

# Twin Cities Congestion Analysis Handbook

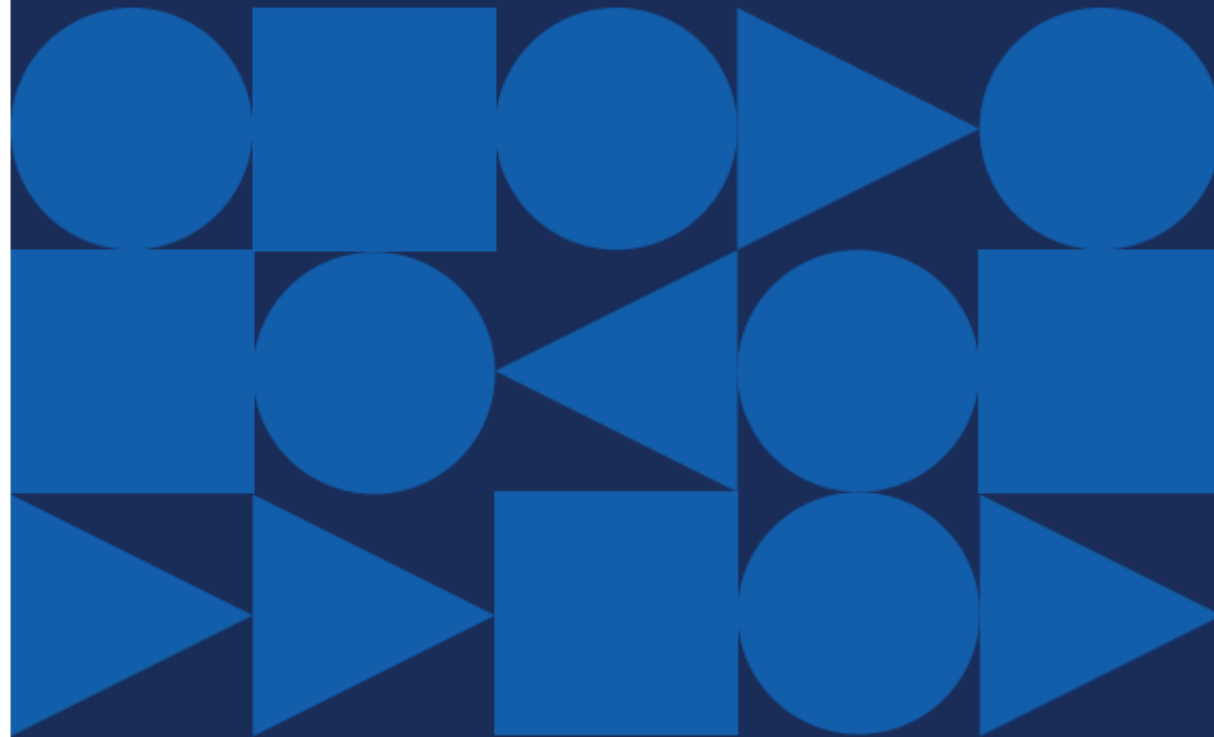
Congestion Management Process (CMP)



11/16/2022 Transportation Advisory Board – Dave Burns and Tim Burkhardt

# Twin Cities Congestion Analysis Handbook

October 2022



## Agenda

- Goals and Approach
- 4-Step Process
- Sample Contents
- Next Steps
- Questions & Discussion



# Goals: Congestion Analysis Handbook

## Provide Guidance

- Provide guidance to stakeholder agencies to help implement the CMP

## Ensure Regional Consistency

- Provide a standardized process for assessing corridor congestion

## Anticipate Multimodal Strategies

- Prepare users to consider multimodal strategies consistent with CMP and TPP

## Emphasize People

- Understand transportation needs of all people who live in the corridor

## Link to Funding

- Align data and strategies with priorities of Regional Solicitation and other sources

# Approach

## Keep it Simple

- Selected data only, GIS/map-based
- Use Travel Time Index (TTI)

