Route 5 Transit Signal Priority Project

Presented By:

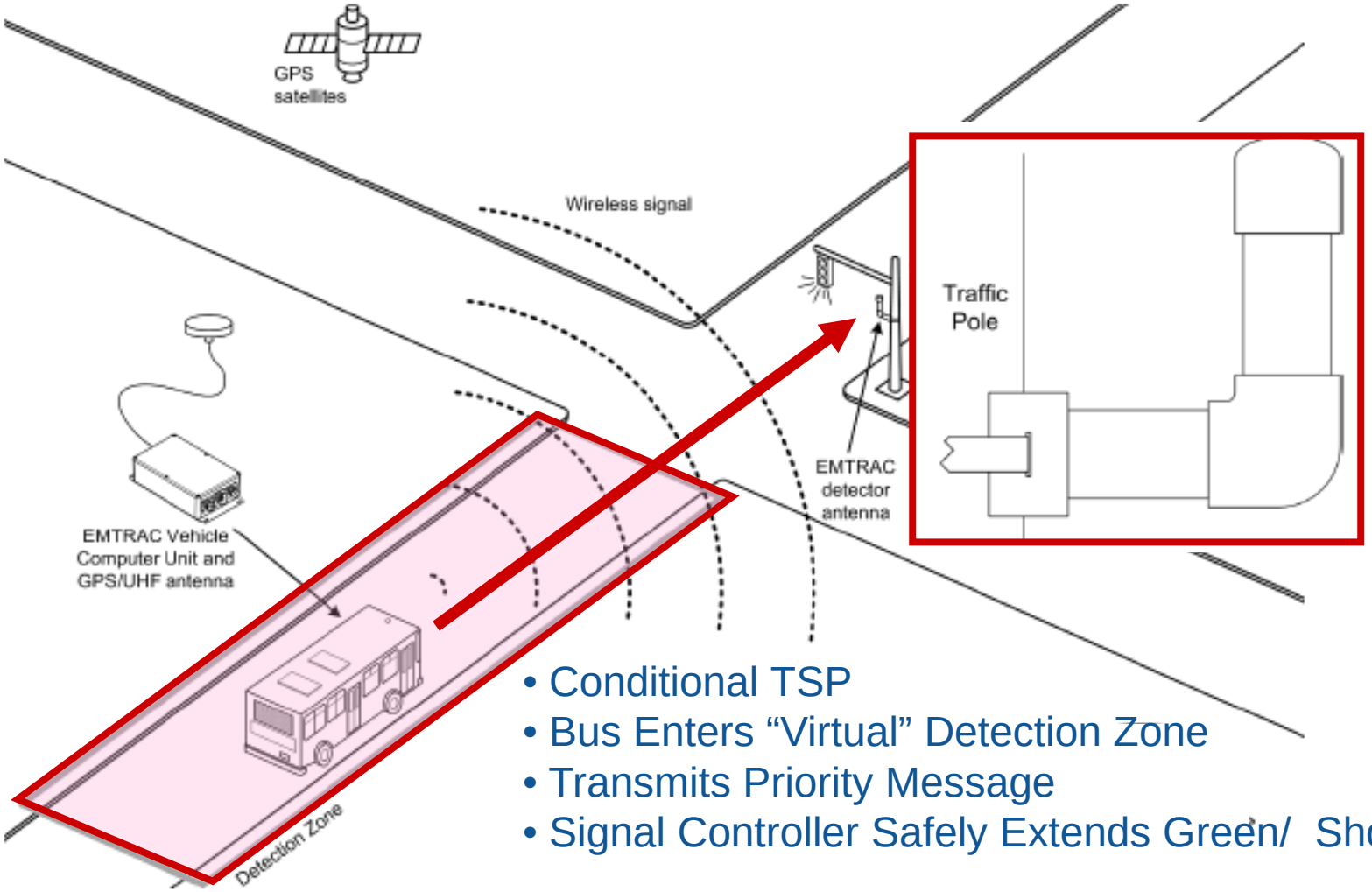
Gary Nyberg, Manager of Technology Systems
Metro Transit Bus Transportation

Metro Transit
a service of the Metropolitan Council

What is Transit Signal Priority (TSP)?

