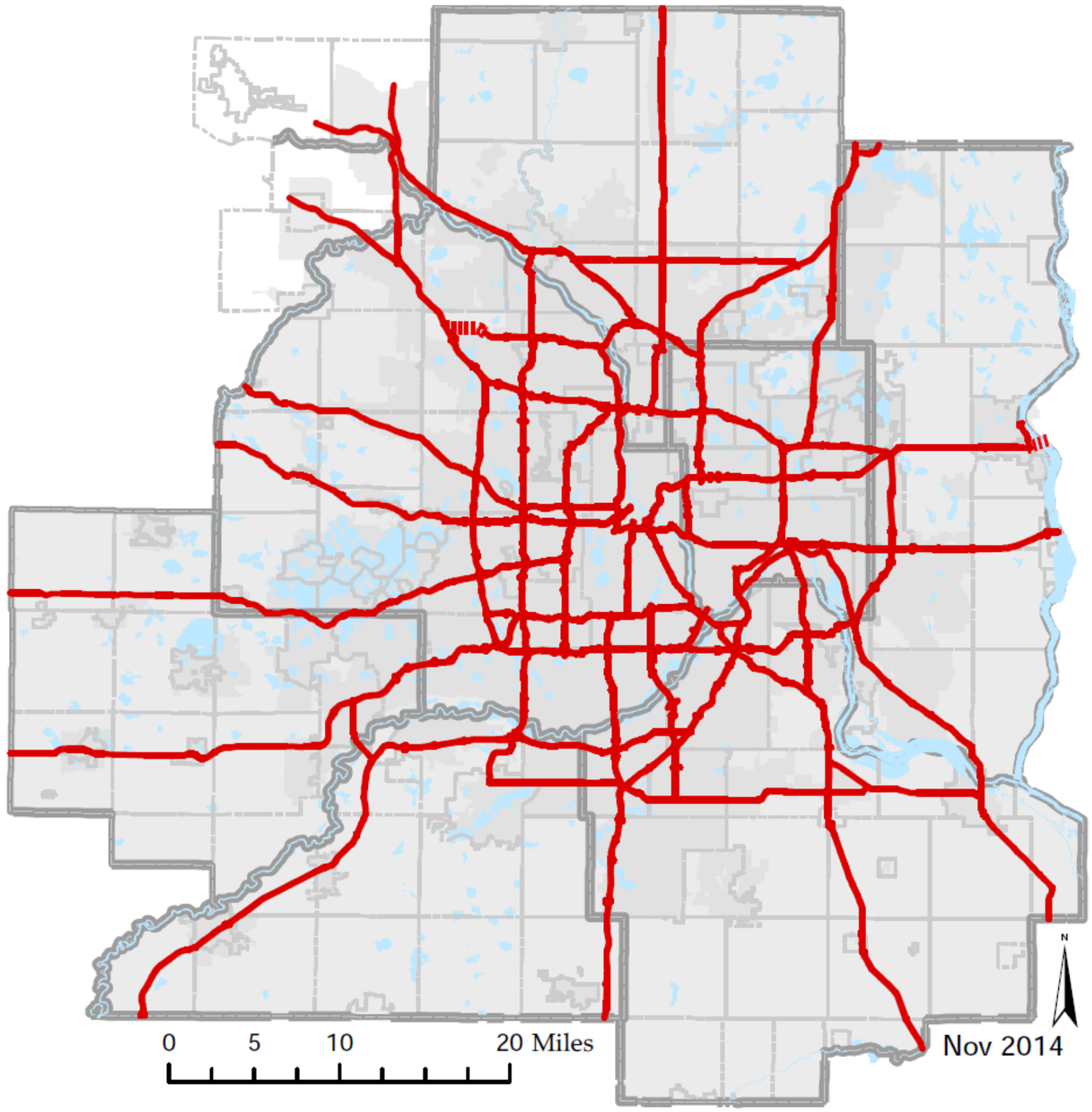
Where are we now?

The Highway Story

Focus of TPP

- Policy and investment direction focused on principal arterial system
  - Data mostly reflects MnDOT owned system
  - Locally owned Principal Arterials often not taken into account
- A-minors supplement principal arterial system
  - A-minors are owned by counties (70%), MnDOT (20%), and cities (10%)
- MnDOT investments in the regional principal arterial system follow TPP policy direction
- Regional Solicitation primarily invests in non-freeway principal arterials and A-minor system

Principal Arterial System



A Large, Aging Highway System

- The region has a mature principal arterial system
  - All planned roadways have been completed (Highway 610 last major link)
  - Extensive and valuable asset (700 miles)
- High level of investment need on the principal arterials
  - Investments to operate, maintain and rebuild the aging system are mandatory (stewards of the system)
  - Increase in use will continue with regional population growth and economic activity
  - Principal arterial system expansion will be limited

Investment Direction History

1989 TPP

- Recognition that traditional expansion to address congestion is unaffordable
- Region's highest priority should be to maintain the existing system
- Aggressively manage the system to ensure it functions as the carrier of the longest trips
- Focus on people-carrying capacity improvements - important that MnDOT build HOV lanes instead of general purpose lanes

Investment Direction History cont.

1993 TPP

- Demand is growing faster than available funds
- The region cannot build its way out of congestion
- Many regional highways are reaching the end of their design life, by 2015 most will require major rebuilding
- The key is to increase the number of people the system carries
- Congestion would not be permitted to increase to levels that affect the metro area's economic competitiveness

Investment Direction History cont.

1995/96 TPP

- Prepared early to meet new federal law (ISTEA) required plan elements
- $2B in planned highway investments removed to meet fiscal constraint requirement
- Demand is growing faster than available funds
- The region cannot build its way out of congestion
- Principal arterial system investment priorities are:
  - Preservation
  - Management
  - Improvement and replacement
  - Expansion

Investment Direction History cont.

2001/2004 TPP

- Major problems identified:
  - Significant increases in demand
  - Inefficient use by single occupant vehicles
  - Increasing maintenance costs
  - Social, environmental, physical and political impacts of adding capacity
  - Insufficient funding
- Principal arterial system investment priorities are:
  - Preservation
  - Management
  - Improvement, replacement and bottleneck removal
  - Expansion

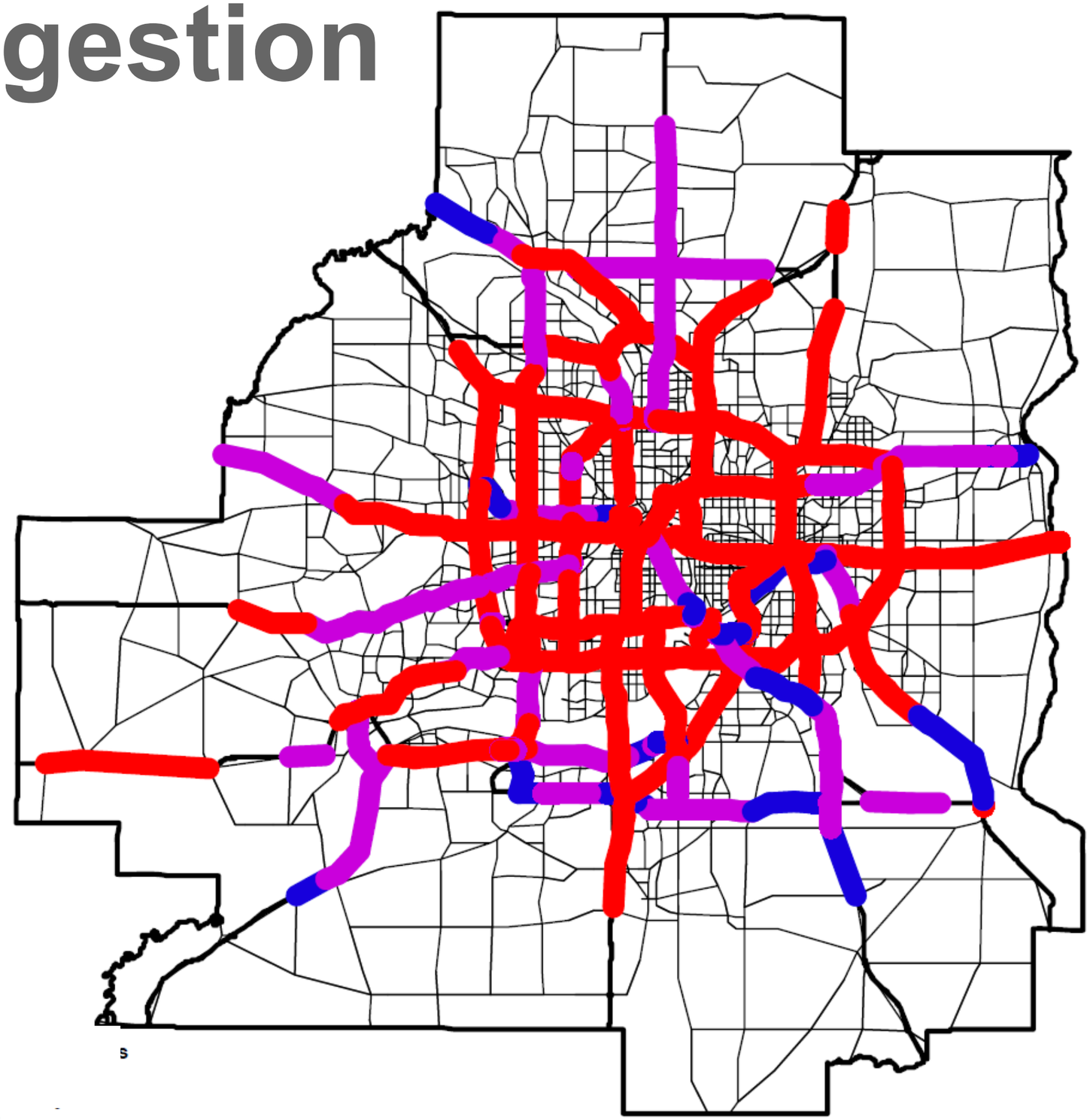
Investment Direction History cont.

2008 Principal Arterial Study/2009 Metropolitan Highway Investment Study

- To largely eliminate congestion would cost > $40 billion while revenues estimated at $6 B
- Equivalent to $2.30 per gallon gas tax increase
- Virtually every principal arterials converted to a freeway and/or widened by 2, 4, or 6 lanes.
- Conclusions:
  - Public is unwilling to fund this strategy
  - Impacts to communities and the natural environment would be unacceptable
  - Would encourage more travel and low-density development

Principal Arterial Improvements to “Fix” Congestion

- Convert to freeway
- Add 2, 4 or 6 lanes



Investment Direction History cont.

2009 TPP

- 12 major expansion projects called for in 2004 plan could not be funded with existing revenues
- Investment options:

  1: Build one major expansion project every five years and leave the rest of the system's congestion problems unaddressed

  2: Address a large number of problem areas region-wide by relying on system management, innovation, lower-cost/high-benefit solutions, and strategic capacity expansions where needed

- 2010 TPP Update removed $2.9 B in unaffordable major expansion projects (to be reassessed)

2009 TPP Projects to Reassess

12 Projects to Reassess ($2.9 B)	Accomplished Since 2009
I-494 / US 169 Interchange Reconstruction	2012 Largely Accomplished, 2 Movements Delayed
I-35E, I-94 to TH 36 – Add 4th Lane	2015 Fully Accomplished, MnPASS
I-494, TH 55 to I-94 – Add 3rd Lane	2016 Fully Accomplished
TH 100, 36th St to Cedar Lake Rd – Add 3rd Lane	2016 Largely Accomplished, Reduced Scope
TH 610, CR 130 to I-94 – 4-Lane Freeway & I-94 Interchange	2017 Largely Accomplished, Reduced Scope
I-694, I-35W to W Jct I-35E – Add 3rd Lane	Largely Accomplished, 2013 US 10 Interchange, 2017 3rd Lane Project, Reduced Scope
I-35W, 46th St to I-94 – Add HOV Lane & Lake St Interchange	Largely Accomplished, 2009 UPA & Currently Under Construction, Reduced Scope
I-494, TH 77 to TH 100 – 1997 EIS	2013 Auxiliary Lane I-35W through France Av
TH 252, 73rd Ave to TH 610 – 4-Lane Freeway	66th St Interchange Funding, Hennepin County Corridor Study Underway
TH 36, I-35W to I-35E – Add 3rd Lane	Eastbound Tier II MnPASS, Corridor Under Study
I-694 E Jct I-35E to TH 36 – Add 3rd Lane	
I-35E, TH 110 to TH 5 – Add 3rd Lane	

Investment Direction History cont.

