Principal Arterial Intersection Conversion Study

TAC Planning Committee Meeting

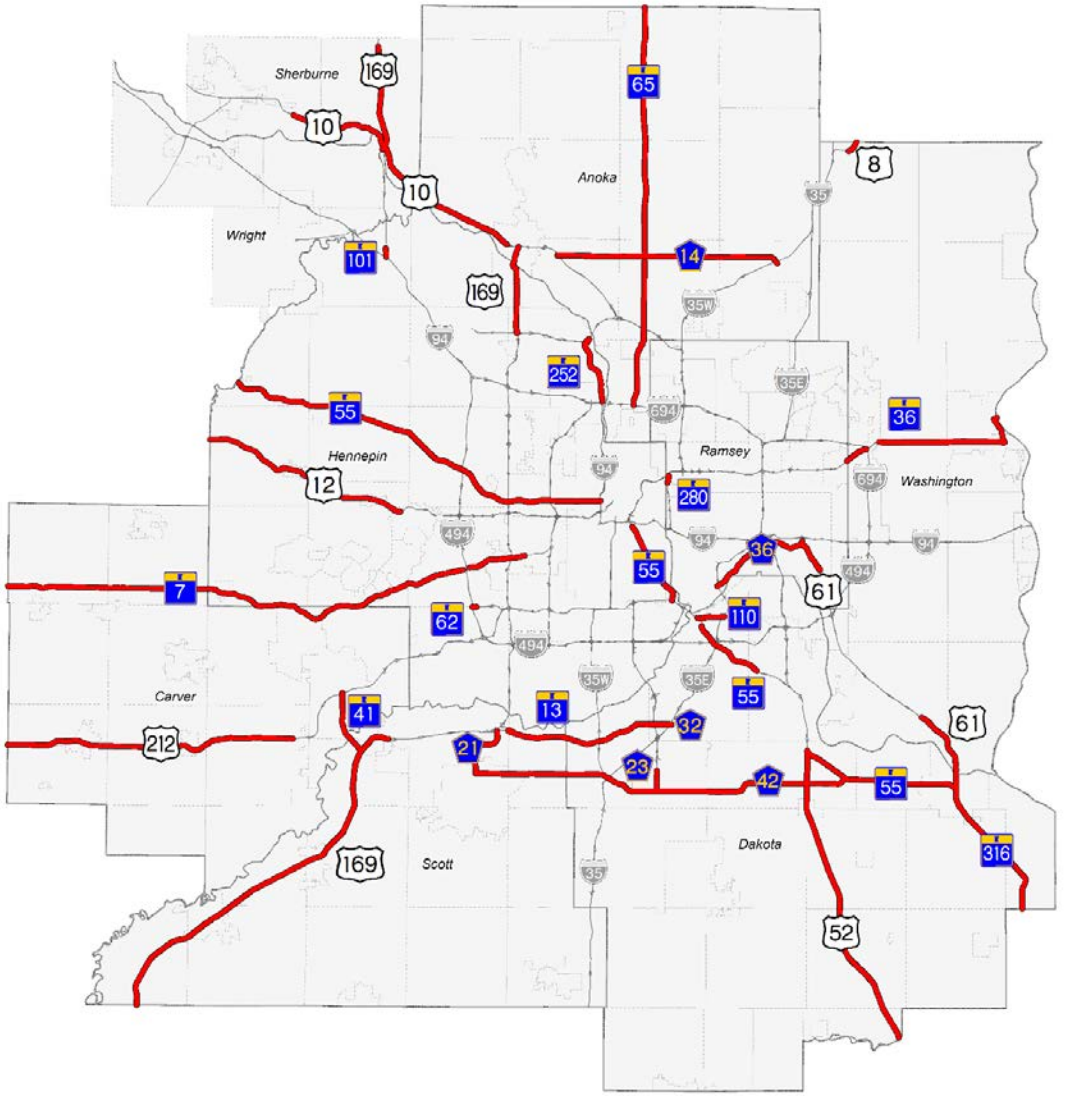
May 12, 2016

Presentation Overview

- Background – Need for Study, Objectives
- Phase I Screening (Completed)
  - More than 370 intersections initially considered
- Phase II (Ongoing)
  - Approximately 100 intersections

