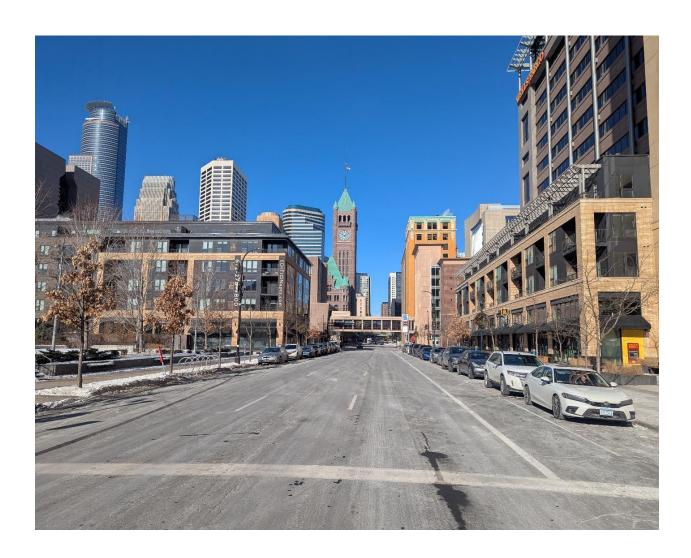
City of Minneapolis 3-Lane One-Ways Study



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Prepared by:



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1) PLANNING BACKGROUND

This study defines various types of 3-lane one-way streets, identifies the street jurisdictions, and highlights recent and planned improvements for each street. It identifies areas of further study, opportunities for safety improvements, and streets with the need for coordination with agency partners.

3-lane one-ways include streets and highway on/off ramps that consist of 3 through lanes in a single direction at intersections, with no motor vehicle traffic moving in the opposing direction at the same intersection.

1.a) Study Goal

The goal of this study is to determine next steps and resource needs for the reconfiguration of 3-lane one-way streets. Street reconfigurations can improve traffic safety and add alternative uses. This study identifies and evaluates all 3-lane one-way streets in Minneapolis for potential safety conversions through:

- Safety and crash analysis
- Vehicle traffic analysis
- Intersection controls
- Parking availability
- Transit, bicycle, and pedestrian use
- Transportation Equity Priority scores
- History and efforts in cities elsewhere to reconfigure 3-lane one-ways
- Recent and programmed street improvements, including if the improvements will reduce the number of general purpose traffic lanes
- Areas of further study and hurdles towards safety improvements

The study fulfills Transportation Action Plan (TAP) <u>Street Operations Action 2.3</u>, to evaluate the reconfiguration of 3-lane one-way streets to reduce travel lanes or add alternative uses, and identifies areas of further study. Street Operations actions seek to address competing demands in the public right of way and clarifies how the City's <u>Complete Streets Policy</u>, commitment to <u>Vision Zero</u>, and <u>climate goal</u> come together into daily operations and systems planning.

2) TYPOLOGIES

3-lane one-way streets are most common in the Downtown core and adjacent to highway onand off-ramps. There are approximately 18 miles of 3-lane one-way streets in Minneapolis. These can be categorized as conventional 3-lane one-ways (largely downtown, with some found elsewhere), highway frontage streets, and highway off-ramps. Street jurisdiction for frontage streets is sometimes shared between the state (MnDOT) and the City. Highway off-ramps are generally owned by MnDOT.

Table 1: 3-Lane One-Ways Mileage and Street Jurisdictions

Street Type	Total Centerline Miles	Number of Street Segments
Conventional 3-Lane One-Ways	15.10	27
City Streets	10.04	15
County Streets	4.92	10
MnDOT Streets	0.14	2
Highway Frontage Streets	2.52	19
Highway Off-Ramps	0.73	11
Total	18.35	57

3-Lane Frontage Street 3-Lane Ramp Conventional 3-Lane One-Way Street LOWRY AVE NE LOWRY AVE N BROADWAY ST NE EAST HENNEPIN AVE GLENWOOD AVE WASHINGTON AVE FRANKLIN AVE W FRANKLIN AVE E LYNDALE AVE S WASHINGTON 50TH ST W Ν 0 1.5 2 0.5 Miles

Figure 1: Map of 3-Lane One-Way Streets and Typologies in Minneapolis

2.a) Conventional 3-Lane One-Ways

Conventional 3-lane one-way streets span multiple blocks and are often paired with another 2 or 3-lane one-way operating in the opposite direction. These streets are most common in Downtown Minneapolis, but are also found in Northeast, Uptown, Phillips, and near the University of Minnesota. This category comprises the majority of the street and lane miles considered in this study. Many of the Downtown streets are aligned directionally with highway ramps entering and exiting Downtown.

While intended to provide vehicle capacity, many currently serve traffic volumes below 750 motor vehicles per lane per hour during peak rush hour use. This indicates an excess in road capacity that could be dedicated to other modes and uses, as well as provide space for safety improvements, green infrastructure and potential placemaking and art. Overbuilt street capacity can lead drivers to speeding, increasing the severity and likelihood of crashes.