2010/2014 TPP

- Established key investment objectives:
  - Mitigate congestion and preserve high level of mobility
  - Increase the people-moving throughput of the system
  - Manage and optimize the system
  - Increase trip reliability and minimize travel time
- Investment approach:
  - Maintain and preserve the existing system
  - Apply traffic management solutions
  - If capacity is needed:
    - Implement lower-cost/high benefit solutions
    - MnPASS (preserve a congestion-free option)
    - Other strategic capacity

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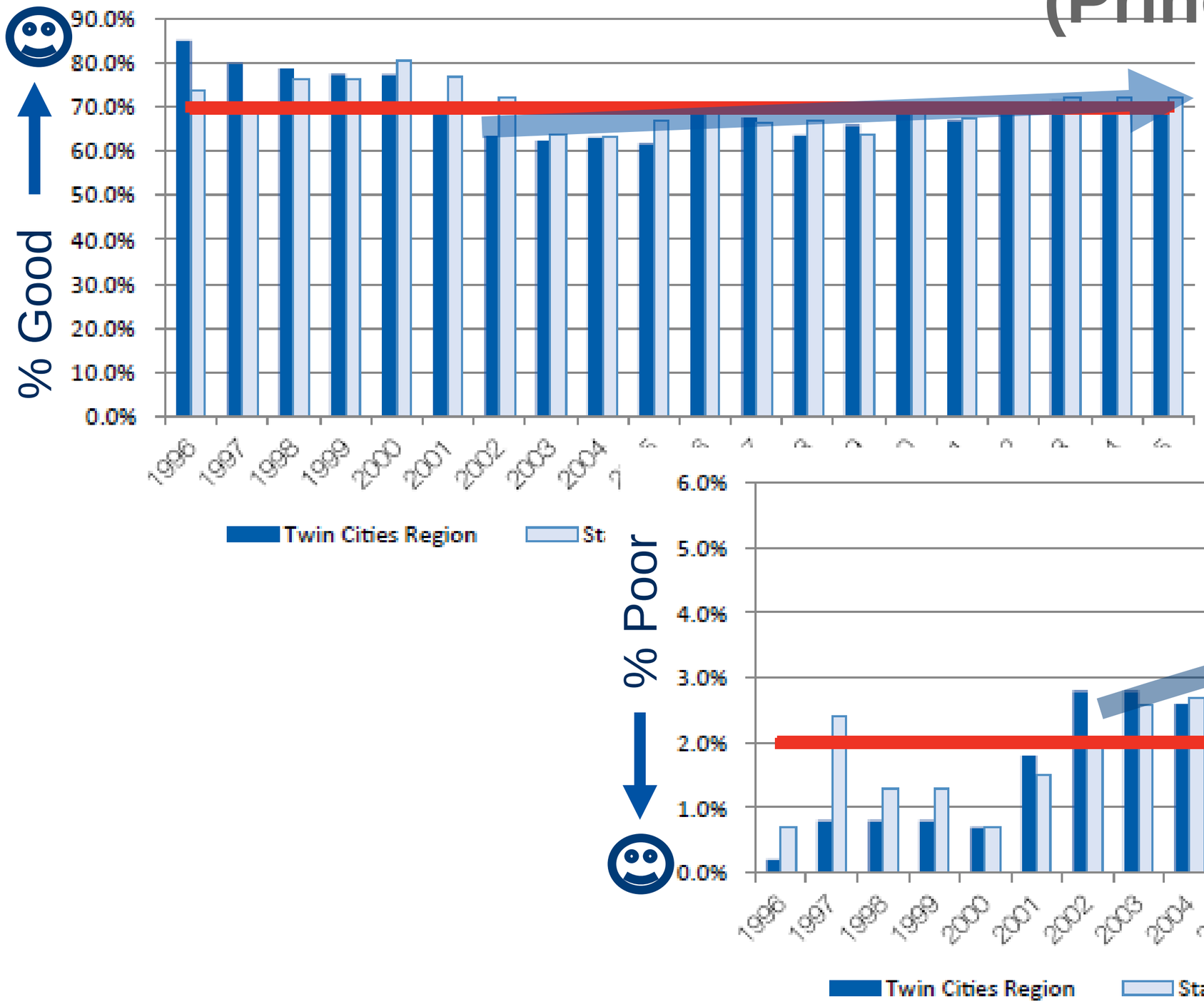
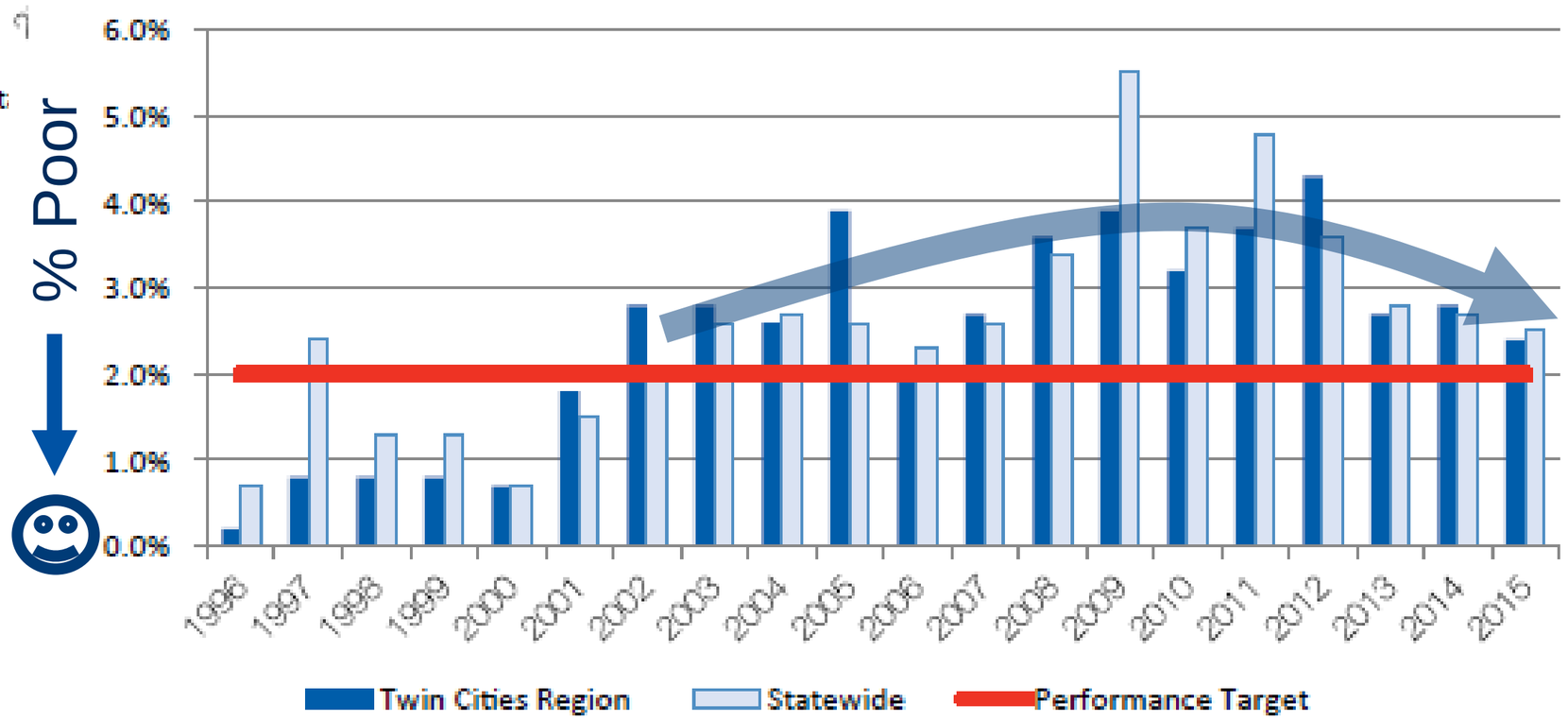
Where are Highways Now?

Existing System Performance and Issues

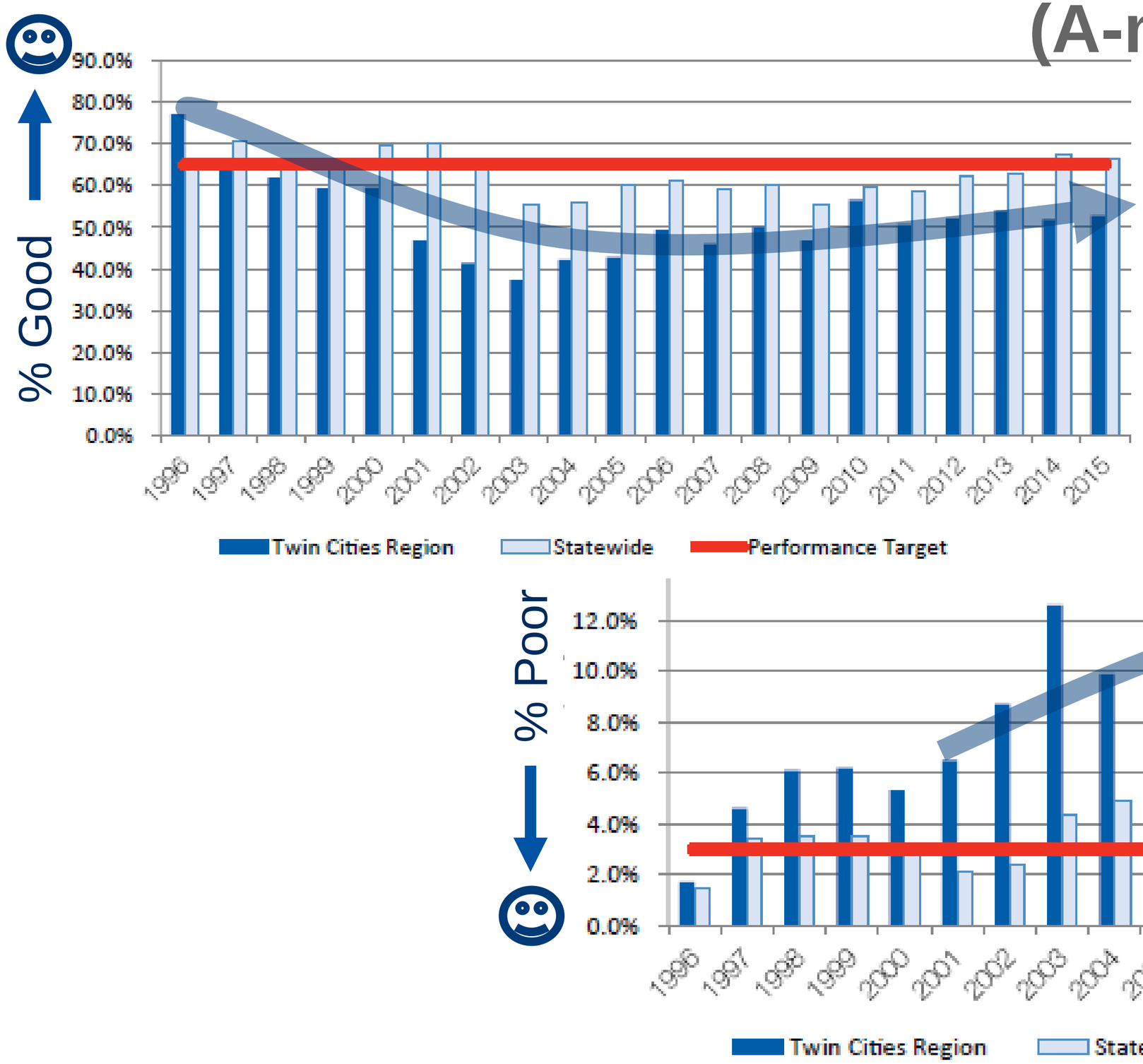
Highways: Pavement Condition

(Principal Arterials)

