Complete Streets Checklist **GUIDE**

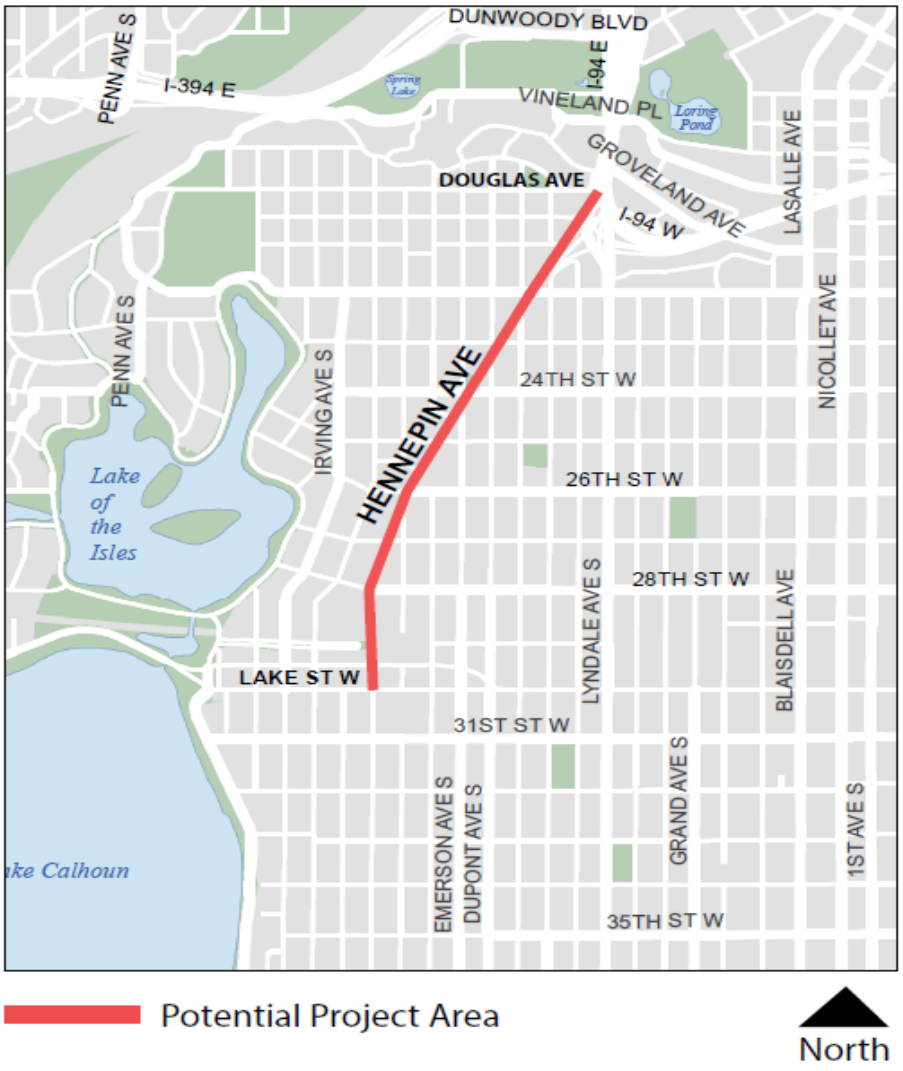
Minneapolis
City of Lakes

A. Project Overview

Project Name: **Hennepin Avenue Reconstruction**
Improvement Type: **Reconstruction**
City Project ID: **PV-158**
Facility Jurisdiction: **City of Minneapolis**
External Agencies: **Metro Transit, Hennepin County, MnDOT, MPRB**
Project Length: **1.36 miles**

Project Limits: **Douglas Ave to W Lake St**
Date Completed: **2026**
TPP Project Manager: **Becca Hughes**
TED Project Manager: **Adam Hayow**

Project Location Map



Description:	The proposed project is a complete reconstruction of Hennepin Avenue from Douglas Avenue to West Lake Street.		
Project Elements:	The proposed project will reconstruct the pavement surface, curb and gutter, sidewalks, and consideration of shelters/platforms for the future Metro Transit E Line. Landscaping, lighting, and street furniture may also be included in the project.		
Context Considerations:	The right-of-way width is 88 feet wide between W Lake St and Colfax Ave S and 30-32 feet between Franklin Ave W and Douglas Ave.		
Ward(s):	7, 10	**Neighborhood(s):**	Lowry Hill, East Isles, Lowry Hill East
Budget:	$32 million	**Funding Sources:**	Federal, MSA, Assessments, Net Debt Bonds
Schedule:	Preliminary Planning/Design: 2020-2021 Concept approval: Spring 2022 Final Design: 2023 Construction: 2024-2026		

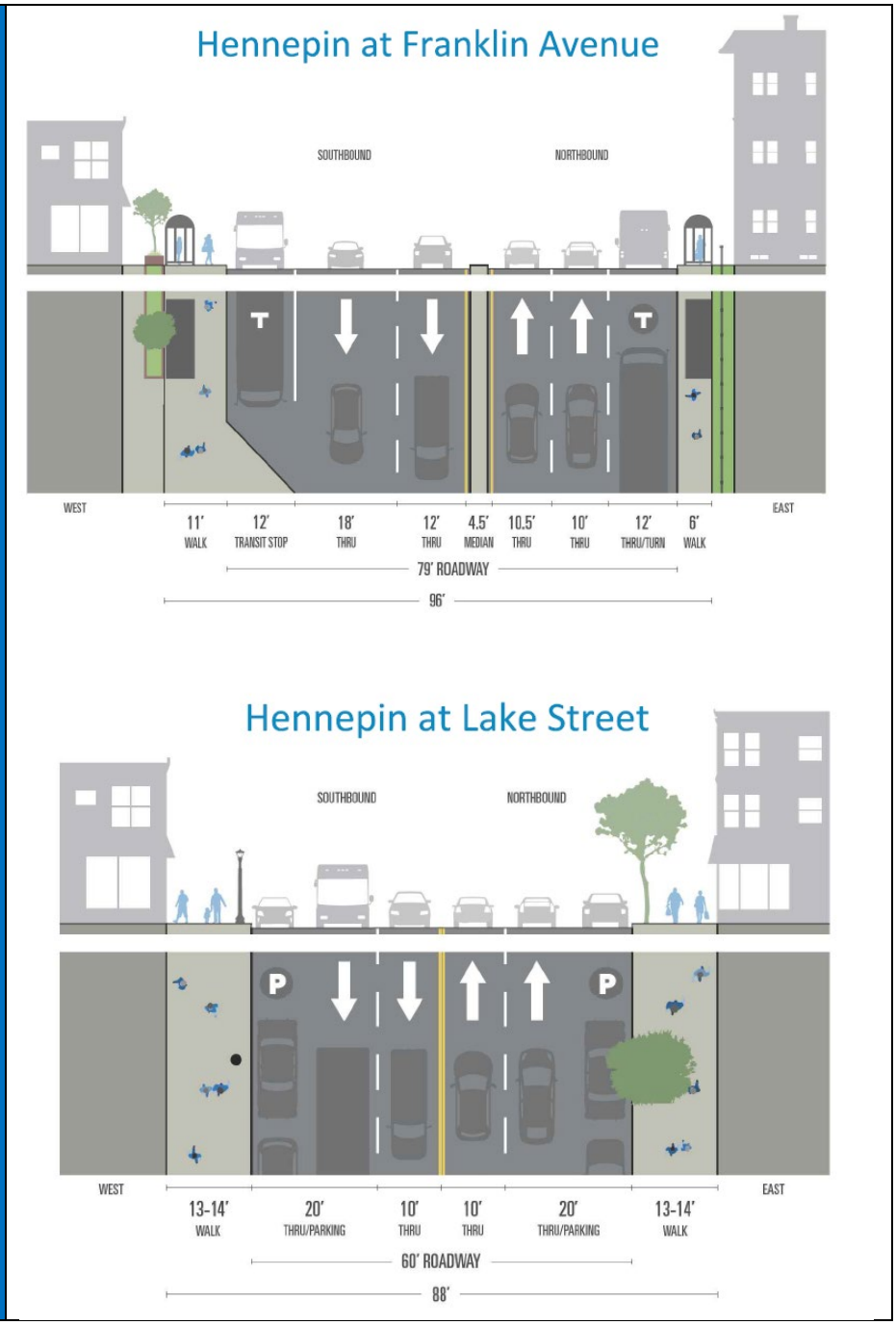
ALIGNMENT WITH TAP PRIORITY NETWORKS

Pedestrian Priority Network:	This segment of Hennepin Avenue is identified on the Pedestrian Priority Network (PPN). It will include elements such as reduced crossing distance, enhanced pedestrian crossings, curb extensions on cross/intersecting streets, medians, and 6'-8' sidewalks along the corridor.
All Ages and Abilities Network:	This segment of Hennepin Avenue is identified on the All Ages and Abilities Network (AAA). It will include elements such as a sidewalk level two-way bikeway.
Transit Priority Project:	This segment of Hennepin Avenue is identified as a Transit Priority Route. It will include elements such as dedicated transit only lanes from Douglas Ave to Uptown Transit Station and BRT stations at Franklin Ave, W 25th St, and the Uptown Transit Station.
Truck Route Network:	This segment of Hennepin Avenue is identified on the Truck Route Network. It will include elements such as one thru lane in each direction, left turn lanes at key intersections, and select parking/loading zones.

B. Existing Conditions

Street Typology:	Mixed Use Regional Connector (Douglas to Franklin) Mixed Use Commercial Connector (Franklin to Lake)	**Special Roadway Designations:**	MSA Route 425
Nearby Traffic Generators:	Downtown Minneapolis, Uptown, Lyn-Lake, I-94 and I-394	**Nearby Destinations:**	Downtown, Walker Art Center, Sculpture Garden, Dunwoody, MCAD, Calhoun Square and various commercial establishments
Zoning District(s):	Urban neighborhood; Corridor mixed use; Community mixed use; Destination mixed use; Parks and open space	**Place Type and Land Use(s):**	Activity Center, Commercial Corridor – Predominantly commercial, office and high density residential
Existing R/W Width:	88' – Between W Lake St and Colfax Ave S; 30-32' - Between Franklin Ave W and Douglas Ave	**Functional Classification:**	A-Minor Augmentor
Year Built and Last Project:	Built: 1957 (Lake to Colfax) Renovated: 2000 (Lake to Colfax) Sealcoat: 2009 (Lake to Colfax) *Lagoon to The Mall – built in 1980 and renovated in 2000	**Pavement Condition Index and Year Inspected:**	61/100 (measured in 2017)
Relevant Plans and/or Studies:	Transportation Action Plan, Street Design Guide, Uptown Small Area Plan, Metro Transit Arterial Transitway Corridors Study		
Planned Development(s):	Site work at Jefferson School; Mixed use development at 1930 Hennepin Ave, Mixed use development at 2841 Hennepin Ave		
Relevant Programmed Improvements:	Franklin Ave resurfacing (2021) Franklin Ave reconstruction (2022) METRO E-Line project (2024) METRO B-Line project (2022)		

Existing Cross-Section



PEDESTRIAN ELEMENTS

Sidewalks: Yes, width varies 6'-14' – some locations include sights/light poles that may impact the effective sidewalk width
Sidewalk Gaps: No
Other Nearby Multi-Use Trails: Yes - Midtown Greenway, Loring Greenway
Conflict Points: Intersections and driveways along the corridor

Pedestrian Volumes: 770-3,400 (2018)
Pedestrian Collisions in the last 10 years: 55 (2011-Sept. 2021)
Ave. Intersection Crossing Distance: 60'
Safe Routes to School Route: Intersecting route along W 22nd St across Hennepin Ave
Level Driveway Crossings: Yes