## Integrate Lived Experience

- Interpret, don't just report

## Screen for Possible Strategies

- Incorporation of Strategy Review Tool

## Sample Corridors

- Range of locations and facilities

## Living Document

- Update as policy and resources change

# Step 1 of 4

## Screen for Congestion

Guides users to the Met Council Congestion Dashboard to look up TTI values

### Travel Time Index (TTI)\*

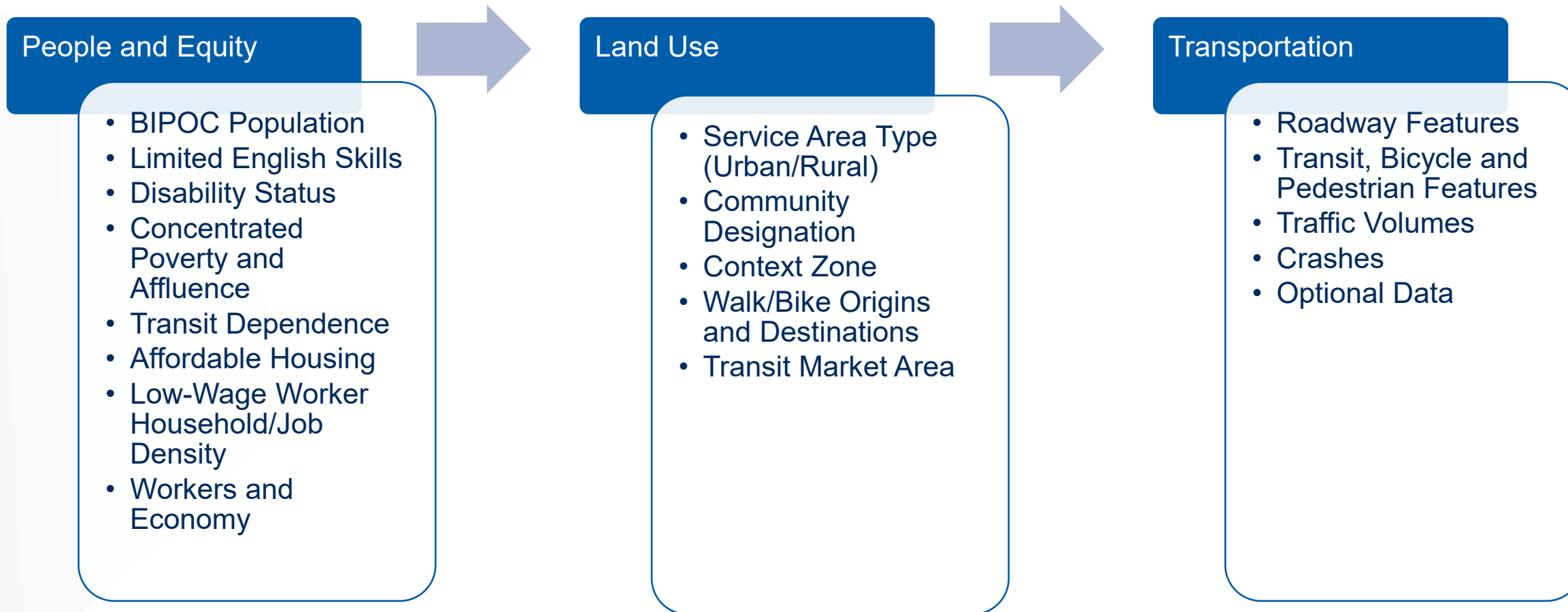
- TTI > 1.25 Congested
- TTI 1.0-1.25 Possibly Congested
- TTI < 1.0 Not Congested

\*TTI: The ratio of *actual travel time* to *free-flow travel time* on a given roadway segment.