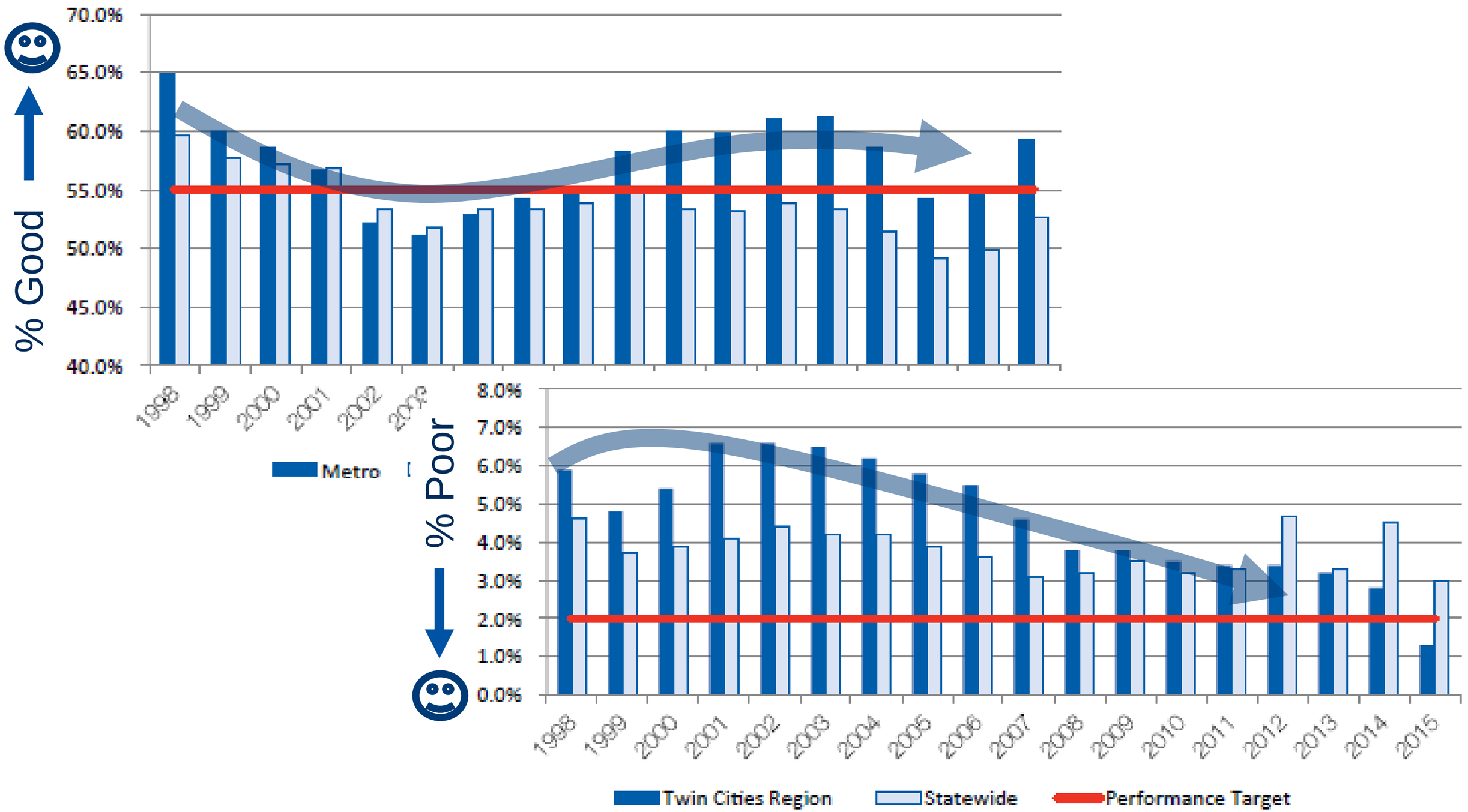




Highways: Pavement Condition
(A-minor Arterials)



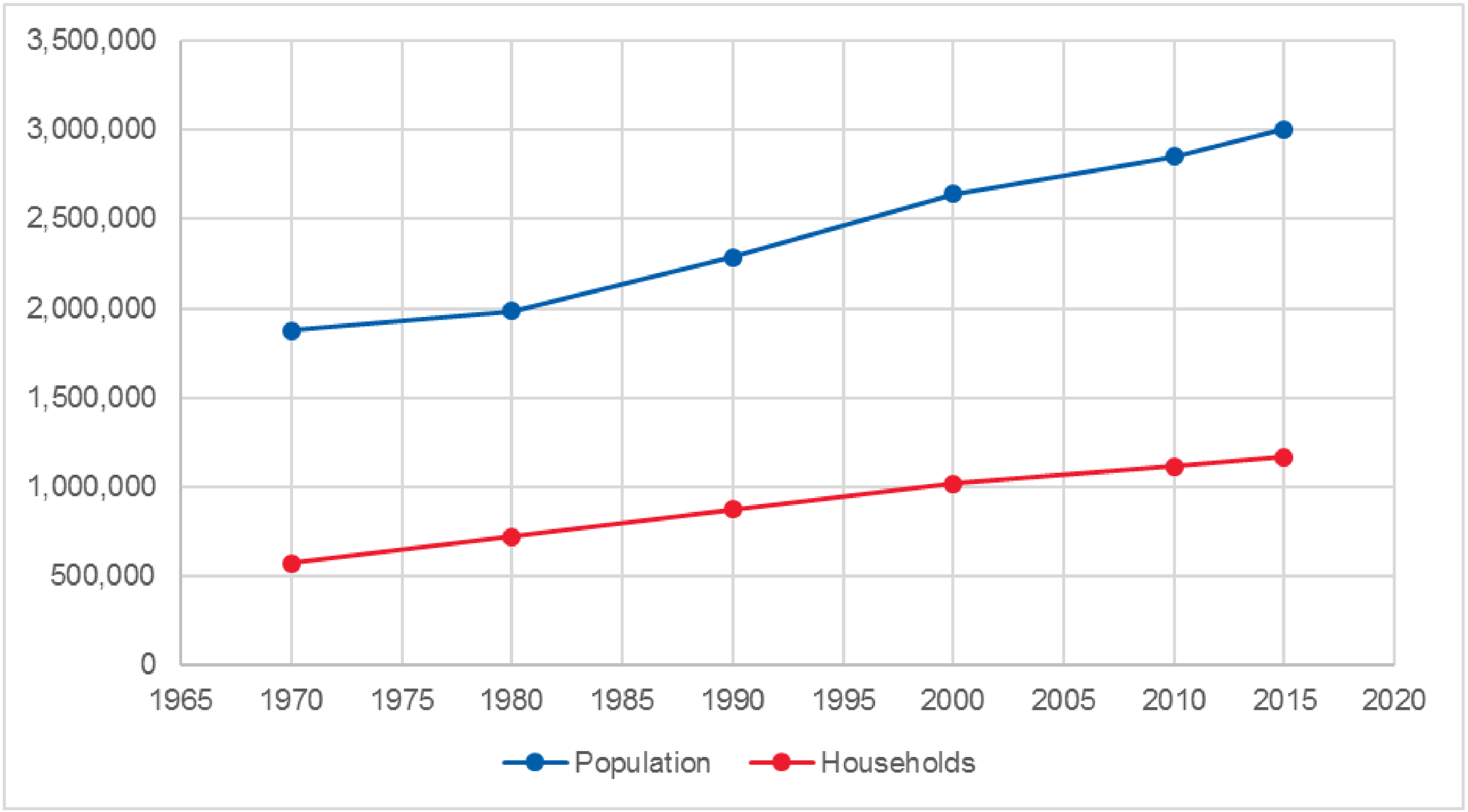
Highway System: Bridges
(Principal Arterials)



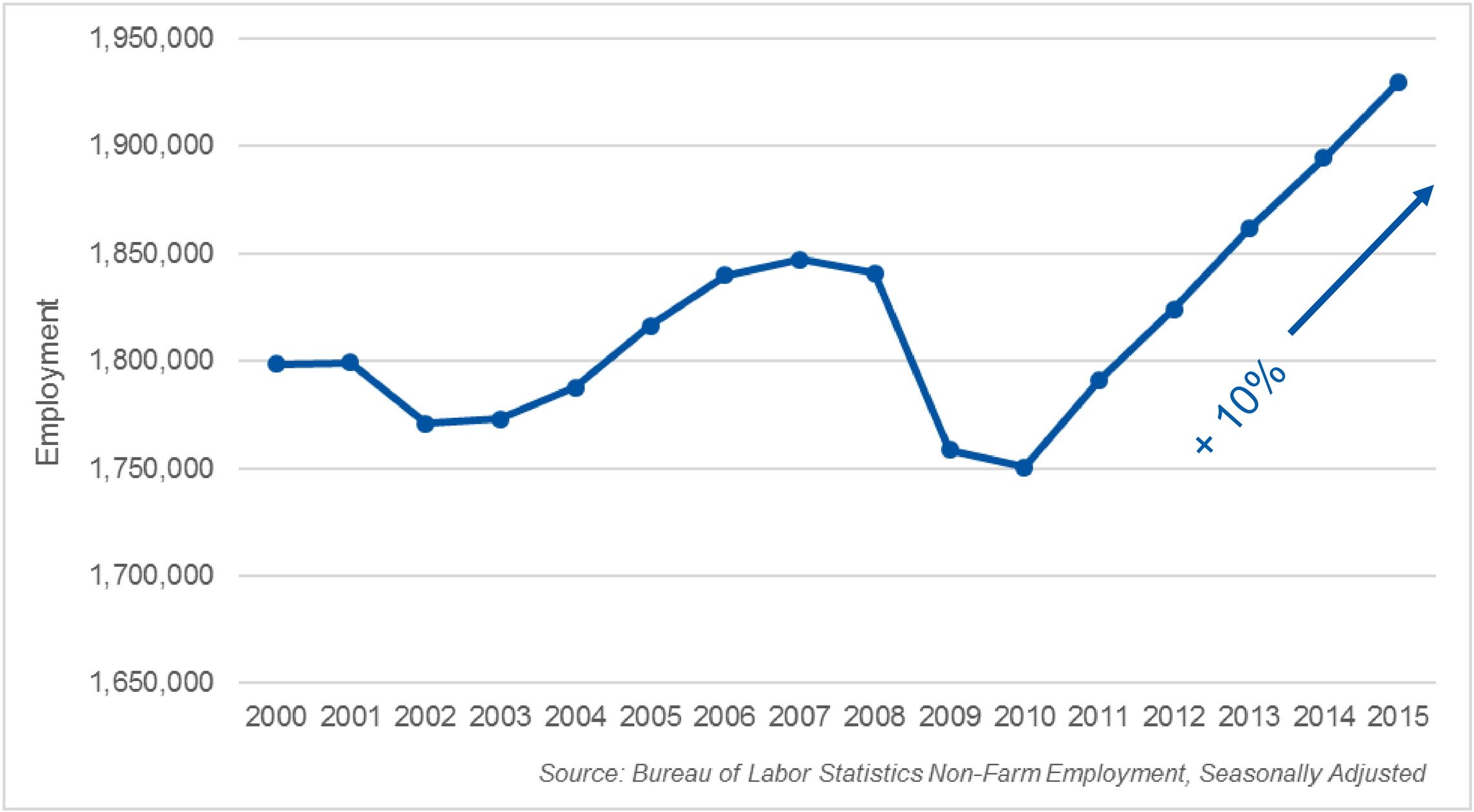
Road Miles and Vehicle Miles Traveled by Functional Class

	Total miles	% of total road miles	% of vehicle miles traveled (all)	% of vehicle miles traveled (buses)
Principal Arterial Highways	700	4%	50%	20%
“A” Minor Arterial Highways	1,900	11%	25%	33%
Other highways and roads	14,900	85%	25%	47%
Total roads	**17,500**	**100%**	**100%**	**100%**

