

# Principal Arterial Intersection Conversion Study

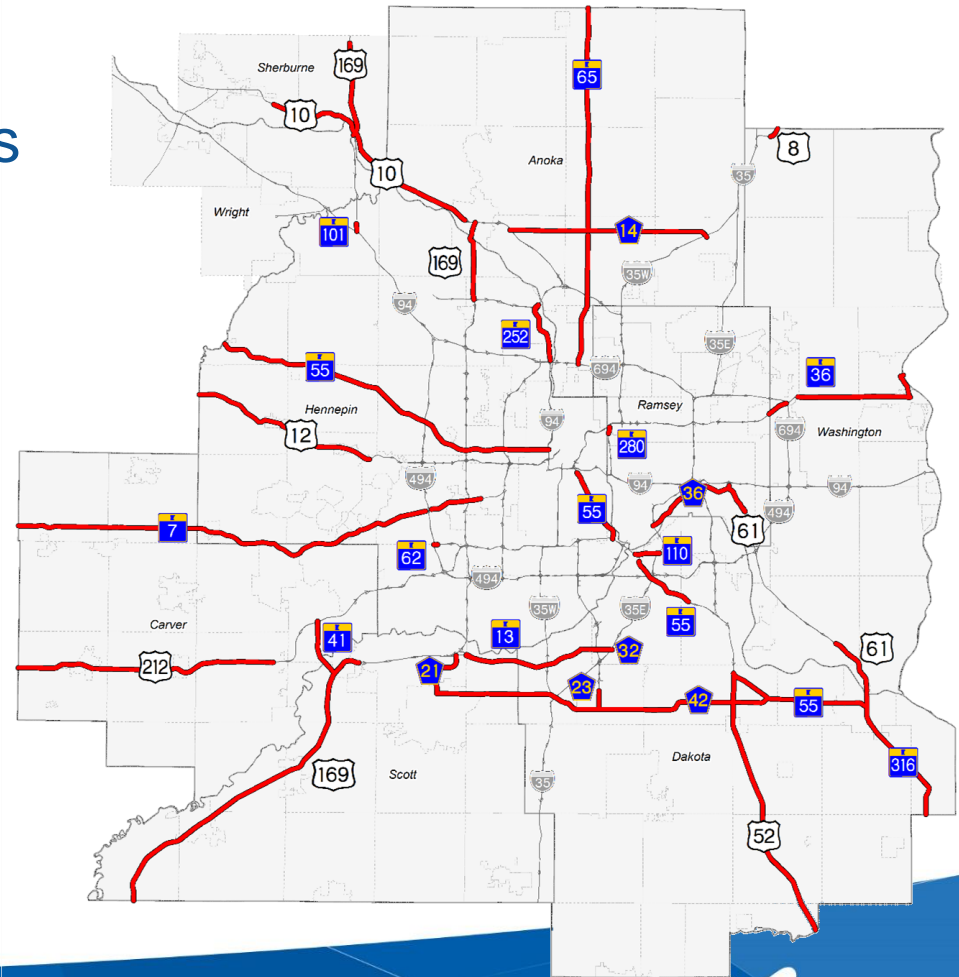
Transportation Advisory Board

February 15, 2017



# Background – Need for Study

- Mobility and safety problems at many at-grade intersections
  - Non-freeway principal arterials
  - Initial study area: 300 miles
- Identify regional priorities given high demand and limited funding
- First-of-its-kind study; identified in Work Program of 2040 Transportation Policy Plan



# Study Leadership and Technical Steering Committee (TSC)

- Led jointly by Metropolitan Council and MnDOT
- TSC met seven times from Nov 2015 through Nov 2016
- Additional eight local outreach meetings in Dec 2015 (included county/city reps in eight participating counties)
- The TSC Members represented:
  - Anoka Co.
  - Carver Co.
  - Dakota Co.
  - Hennepin Co.
  - Ramsey Co.
  - Scott Co.
  - Sherburne Co.
  - Washington Co.
  - City of Blaine (TSC local gov. rep.)
  - MnDOT Metro
  - MnDOT District 3
  - Metropolitan Council
  - Federal Highway Administration