# Step 2 of 4

## Understand Context and Causes

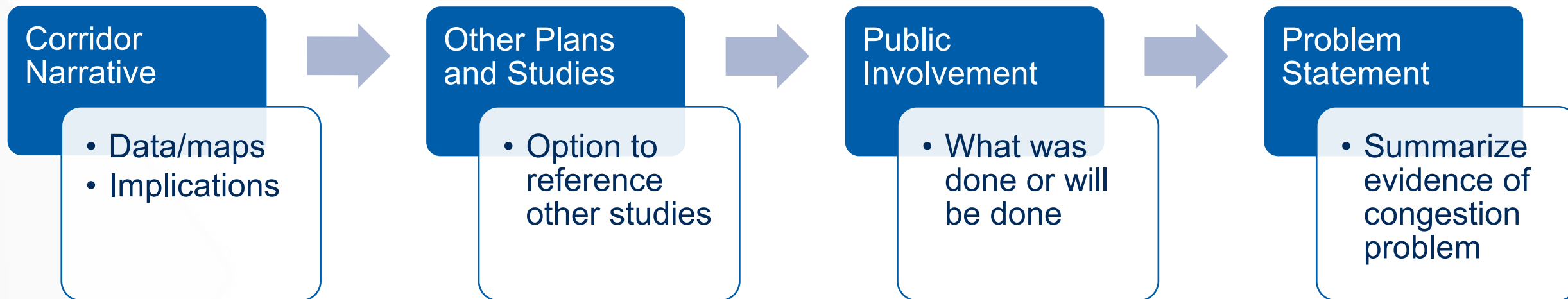
Collect, analyze, and document data to support multimodal strategies



# Step 3 of 4

## Prepare Analysis Summary

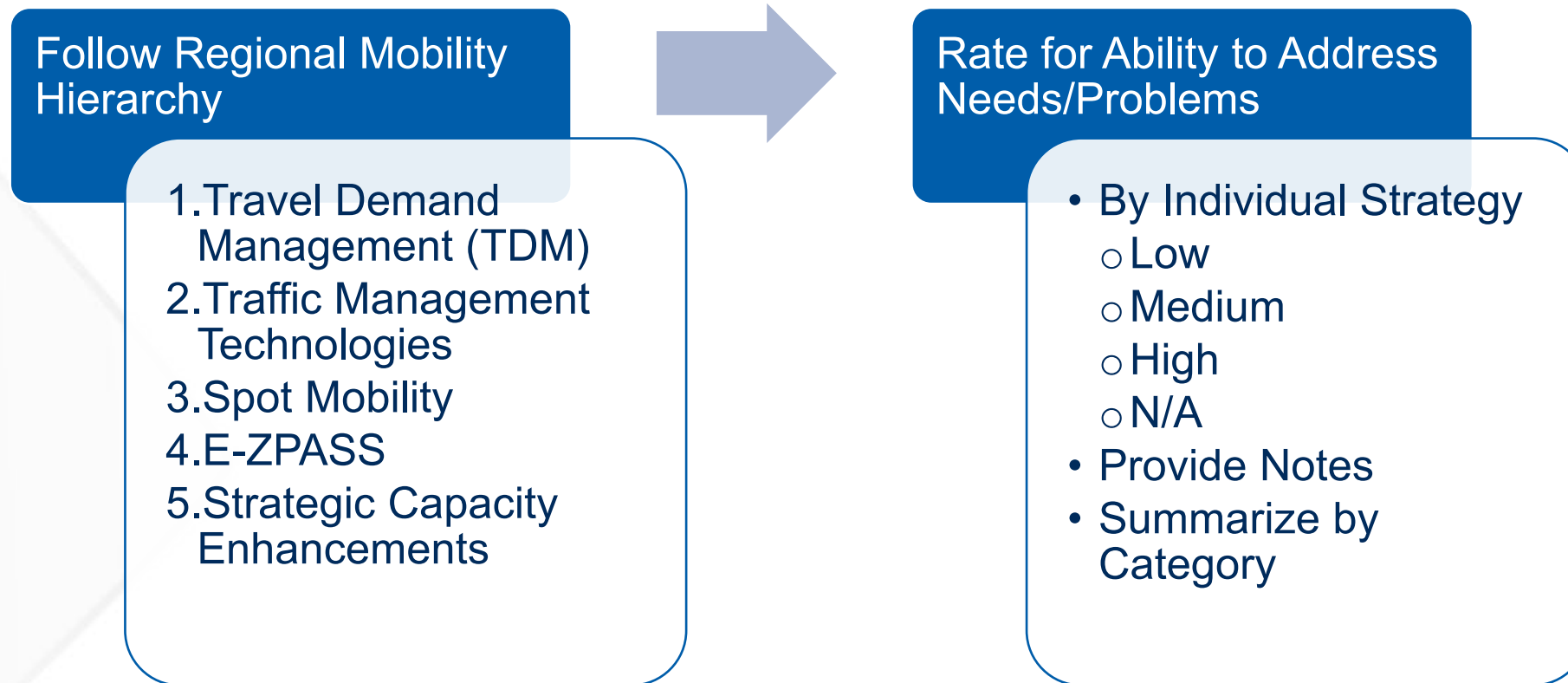
Summarize data and implications and prepare problem statement