Population and Households

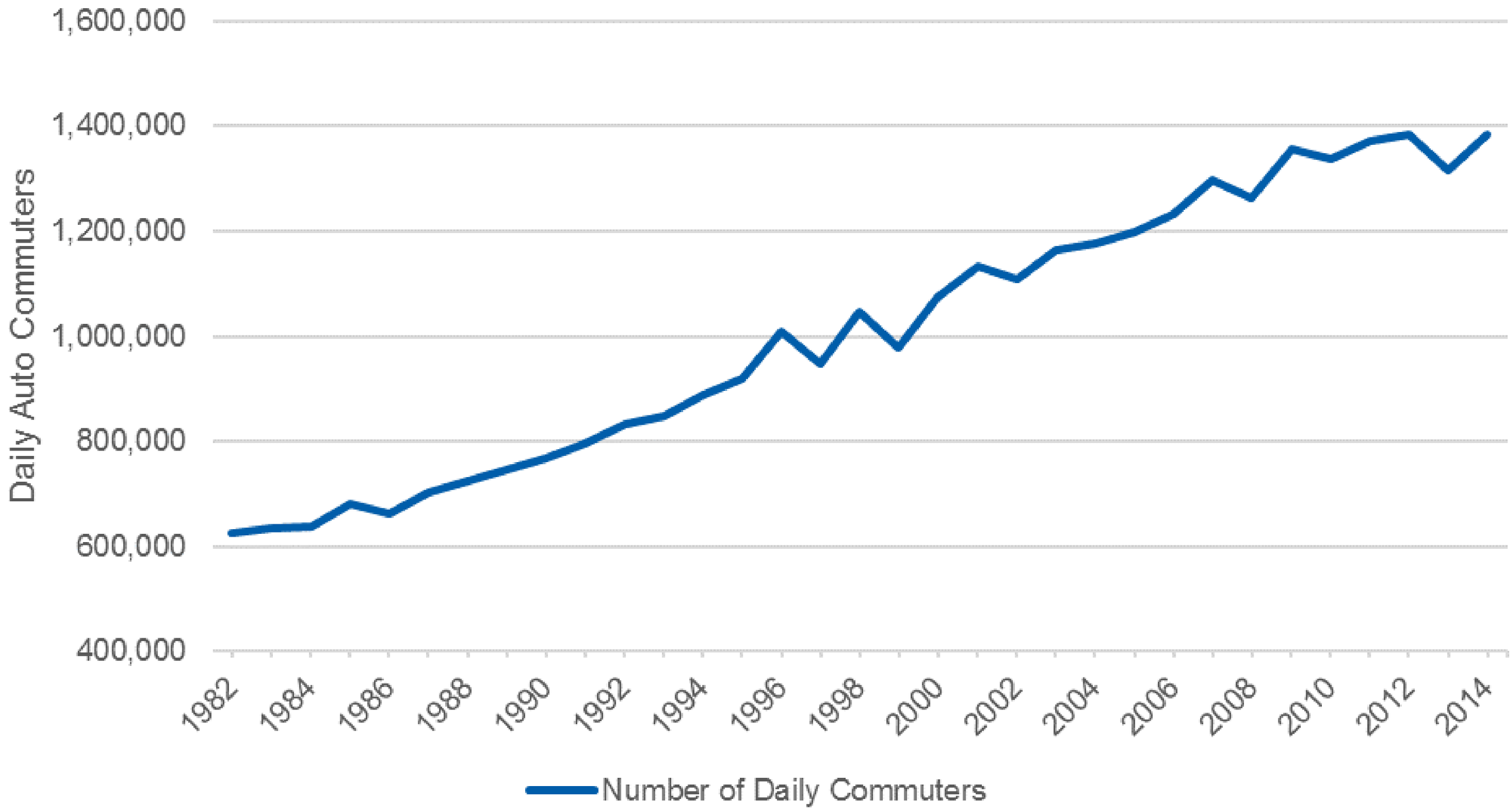


Regional Employment 2000-2015

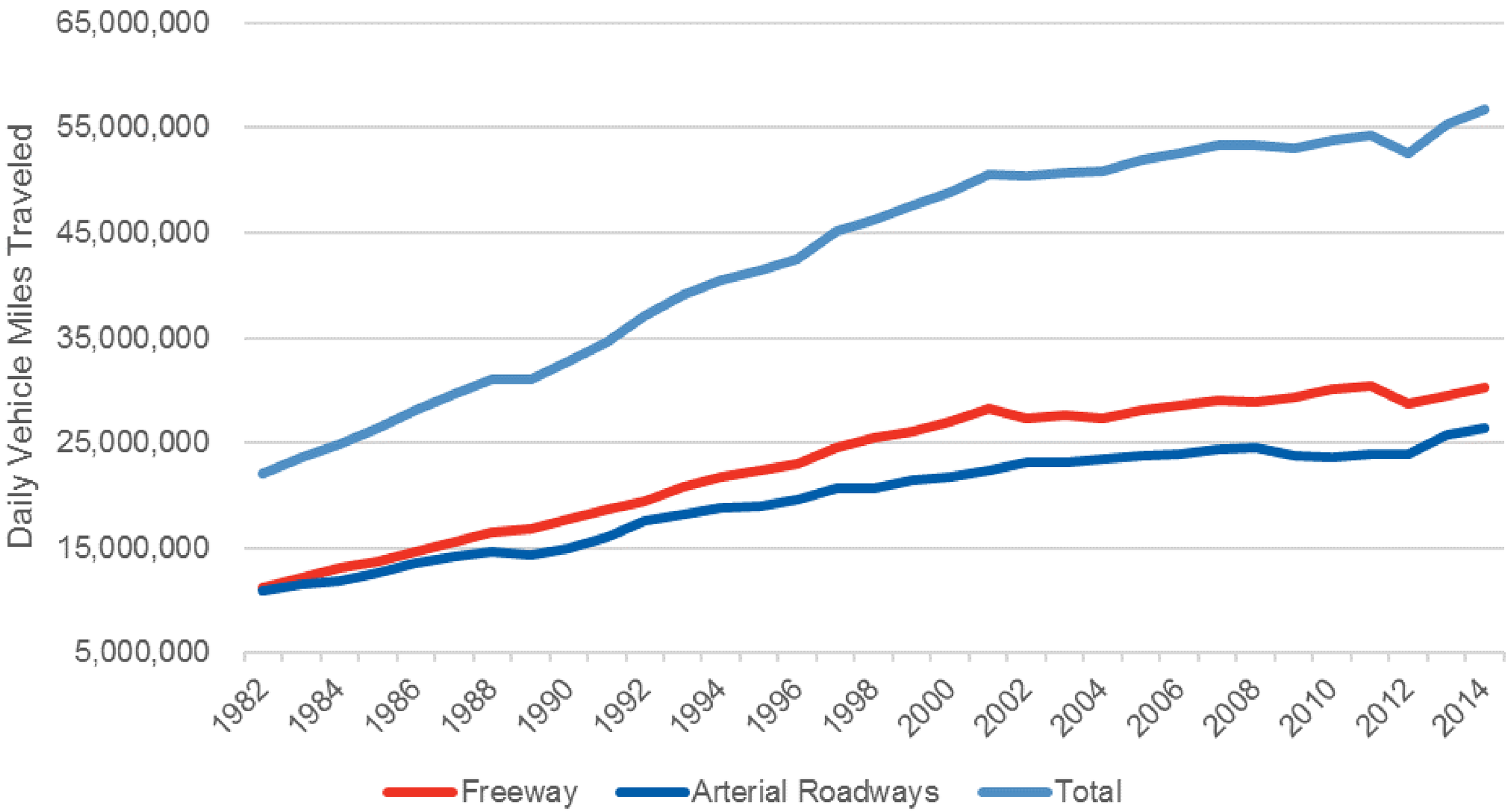


Source: Bureau of Labor Statistics Non-Farm Employment, Seasonally Adjusted

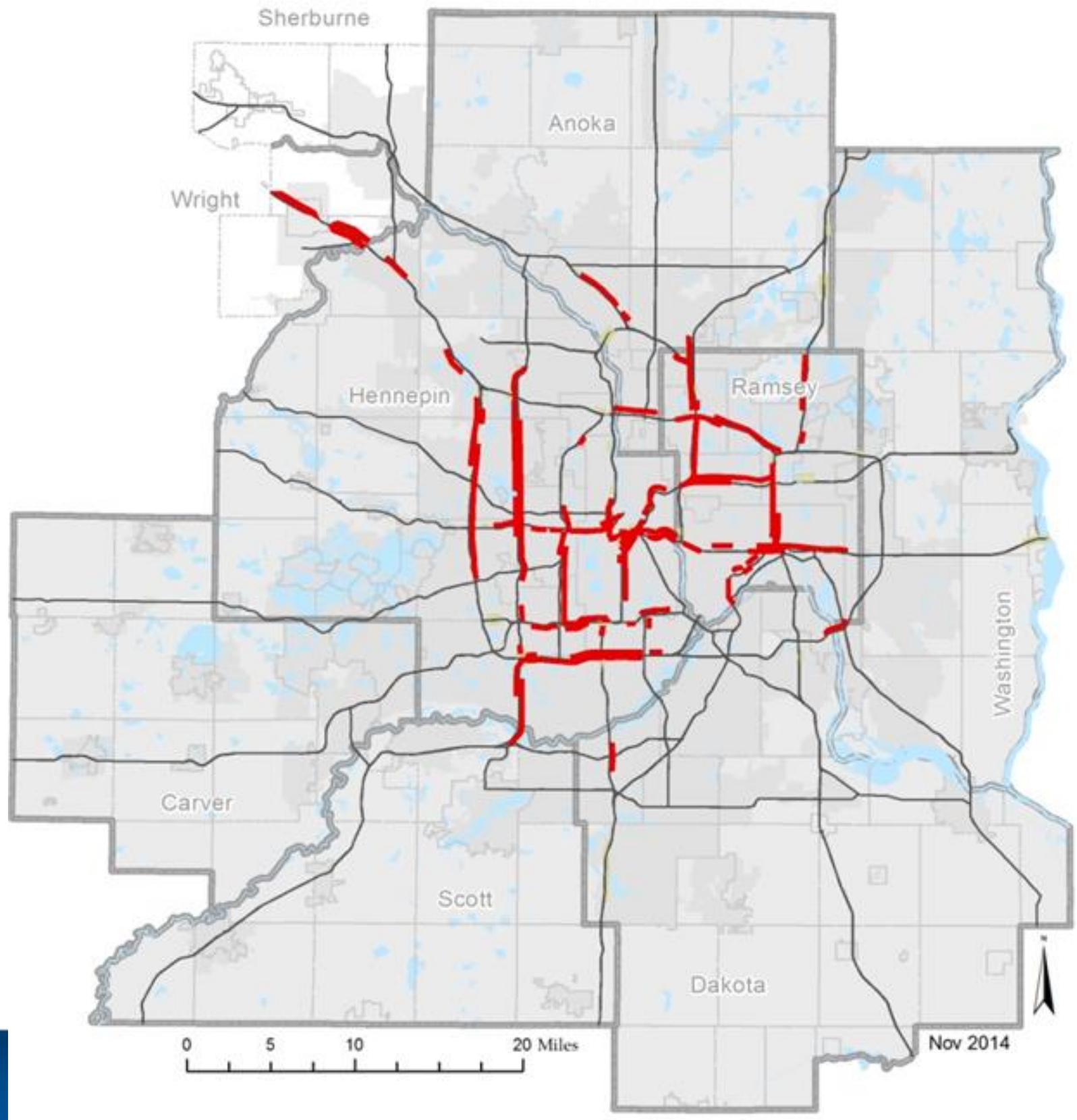
Peak Period Travelers



Daily Vehicle Miles Traveled

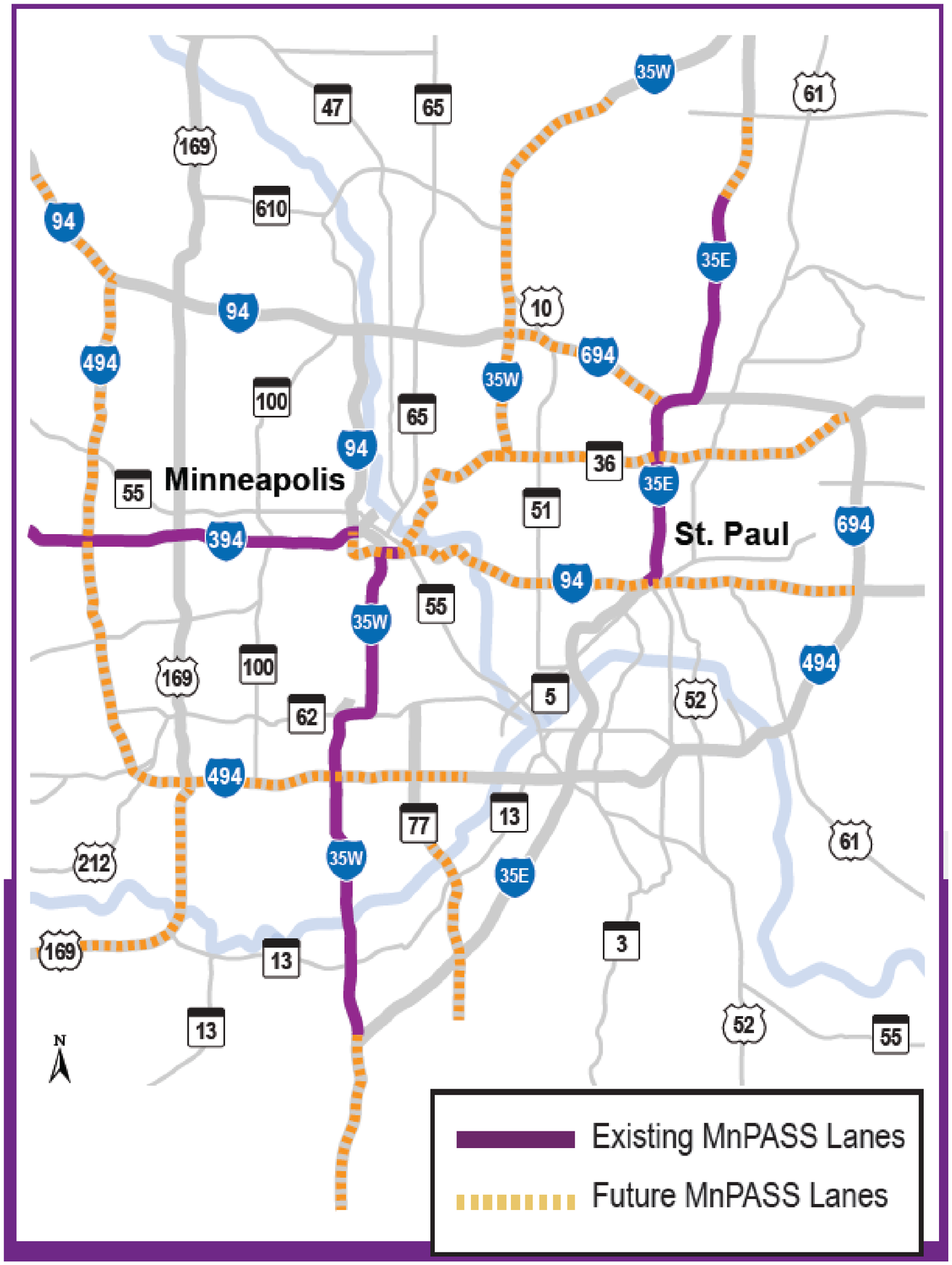


Principal Arterial Congestion (2013)