Traffic Buffer? Varies, 0'-8'
Type: Varies – boulevards, furnishing zone
Dimensions: 0'-8'
Marked Crosswalks? Yes, at all signalized crossings along corridor
Type: Zebra

Other Features? N/A

ADA Transition Plan
High Priority Intersection(s): Douglas, Summit, Franklin, Colfax, W 22nd St, Dupont, Emerson Ave, W 25th ½ St, W 27th St
Non-Compliant Intersection(s): Douglas, Summit, Franklin, Colfax, W 22nd St, Dupont, Emerson Ave, W 25th ½ St, W 27th St

BICYCLE AND MICROMOBILITY ELEMENTS

On-Street Bicycle Facility: No
Dimensions: N/A
Existing or Future AAA network facility? Future AAA
Bicycle Volumes: 220-280 (2018)
Bicycle Collisions in the last 10 years: 23 (2011 – Sept 2021)
Conflict Points: Intersections, driveways, bus stops
Existing Bikeway Connections: Franklin Ave W (Hennepin to Penn), W 24th St, W 26th St, W 28th St, Hennepin Ave (south of Lake St)
Type: *Off street trail, protected bikeways, on street bike lanes*

Other Features? N/A

Planned Bikeway Connections: Franklin Ave (Hennepin to Lyndale)
Low-stress bikeways: Lake of the Isle Trail, Bryant Ave Bike Blvd, Midtown Greenway, Loring Greenway
Other Nearby Bikeways: N/A

Other multimodal facilities: Nice Ride stations near W 28th St, W 27th St, W 24th St, and Dupont/W 22nd St

Dimensions: Varies

TRANSIT ELEMENTS

Transit Service: Yes - Routes 2, 6, 17, 23, 612

High-Frequency Transit Network: Yes

Existing or Planned Transitway: Yes – Arterial BRT (E Line)

TAP Transit Priority Projects: Yes

Stop Types: 16 existing - near side, far side

Other Features? Peak hour bus only lanes – 7-9am Lake to 28th St & 25th St to Franklin Ave; 4-6pm 25th St to 29th St

CURBSIDE MANAGEMENT ELEMENTS

On-Street Parking: Yes – variety of both metered and unmetered parking; various time restricted parking

Delivery/Loading Zones: Yes – various delivery/loading zones along the corridor

Valet/Taxi Zones: Yes – NB Hennepin between Lagoon and W 29th St 9pm-2am Friday-Sunday; 10pm-3am Thursday-Sunday

PUBLIC REALM FURNISHINGS, GREENING, AND LIGHTING

Street Furnishings: Lighting, benches, bike racks, banners, bus shelters
Greening Features (either decorative or green stormwater infrastructure): Trees and perennials in pocket parks, trees in turf boulevards

Street Lighting: Yes

Street Type: Mixed Use Regional Connector (Douglas to Franklin); Mixed Use Commercial Connector (Franklin to Lake)
Land Uses:

- Urban neighborhood
- Corridor mixed use
- Community mixed use
- Destination mixed use
- Parks and open space

MOTORIZED VEHICLE ELEMENTS

Existing Traffic Volumes: 15,000 – 31,500 AADT (2018)
Existing Truck Volumes (if available): N/A
Projected Traffic Volumes: 20% growth in person trips; 0% vehicle traffic growth due to increased walk, bike, and transit mode shares
Motor Vehicle Collisions: 768 (2011 – Sept 2021)

Critical Crash Rates (if available): 2006 – Mar 2019

Intersections with Critical Crash Rates > 1.0 are:

- 27th St (1.05)
- Lagoon Ave (1.08)

Segments with Critical Crash Rates >1.0 are:

- 26th St to Girard Ave (1.85)
- Girard Ave to 27th St (1.60)
- 27th St to 28th St (1.24)
- 29th St to Lagoon Ave (1.04)

If yes describe: N/A
Modal Conflict Point(s): Intersections, crosswalks, transit stops, driveways
Intersection Controls: Signals
Truck Route: Yes, MSA Route

Prohibited Movement(s): Intersecting one-ways
Skewed or Atypical Intersection(s): Skewed intersections

Roadway Restrictions: N/A
Known Drainage Issues: Yes – isolated flooding after rain events

Sight Distance Issues: Yes

Bridges: Yes
Rail Crossings: No

Origins and Destinations: Streetlight data showed that about 50% of trips in the area are through trips with the majority on Hennepin Ave and another 10-15% on neighborhood streets east and west of Hennepin.

Is this corridor identified as a High Injury Street? Yes

Non-Intersection Access: driveways

Other Features? N/A

C. Preliminary Design: 0%

CORE TEAM:

Transportation Planning and Programming: Becca Hughes, Amy Barnstorff
Traffic Engineering and Design: Adam Hayow
Traffic and Parking Services: Allan Klugman
Surface Water and Sewers: Kelly Moriarity, Lisa Goddard
Transportation Maintenance and Repair: Steve Collin
Water Treatment and Distribution: Bob Ervin
Community Planning and Economic Development: Madel Mouta

SITE VISIT(S):

Numerous site visits were conducted between 2017-2021. Select site visits outlined below.

Date: 10/15/2018
Observations: Collect parking supply and occupancy data

Date: 4/16/2020
Observations: Pedestrian, bicycle, transit, and traffic operations observations

Date: 1/14/2021
Observations: Review driveways

PEDESTRIAN AND PUBLIC REALM ELEMENTS/FURNISHINGS

Included in Project: ☒Yes ☐No
Identified in Pedestrian Priority Network: ☒Yes ☐No
Additional Technical Analysis: ☐Yes ☒No, if yes list (provide in appendix):
Street Type: Mixed Use Regional Connector (Douglas to Franklin) and Mixed Use Commercial Connector (Franklin to Lake)

Pedestrian and Public Realm Guidelines

	Existing	Guidelines		Design Concept(s)
		Acceptable	Recommended	
Boulevard/Furnishing Zone	0’-8’	7’	8.5’	Varies 3’-8’
Pedestrian clear zone	5-6’	5’	8’	8’ total (clear zone + frontage) south of Franklin Ave with short segments of 5.5-7’ sidewalks at constrained points; 6’ total (clear zone + frontage) north of Franklin Ave
Frontage zone	0’	1.5’	3’	See notes above

Other pedestrian elements included or under consideration (see list above): N/A
If design recommendation is less than recommended, provide explanation: Some segments do not meet the recommended pedestrian clear zone due to constrained space at left-turn lanes and selected BRT platforms

Design Impact: ☒Improved ☐Unchanged ☐Degraded
Easements Required: ☒Yes ☐No
Street Lighting: ☒Yes ☐No (Refer to Street Lighting Policy), if yes describe: Pedestrian Street Lighting Corridor
Street Furnishings: ☒Yes ☐No (Refer to DPRF and PRG), if yes describe: Existing furnishings maintained by Special Service Districts. Desire for existing or new furnishings will be coordinated with the SSDs.
Greening Elements: ☒Yes ☐No (Refer to DPRF and PRG), if yes describe: Project includes trees
Maintenance Considerations: N/A

BIKEWAYS AND MICROMOBILITY ELEMENTS

Included in Project: ☒Yes ☐No
Identified in AAA Network: ☒Yes ☐No
Additional Technical Analysis: ☒Yes ☐No, if yes list (provide in appendix): Additional analysis can be found on the project website - https://www.minneapolismn.gov/media/-www-content-assets/documents/Open-House-2-Design-Analysis-and-Concepts---Hennepin-Ave.-S.-Reconstruction.pdf
Street Type: Mixed Use Regional Connector (Douglas to Franklin) and Mixed Use Commercial Connector
Bicycle Facility: Sidewalk-level two-way cycle track

Bicycle Guidelines

	Existing	Guidelines		Design Concept(s)
		Acceptable	Recommended	
Bike Lane	N/A	5’	6’	NA
Buffer	N/A	.5 - 1.5’	1.5’	2’
Protected Bike Lane	N/A	One way – 5’; Two-way – 8’	One way – 6-7’; Two-way – 10-12’	8’-10’

Other bicycle elements included or under consideration (including protected intersections; see list above): Off-street bike facility, protected intersections where intersecting with existing protected bikeways
If a reconstruction, confirm no unprotected bike lane or describe why an unprotected bike lane is included: Will not include an unprotected bikeway

If design recommendation is less than recommended, provide explanation: Maximizing pedestrian space
Design Impact: ☒Improved ☐Unchanged ☐Degraded
Easements Required: ☐Yes ☒No
If identified in AAA Network and not incorporated, provide explanation: N/A
Maintenance Considerations: Snow and ice control must be considered

CURBSIDE MANAGEMENT ELEMENTS

Included in Project: ☒Yes ☐No
Additional Technical Analysis: ☒Yes ☐No, if yes list (provide in appendix): Evaluate need and feasibility of curbside uses along adjacent streets
Street Type: Mixed Use Regional Connector (Douglas to Franklin) and Mixed Use Commercial Connector (Franklin to Lake)

Curbside Street Guidelines

	Existing	Guidelines		Design Concept(s)
		Acceptable	Recommended	
Parking Lane	20’ shared parking/thru lane	7’	8’	8’
Delivery/ Loading Zone	20’ shared parking and loading/thru lane	7’	8’	8’
Other mobility treatment (e.g. scooter parking, Nice Ride station, etc.)	Select Nice Ride locations along Hennepin Ave or adjacent roadways	varies	varies	N/A

On-Street Parking Recommendations (if applicable): ☒Remove ☐Maintain ☐N/A
On-Street Loading/Un-Loading Recommendations (if applicable): ☒Remove ☐Maintain ☐N/A
Curb Extensions Recommended: ☒Yes ☐No Describe here if not included: Curb extensions not feasible on Hennepin Ave due to full-time transit lanes. Curb extensions recommended on cross streets.
Other curbside design elements included or under consideration (see list above): curb cuts, driveways
If design recommendation is given priority consideration over pedestrian, bicycle, or transit facilities provide explanation: N/A
Maintenance Considerations: Snow and ice control should be considered

PUBLIC REALM FURNISHINGS AND URBAN LANDSCAPING

Street Furnishings: Existing furnishings maintained by Special Service Districts. Desire for existing or new furnishings will be coordinated with the SSDs.
Greening Features (either urban landscaping or green stormwater infrastructure): Streets trees will be included in this project

MOTOR VEHICLE ELEMENTS

Additional Technical Analysis: ☒Yes ☐No, if yes list (provide in appendix): Traffic Summary Analysis (Appendix A)

Street Type: Mixed Use Regional Connector (Douglas to Franklin) and Mixed Use Commercial Connector (Franklin to Lake)
Speed Limit: 25

Design Guidelines, Standards, and Plans: MnDOT State-Aid
Design Vehicle: SU-30, WB 40

Design Speed: 25

Control Vehicle: MM 100 or WB-62

Street Guidelines

	Existing	Guidelines		Design Concept(s)
		Acceptable	Recommended	
Median	0’	4’	6’-8’	Varies, 4’-8’
Curb and Gutter Zone	2’	1’	2’	1’

Other Design Considerations: consider variance to reduce lane widths and reaction zones to allow more sidewalk space (not required but recommended)
Variance or Design Exception Required: ☒Yes, variance required for median width at select locations ☐No
Maintain Emergency Vehicle Access: ☒Yes ☐No
Maintain Freight Access: ☒Yes ☐No ☐N/A

What Freight Data Were Collected (e.g. tube counts, observational, engagement with freight users): Intersection turning movement counts; Trucks are generally 2% of the total traffic on the corridor.
Capacity Recommendations: ☒Reduction ☐Maintain ☐Expansion ☐ Other: Click here to enter text.
Other vehicle design elements included or under consideration (see list above): N/A
If design recommendation affords motor vehicle elements priority consideration over pedestrian, bicycle, urban landscaping, or transit elements provide explanation: N/A
Maintenance Considerations: N/A

INTERSECTION AND CROSSING ELEMENTS

Features could include: curb extensions, raised crossings, and others.

