Acknowledgements

- Work completed as part of update to the Congestion Management Process (CMP)
- Led by Metropolitan Council
- Partnership with Kimley-Horn & Associates
What is CMP?
- Congestion Management Process
- Joint effort:
  - Metropolitan Council
  - MnDOT
  - Counties
  - Cities
- Identify and shape projects to improve highway safety and regional movement

Why update CMP?
- Historically congestion measures produced for freeways only
- Extend congestion measurement across arterial network
- Recurring and systematic process for evaluating corridors
Selecting a Measure

- Ongoing evaluation – need to reproduce year after year
- Ensure it is reproducible and consistent
- Appropriate for scale

Performance Measure Considerations: Data Collection

- Difficulty of data collection
- Frequency of data availability
- Sources of data (in-house vs. collaboration with other departments)
- Necessary time and resources
Congestion Evaluation

V/C Performance Measure
**V/C Analysis Process**

1) Analysis Time – V/C calculations will be based on hourly volumes and capacities

2) Volume – AADT counts will be converted to peak hour directional volumes using K-factors representing the 100th highest hour

3) Capacity – obtained from the Regional Travel Demand Model based on roadway type and area type; no adjustments applied

4) Congestion – TBD

**V/C Data Sources and Process**

- ATR stations matched to roadway type and area type designations
- K-factors for 100th highest hour gathered from ATR reports
- Assign peak hour percent of daily traffic and directional split to AADT
5. Review V/C Screening Thresholds

Volume to Capacity ratios were calculated and joined/aggregated to provide a max and mean V/C value for each Segment.

- Datasets used:
  - MnDOT AADT Count Location Volumes (standard k factor (.105) used to convert to hourly volume)
  - Regional model capacities
  - Lane count at each AADT location

  K factor was chosen by analyzing ATR volume data within the Region.

Volume to Capacity Analysis Tool

- Data
  - MnDOT AADT Count Location Volumes (Daily volumes)
    - Standard k factor (.105) used to convert to hourly volume
  - Regional model capacities (Hourly capacities)
  - Lane count at each AADT location (Visual confirmation)

- Approach
  - Each CMP Network Group was filtered and analyzed independently
  - Volume to Capacity ratios were calculated at each volume reporting point
  - Points were joined/aggregated to provide a max and mean V/C value for each segment
Dashboard Demonstration