# Phase I Results

- Of 374 intersections, 91 (24%) advanced to Phase II
- Intersections screened out based on balancing many criteria
  - Data (volumes, safety)
  - Context (prior planning, funded projects, local preference, setting)
  - Opportunities to revisit in future updates
  - Screened out several local-road intersections

**PRINCIPAL ARTERIAL INTERSECTION CONVERSION STUDY**

**DESCRIPTION**  
This deliverable provides a complete review of study activities and results through completion of the Phase I screening process, which identified corridors and intersections to advance for detailed study. The next steps (Phase II) will include additional studies and prioritization for the selected intersections to identify potential grade separations and priorities.

**Principal Arterial Intersection Conversion Study  
Background Data, Outreach Summary, and Phase I Screening (Technical Memo)**

March 2016  
Metropolitan Council Contract No. 15P102  
Prepared for:  
Metropolitan Council  
Minnesota Department of Transportation, Metro District

Prepared by:  
Bolton & Menk, Inc.  
Stonebrooke Engineering



# Phase II Weighted Criteria

- Phase II Criteria & Weights – *Which intersections:*
  - Serve higher volumes of traffic, reduce mobility, and cause variable travel times? (**Mobility = 40%**)
  - Have a higher rate/cost of severe crashes? (**Safety = 30%**)
  - Can accommodate grade separation, prior planning, and leverage other modes like bikes, transit, freight? (**Corridor Context = 30%**)
- Technical Steering Committee (TSC) members helped to establish these weights