- An operational strategy where the buses 'request' priority treatment to facilitate a swifter movement of buses through signalized intersections.
- Typical strategies include :
  - Extending a green light
  - Reducing a red light
  - Request sent only in certain pre-defined conditions (e.g., late arriving buses only).
- Allows for more reliable travel times and improved schedule adherence.
- It is NOT Traffic Signal Preemption

How does TSP work?



- Conditional TSP
- Bus Enters “Virtual” Detection Zone
- Transmits Priority Message
- Signal Controller Safely Extends Green/ Shortens Red

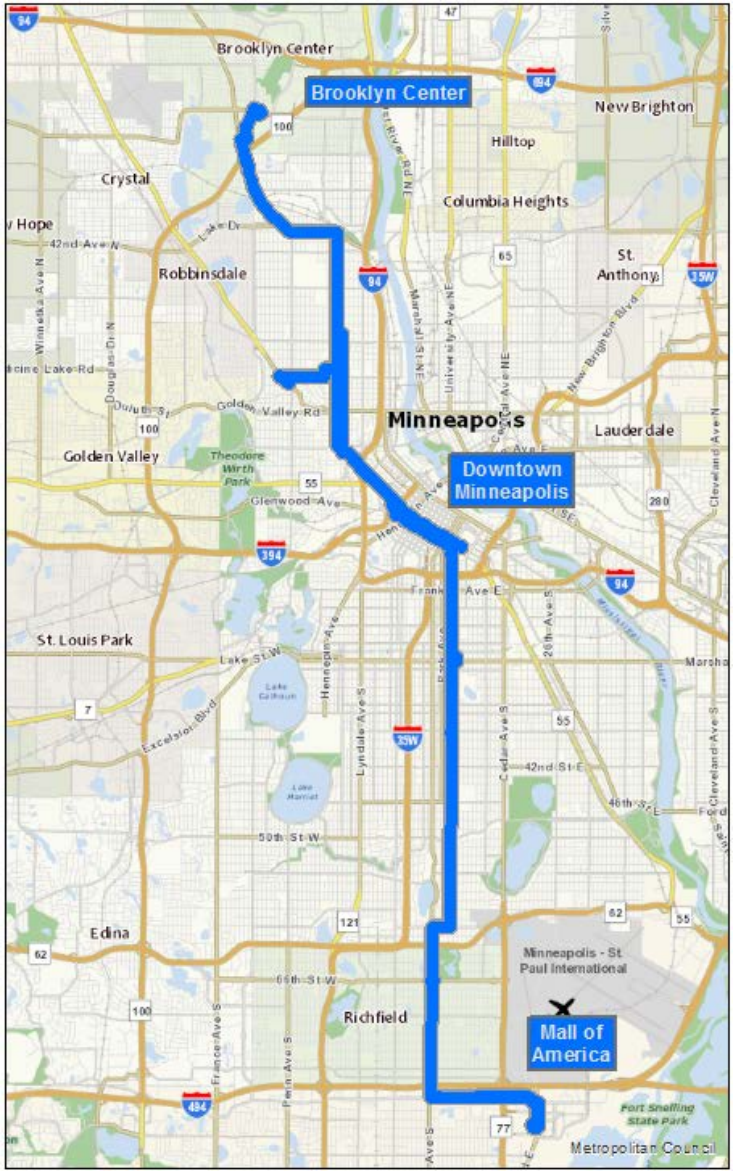
Metro Transit
a service of the Metropolitan Council

Project Background

- In 2015, a tool was developed to help Internal Staff Evaluate, Prioritize, and Estimate Costs to Deploy TSP on various Route Corridors and Segments
- Criteria included
  - Percent Late Timepoint Crossings
  - Average Weekly Ridership
  - Scheduled In-Service Speed
  - Average & Variability of Observed In-Service Speed
  - Number of trips operated on the segment
- From this process, Route 5 within Minneapolis was chosen as the highest priority Route to implement TSP.

