Congestion Management Safety Plan

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Metropolitan Council Transportation Committee

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DEPARTMENT OF TRANSPORTATION

Agenda

	Topic
1	What is the Congestion Management Safety Plan (CMSP)?
2	Relevance to Congestion Investments
3	Approach and Methodology
4	Current Analysis and Next Steps

What is the Congestion Management Safety Plan?

- A unique initiative aimed at identifying Highway investment solutions that can be quickly implemented at lower costs than traditional projects (e.g. adding new lanes or bridges)
- Goals are to address congestion, safety and travel time reliability concerns
- Focus is on MnDOT freeways & highways in 8-county metro

What is the Congestion Management Safety Plan?

- Solutions strive to:
  - Use existing pavement and right-of-way
  - Be implemented in one construction season
  - Take advantage of other upcoming funded projects
  - Be less than one mile in length
  - Fine-tune the system rather than expand it

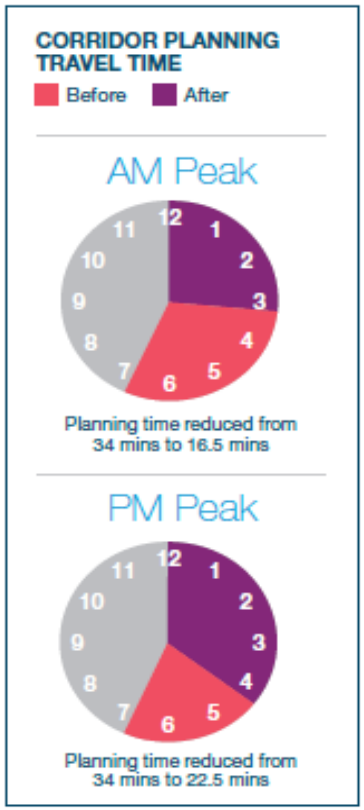
Project Examples

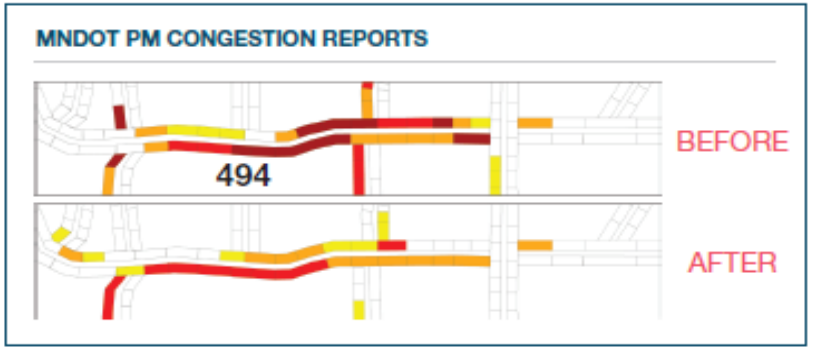
Congestion Management Safety Plan

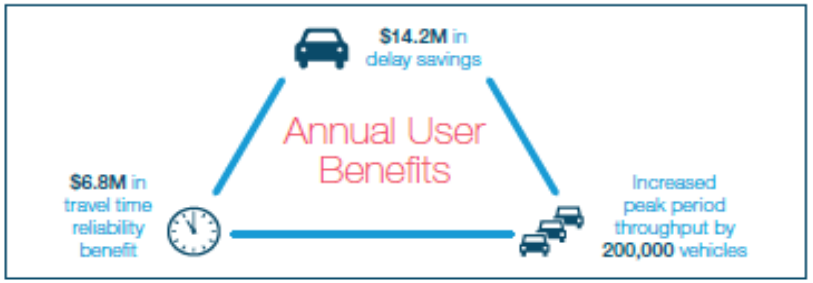
I-494
Westbound auxiliary lane between northbound I-35W loop and France Avenue