Included in Project: ☒Yes ☐No
Identified in Pedestrian Priority Network: ☒Yes ☐No
Additional Technical Analysis: ☒Yes ☐No, if yes list (provide in appendix Traffic Summary Analysis (Appendix A)

Street Type: Mixed Use Regional Connector (Douglas to Franklin) and Mixed Use Commercial Connector (Franklin to Lake) .
Design Guidelines: MnDOT State Aid
Design Vehicle: SU-30 or WB-40

Signalized Intersections

Location	Description	Concept(s)
All intersections	Signalized	ADA Ped ramps
All locations	Signalized	APS with countdown timers

Does design address the following:
Reduce non-motorized crossing distances: ☒Yes ☐No ☐N/A
Allow for adequate clearance time for non-motorized users: ☒Yes ☐No ☐N/A
Reduce non-motorized wait times: ☒Yes ☐No ☐N/A
Simplify intersection complexity: ☒Yes ☐No ☐N/A
Increase visibility of non-motorized users: ☒Yes ☐No ☐N/A
Reduce conflicts between modes to enhance safety: ☒Yes ☐No ☐N/A

Other traffic signal components included or under consideration: APS with countdown timers, enhanced pedestrian crossings at select locations, dynamic signs to enhance visibility of turn restrictions and transit-only

lanes
Other intersection design elements included or under consideration: ADA Pedestrian ramps, pedestrian refuge medians at select locations
If design recommendation affords motor vehicle elements priority consideration over pedestrian, bicycle, or transit elements provide explanation: N/A
Maintenance Considerations: Snow and ice control must be considered

MITIGATING FACTORS AND OPERATIONAL CONSTRAINTS

Were any modes excluded from the design? No

Was there a documented lack of current or future need that excluded a particular mode or design element? (e.g. higher quality parallel route in close proximity) Describe below.

Walking: No

Biking/Micromobility: No

Transit: No

Green stormwater infrastructure: No

Small freight: No

Driving: No

Large freight: No

Parking: No

Explain any constraints related to physical space or right of way acquisition: Right-of-way acquisition may be needed to provide a 150-foot southbound BRT platform at Franklin Ave and a sidewalk connection north of Franklin Ave to Bryant Ave.

Explain any constraints related to emergency vehicle clearance: N/A

Are any modes prohibited by law from using the street? No

What other limiting factors influenced the design choices in this project? N/A

OUTREACH AND ENGAGEMENT

☒ Council Members: Click here to enter text.
☐ Other: Click here to enter text.

Stakeholder Outreach

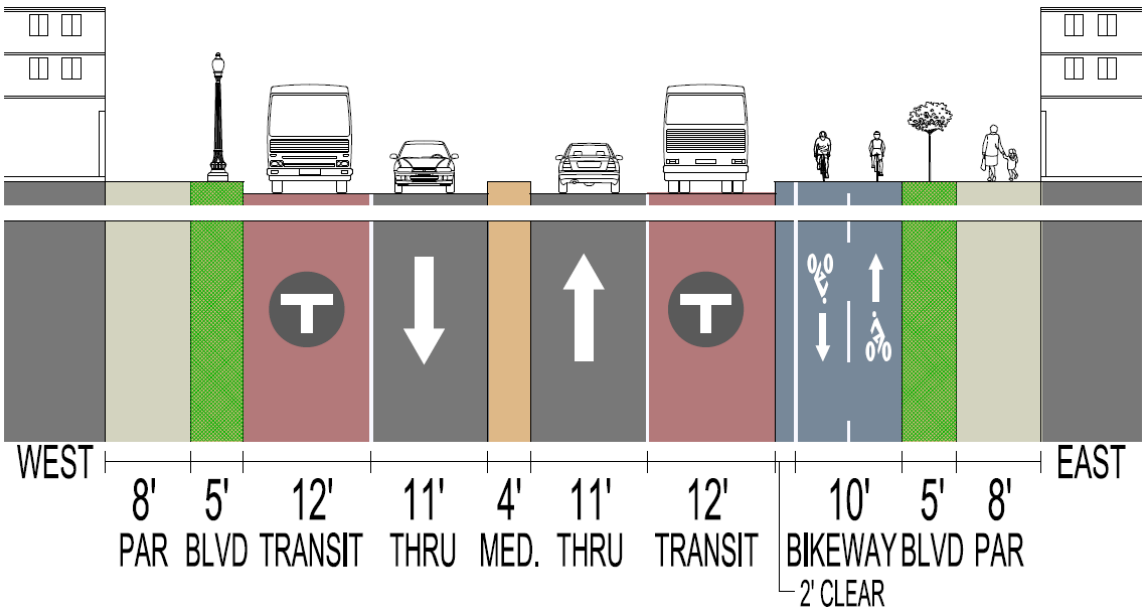
☒ Residents: Click here to enter text.
☒ Neighborhoods: Lowry Hill East Neighborhood Association, Lowry Hill Neighborhood Association, East Isles Residents Council
☒ Advisory Committees: BAC, PAC, MACOPD
☒ Business Associations Uptown Association, Uptown Special Service District, Lowry Hill Special Service District

☒ Private Property Owners Click here to enter text.
☒ Other: Corridor Stakeholder Committee

Approach and Summary: Project engagement summaries can be seen on the project website:

- Open House 1 (Spring 2018) engagement summary: https://www.minneapolismn.gov/media/-www-content-assets/documents/Community-Engagement-Summary-(2018)---Hennepin-Ave.-S.-Reconstruction.pdf
- Open House 2 (Fall 2020) engagement summary: https://www.minneapolismn.gov/media/-www-content-assets/documents/Open-House-2-Enagagement-Summary---Hennepin-Ave.-S.-Reconstruction.pdf
- Open House 3 (Spring 2021) engagement summary: https://www.minneapolismn.gov/media/-www-content-assets/documents/HennepinSouth_Round-3-Engagement-Summary_June-2021.pdf