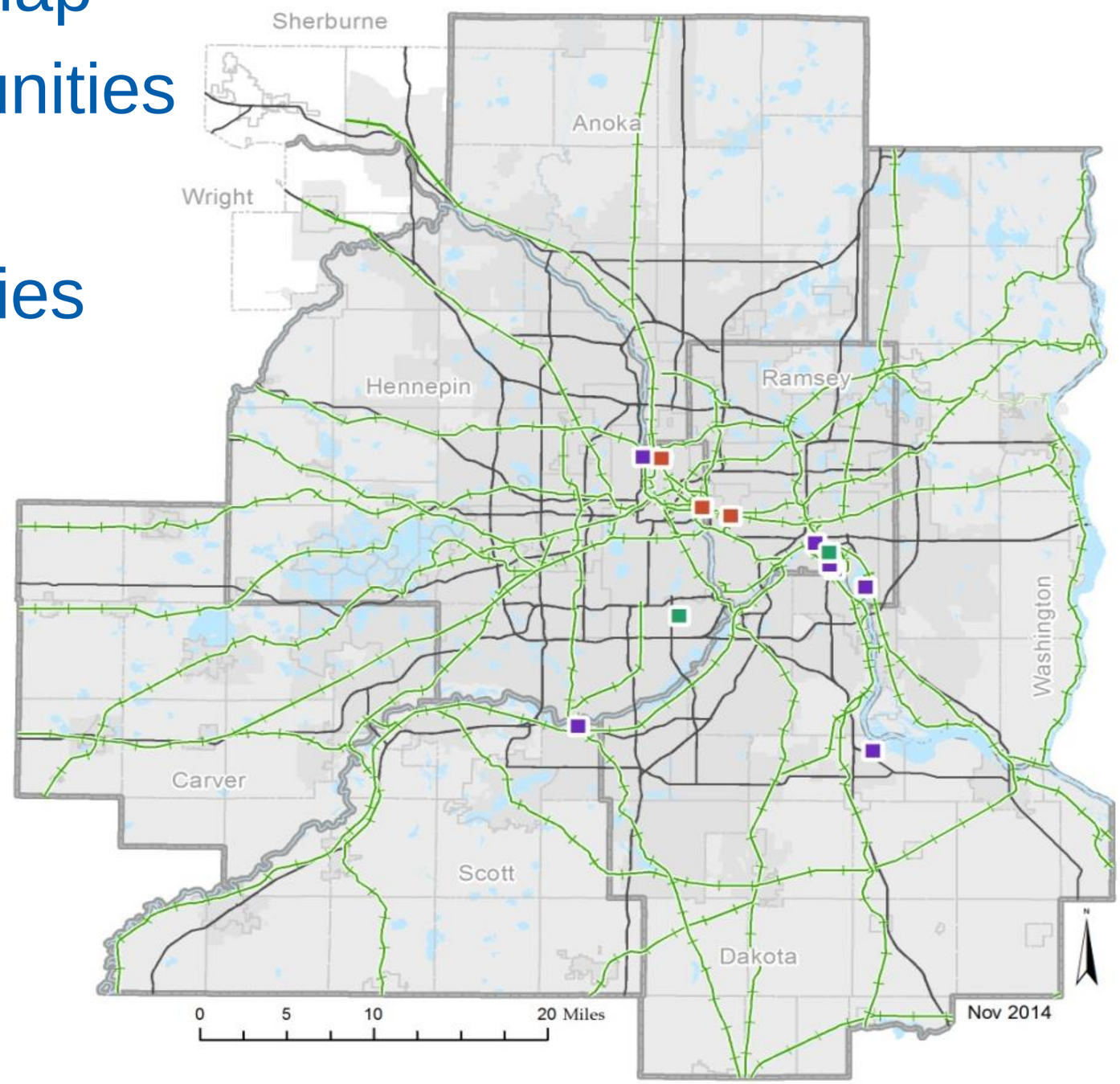
Existing MnPASS

- I-394 (2005)
- I-35W South (2009/2010)
- I-35E
  - To Little Canada Road (2015)
  - To CR J/CR 96 (2016)

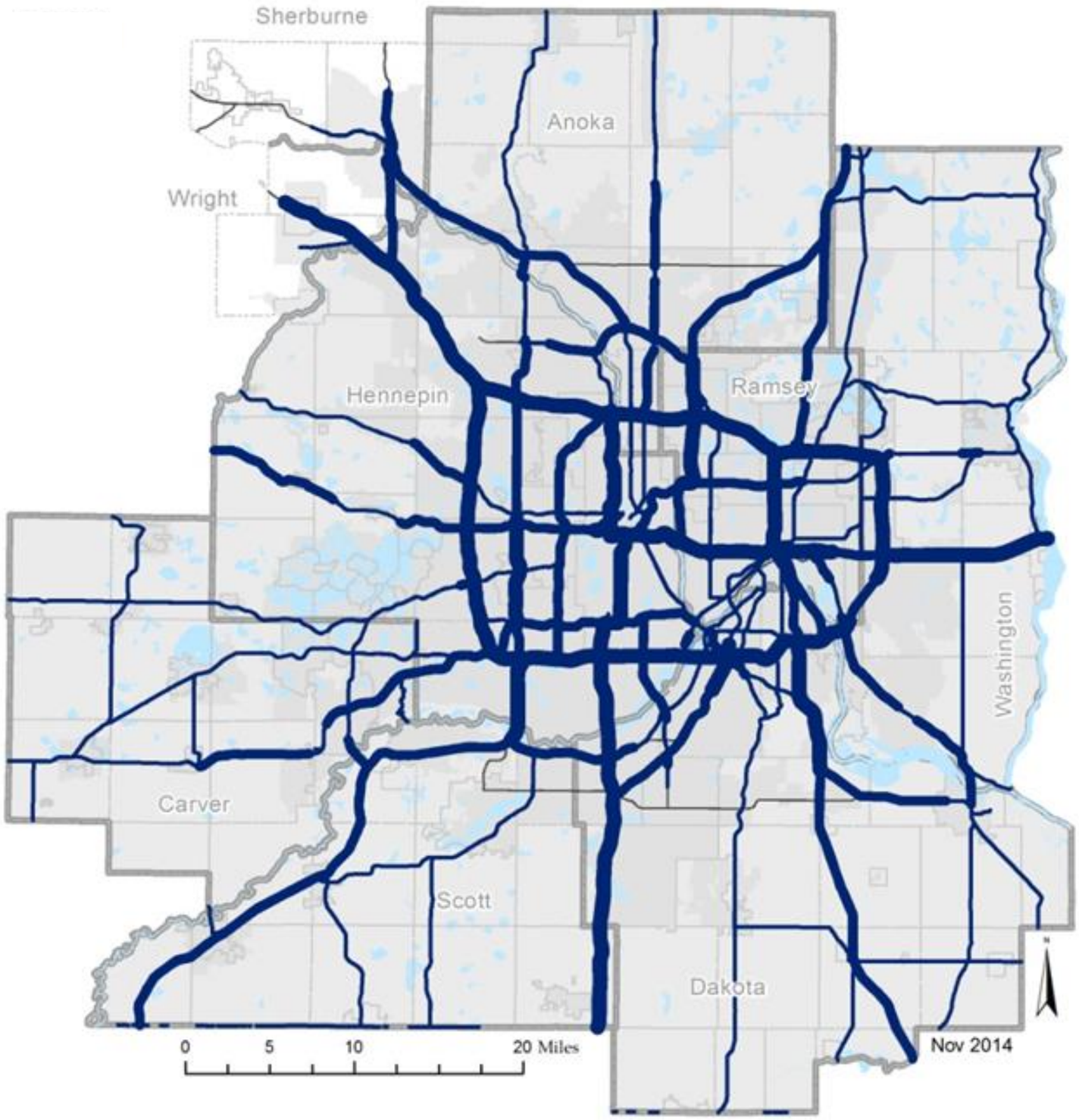


Current Freight System

- Freight modal systems/trends
- Metro Freight System map
- Challenges and opportunities
- Future direction
- Other freight plans/studies



Heavy Commercial Vehicles



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Where are Highways Headed?

Investment Focus

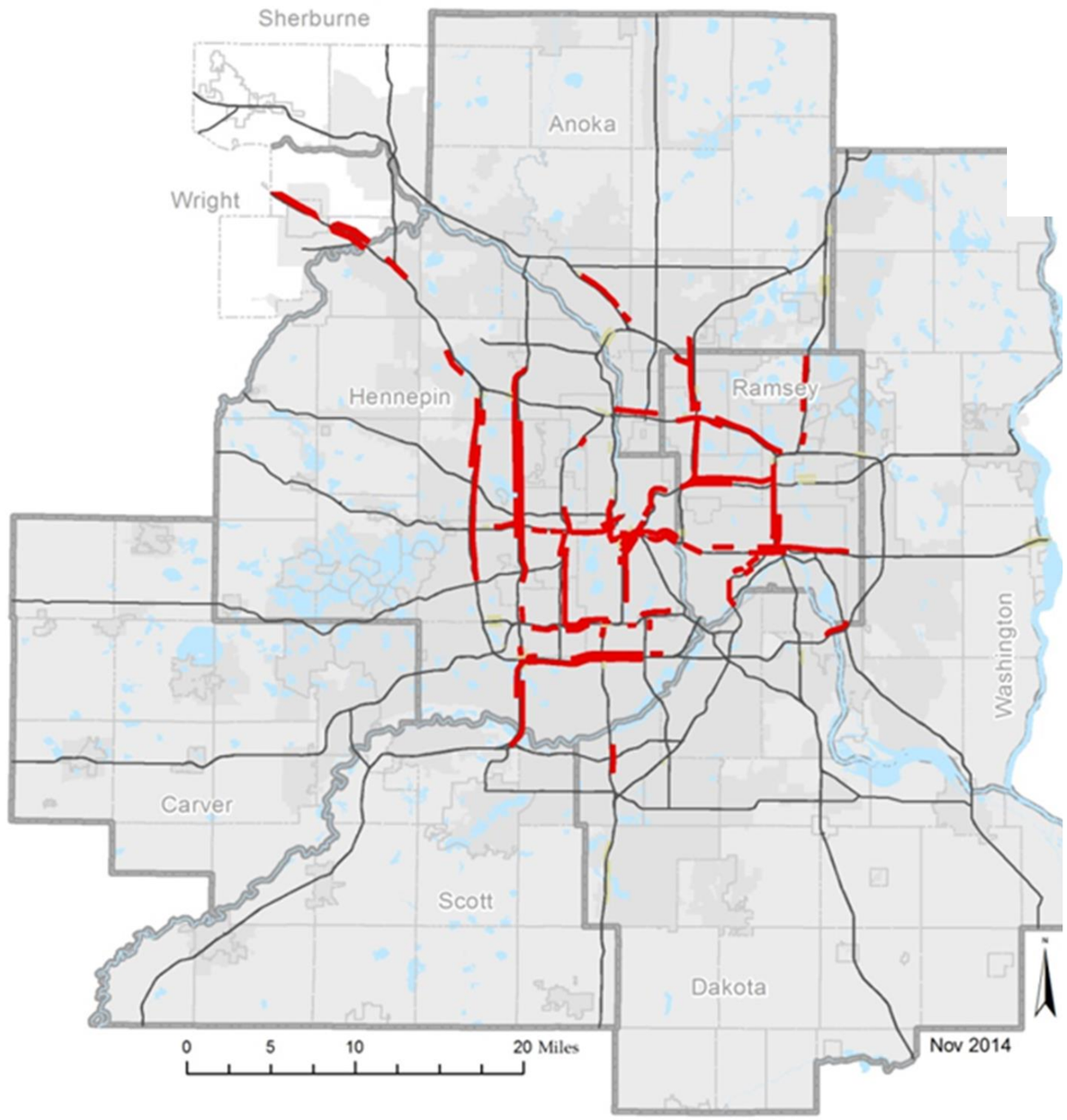
- Federal Direction to preserve assets since 1990's
  - MnDOT Highway Pavement Management Application
  - Bridge Replacement and Improvement Management
- Existing pavement and bridge targets are largely being met
- Large bridge bubble for Metro in near future
- Continuing to meet targets will require increased percentage of MnDOT Metro District's resources
- MnSHIP projects that after 2023, $0 available for mobility
- 2017 session provided short-term ability for limited investments