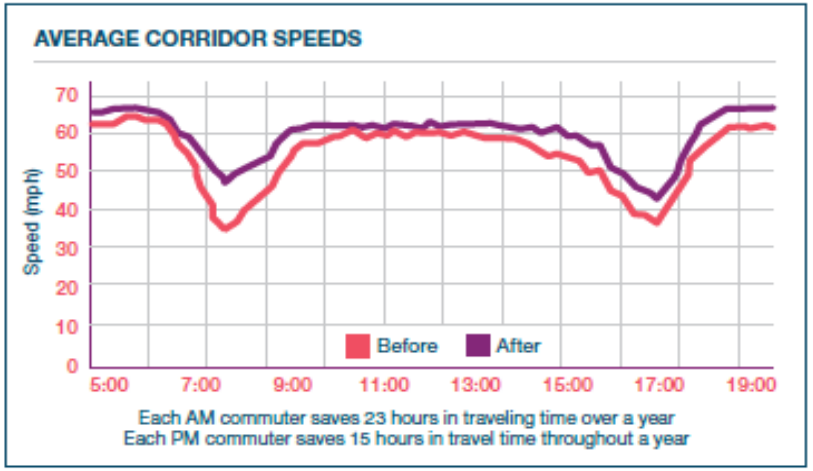
Solution Concept
Year Built: 2013
Construction Duration: 1 year
Cost: $4M

I-494 is a principal arterial freeway that makes up half of the beltline surrounding the Twin Cities metro area. I-494 serves a large variety of regional and local trips, and provides access to numerous north-south principal arterials including TH 212, US 169, TH 100, I-35W, TH 77. The section of I-494 between France Avenue and I-35W is routinely one of the most congested segments of freeway in the entire Twin Cities metro. A combination of entering, weaving, and heavy through traffic contributes to both a.m. and p.m. peak hour congestion issues.









Project Examples

Congestion Management Safety Plan

TH 100 at I-694

Two-lane northbound on-ramp from TH 100 to eastbound I-694 and re-stripe

Solution Concept

Year Built: 2007
Construction Duration: 1 year
Cost: $190,000

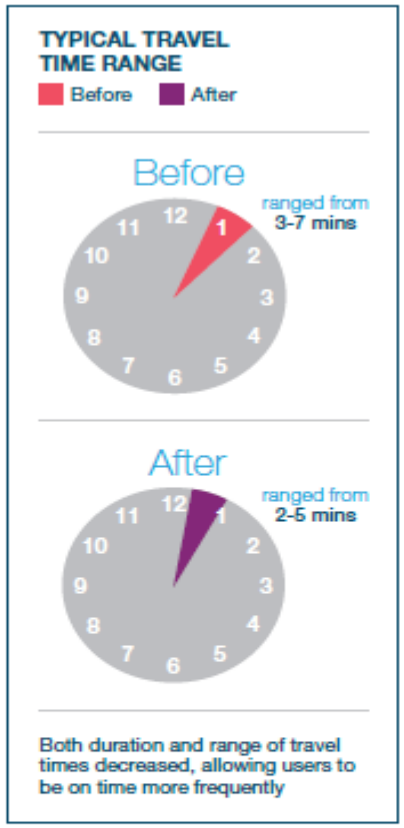
TH 100 northbound from France Avenue to I-694 eastbound was unchanged in the freeway conversion of TH 100 (TH 55 to France Avenue). This segment's single-lane entrance onto I-694 eastbound had been adequate for the TH 100 expressway. The conversion to a freeway fed more traffic into the entrance and developed a two-mile congested queue on the roadway segment. This was exacerbated by the shifting traffic patterns as a result of the I-35W bridge collapse.

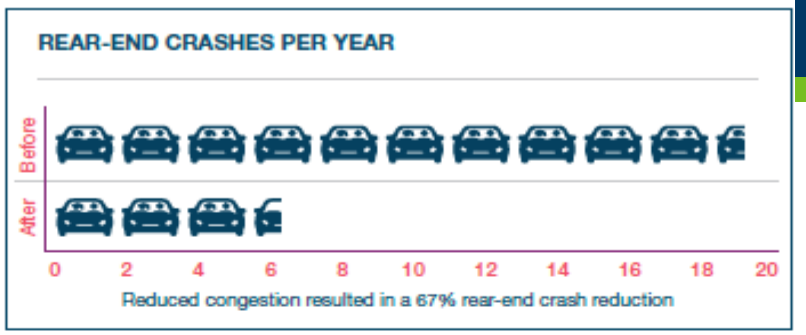
This project provided a two-lane northbound ramp from TH 100 to eastbound I-694 This project was completed as part of the I-35W Bridge Traffic Restoration efforts.