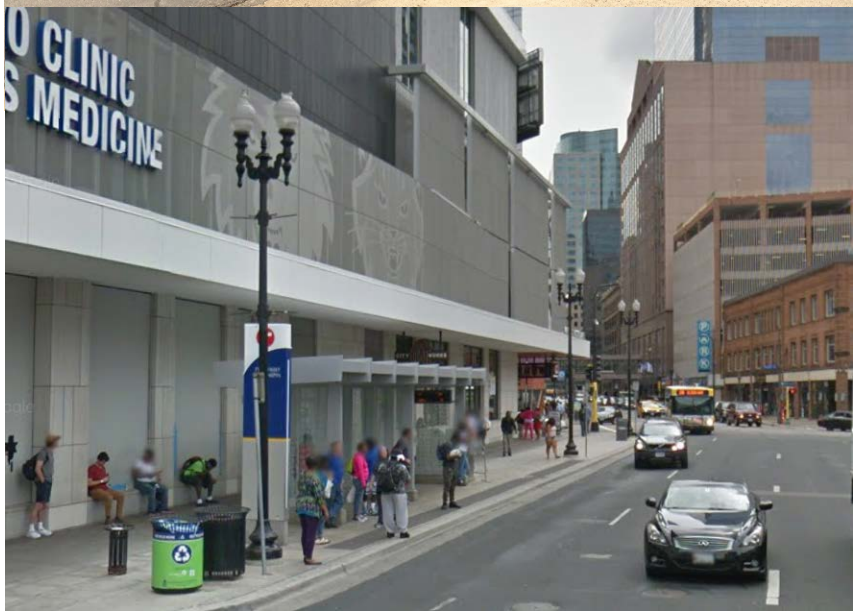
Route 5 Overview

- Long Route
- Busy Route
- High Ridership
- On Time Performance Challenges
- High Service Variability



Route 5 Project Goals

- Improve on-time performance, travel time, & service reliability.
- Provide transit advantage in line with agency equity initiatives.
- Thrive 2040 - provide faster core local route service



Fremont/ Emerson TSP Corridor

Between 7th St. N./ Twins Way & 44th Ave. N./ Penn Ave. N.

- 4.9 Mile Corridor
- 22 Traffic Signals Assessed; 19 planned to have TSP installed
- 66% of Corridor within ACP50
- 4,913 Average Weekday Rides in the corridor area (7,895 in North Half of Route)
- 1–3 mins. Est. Travel Time Savings

Chicago Ave. TSP Corridor

Between Chicago Ave./ E. 14th St. & Chicago Ave./ E. 54th St.

- 4.4 Mile Corridor
- 19 Traffic Signals Assessed; 12 planned to have TSP installed
- 61% of Corridor within ACP50
- 6,028 Average Weekday Rides in the corridor area (10,927 in South Half of Route)
- 1–3 mins. Est. Travel Time Savings

Estimated Project Budget

On Board Bus Estimated Costs: (all buses currently equipped)	$ 0
Intersection HW Estimated Costs: (includes Priority Detectors, Detector Racks, Communication, & Configuration)	$377,000
Internal & Consultant Engineering Estimated Costs:	$80,000
Total Estimated Costs:	**$457,000**

Metro Transit
a service of the Metropolitan Council

Project Timeline

• TSP Parameters Developed	Complete
• FTA Funding Approval	Complete
• TSP Hardware Delivered	Sept. 2017
• Install Complete/ Active – North Half	Dec. 2017
• Install Complete/ Active – South Half	April 2018
• Final System Acceptance Testing	May 2018
• Evaluation/ Close Out	June 2018

Thank You

Gary Nyberg
Manager - Transit Technology Systems
Metro Transit Bus Operations
gary.nyberg@metrotransit.org
612-349-7303

Metro Transit
a service of the Metropolitan Council