# Step 4 of 4

## Consider Strategies

### Review and rate potential strategies to address congestion (Excel tool)






# Sample Contents

## 1. Begins with Instruction Sheets

TWIN CITIES CONGESTION ANALYSIS HANDBOOK



### Transit Dependence

**SUMMARY**

- Prepare a map showing households who lack regular access to a motor vehicle - also known as “transit-dependent households” for meeting their travel needs (please note these households may also rely on walking or biking for their travel).

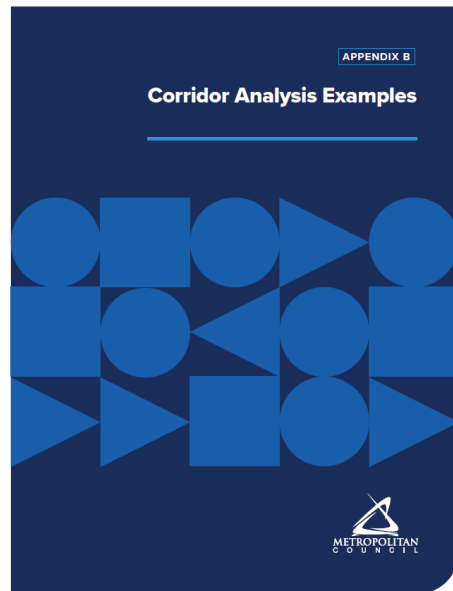
**DATA ELEMENTS**

<b>American Community Survey 5-Year Summary File</b>	<ul style="list-style-type: none"> <li><b>Agency Providing:</b> Metropolitan Council</li> <li><b>Location:</b> Latest ACS 5 Year Summary File (currently the 2016 to 2020 file) available from the Minnesota Geospatial Commons (<a href="https://gisdata.mn.gov/dataset/us-mn-state-metc-society-census-acrs">https://gisdata.mn.gov/dataset/us-mn-state-metc-society-census-acrs</a>)</li> <li><b>Data Interface:</b> Shapefile</li> </ul>
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**PROCESSING AND ANALYSIS**

<b>Transit-Dependent Households Per Census Block Group</b>	<p><b>Step 1: <i>Number</i> of Transit-Dependent Households Per Block Group</b></p> <ul style="list-style-type: none"> <li>Use the variables included in the shapefile to develop this information layer               <ul style="list-style-type: none"> <li>“HH_NOVEH” (households with no vehicles)</li> </ul> </li> </ul> <hr/> <p><b>Step 2: <i>Percent</i> of Transit-Dependent Households Per Block Group</b></p> <ul style="list-style-type: none"> <li>Use the variables included in the shapefile to develop this information layer               <ul style="list-style-type: none"> <li>“HH_NOVEH” (households with no vehicles) and</li> </ul> </li> </ul>
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# 2. Example Narratives