Vehicle Trips & Miles Traveled

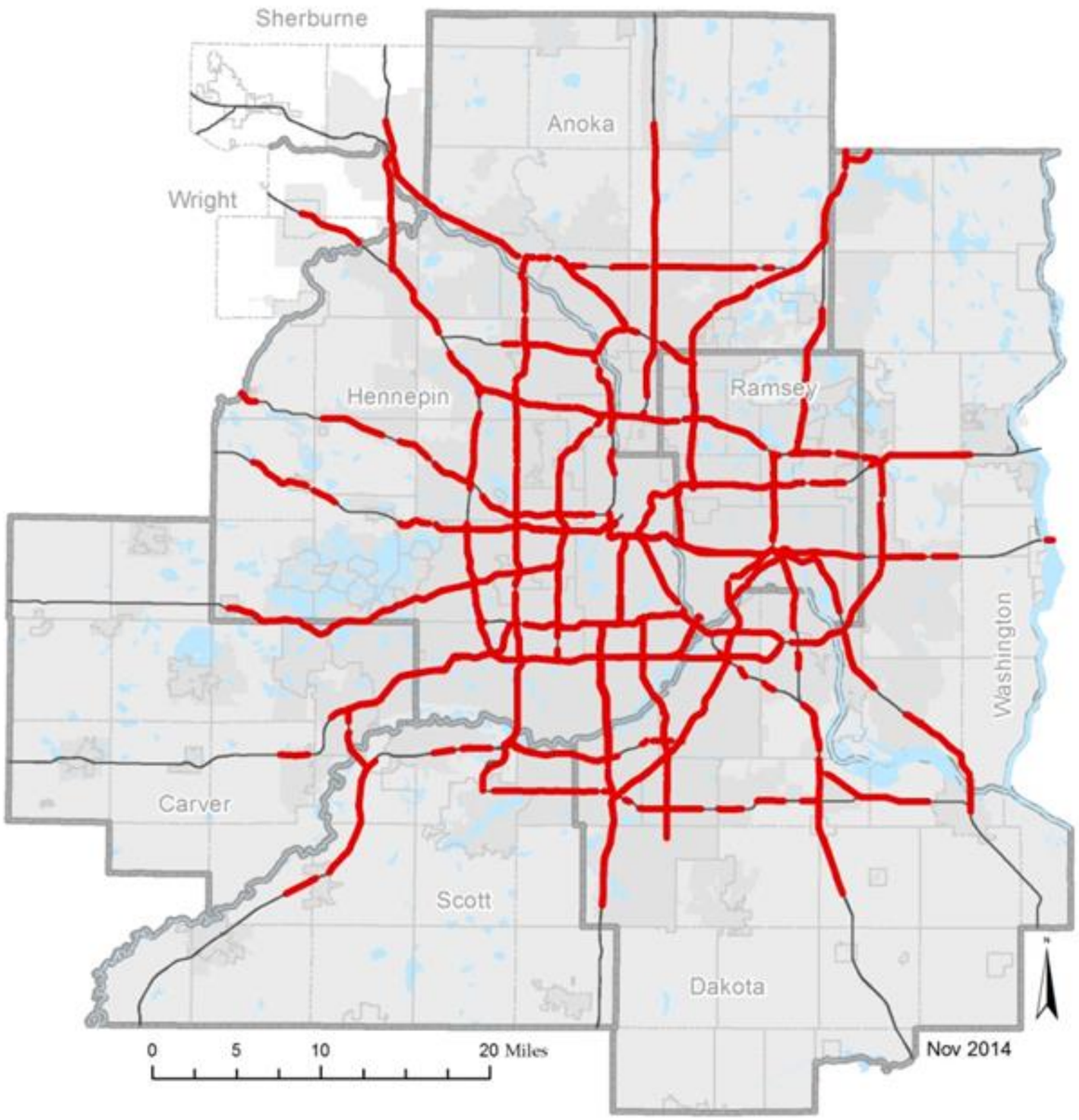
	2010	2040 Current Revenue Scenario	Change	Percent
Population	2,850,000	3,673,860	+823,860	+29%
Daily Vehicle Trips	6,600,000	9,776,000	+2,152,000	+28%
Daily Vehicle Miles Traveled	72,900,000	89,420,000	+16,520,000	+23%
Daily Vehicle Miles Traveled per Resident	25.6 miles per resident within the 7-county region	24.3 miles per resident within the 7-county region	-1.3 miles per resident within the 7-county region	-5%

Principal Arterial Congestion

2013



2040



Pavement and Bridge Outcomes

	System	Targets	2015	2037
Pavement Condition	Interstate	2% poor	2.1% poor	4% poor
	Remaining NHS	4% poor	2.7% poor	8% poor
	Non-NHS	10% poor	5.1% poor	18% poor
Bridge Condition	NHS	2% poor	3.0% poor	6% poor
	Non-NHS	8% poor	3.1% poor	7-8% poor

Highway Investment Direction

- Highway System Investment Prioritization Factors in TPP
- Requirements
    - Safety and security
    - Operate, maintain, and rebuild
- Prioritization Factors
    - Economic vitality
    - Critical system connectivity
    - Travel time reliability
    - Support job and population growth forecasts and local comprehensive plans
    - Regional balance of investments

Highway Investment Philosophy

1. Priority is to operate, maintain and preserve the existing highway system.
2. Preservation projects can be a catalyst for including other investments (i.e. safety, spot mobility and lower cost/high benefit improvements)
3. Prioritize today's problems over forecasted problems
4. Existing infrastructure and right-of-way should be utilized to the maximum extent possible

Highway Investment Philosophy

5. Focus on lower cost/higher benefit solutions (i.e. 80% of the benefit at 30% of the cost)
6. Coordinate projects with local governments to achieve cost effective results with minimum disruption
7. Where mobility needs are identified, explore in order:
   - Traffic management technologies
   - Lower cost/high benefit spot mobility improvements
   - MnPASS lanes
   - Strategic capacity investments

Highway Investment Categories

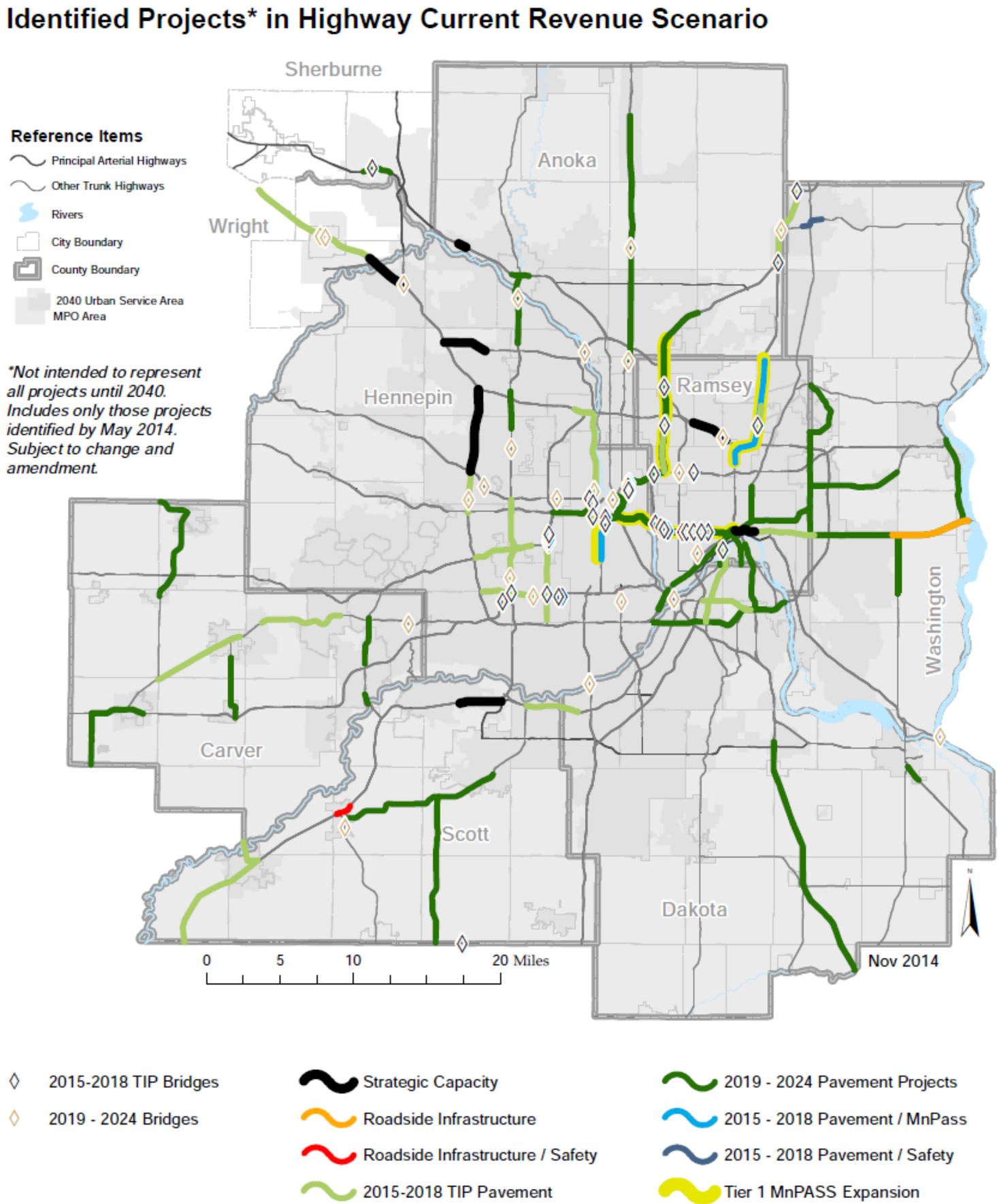
1. Operate and maintain highway assets
2. Program support
3. Rebuild and replace highway assets
4. Safety improvements
5. Bicycle and accessible pedestrian improvements
6. Mobility Improvements:
    - Traffic management technologies
    - Spot mobility improvements
    - MnPASS
    - Strategic capacity enhancements

Highway Investment Summary

	Operations and Maint.	Program Support	Rebuild and Replace	Safety Bicycle Ped.	Mobility	Total
Current Revenue Scenario 2015-2040	$2.0 billion	$900 million	$6.9 billion	$700 million	$700 million	$11.2 billion
Increased Revenue Scenario 2015-2040	+ $1.0 billion	+ $700 million	+ $2/$2.5 billion	+ $600 Million	+ $4/$5 billion	+ $8/$10 billion

Identified Projects through 2024

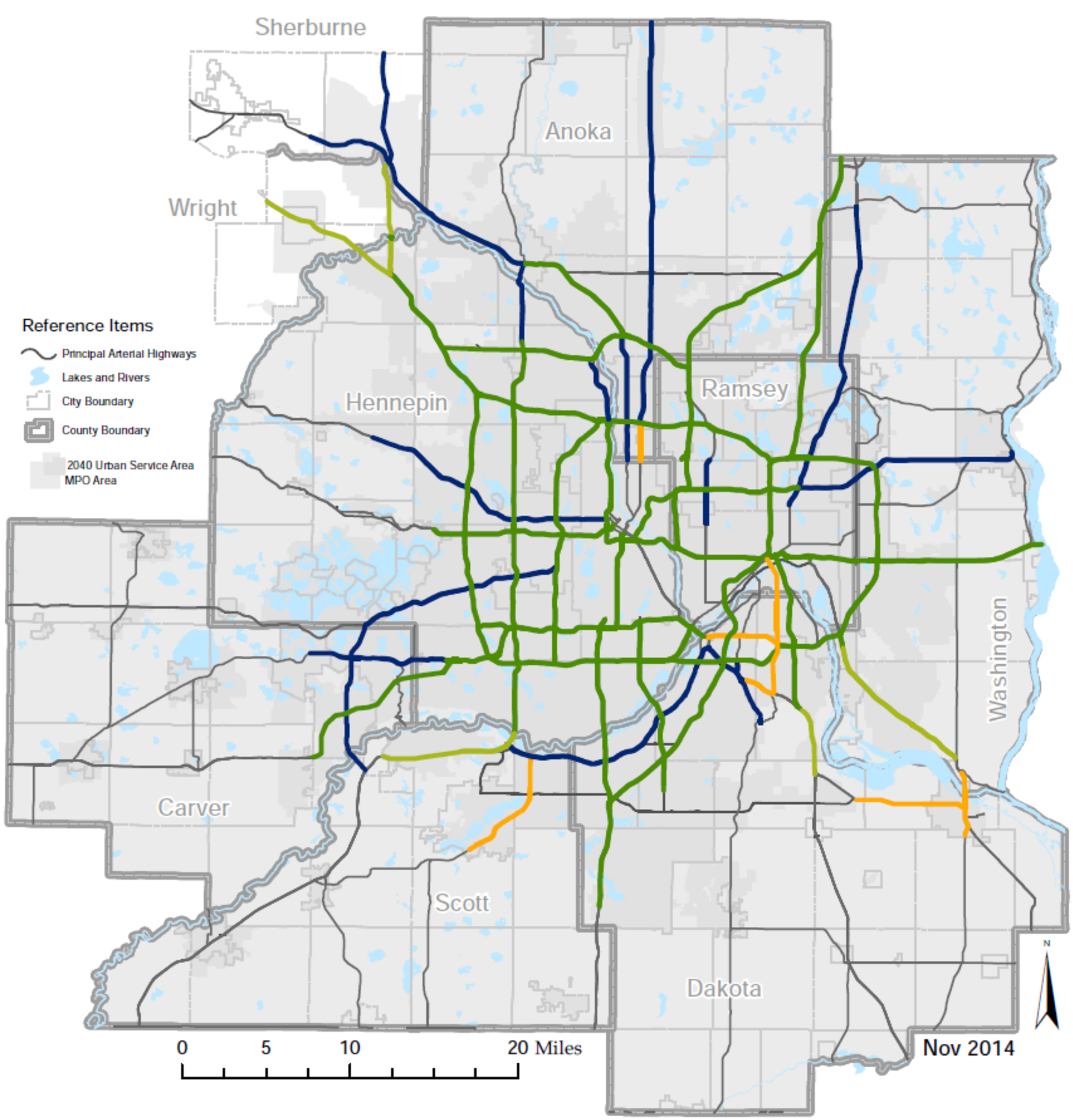
- This update will include major preservation projects through 2040