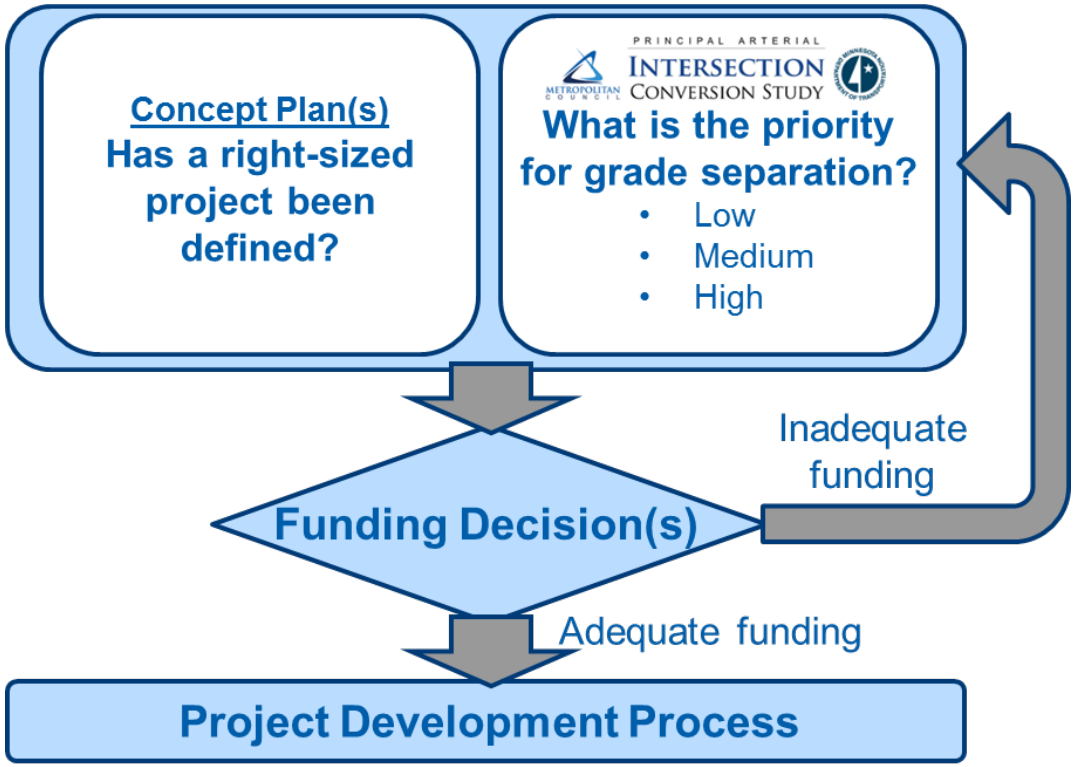
Background – Need for Study

- Mobility and safety problems at many at-grade intersections
- Guide strategic investments
  - Intersections & corridors
- First-of-its-kind study; identified in Work Program of 2040 TPP