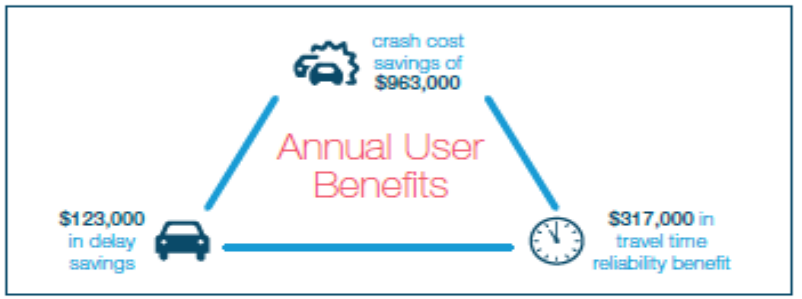
The traffic improvement and low impacts demonstrate that striping and lane-alignment modifications can be effective solutions.

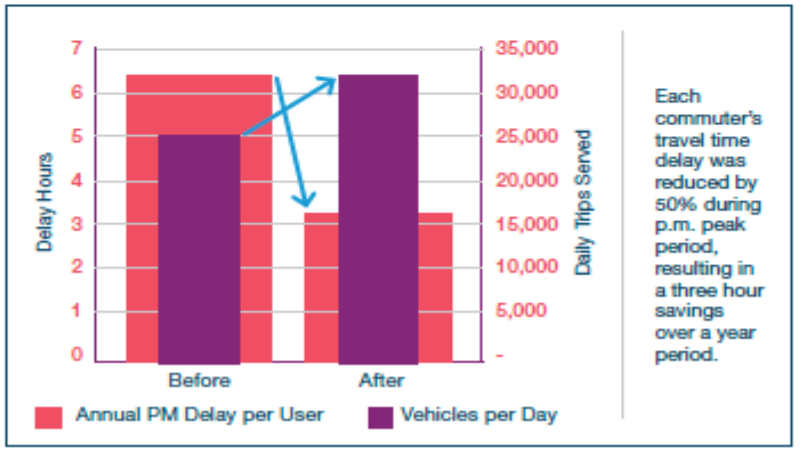
Low cost

Duration of congestion decreased by 1Hour









Project Examples

Congestion Management Safety Plan

TH 61 / TH 55 and 10th St.
Eastbound double left-turn lane

Solution Concept
Year Built: Fall 2015
Construction Duration: 1 year
Cost: $356,378

The intersection of TH 61 and TH 55 is located in the City of Hastings. TH 61 through town was expected to operate poorly when the new TH 61 Bridge was constructed. Buildings and direct access to TH 61 makes it difficult to increase capacity.

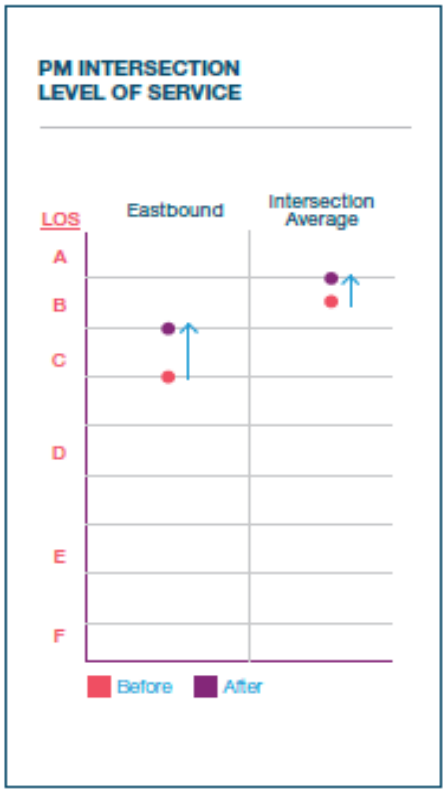
This project was an individual project that was built by itself. It was constructed quickly with a very short construction timeline (3 weeks).