## Assessment/Analysis

### CONGESTION

The travel time index (TTI) ranges from 0.75 to 0.90 depending on the segment and direction. Duration of congestion ranges from 0.3 to 1.1 hours. Based on these measures, the corridor is not congested. However, there have been reports by the public of insufficient gaps to enter traffic and related safety concerns in addition to interest in improved pedestrian and bicycle facilities. For these and other reasons, we have chosen to proceed with this corridor analysis. (Figure 2)

### PEOPLE AND EQUITY

#### *Race and Ethnicity*

According to Metropolitan Council data, census tracts in most of the corridor have 0-5% Black, Indigenous, or People of Color (BIPOC) populations and a small area at the east/northeast end of the corridor has 5-15% BIPOC populations. (Figure 3)

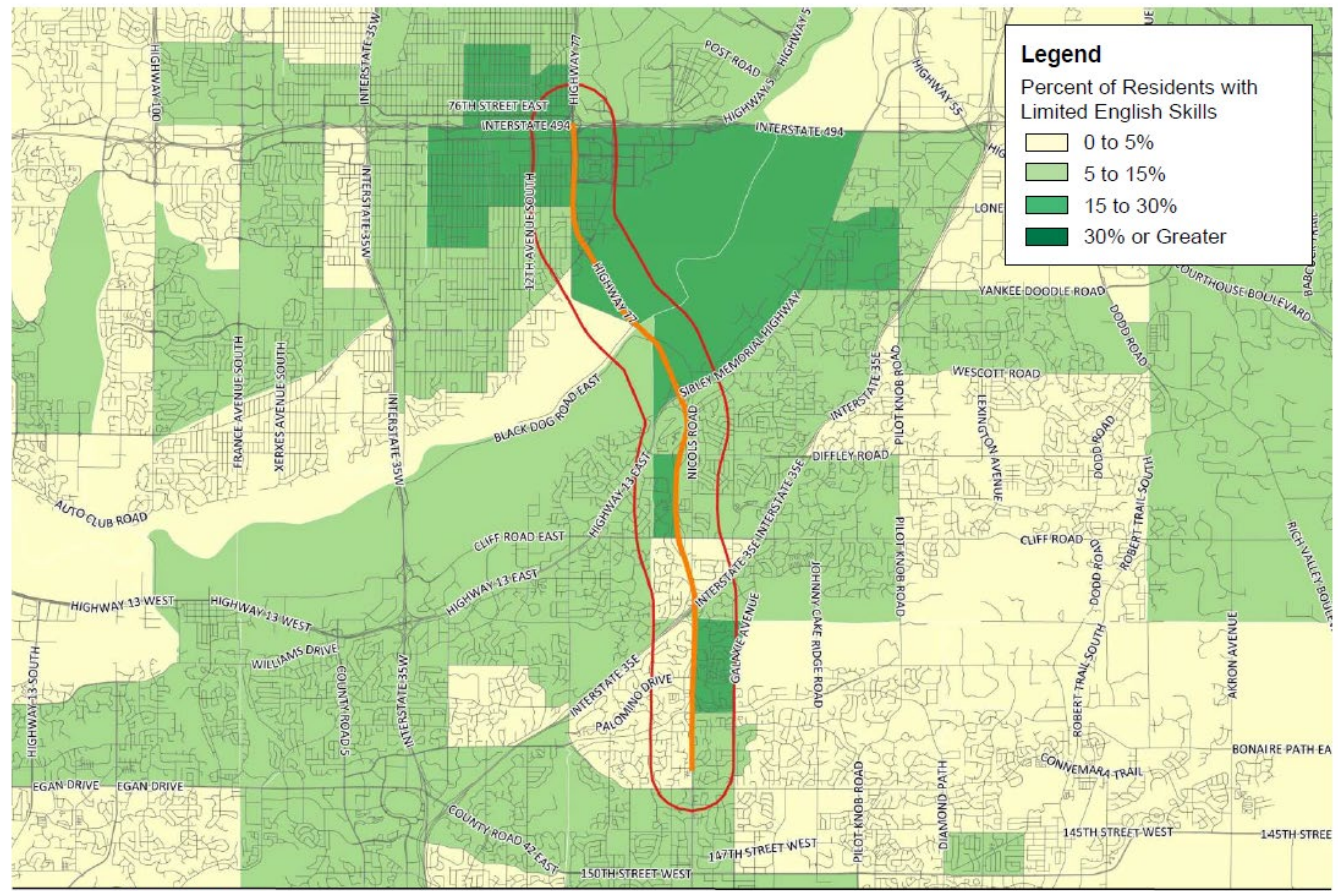
**Implications:** Local knowledge should be used to determine whether additional focused techniques and/or culturally-tailored approaches are needed to reach BIPOC populations in the corridor. Given the relatively low presence of BIPOC populations, development of additional or specific culturally-appropriate approaches may not be cost-effective for increasing engagement along this corridor.