# Phase II Priority Map (91 Intersections)

## Grade-Separation Priorities:

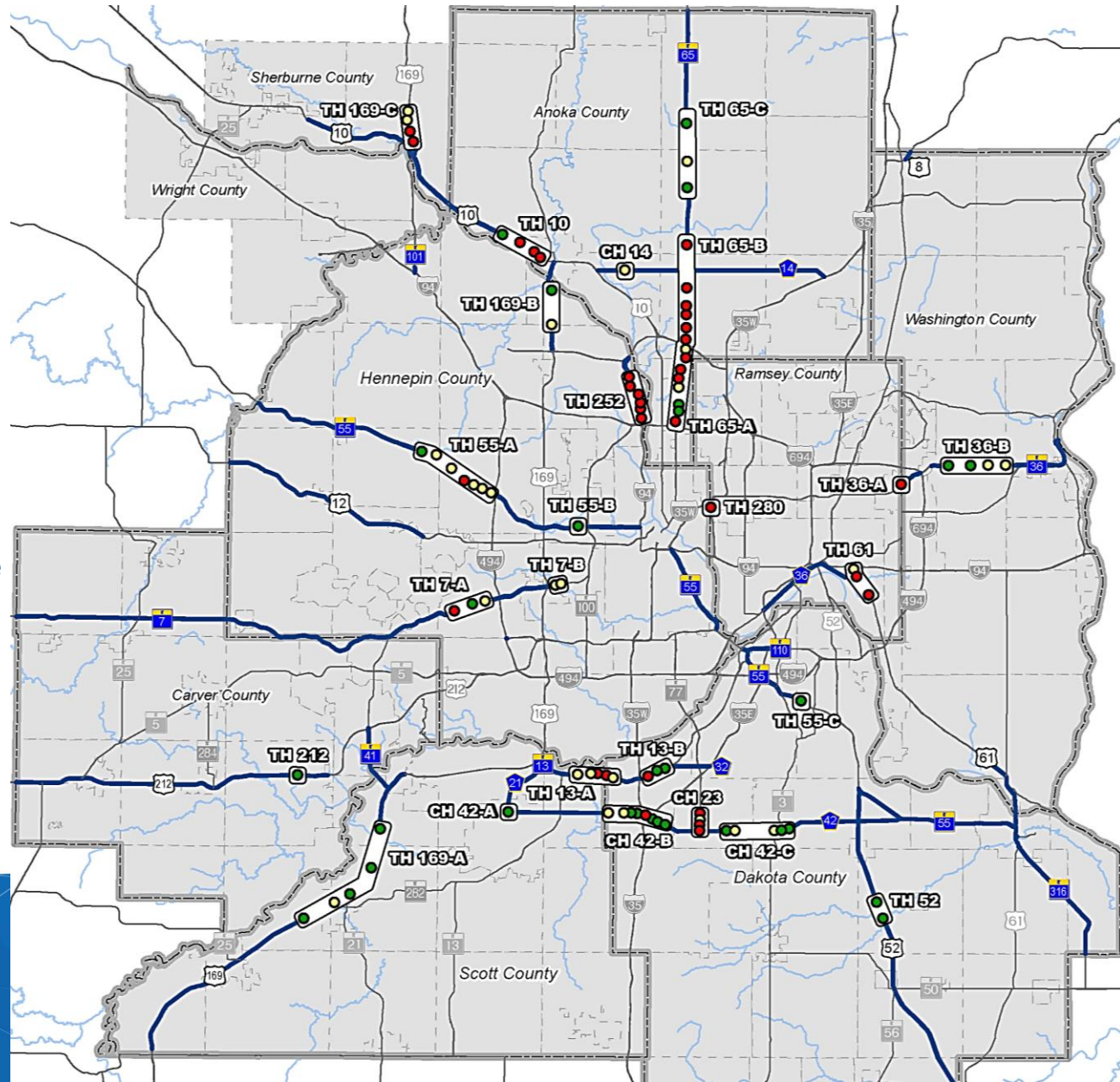
- 34 High
- 27 Medium
- 30 Low

## 26 Focus Areas

- Intersection locations & corridors
- Likely basis for future corridor studies

## Grade-Separation Priority

- High
- Medium
- Low

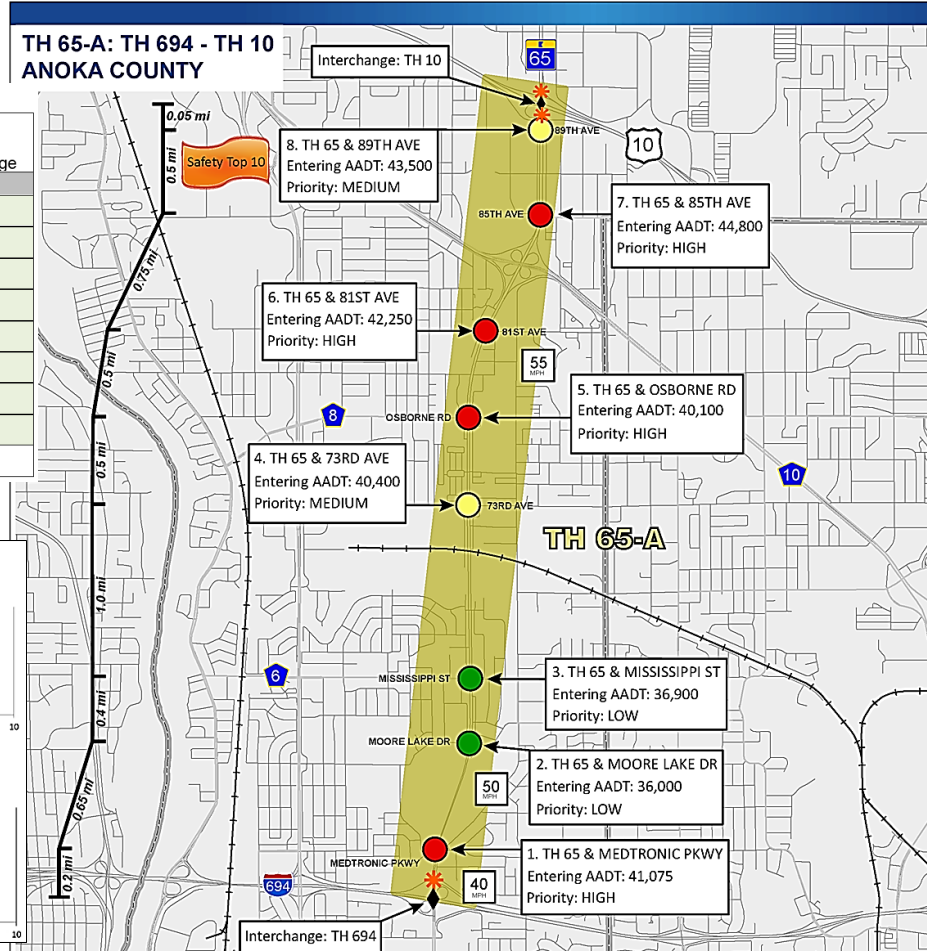
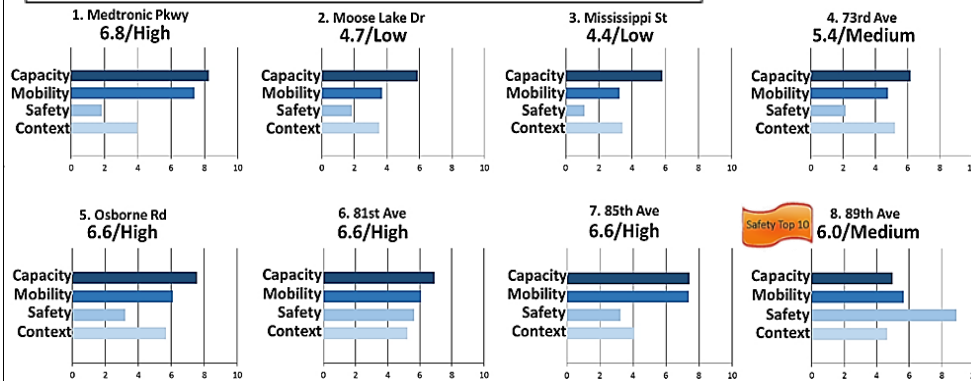