Mobility Improvements: Traffic Management Technologies

- Also called active traffic management, intelligent transportation systems, or roadway system management
- Optimize the capacity of the system
- Purpose is to delay and reduce peaks in congestion, increase person throughput, improve air quality, reduce crashes, improve travel time reliability
- $50M 2015-2023; $5M per year 2024 - 2040
- Increased Revenue Scenario: Not Specified

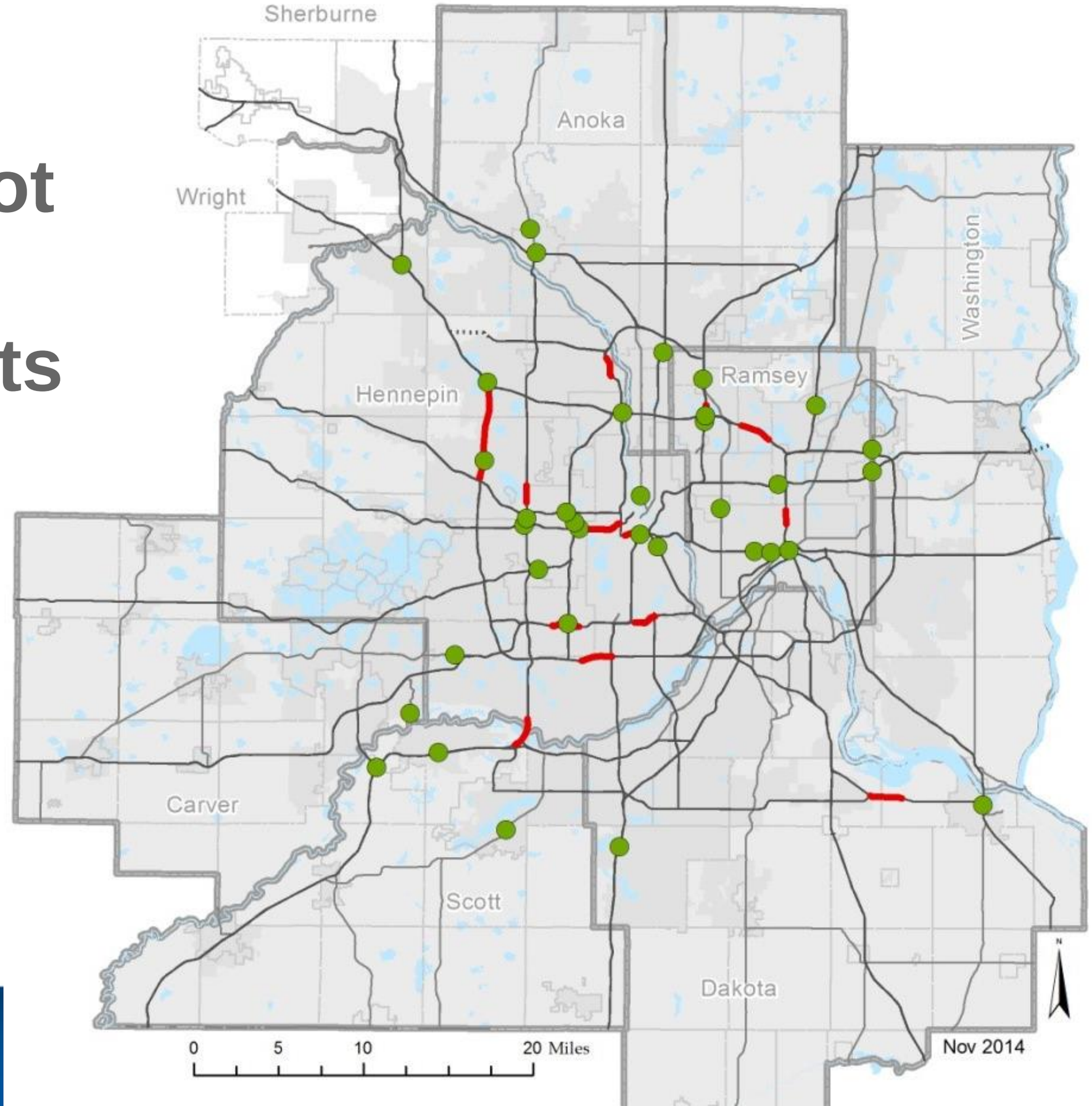
MnDOT Traffic Management Technologies



Mobility Improvements:
Spot Mobility Improvements

- Identified through MnDOT Congestion Management and Safety Plan (CMSP)
  - CMSP I 2007
  - CMSP II 2008/2010
  - CMSP III 2011/2013
  - CMSP IV 2016/2017
- Specific locations to be added to 2018 TPP
- Current Revenue Scenario
  - $75-125 M 2015-2024
  - $20 M per year to 2023
- Increased Revenue Scenario: Not Specified

Current and Increased Revenue Scenario Spot Mobility Improvements

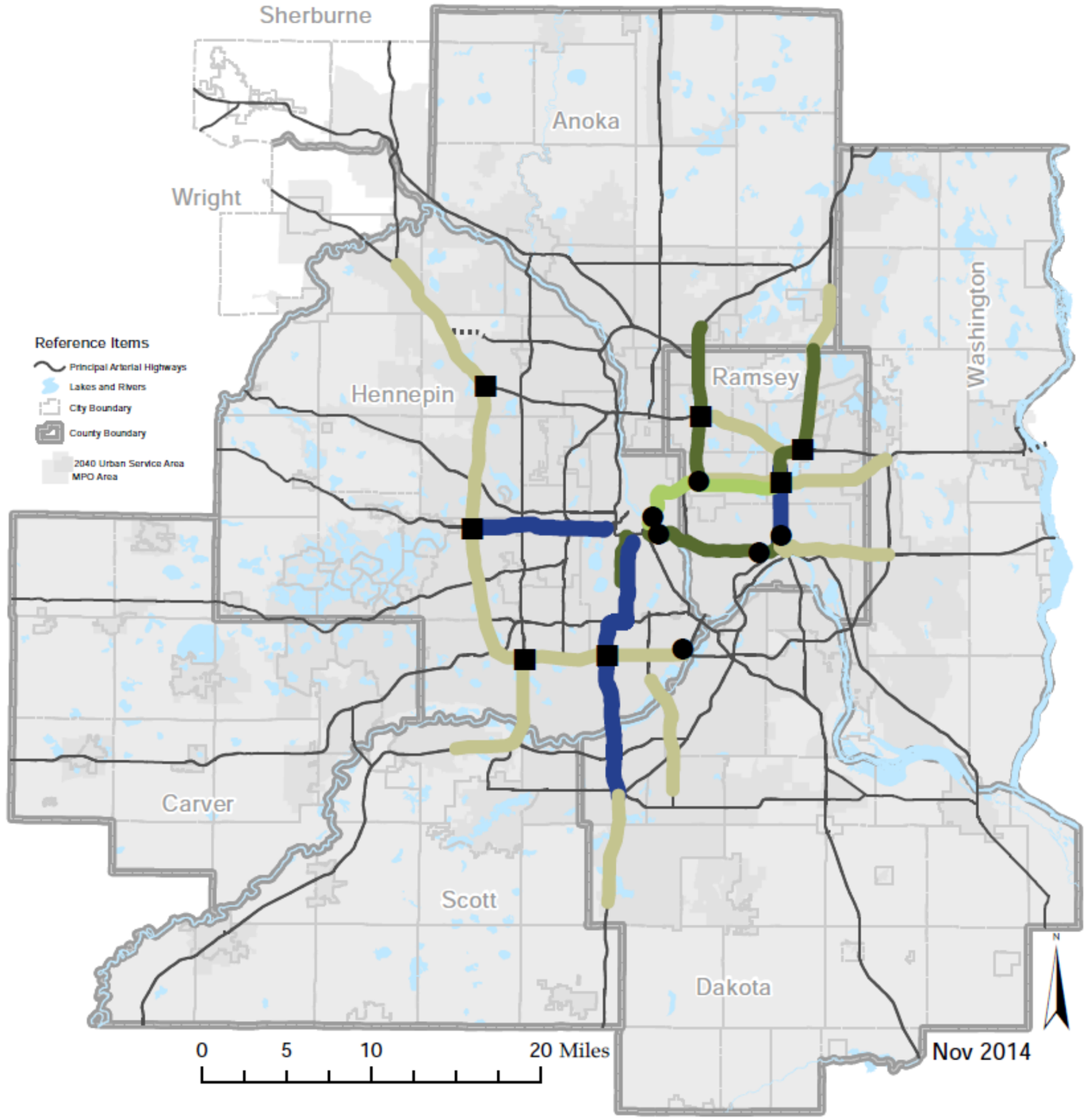


Mobility Improvements: MnPASS

- Study History
  - MnPASS 1 2005
  - MnPASS 2 2010
  - MnPASS 3 2016/2017
- System Objectives
  - Provide reliable, congestion-free travel option during peak hours for people who ride transit, carpools, and those willing to pay
  - May require flexible design approach to maximize use of available pavement and right-of-way
  - $200 M 2015-2023
  - Increased Revenue Scenario: Not Specified

MnPASS System Vision

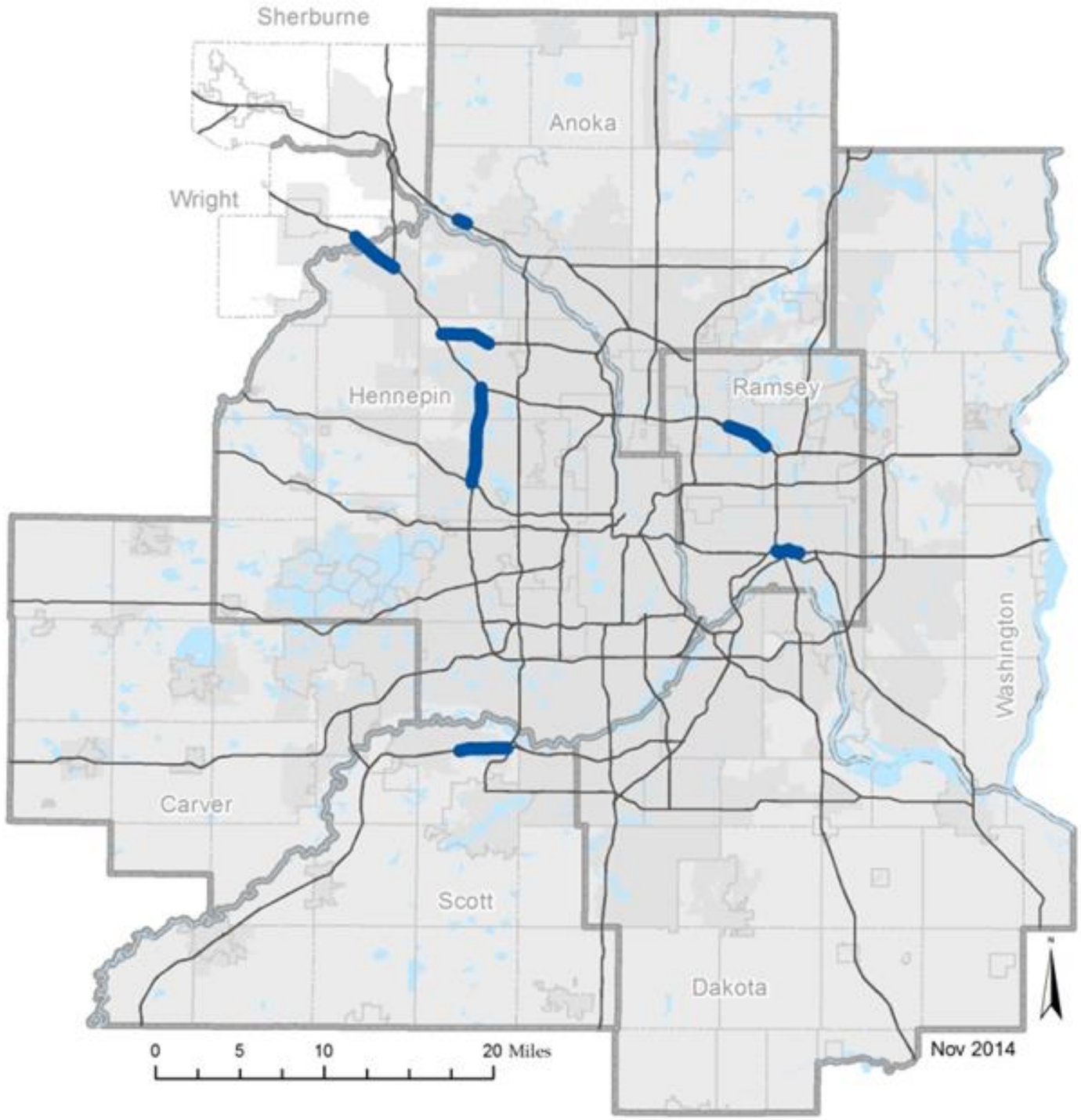
- Tier I (funded)
  - I-35E built
  - I-35W South
  - I-35W North Roseville to Lino Lakes
- Tier II
  - I-94 under study (funded)
  - Highway 36 under study
  - I-35W Minneapolis to Roseville