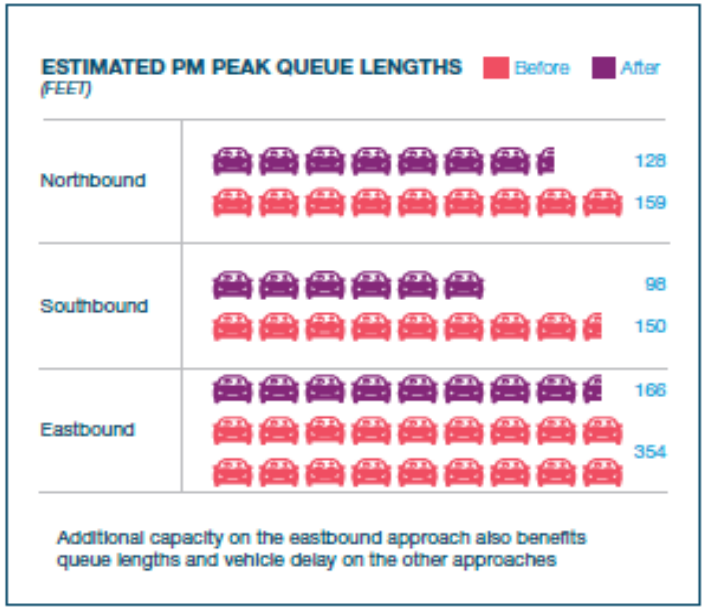
Cooperation from the City and adjacent developments allowed for the project to go smoothly.

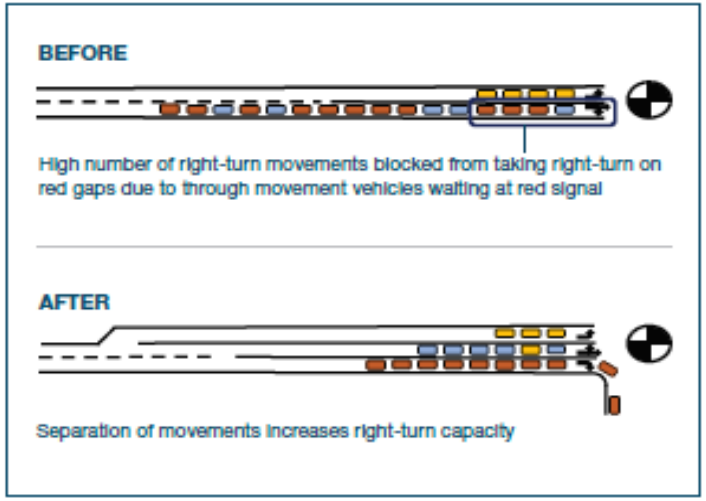
Low cost

Annual delay savings of $68,000

Before After







Why Pick this type of approach?

- Realization that building our way out of congestion is not a feasible approach
- Impacts to environment and communities would be severe to catastrophic
- Right-of-way acquisition costs would be prohibitive in some areas
- Revenues to fund the expansion fall significantly short
  - Study estimated a need of $40B, revenues were $6B
  - Gas tax would need to increase by $2.30 per gallon