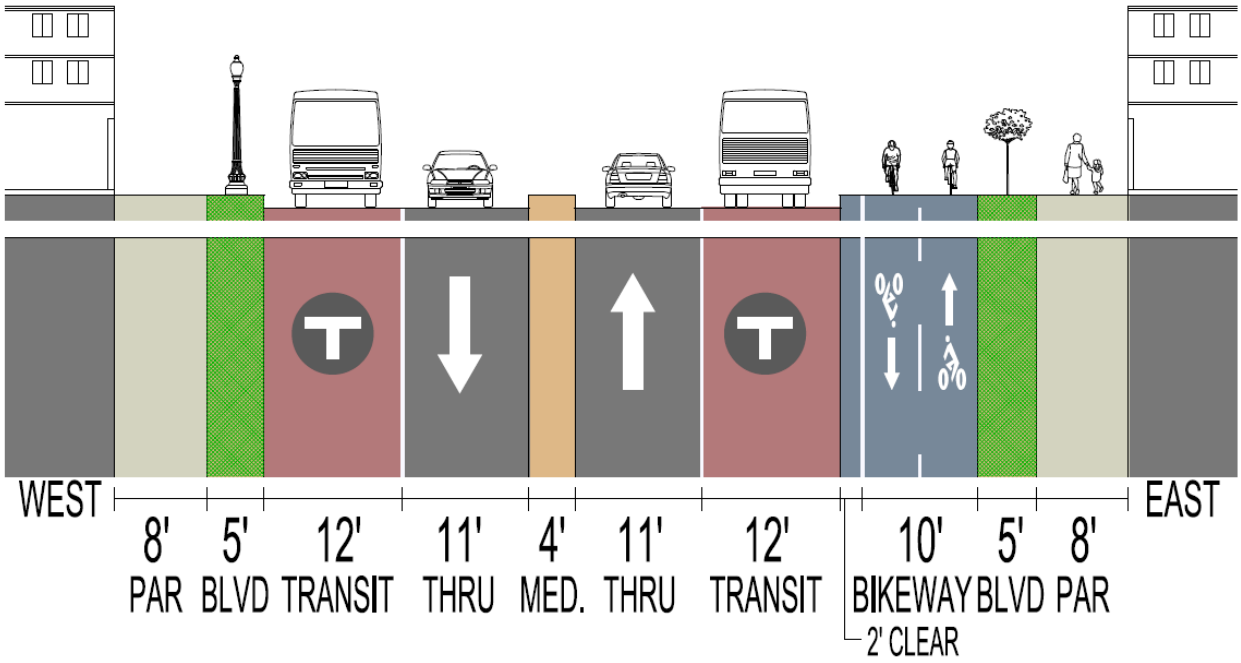
RECOMMENDED CROSS-SECTION



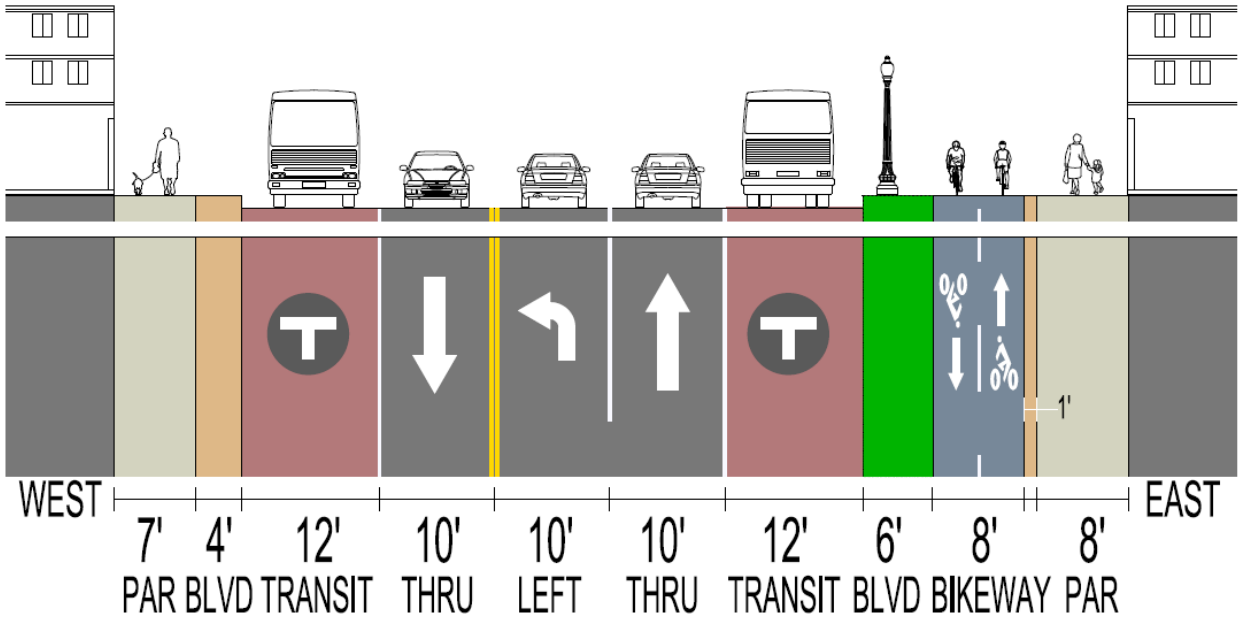
D. Preliminary Design: 30%

RECOMMENDED CROSS-SECTION

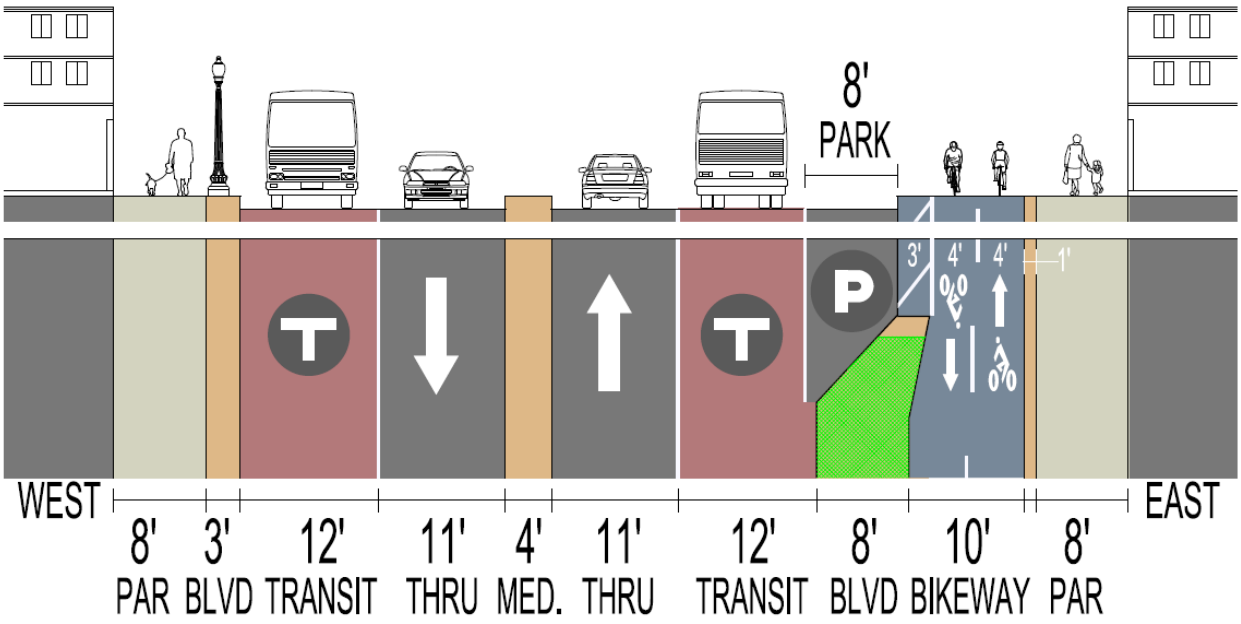
Base Section



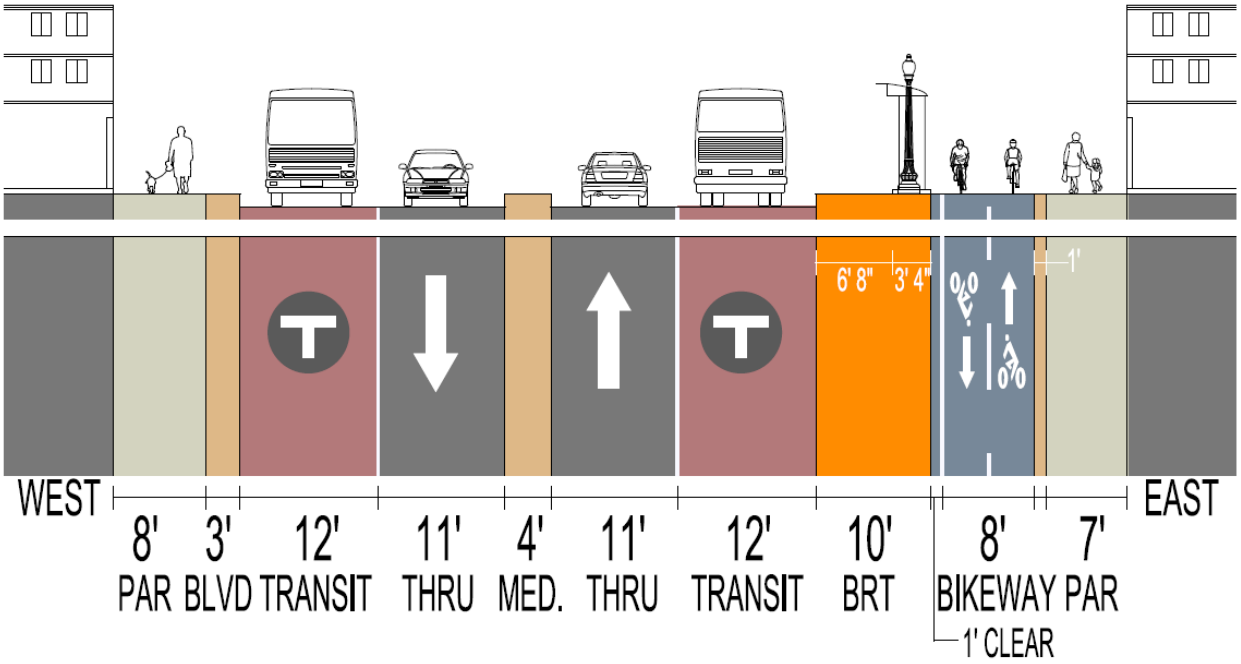
Locations with left turn lanes



Locations with Parking/Loading Bay



Locations with Transit Station



RECOMMENDED LAYOUT

Recommended layout can be seen on the project webpage: https://www.minneapolismn.gov/media/-www-content-assets/documents/3_Hennepin-recommended-design-layout.pdf

Project Meetings

A complete list of project meetings (as of 1/20/2021) attached in Appendix B

Concept and Design Changes

Design Benchmark	Date	Design Change(s)	Rationale	Core Team Member
30				
60				
90				
100				

Summary of Non-Motorized Complete Streets Elements

Mode	New/Modified Elements
Walking/Rolling	Upgraded ADA ramps, shorted crossing distances, wider pedestrian access routes, APS, full signals, select pedestrian refuge medians
Bicycles and Micromobility	Sidewalk-level two-way protected bicycle trail
Transit	Dedicated transit only lanes, BRT platforms at Franklin, 25th St, and Uptown Transit Station
Public Realm Elements/Furnishings	Street lighting and signage; storm water management

Appendix A: Traffic Analysis Summary

The following summarizes the key findings from the traffic evaluation for existing and the future design alternatives for the Hennepin Avenue S corridor.

1. Hennepin Avenue Transportation – Existing Users and Characteristics

Hennepin Avenue facilitates over 40,000 persons daily through multimodal transportation. Key characteristics of the current facility that were considered in the traffic analysis include the following:

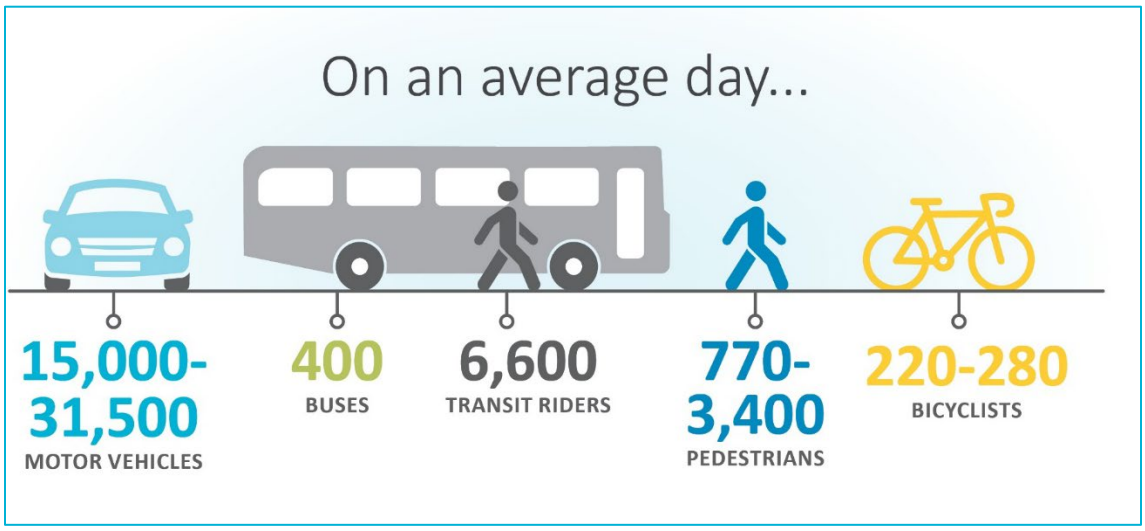


Figure 1. Existing Hennepin Avenue Transportation Users

EXISTING DAILY CORRIDOR USERS

- **Pedestrians.** A typical day shows approximately 150-400 total pedestrian intersection crossings during peak hours. Pedestrian activity is greatest on the south end and reduces to the north. Approximately 67% of pedestrian travel occurs on the west side of Hennepin Avenue.
- **Bicycles.** Bicyclists currently travel within the motor vehicle lanes.
- **Transit.**
  - There are currently 10 Metro Transit routes using Hennepin Avenue. Approximately 50-60 total bi-directional buses use the corridor during peak hours.
  - Hennepin Avenue is planned as the future Metro E Line (Route 6) arterial bus rapid transit route.
  - Peak period bus lanes (southbound south of 25th Street, northbound Lake Street to the Uptown Transit Center, and northbound north of 25th Street) occupy the curb lane.

- **Motor Vehicles.** Key travel characteristics include:
  - **Mode Share**. Passenger and commercial vehicle occupants make up approximately 70% of the corridor users on a daily basis.
  - **Left turns.** Motorists making a left turn from Hennepin Avenue represent about 3% of traffic.
  - **Trucks.** Commercial or larger vehicle truck traffic along Hennepin is approximately 4% throughout the day and about 2% during the p.m. peak hour.

MOTOR VEHICLE REGIONAL AND DESTINATION TRIP PATTERN

- **Roadway Function.** Approximately 50-55% of motorists travel through the corridor, 30% originate or are destined within the adjacent neighborhoods, and 20% are corridor destination based.

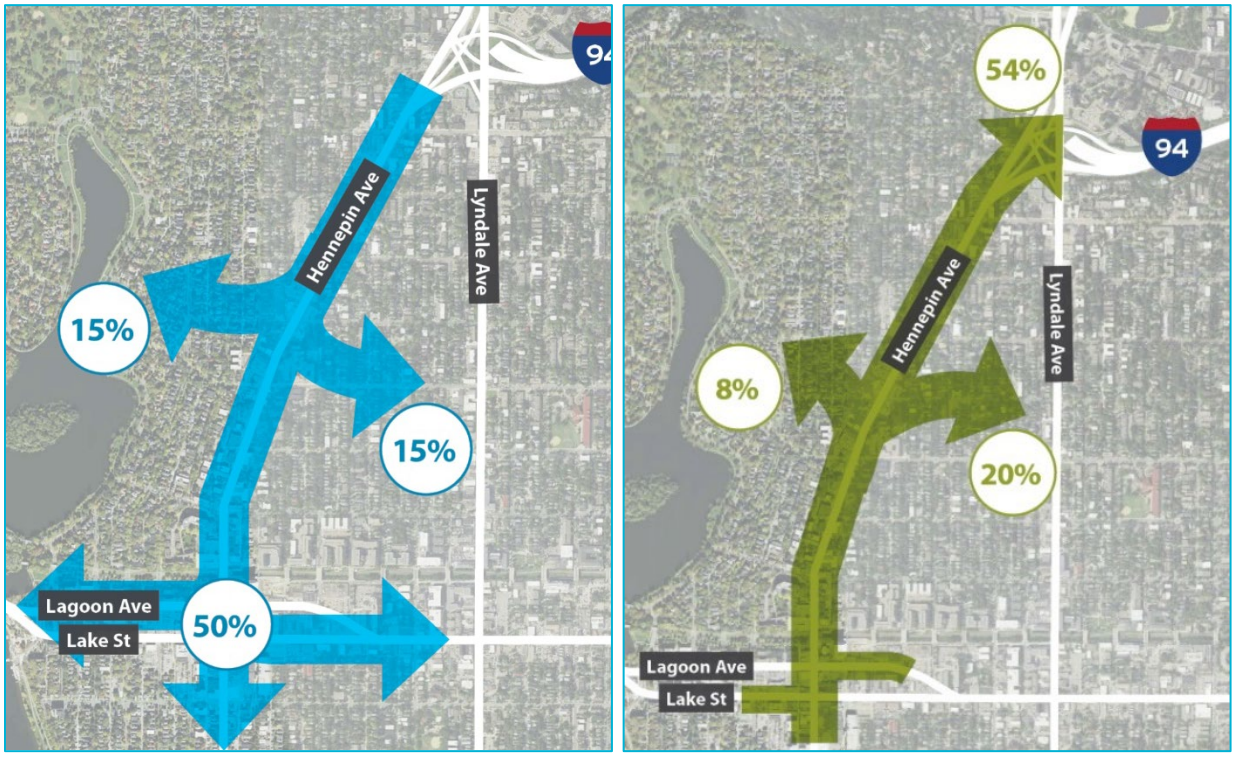


Figure 2. Existing Through Traffic Patterns on Hennepin Avenue

- **Volumes.** The traffic analysis of existing conditions is based on year 2018 (pre-COVID 19 and pre-35W/94 construction) traffic volumes. Volumes collected in late 2021 show consistent traffic levels as 2018 (blue line in Figures 3-4) throughout the day, except for the northbound a.m. peak hour showing approximately 35% less in 2021 (orange line in Figure 3).