#### *Language Spoken*

According to Metropolitan Council data, the corridor is in an area with 0-5% of residents with limited English language skills. (Figure 4)

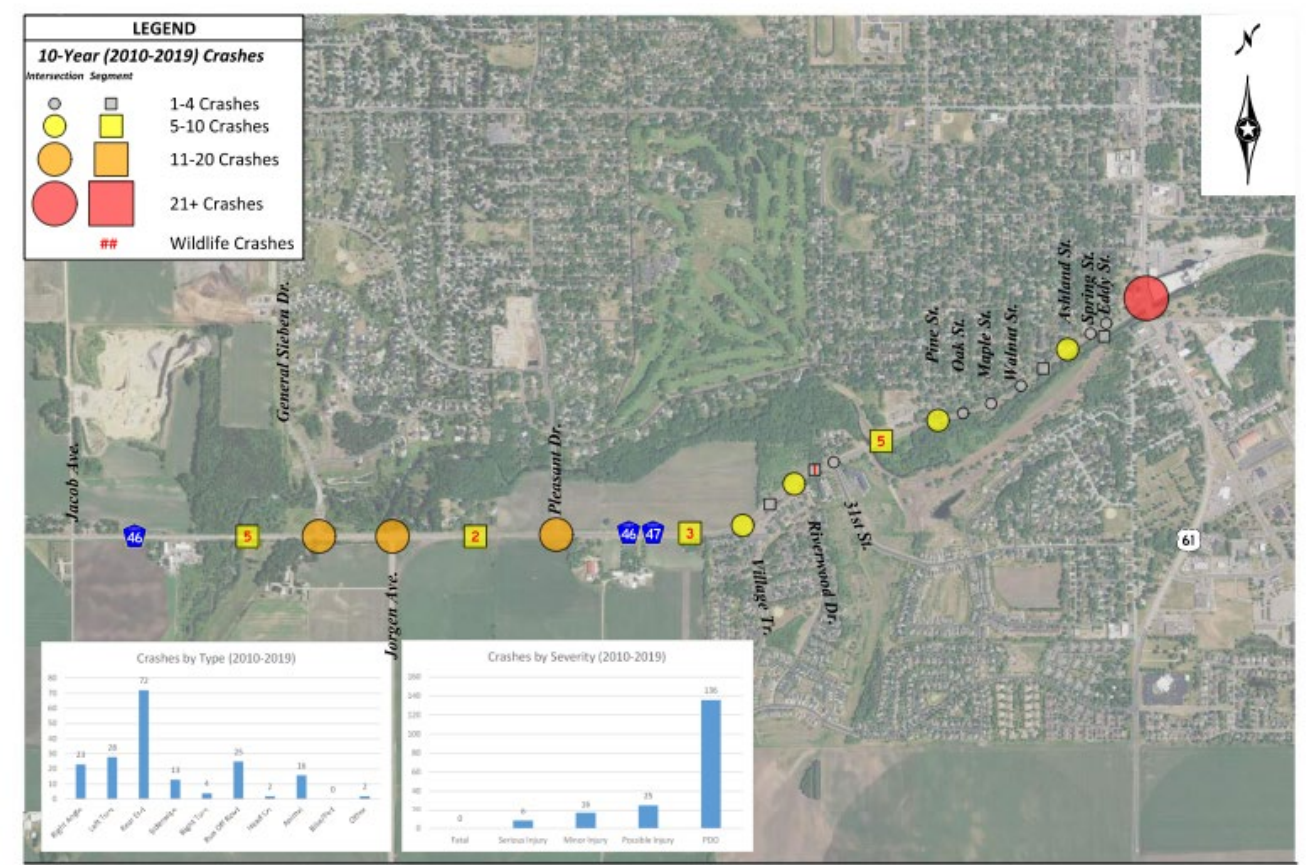
**Implications:** Local knowledge should be used to determine whether additional focused techniques and/or culturally-tailored approaches are needed to reach BIPOC populations in the corridor. Given the relatively low presence of residents with limited English language skills, development of translations or other similar approaches may not be cost-effective for increasing engagement along this corridor. However, services should be made available upon request.