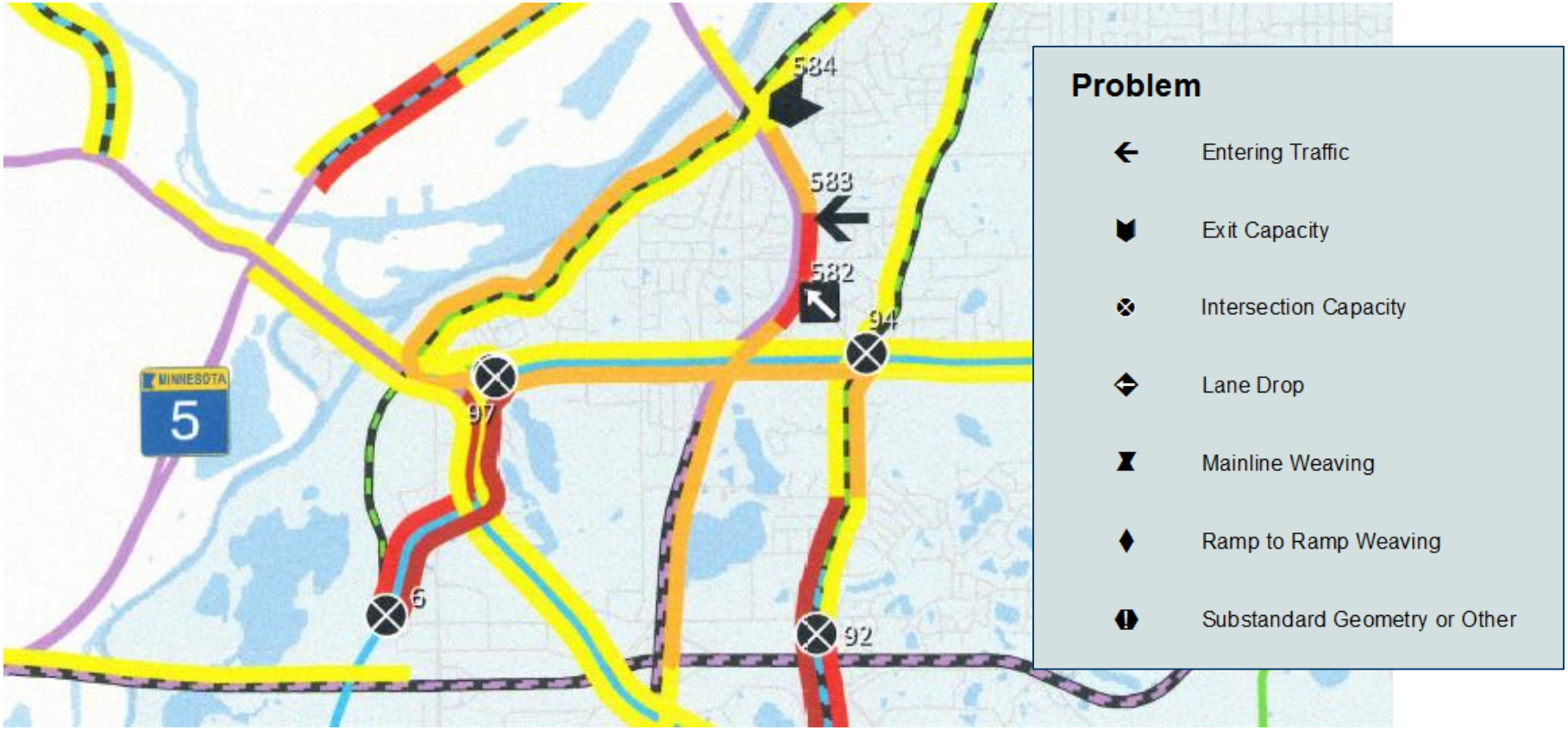
Relevance to Congestion Investments

- Direction from recent MnDOT and Met Council long range plans realize constraints (environmental, political, funding) and set priorities for investment on our transportation network:
  - Preservation Only
  - Active Traffic Management
  - Congestion Management Safety Plan
  - MnPASS
  - Strategic Capacity
- Congestion Management Safety Plan approach offers a more efficient use of limited resources

Approach and Methodology

- First, traffic volumes, travel times, and crash data was collected for all MnDOT roadways in the Metro area
  - Volume and travel time data came from our loop detectors and 3rd party GPS data for the year 2015
  - Crash data covered a three year period from July 2012 to June 2015
- Underlying causes of congestion or crashes were analyzed
- Analysis of over 600 locations led to the development of the "System Problem Statement"