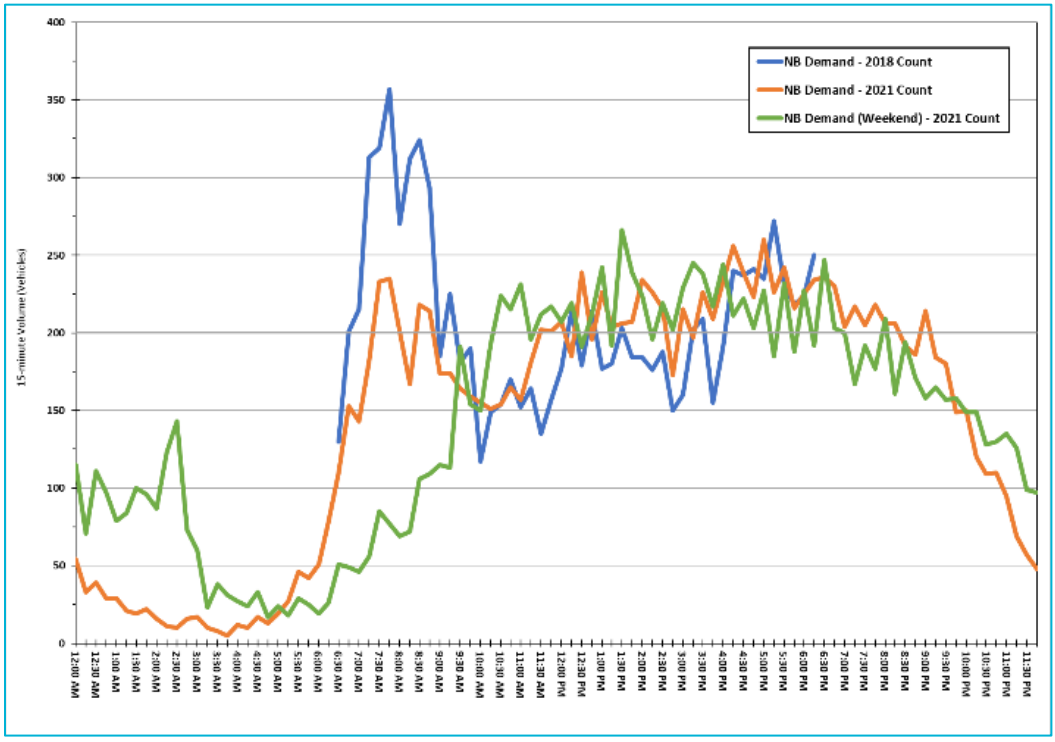


Figure 3. Existing Traffic Volumes - Northbound Hennepin Avenue

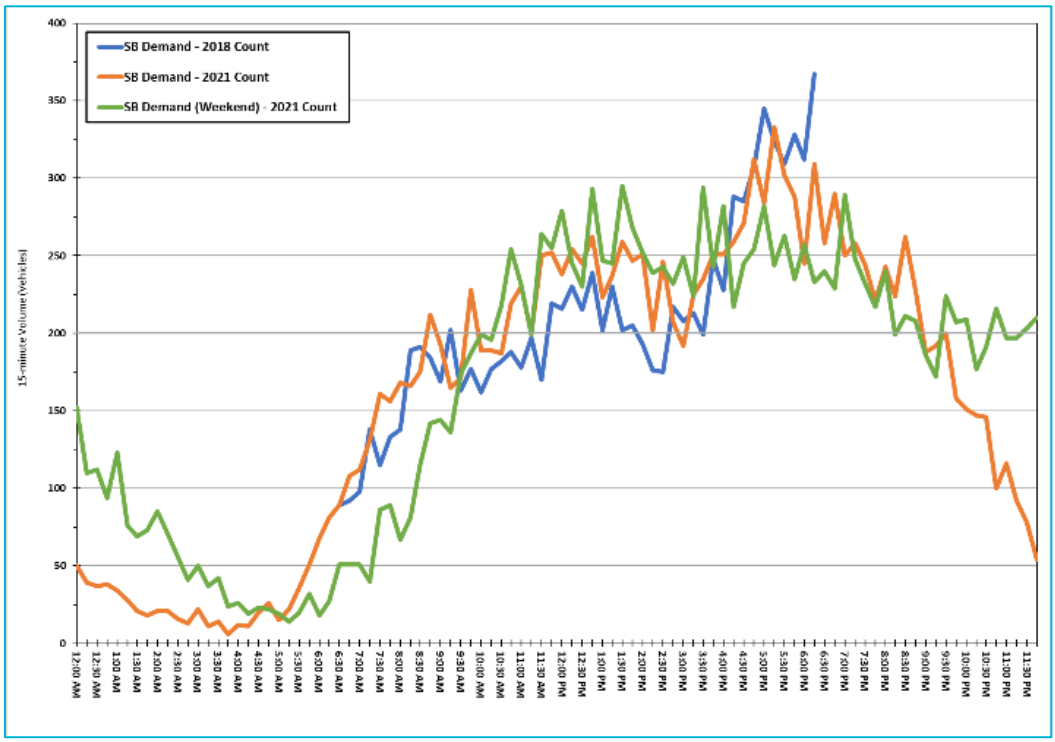


Figure 4. Existing Traffic Volumes - Southbound Hennepin Avenue

2. Multimodal Forecast Volumes

The City of Minneapolis Transportation Action Plan (TAP) calls for action over the next 10 years to leverage city streets to reach citywide goals. Implementation of the TAP through street design will enhance transit, walking, and bicycling in pursuit of increasing mode share and reducing motor vehicle traffic. An estimated 40,000 persons per day use Hennepin Avenue (Figure 5), and the Metropolitan Council Activity Based Regional Model (ABM) estimates an approximate 20% growth in persons within the corridor across all travel modes (48,000 persons) over the next 20 years. In accordance with the City of Minneapolis TAP, consideration of existing Hennepin Avenue characteristics, the ABM, growth in persons within the corridor, and corridor design elements, the forecast volumes were derived from the estimated corridor mode share (Figure 6).

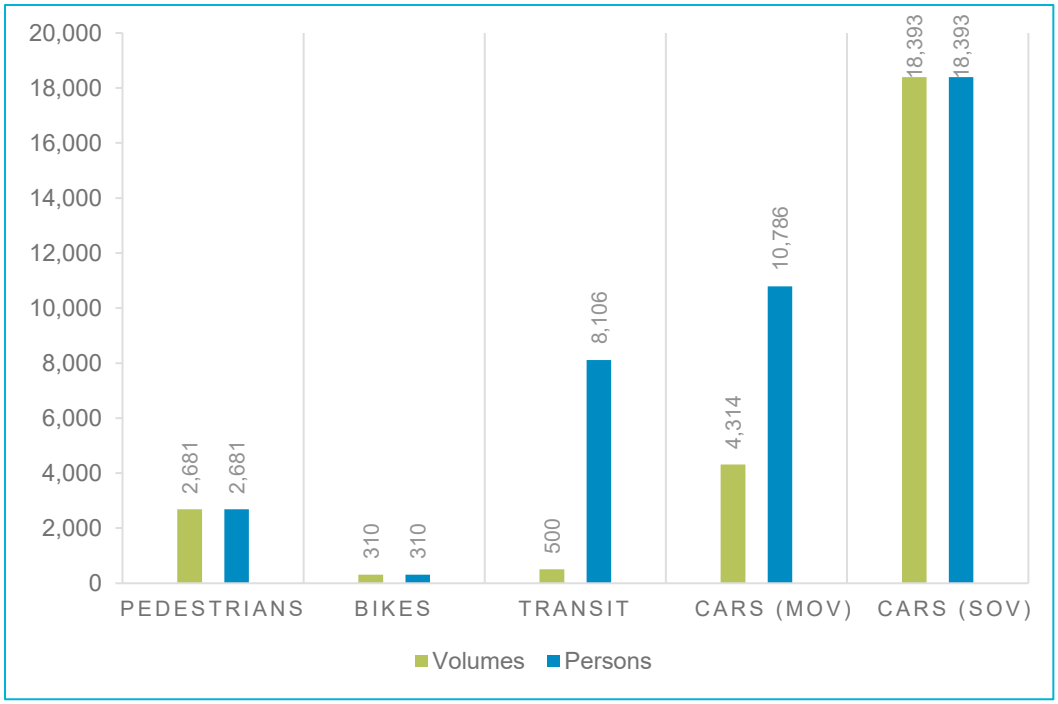


Figure 5. Existing Daily Persons by Travel Mode

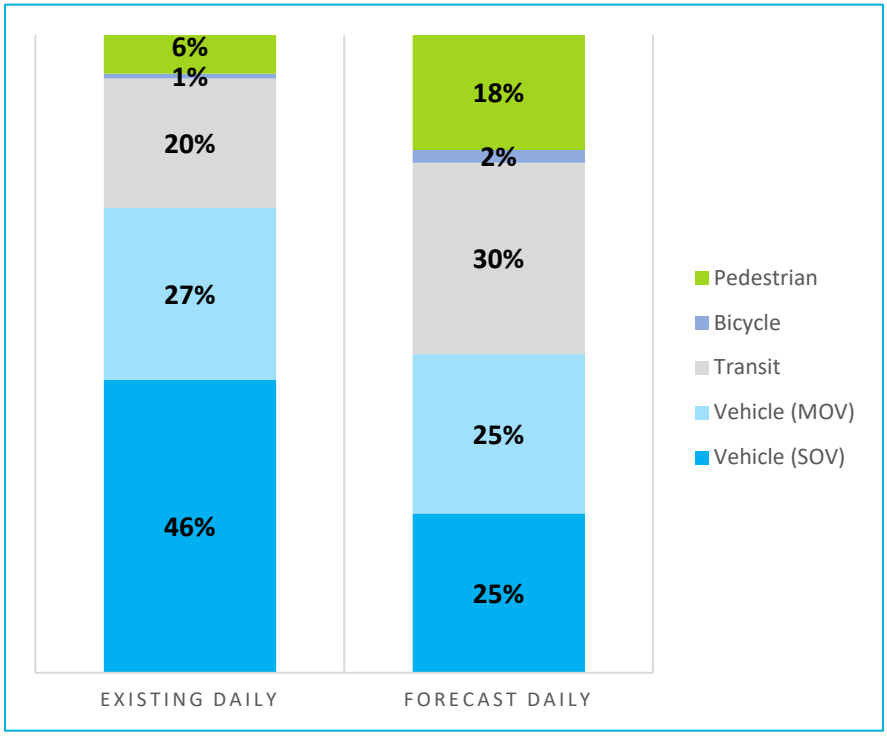


Figure 6. Existing and Forecast Travel Mode Share

Including the forecast person growth within the corridor and mode share consistent with the policies of the TAP, the forecast motor vehicle traffic volumes are shown below. Motor vehicle volume levels are expected to reduce by approximately 20% (Figure 7). This reduction along Hennepin is expected to occur through improved alternative transportation options, street design elements that enhance transit facilities and service, walking and bicycling, and motorists seeking alternative route choices. In addition, the future of a remote working environment and the post-pandemic a.m. peak traffic volumes may continue to be depressed into the future (currently 35% lower than 2018 and 20% lower than the forecast volumes).