# 3. Supported by Maps/Graphics



Congestion Analysis Handbook  
Example Corridor: TH 77

Figure 4  
Percent of Residents with Limited English Skills



Congestion Analysis Handbook  
Example Corridor: CSAH 46

Figure 19  
Crashes



# 4. Concludes with Strategy Screening Tool

## CMP Strategy Screening: TH 77 Example Corridor

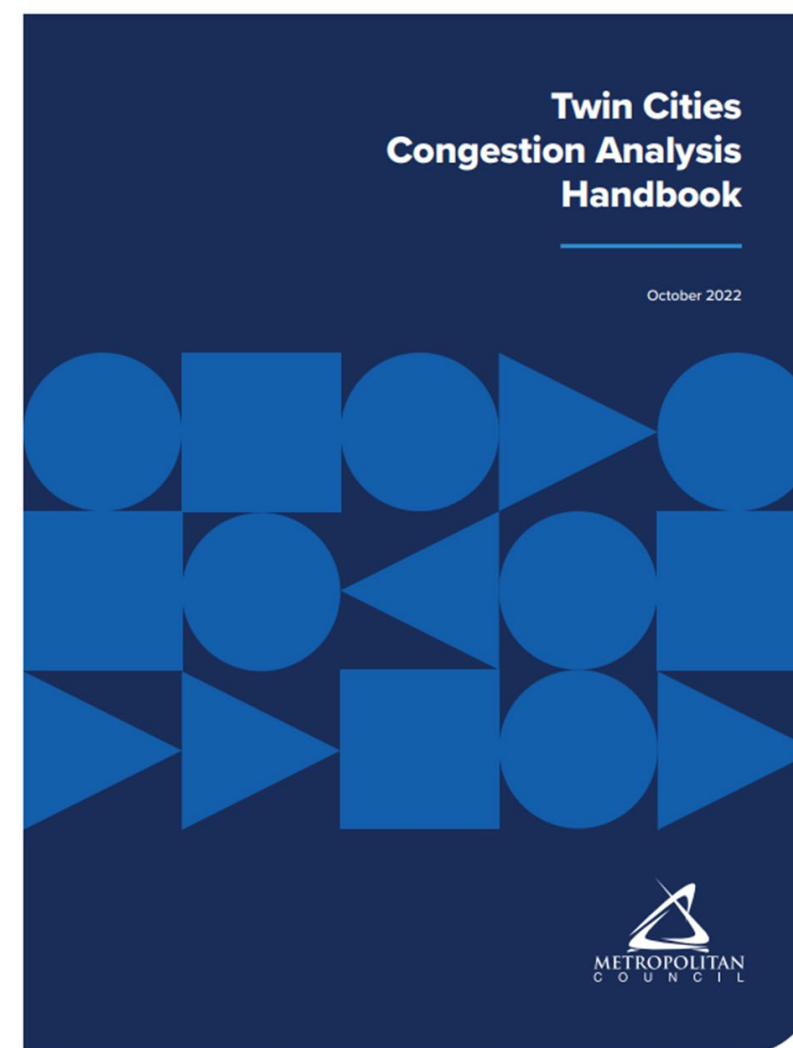
CMP Appendix D ID#	Strategy	Potential of Strategy to Address	
		Rating	Notes
<b>Priority 1. Travel Demand Management</b>			
1.01	Congestion Pricing (MnPASS)	High	TH 77 is a Tier 3 MnPASS corridor: past studies have
1.02	Alternative Work Hours	Low	Could help reduce peak period
1.03	Telecommuting	Medium	Remote work following pandemic
1.04	Guaranteed Ride Home Programs	Low	no info on how relevant this would be
1.05	Alternative Mode Marketing and Education	Low	More transit ridership could reduce
1.06	Safe Routes to School	n/a	Could be part of bigger system
1.07	Preferential or Free Parking	n/a	Don't see how this would help
1.08	Event Transportation Management Plans	n/a	Events are not a congestion cause
1.09	Negotiated Demand Management Agreements	n/a	Don't see how this would help
1.10	Trip Reduction Ordinance	n/a	Assume this is relevant to single
1.11	Infill Developments	n/a	Could be part of bigger system
1.12	Transit Oriented Developments	Low	Could be part of bigger system
1.13	Design Guidelines for Pedestrian-Oriented Development	Low	Could be part of bigger system
1.14	Mixed Use Development	Low	Could be part of bigger system
1.15	Long-Range Comprehensive Land Use Planning	n/a	Already being done within Met
2.01	Transit Capacity Expansion	Low	Improved transit service could help
2.02	Increasing Bus Route Coverage and/or Frequencies	Low	Improved transit service could help
2.03	Implementing Regional Transitways	Low	Red Line is in place; improved service