# Detailed Focus Area Example (TH 65-A)

## Capacity Analysis Summary

	Existing Intersection	Expanded Intersection	Alternative At-Grade Intersection	Add PA Capacity	Hybrid Interchange	Full Interchange
<b>TH 65-A</b>						
1	Medtronic Pkwy.	☒	☒	☒	☐	☐
2	Moore Lake Dr.	☐	☐	☐	☐	☐
3	Mississippi St.	☐	☐	☐	☐	☐
4	73rd Ave.	☐	☐	☐	☐	☐
5	Osborne Rd.	☒	☒	☒	☒	☐
6	81st Ave.	☒	☒	☒	☒	☐
7	85th Ave.	☒	☒	☒	☐	☐
8	89th Ave.	☐	☐	☐	☐	☐
<b>Key</b>		☒ V/C ≥ 1.0	☒ V/C > 0.85 & < 1.0	☐ V/C ≤ 0.85		

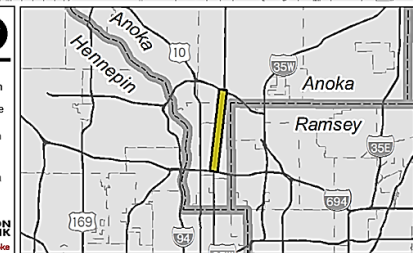
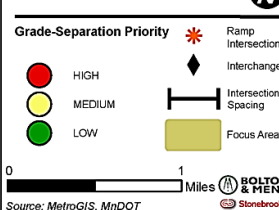
## Intersection Scores and Grade-Separation Priorities



### Intersection measures:

- Capacity:** Do peak-hour volumes exceed design?
- Mobility:** Are daily volumes and congestion high?
- Safety:** Are there many or severe crashes?
- Context:** Are plans and multi-modal factors supportive?

### Legend



This corridor includes the full range of intersection priorities. The capacity analysis indicates possible need for high-capacity at-grade improvements or a grade separation at Medtronic Parkway. All three ramp intersections exhibit mobility or capacity problems.