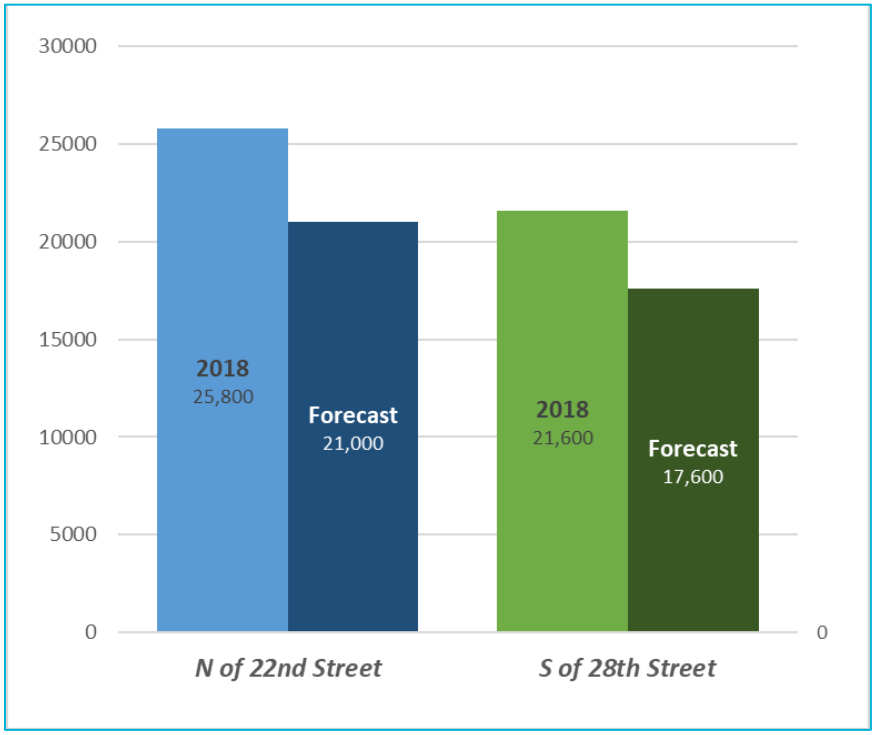


Figure 7. Forecast Daily Vehicle Traffic Volumes

3. Corridor Mobility Performance

A comprehensive multimodal traffic modeling analysis was completed for numerous street design / lane configuration scenarios and the recommended design layout. Key performance metrics used to convey the quality of mobility are Level of Service (LOS) and travel time as illustrated in Figures 8-11 (2018 existing and the recommended layout with forecast traffic volumes).

CORRIDOR LEVEL OF SERVICE

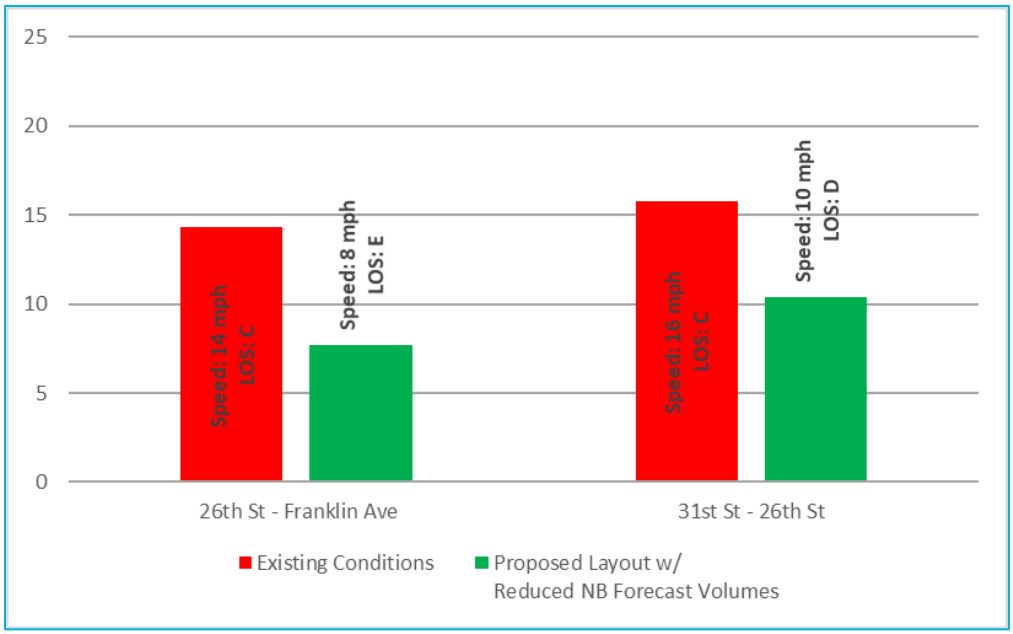


Figure 8. Northbound – Average Motor Vehicle Speed and LOS (AM Peak)

Note: Average motor vehicle speed (green bar) reflects the forecast volumes less an estimated 150 motorists that are likely to divert because of the approach capacity to Franklin Avenue.

Figure 9. Southbound – Average Motor Vehicle Speed and LOS (AM Peak)

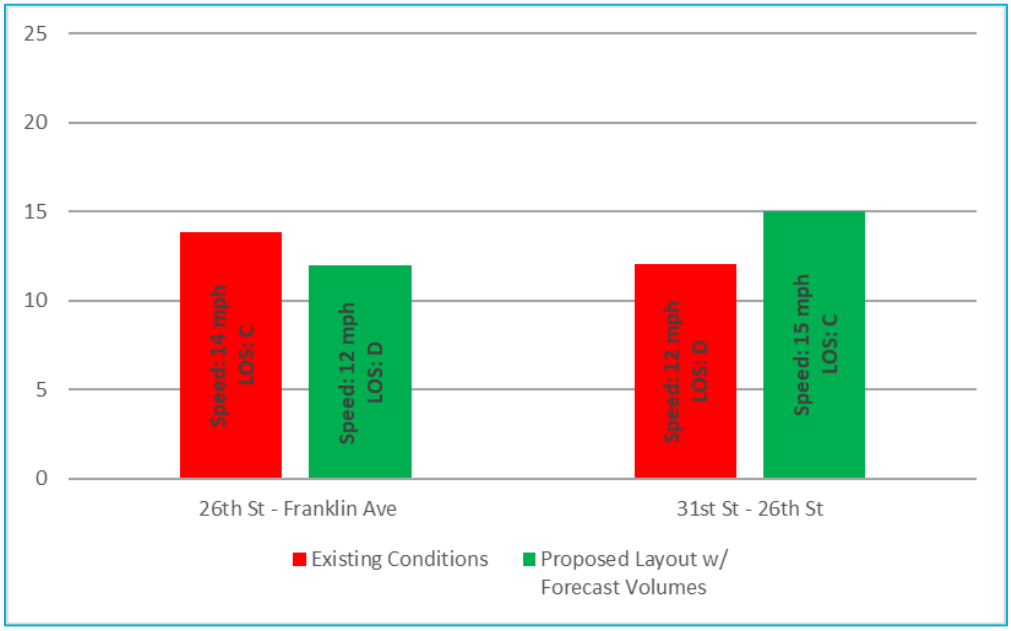


Figure 10. Northbound – Average Motor Vehicle Speed and LOS (PM Peak)

Figure 11. Southbound – Average Motor Vehicle Speed and LOS (PM Peak)

MOTOR VEHICLE TRAVEL TIME

Motor vehicle and transit vehicle travel times (shown in minutes) are compared between the existing conditions (2018 volumes) and the recommended layout with the forecast traffic volumes. The total corridor travel time is the addition of the two key corridor segments (north of 26th Street and south of 26th Street).

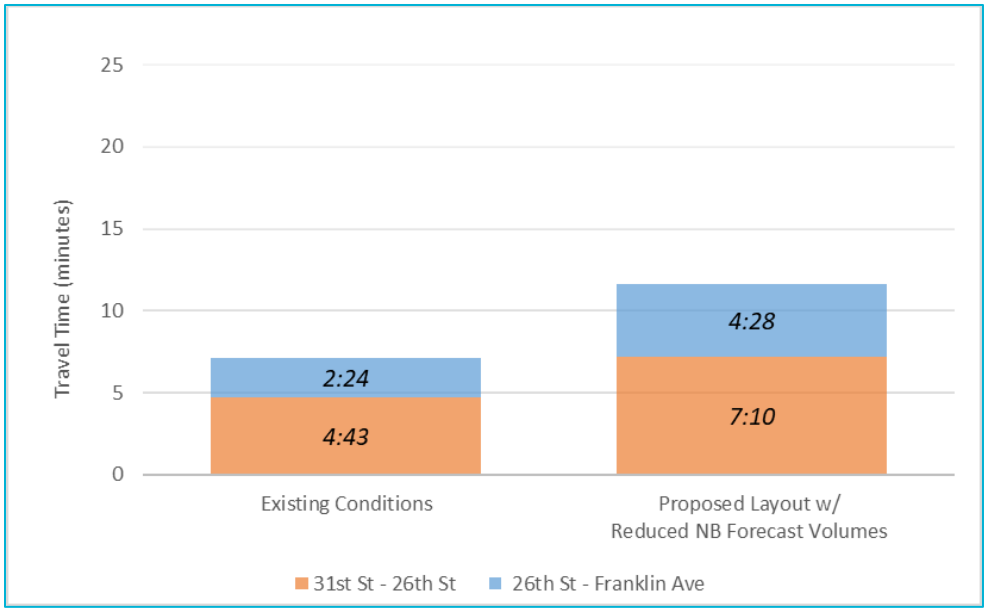


Figure 12. Northbound - Motor Vehicle Travel Time (AM Peak Hour)

Note: Average motor vehicle travel times (proposed layout) reflects the forecast volumes less an estimated 150 motorists that are likely to divert because of the approach capacity to Franklin Avenue.