2.04	Providing Real-Time Information on Transit Routes	n/a	Generally exists already (not mobile)
2.05	Reducing Transit Fares	Low	More transit ridership could reduce
2.06	Providing Transit Advantages	Low	Bus only shoulders already exist
2.07	Provide Transit Signal Priority	Low	Possibly could help with transit
2.08	Encourage Off-Board Fare Collection	n/a	Don't see how this would help

## CSAH 46 Strategy Rating Summary

Category	Summary Rating	Notes
<b>Travel Demand Management</b>	Low	Adding pedestrian/bicycle facilities on CSAH 46 appears warranted to improve access, circulation and safety; could support removing some driving trips over time but not a major influence on congestion
<b>Traffic Management Technologies</b>	Low	While overall this category is not applicable to CSAH 46, two exceptions are 1) to implement improved access management and 2) to explore whether signal timing or related improvements are needed at the TH 61/CSAH 46 signal
<b>Spot Mobility</b>	High	Intersection improvements and turn lanes appear to be applicable strategies but should be considered within the context of the constrained right-of-way and concerns about speeding in the corridor
<b>E-ZPass</b>	n/a	E-ZPass is not applicable on CSAH 46
<b>Strategic Capacity Enhancements</b>	n/a	No need for additional mainline capacity identified

# Next Steps

- Finalize and release Handbook
- New contract to test tool within more corridor contexts (on demand)
- Continue to incorporate input from stakeholders and refine as needed
- Update/refine as CMP Policies and Procedures Handbook is refined





# Questions/Discussion

**David Burns**

**Planning Analyst – MTS Planning**

**[David.Burns@metc.state.mn.us](mailto:David.Burns@metc.state.mn.us)**

**Tim Burkhardt, AICP**

**Project Manager - Alliant Engineering**

**[tburkhardt@alliant-inc.com](mailto:tburkhardt@alliant-inc.com)**