**Figure 10**  
**Anoka County - TH 65-A**  
**Focus Area**



# Focus Area Observations

- The Focus Areas and intersection priorities provide potential guidance for any future studies
- Two Focus Areas include only High-Priority intersections
  - Anoka Co. TH 65-B, 93rd Lane to Bunker Lake Blvd. (six intersections; 5.5 miles)
  - Hennepin County TH 252, 66th Ave. to 85th Ave. (six intersections; 2.5 miles)
- There are Opportunities to Coordinate Corridor-Wide Intersection Improvements
  - Possible consolidation or closure of intersections at some locations
  - Appropriate scaling or “right-sizing” of future intersection or interchange solutions

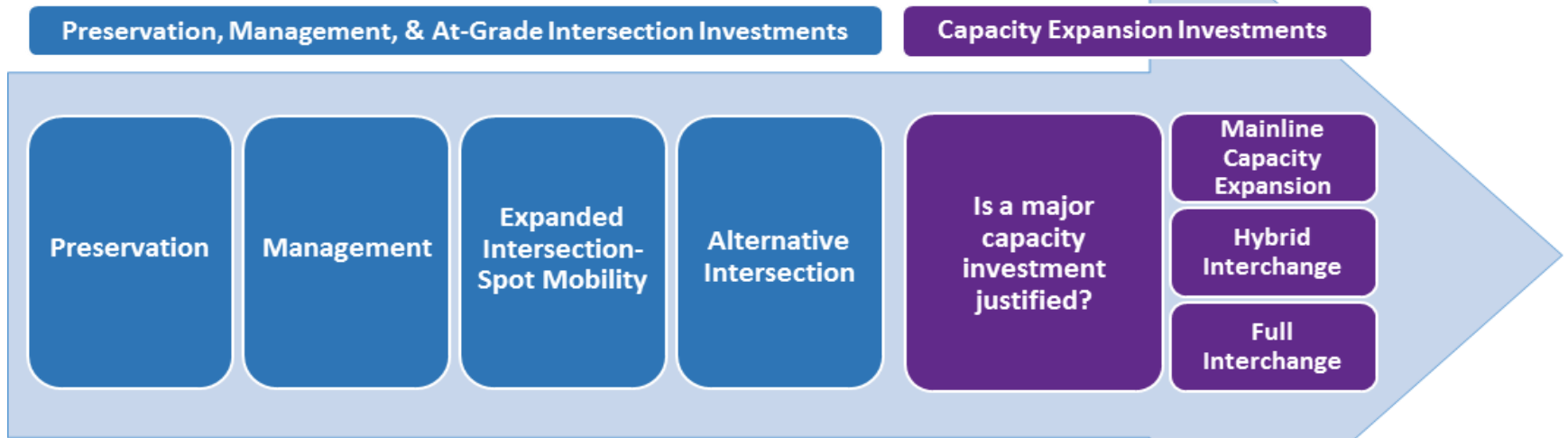
# Study Outcomes and Limitations

- Provided a regionally consistent comparison of the intersections and relative priorities
  - Intent of the Study: regional guidance for investments
  - Provides corridor overviews
- Did not address interactions among multiple closely spaced intersections (corridor traffic details)
- Did not fully address unique context issues, including potential growth and change

# Role of the Study in Future Planning

- Trend: 16 new interchange projects over the last 10 years (less than half of the 34 High-Priority intersections)
- Results will:
  - Modify TPP and MnSHIP investment scenarios
  - Provide input to funding decisions (for example, Regional Solicitation, TED, SaM, and RALF programs)
  - Serve as a reference for local planning and policy reviews
  - Make the case for additional funding
- Advises the right-sizing of proposed projects based on intersection priorities

# Regional Investment Philosophy



- Council and MnDOT
  - Define strategic capacity enhancements in the TPP
  - Recommend development of intersection improvements based on a progression of investment decisions
- Study is part of improved targeting for investments

# Questions

Steve Peterson, Metropolitan Council Project Manager  
651-602-1819 or [Steven.Peterson@metc.state.mn.us](mailto:Steven.Peterson@metc.state.mn.us)

Paul Czech, MnDOT Project Manager  
651-234-7785 or [Paul.Czech@state.mn.us](mailto:Paul.Czech@state.mn.us)

Project Website:  
<https://metro council.org/PAICS>