Approach and Methodology



Approach and Methodology

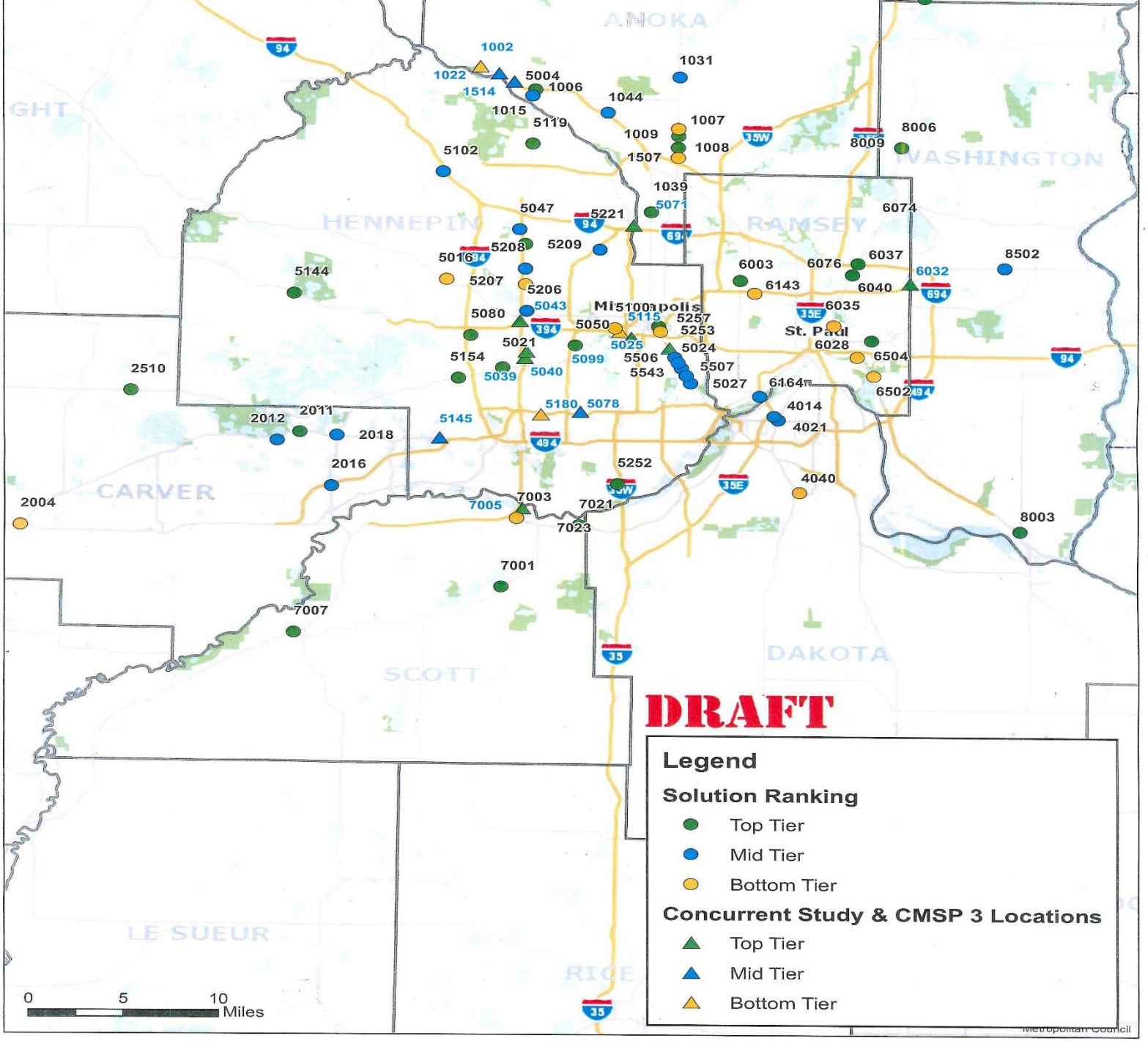
- 600 + locations assessed for the magnitude of congestion, safety and reliability costs
- Goal was to select around the costliest 10 % of the problem locations (around 60 locations)
- Problem locations that were programmed for improvements within the next 4 years were also excluded

Approach and Methodology

- Several Design workshops were held to identify possible solutions for approximately 60 locations
- Workshop teams included MnDOT area engineers, managers, traffic engineers (freeways, signals), Met Council, and Federal Highway Administration, plus consultant design and construction staff
- Over 80 solutions were recommended for further analysis

Current analysis and Next Steps

- Solutions are being subjected to a secondary screening
- The 80+ solutions are being subjected to benefit costs analyses
  - Solutions should provide benefits by reducing delay and crash costs
  - Costs to build the projects are being estimated
- Return on investment estimated for each solution
- Solutions sorted into “high”, “medium” and “low” tiers based on return on investment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DRAFT
Legend
Solution Ranking
Top Tier
Mid Tier
Bottom Tier
Concurrent Study & CMSP 3 Locations
Top Tier
Mid Tier
Bottom Tier
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Miles

Current analysis and Next Steps

- “High” tier solutions will be subjected to further analysis
- Preliminary scoping of refined solutions
- Project selection
- Coordinating meetings and public outreach
- Projects from the CMSP study will be included in the Metropolitan Council’s TPP
  - Project List requires coordination between MnDOT and Council
  - Some solutions changing categories based on several factors

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Thank you!

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