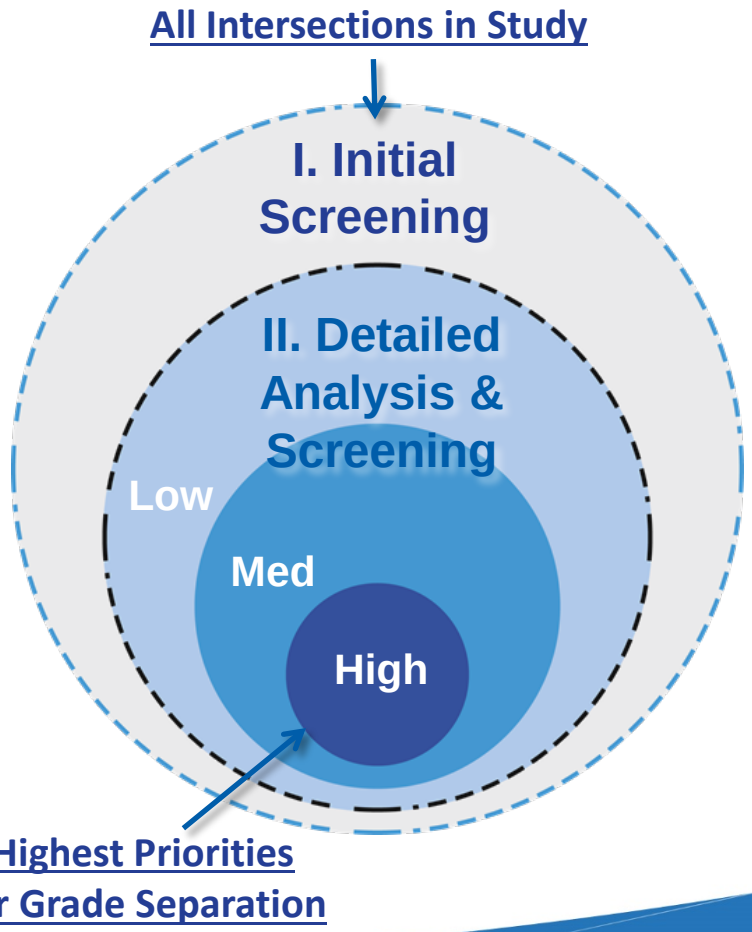
Study Objectives

- Identify regional priorities given high demand for grade-separations and limited funding
- Provide input to funding decisions



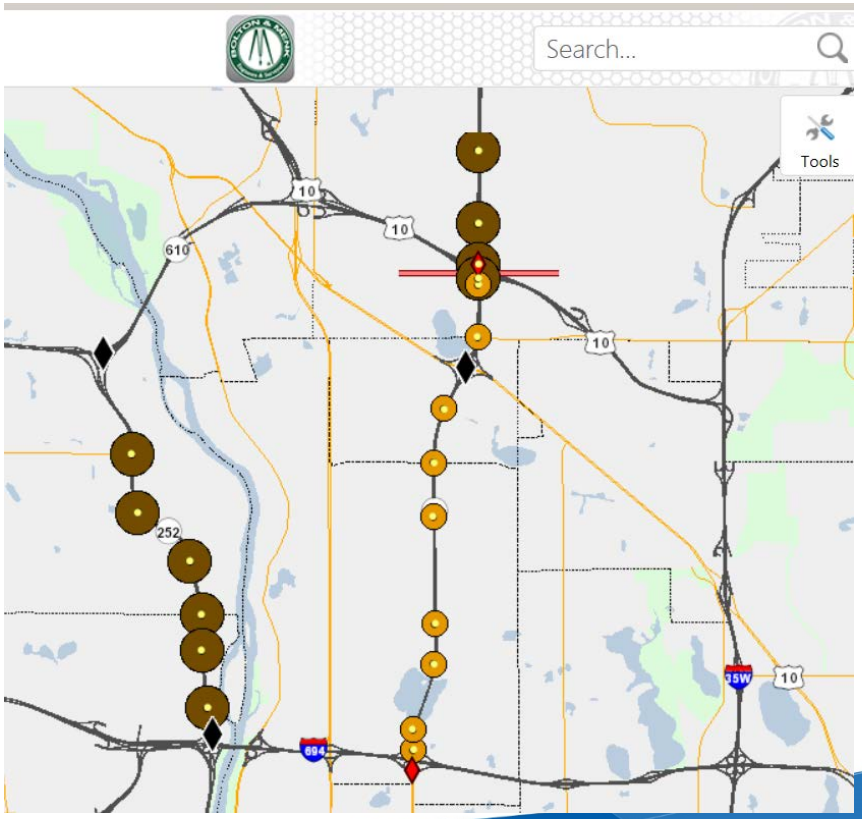
Study Process Overview

- Phase I. Initial Screening
  - Which intersections are not candidates for grade separation at this time?
- Phase II. Detailed Analysis & Screening
  - Set priorities for future grade separations – Low, Medium, High
  - Consider best fit for design solutions (cost effectiveness)



Phase I Screening Process

- Eight local outreach meetings (December 2015):
  - Technical and contextual screening criteria
  - Specific corridors, intersections, and data
- Local input helped refine the Phase I criteria
  - Volume & capacity
  - Safety & local input



Phase I Screening: Criteria, Process

Volume and Capacity Factors

Guidance Based on ADT Thresholds

(MnDOT ICE and HCM guidance for signalized intersections)