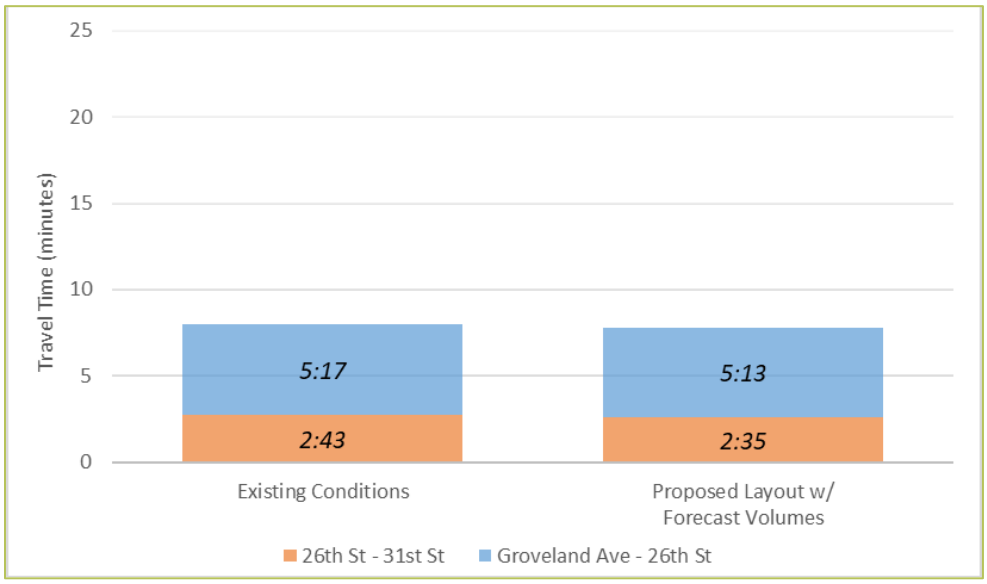


Figure 13. Southbound – Motor Vehicle Travel Time (AM Peak Hour)

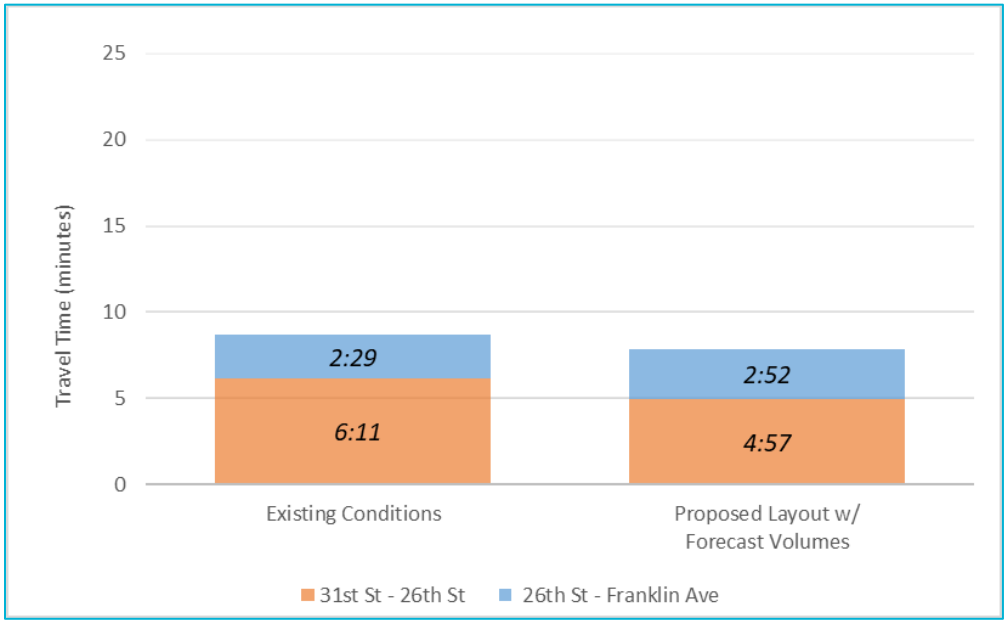


Figure 14. Northbound – Motor Vehicle Travel Time (PM Peak Hour)

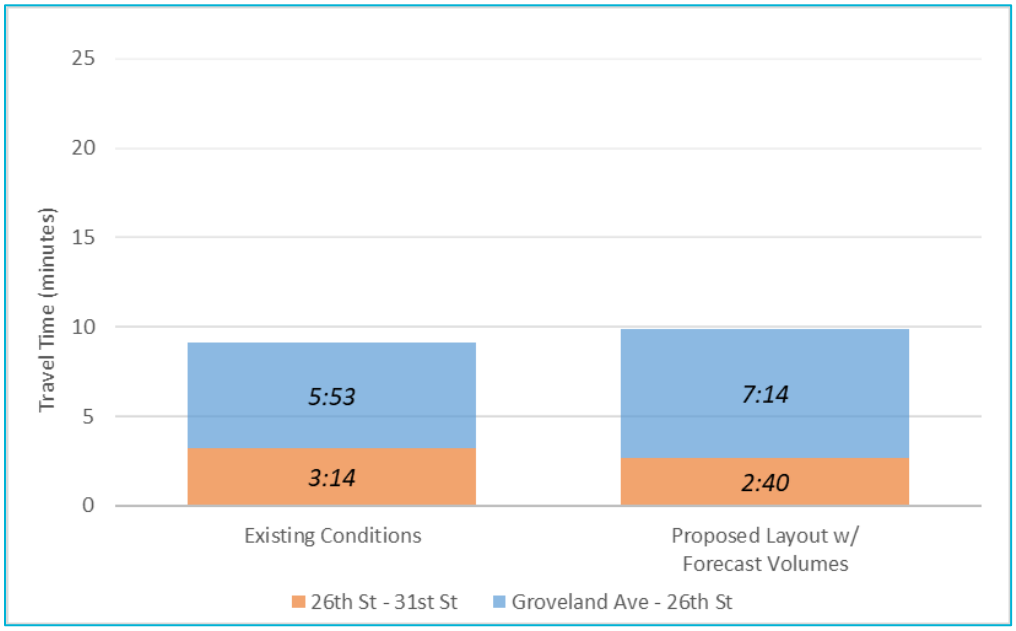


Figure 15. Southbound - Motor Vehicle Travel Time (PM Peak Hour)

TRANSIT VEHICLE TRAVEL TIME

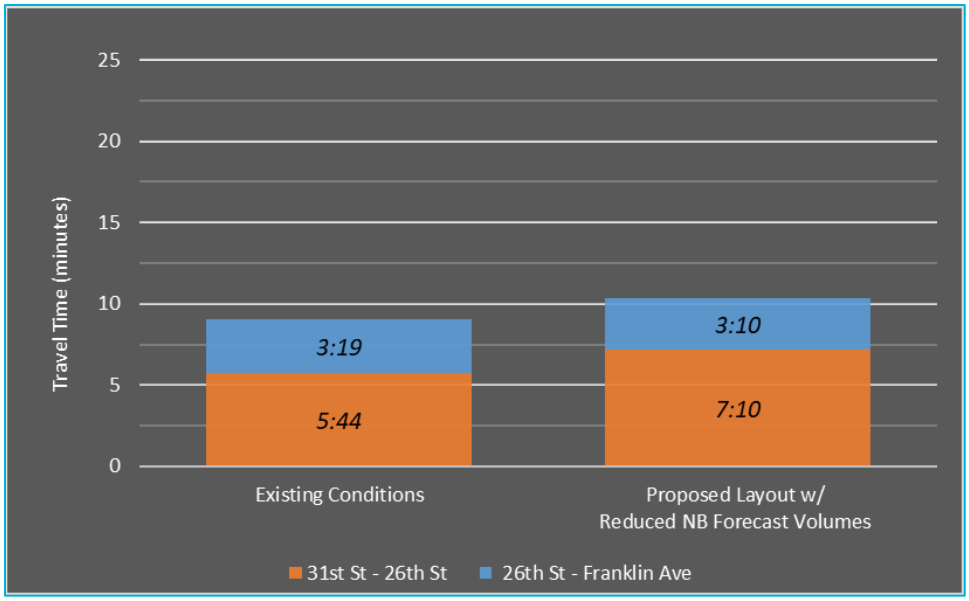


Figure 16. Northbound – Transit Vehicle Travel Time (AM Peak Hour)

Note: Transit vehicle travel time (recommended layout) reflects the forecast volumes less an estimated 150 motorists that are likely to divert because of the approach capacity to Franklin Avenue. The transit vehicle travel time may also be influenced by I-94 congestion backing onto Hennepin Avenue (not reflected) and motor vehicle congestion that could block access to the transit lanes.

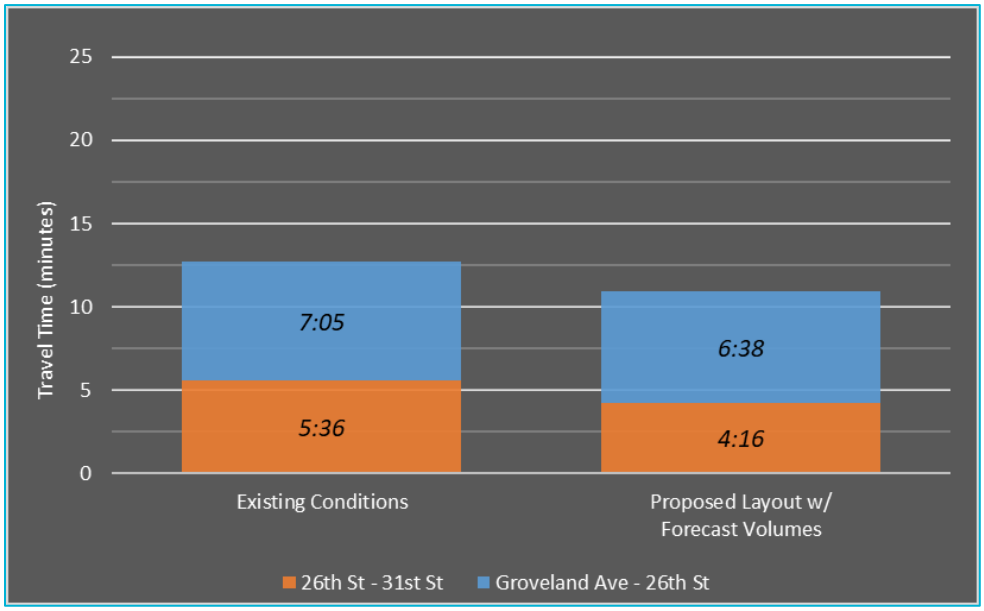


Figure 17. Southbound - Transit Vehicle Travel Time (AM Peak Hour)

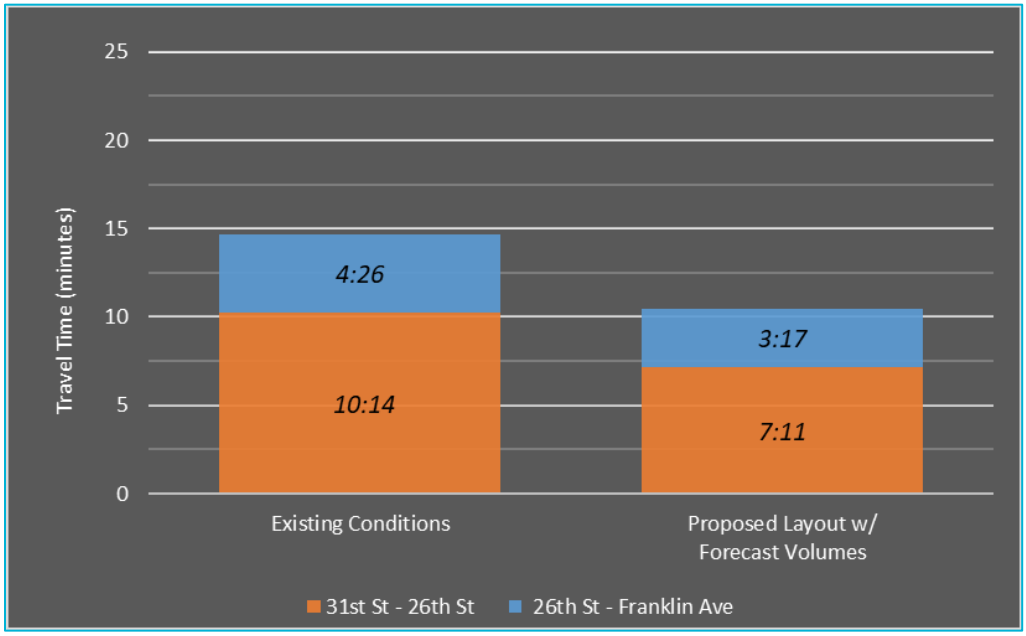


Figure 18. Northbound - Transit Vehicle Travel Time (PM Peak Hour)