Mobility Improvements: Strategic Capacity Enhancements

- Collaborative work with MnDOT to identify projects
- Lower cost/high return on investment approach
- Capacity enhancements must not preclude future MnPASS
- $225 M 2015-2023
- Increased Revenue Scenario: Not Specified

Strategic Capacity in TPP



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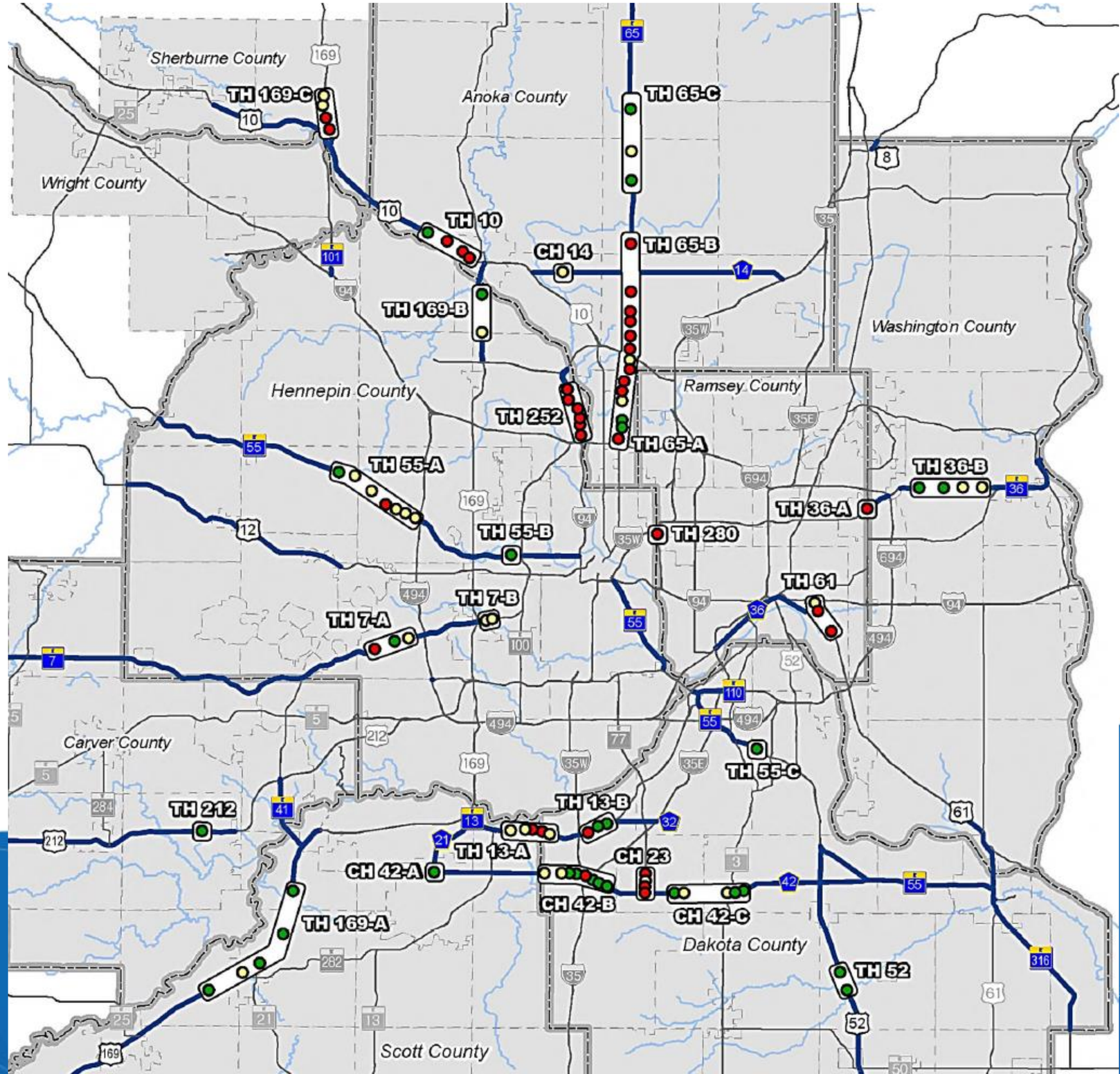
What Changes are Expected in the Plan?

Update Informed by Studies

- Principle Arterial Intersection Conversion Study (Jan)
- Appendix F: Interchange Review Committee (May)



Update Informed by Studies

- Congestion Mitigation Safety Plan IV (August)
- MnPASS III (Sept)
- Highway Truck Corridors Study (May)
- Regional Highway Spending & Investment Needs (Sept)
- Statewide Freight System Plan (Jan)

Increases to Current Revenue Since 2014 TPP

- 2015 FAST Act
  - Freight Projects ($23M/year statewide)
  - STP/CMAQ ($90M/year)
- 2017 State Legislative Action
- 2017 Changes to County Sales Tax
  - Potential inclusion of projects in TPP

Increased Revenue Scenario

- Context:
  - 2014 Increased Revenue Scenario
    - TFAC Recommended + $8-10 B
  - Revenue equivalent of + $0.40/gallon Gas Tax
  - + $0.25 Required to Match Inflation
- Issue: Should the Increased Funding Scenario be higher or lower than + $8-10 B?

Additional Changes to TPP

- Regional Highway Spending and Investment Needs Study (Sept)
- Inclusion of major preservation projects out to 2040 (Fall)
- Performance Based Planning/Performance Measures (Fall)
- Congestion Management Process (CMP) (Oct)
- Future with Connected and Autonomous Vehicles (Fall)

Current/Future Highway Issues

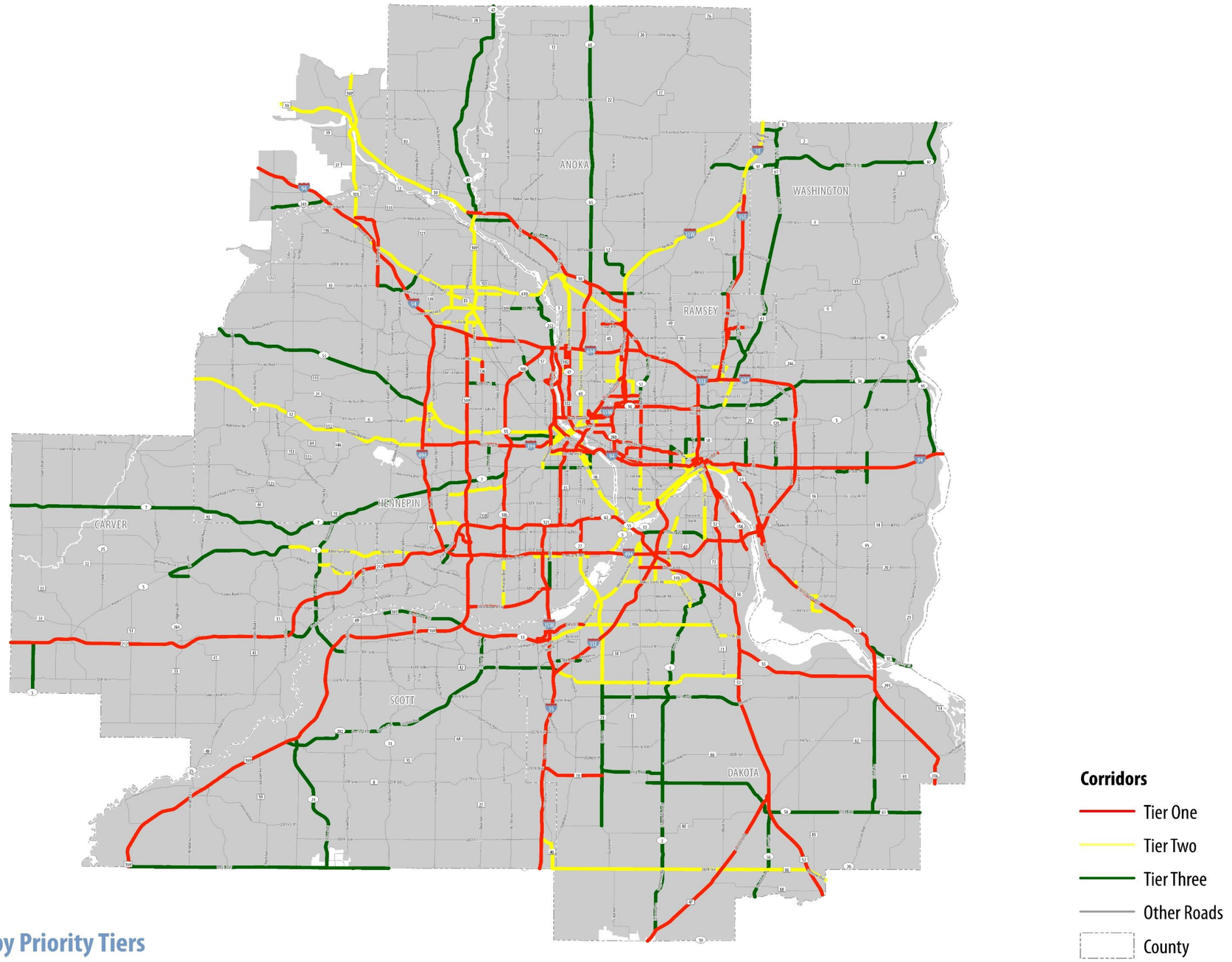
- Increased level of funding needed
  - Large and Aging System
  - Population and Employment Growth
  - Overall VMT growth and increases in congestion
- Travel disruptions increasing from needed preservation and rebuilding
- Highway system is critical to the regional economy
- Large increases in truck freight

Freight Changes to TPP

- Freight modal trends updates
  - e.g., Trucking delivery systems
- Metro Freight System map update
- Railroad Bottlenecks map update
- Industrial lands inventory results relative to river barge and rail spur access
- Incorporate results from Regional Truck Corridors Study

Freight Changes to TPP

Key Regional Truck Corridors



Regional Truck Corridors by Priority Tiers

Freight Changes to TPP

Proposed Key Regional Truck Corridors will provide guidance on:

- Regional planning
  - Coordinated data collection at state and local levels
  - System performance measures
- Regional Investment
  - Highway project selection criteria for Regional Solicitation
  - Guidance to local investments
  - Guidance to federal and state funding programs

Work Program Items Freight

- Periodic updates to key regional truck corridors
- Develop process for coordinating truck counts on key truck corridors
- Investigate application of new & emerging technologies
- Others?

Work Program Items Highways

- System-to-System Interchanges
  - Study Proposed for work program in 2018 TPP
  - High volume/high cost investments
  - Recent investments illustrate demand
  - Comparative analysis to help establish priorities under Strategic Capacity Investments

- Others?

What's Next?

Future Meeting Schedule

Month	Topic(s)
August	Bike/Ped and Other
September	Aviation and Other

Thank you

Questions?

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