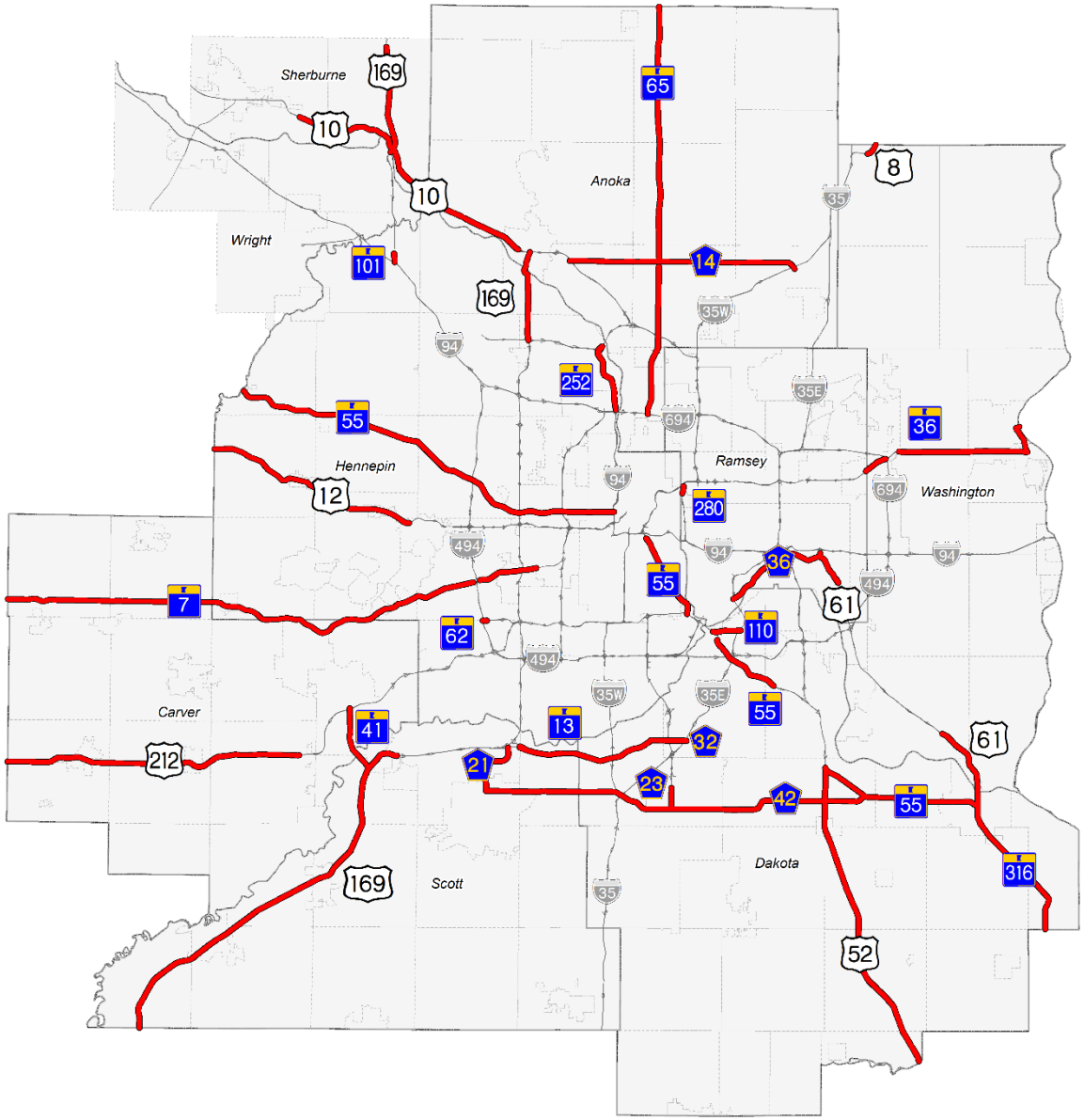
Safety, Context & Local Input Factors

Criteria Based on PA Role, Previous Planning, and Local Context

1. **Safety** (critical crash index)
2. **Functional Class & System Context**
3. **Local Planning Support** (previous studies; support at meetings)
4. **Right-of-Way and Physical Feasibility** (expressway or urban street?)
5. **Regional Mobility or Growth Corridor**
6. **Infrastructure and Funding Cycle**