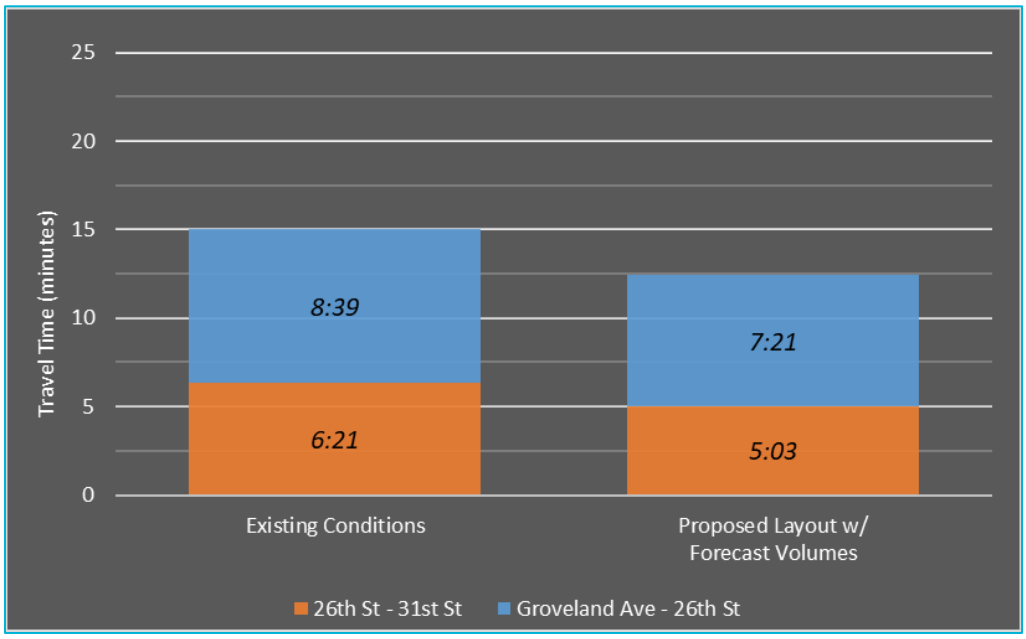


Figure 19. Southbound - Transit Vehicle Travel Time (PM Peak Hour)

ALTERNATIVES EVALUATION

The traffic analysis process identified several conclusions that informed the recommended layout or were considered in the overall design considerations:

- The most challenging intersections to balance motor vehicle and transit service capacity are Franklin Avenue and the Lake/Lagoon intersections due to high through and turning traffic demands, transit connections, and closely spaced traffic signals.
  - Two southbound through movement travel lanes are needed at Franklin Avenue to minimize potential for traffic to back onto the freeway ramp.
  - Two eastbound left-turn lanes (from Lake Street) onto Hennepin Avenue are needed. A four-lane cross-section between Lake Street and 29th Street is needed.
- Transitioning from a 4-lane to a 3-lane design (lane drop merge) in the southbound direction is incrementally more efficient the further south of Franklin it is located. However, the capacity increase is only approximately 5-10% better if located south of 24th versus south of 22nd or Franklin Avenue. Capacity gain should be considered with respect to the impacts to transit, sidewalks, bicycle facility, and other corridor space needs.
- Reducing Hennepin Avenue to one travel lane at Douglas Avenue is advantageous to improving safety and efficiency by allowing the existing left side merge from the westbound I-94 exit ramp to be a lane addition instead of a merge.
- Optimum locations for left-turn lanes were identified based on left-turn traffic demand, key crossing city streets, traffic access and circulation for adjacent properties, safety, and traffic efficiency. Key intersections include 28th Street, 26th Street, 24th Street and 22nd Street. Left turn restrictions (on Hennepin) should be considered at all other intersections from Franklin Avenue to 29th Street where left-turn lanes are not provided.
- Restricting both the northbound and southbound left-turn movements at Franklin Avenue offers significant intersection safety and motor vehicle/transit benefit. There are also significant impacts on other modes if space is allocated for left-turn lanes at Franklin. A left-turn movement from a shared through lane is not recommended at this intersection.
- The final shelter placement and associated pavement marking/signing for a nearside transit station may have an influence on traffic capacity for the northbound approach at Franklin Avenue; increasing distance or removing red paint in advance of the stop bar improves motor vehicle and transit operation by allowing motorists to use this space when buses are not present. However, other design constraints and transit route connectivity considerations may govern the final design.
- Corridor performance may also be influenced by I-94 congestion (external factor) backing onto Hennepin Avenue, which is not reflected in the traffic analysis. This external corridor congestion could impact the mobility performance of Hennepin Avenue during the a.m. peak period.

4. Key Traffic and Transit Mobility Performance Summary

The proposed concept layout is designed to accommodate the forecast traffic volume levels, mode share expectations, and to optimize mobility, capacity, and safety at key focus areas in accordance with the City of Minneapolis TAP policy. Based on the traffic analysis, the key performance conclusions with respect to the recommended concept layout and forecast volumes are summarized below:

- Southbound Hennepin Avenue is expected to operate at a LOS D or better all day under forecast traffic volumes.
- Northbound Hennepin Avenue, under forecast traffic volumes, is expected to operate at a LOS D or better for nearly all day. LOS F (approximately 1 ½ hours) during the a.m. peak period is expected (approximately 150 vehicles/hour over capacity at Franklin Avenue). The northbound a.m. peak hour traffic demand that can be accommodated at Franklin is 30% less than 2018. It is unknown if the current morning traffic volume trends will stay depressed after the pandemic, or if a return to pre-COVID 19 levels will occur. Current (2021) a.m. peak hour volume levels are close to 35% lower than pre-COVID 19 levels. Should this trend continue, a capacity issue at Franklin Avenue or traffic diversion would not be expected.
- Motor vehicle travel times are expected to be approximately 1 minute longer southbound (p.m. peak hour) and 4.5 minutes (a.m. peak hour) longer northbound, with potential motor vehicle traffic diversion. It should be noted that final shelter placement and pavement marking/signing for the northbound nearside transit station at Franklin Avenue (increasing distance or removing red paint in advance of the stop bar reduces travel time by allowing motorists to occupy the right lane in front of the shelter when buses are not present), the presence of congestion on I-94 (which could increase travel time), and significantly depressed a.m. peak volume demand following COVID 19 (greatly reduces travel demand) are variables that should be taken into consideration.
- Transit lanes show benefit in both the directions, with expected transit vehicle travel time improvements as follows:
  - A.m. peak – 1.5 minutes northbound (over traveling in a general use traffic lane) and 1.5 minutes southbound.
  - P.m. peak – 4 minutes northbound and 2.5 minutes southbound.

Appendix B: Project Meetings

Date	Meeting Name
4/11/2018	In-person open house meeting
3/23/2020	0% CPTF
3/26/2020	MnDOT Federal Aid meeting
5/1/2020	Technical Advisory Committee (TAC) meeting
5/19/2020	EIRA BET Committee meeting
5/26/2020	Technical Advisory Committee (TAC) meeting
6/23/2020	Technical Advisory Committee (TAC)
7/14/2020	Capital Project Design and Delivery (CPDD) meeting
7/17/2020	Technical Advisory Committee (TAC) meeting
7/16/2020	Pedestrian Advisory Committee Infrastructure & Engineering Subcommittee meeting
7/28/2020	Technical Advisory Committee (TAC) meeting
7/30/2020	Corridor Stakeholder Committee (CSC) meeting
8/4/2020	Metro Transit meeting
8/8/2020	Bicycle Advisory Committee Engineering Subcommittee meeting
9/15/2020	Metro Transit meeting
9/22/2020	Virtual open house meeting
9/30/2020	Virtual open house meeting
10/6/2020	Corridor Stakeholder Committee (CSC) meeting
10/21/2020	Uptown Business Association meeting
10/27/2020	Technical Advisory Committee (TAC) meeting
11/5/2020	Property owner meeting (areaway site visit)
11/10/2020	Capital Project Design and Delivery (CPDD) meeting
11/10/2020	LHNA board meeting
11/17/2020	EIRA BET Committee meeting
11/24/2020	Technical Advisory Committee (TAC) meeting
12/1/2020	MnDOT State Aid meeting
12/6/2020	Business owner meeting
12/7/2020	Metro Transit meeting
12/9/2020	Utility Coordination meeting
12/9/2020	LHENA Zoning & Planning meeting
12/15/2020	Corridor Stakeholder Committee (CSC) meeting
1/5/2021	Property owner meeting (areaway site visit)
1/11/2021	Technical Advisory Committee (TAC) meeting
1/12/2021	Capital Project Design and Delivery (CPDD) meeting

1/14/2021	MPRB meeting
1/25/2021	MPRB meeting
1/26/2021	Technical Advisory Committee (TAC) meeting
2/9/2021	Corridor Stakeholder Committee (CSC) meeting
2/17/2021	Metro Transit meeting
2/18/2021	Metro Transit meeting
2/23/2021	Technical Advisory Committee (TAC) meeting
3/2/2021	Virtual open house meeting
3/4/2021	Virtual open house meeting
3/9/2021	Property owner meetings
3/10/2021	Property owner meeting
3/16/2021	Bicycle Advisory Committee Engineering Subcommittee meeting
3/17/2021	Property owner meetings
3/18/2021	Pedestrian Advisory Committee Infrastructure & Engineering Subcommittee meeting
3/19/2021	Property owner meeting
4/6/2021	LHNA board meeting
4/14/2021	Business owner meeting
4/14/2021	LHENA Zoning & Planning meeting
4/17/2021	Metro Chapter National Federation for the Blind MN (NFBMN) meeting
4/19/2021	Property owner meeting
4/20/2021	Lowry Hill Special Service District meeting
4/21/2021	Uptown Special Service District meeting
4/21/2021	Uptown Business Association meeting
4/29/2021	EIRA BET Committee meeting
5/4/2021	MnDOT State Aid meeting
5/5/2021	Metro Transit meeting
5/18/2021	Corridor Stakeholder Committee (CSC) meeting
5/19/2021	Metro Transit meeting
5/20/2021	LHNA annual meeting
6/2/2021	MnDOT State Aid meeting
6/22/2021	Technical Advisory Committee (TAC) meeting
7/22/2021	Metro Transit meeting
8/2/2021	Jefferson School meeting
8/17/2021	Jefferson School meeting
8/31/2021	Property owner meeting
9/14/2021	Property owner meeting
9/16/2021	Property owner meeting
10/20/2021	Property owner meeting
11/2/2021	Property owner meeting
11/9/2021	Capital Project Design and Delivery (CPDD) meeting
11/9/20021	Corridor Stakeholder Committee (CSC) meeting
12/7/2021	Technical Advisory Committee (TAC) meeting

12/13/2021	15% CPTF
1/4/2022	Uptown Business Association meeting
1/4/2022	LHNA board meeting
1/5/2022	Lowry Hill Special Service District meeting
1/5/2022	Uptown Special Service District meeting
1/7/2022	MPRB meeting
1/10/2022	Metro Transit meeting
1/11/2022	Bicycle Advisory Committee Engineering Subcommittee meeting
1/11/2022	MnDOT Federal Aid meeting
1/12/2022	LHENA Community Development Committee meeting
1/13/2022	Virtual open house meeting
1/18/2022	EIRA BET Committee meeting
1/20/2022	Pedestrian Advisory Committee Infrastructure & Engineering Subcommittee meeting