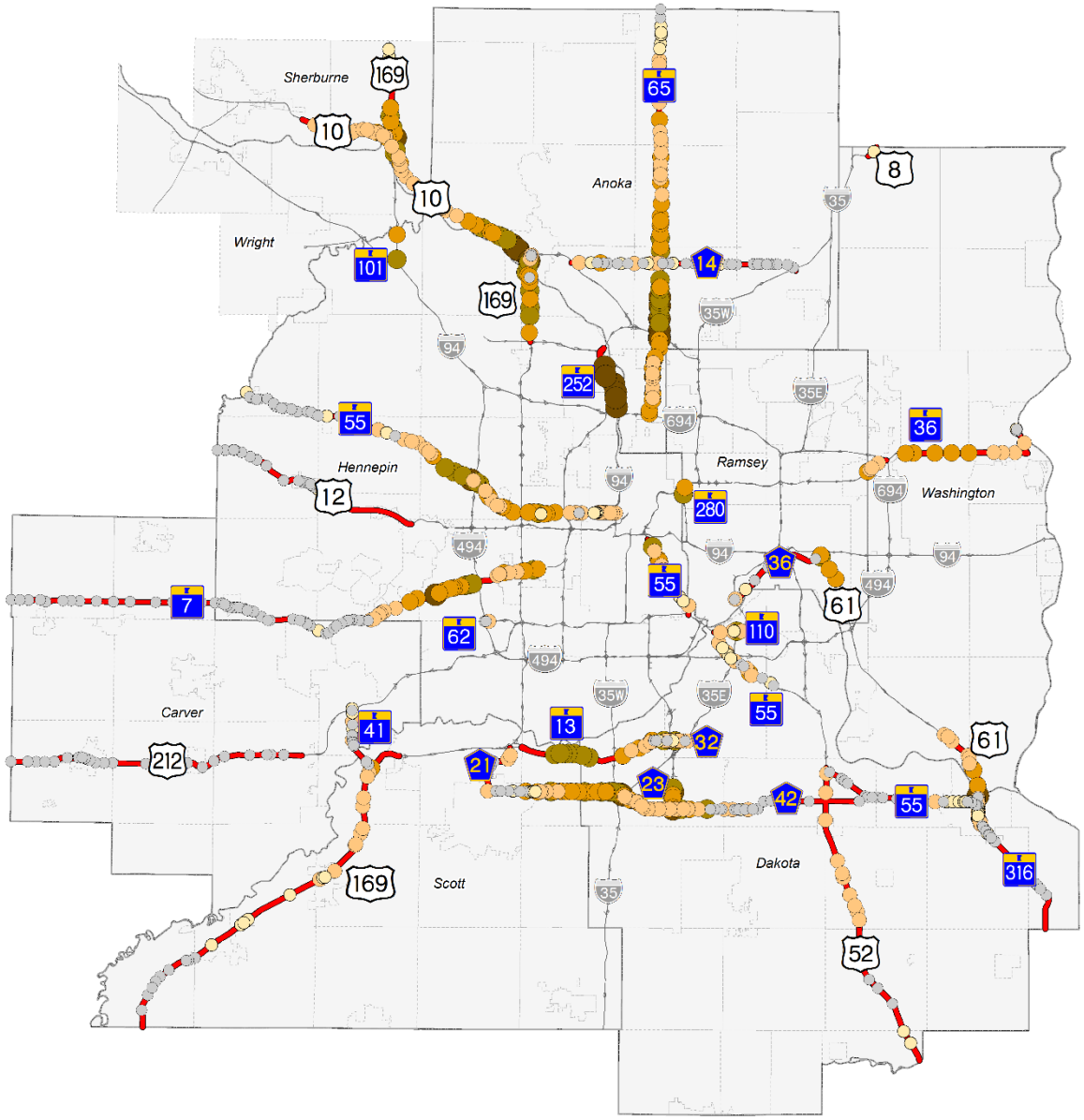
(Items 3, 4, and 6 were sometimes significant in Phase I screening decisions.)

Phase I Screening



Non-Freeway Principal Arterial Study Corridors (300 miles)

Phase I Screening

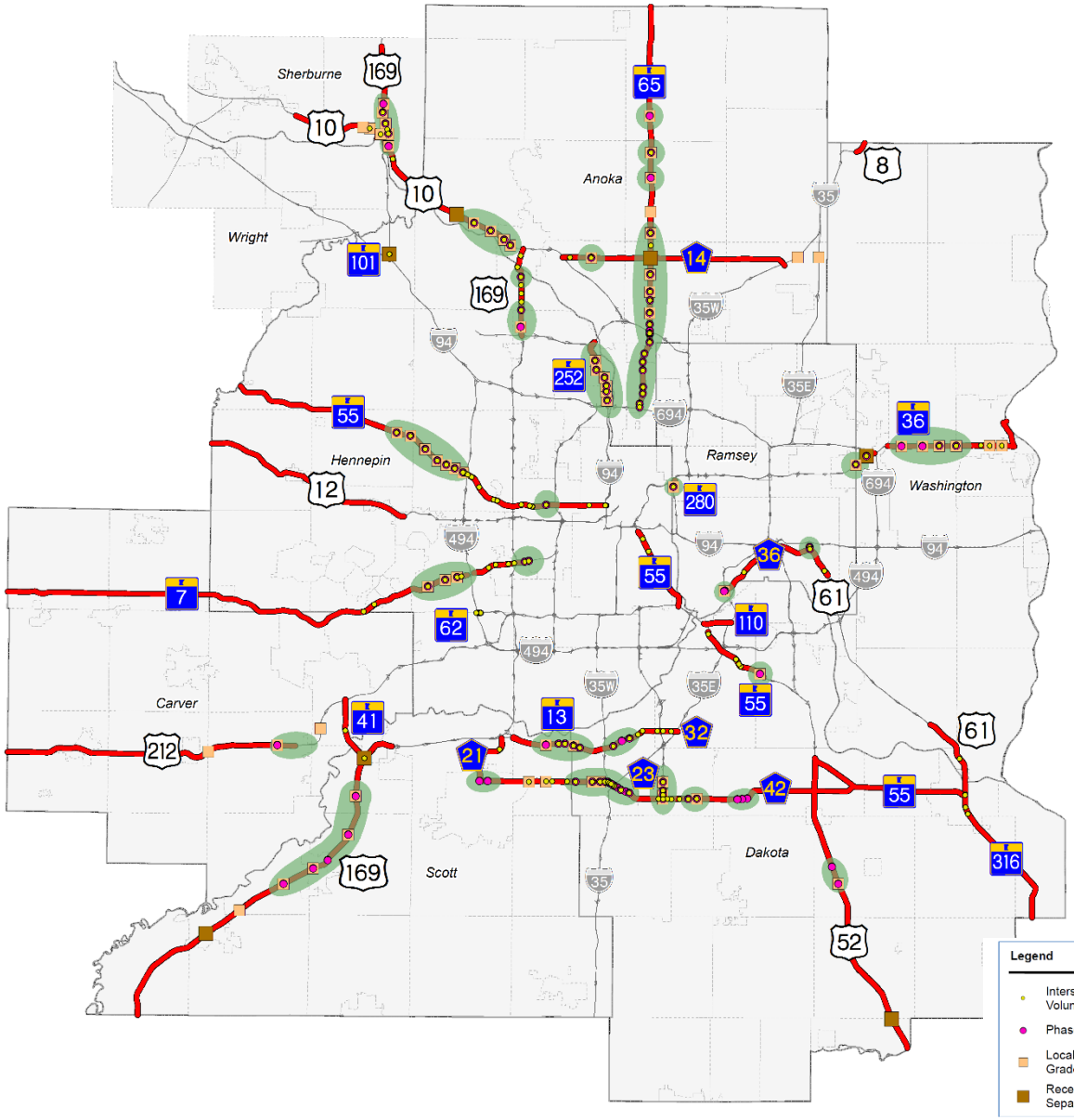


All Intersections (374)

Entering Volumes

- 5435 - 20000
- 20001 - 25000
- 25001 - 35000
- 35001 - 45000
- 45001 - 55000
- 55001 - 68850

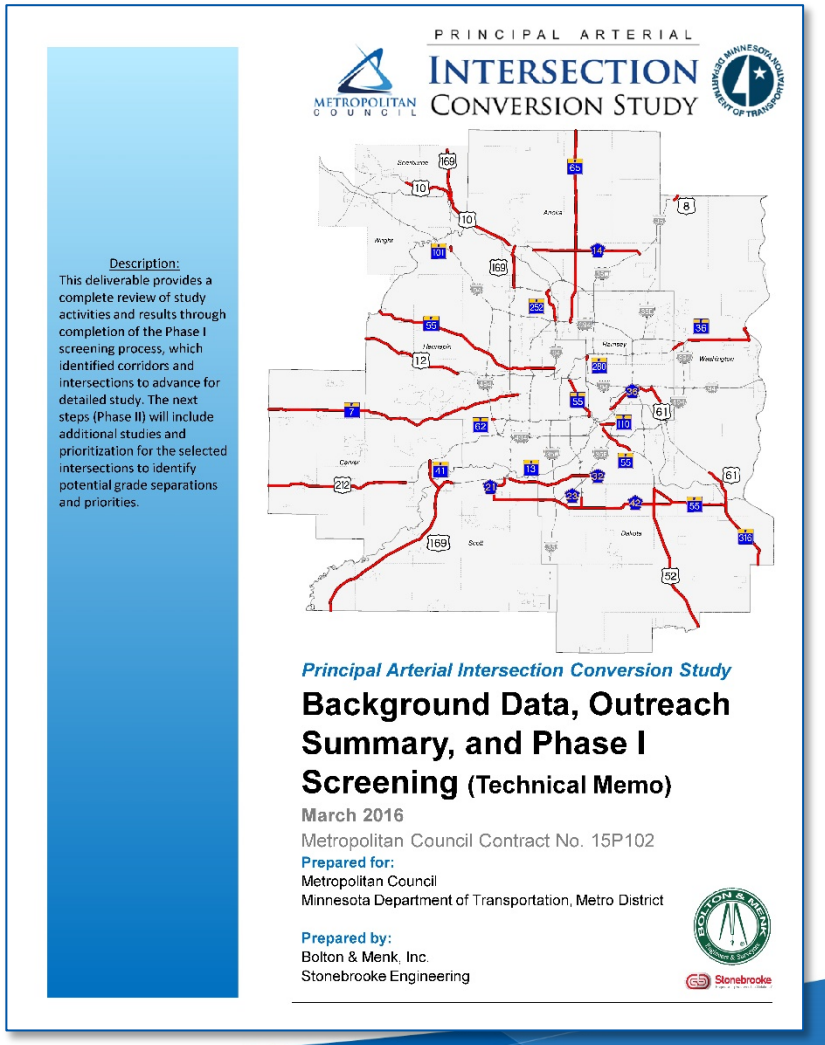
Phase I Screening



104 intersections identified for Phase II analysis

Phase I Results

- Of 374 intersections, 104 (28%) advanced to Phase II
- Some locations exceeding volume criteria were screened out based on context – examples:
  - TH 55 Hiawatha Ave.
  - TH 36 in Oak Park Heights
  - TH 61 in Hastings
- Tech Memo (project website)



Phase II Screening Steps/Criteria

- First… Provide higher scores for intersections that:
  - Serve higher volumes of traffic, reduce mobility, and cause variable travel times? **(Mobility and Reliability)**
  - Have a higher rate/cost of severe crashes? **(Safety)**
  - Can accommodate grade separation, serve regional routes, and leverage other modes? **(Corridor Context)**
- Technical Steering Committee (TSC) members are helping to establish weights

Next Steps (Phase II)

- Finish intersection data collection (detailed turning volumes)
- Compute composite scores
- Run volume/capacity scenarios before and after improvements (FHWA Capacity Analysis Tool)
- Work with TSC members to complete the study
- Final study products: late 2016/early 2017

Questions

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Project Website:

http://www.metrocouncil.org/Transportation/Planning-2/Transit-Plans,-Studies-Reports/Highways-Roads/Principal-Arterial-Intersection-Conversion-Study.aspx