Source: Google Maps Streetview, 2022

City-owned 3-lane one-way streets in Minneapolis include:

- Downtown (9.4 miles over 12 segments)
 - o 2nd Ave North from 5th Street North to 3rd Street North
 - o 4th Ave South from South Washington Ave to 10th Street South
 - o 5th Ave South from 10th Street South to South Washington Ave
 - o 3rd Street from 9th Ave South to 2nd Ave North
 - o 4th Street from 2nd Ave North to 10th Ave South
 - Except for the block between 3rd and 4th avenues, in front of City Hall
 - o 6th Street from Hennepin Ave to Park Ave, and from 11th Ave South to 13th Ave South
 - o 7th Street from 13th Ave South to 2nd Ave North
 - o 8th Street from La Salle Ave to 13th Ave South
 - o 9th Street from 5th Ave South to Hawthorne Ave
 - o 10th Street from Twins Way to Park Ave
 - o 11th Street from 5th Ave South to Hawthorne Ave
 - 12th Street from Hawthorne Ave to 4th Ave South

- Northeast (0.1 mile)
 - 4th Street from Central Ave to 1st Ave NE
- Phillips (0.5 mile)
 - o 26th Street from 10th Ave to Portland Ave
 - o 28th Street from Chicago Ave to 10th Ave

County-owned 3-lane one-way streets in Minneapolis include:

- Downtown (0.3 mile)
 - o Portland Ave from 17th Street South to East Franklin Ave
- Northeast (0.8 mile)
 - o 1st Ave NE from Central Ave to the Mississippi River
 - o East Hennepin Ave from the Mississippi River to Central Ave
- Phillips (0.7 mile)
 - o Park Ave from just north of 32nd Street East to just north of 28th Street East
 - o Portland Ave from 29th Ave East to just south of 31st Street East
- Southeast (1.9 mile)
 - o 7th Street from Central Ave to East Hennepin Ave
 - 4th Street from Oak Street SE to just east of I-35W
 - University Ave from 8th Ave SE to Oak Street SE
- Uptown (1.3 mile)
 - o Lagoon Ave from South Emerson Ave to just west of East Bde Maka Ska Parkway
 - o Lake Street from just west of East Bde Maka Ska Parkway to Dupont Ave South

MnDOT-owned 3-lane one-way streets in Minneapolis include:

- Southeast (0.1 mile)
 - o 4th Street from 2nd Ave SE to Central Ave
 - o 4th Street from just east of I-35W to 8th Ave SE

Street Jurisdiction City MARSHALL ST NE County MnDOT WEST BROADWAY GOLDEN VALLEY RD BROADWAY ST NE STINSON BLVD EAST HENNEPIN AVE 35W GLENWOOD AVE UNIVERSITY AVE SE PENN AVE S WASHINGTON AVE 94 FRANKLIN AVE W FRANKLIN AVE E 35W) LAKE ST E LAKE ST W LYNDALE AVE S CEDAR AVE S 0 0.25 0.5 0.75 ■ Miles

Figure 3: Map of Conventional 3-Lane One-Way Streets by Street by Jurisdiction

2.b) Highway Frontage Streets

Highway frontage streets serve a dual purpose as city streets with homes and commercial uses, while also connecting highway on- and off-ramps. Frontage streets may have local side streets connections and private property access points. These streets were often regular urban streets prior to the construction of the interstate highways through the city. The highways continue to be a physical barrier for people walking and biking, and even driving, today. Street jurisdiction of frontage street is not well defined. It is not always clear where MnDOT's responsibility ends, and the City street starts.

From a safety perspective, the area where the off-ramp merges with the local street creates a potential conflict zone, as the motor vehicles coming off the highway often enter the local street network at a high speed. These areas involve variable speeds between the exit ramp users and local street users. Frequent merging and lane switching by vehicles in this zone can lead to an unpleasant travel experience for users of all transportation modes and nearby residences.

3-lane one-way frontage streets can be found along I-35W and I-94, including Stevens Avenue and South 2nd Street in South Minneapolis along I-35W; South 9th Street in Seward along I-94; near the University Avenue, Hennepin Avenue, and Quarry ramps off I-35W in Northeast; East and West Lyndale Avenue along I-94 in Near North and Loring Park, and the Dowling Avenue and 53rd Avenue North ramps to I-94 in Camden.



Figure 4: 9th Street South in Seward

Source: Google Maps Streetview, 2022

2.c) Highway Ramps

Highway on- and off-ramps connect limited access freeways to the local street network. Often, signage prohibits pedestrians from crossing on one or more legs of the intersections with the local street network. TAP Walking Action 5.5 Provide pedestrian crossings at all legs of legal

¹ Minneapolis Public Works, Racial Equity Framework for Transportation, Page 16. https://www2.minneapolismn.gov/media/content-assets/www2-documents/residents/Racial-Equity-Framework-for-Transportation-(REF).pdf

intersections by default; retroactively work to install these where they do not exist, calls for adding pedestrian crossings at all legs of legal intersections. Off-ramps are often wide on approach to the local street to create space for dedicated turn lanes. This creates a wide roadway crossing at the intersection with the local street network, uninviting to cross on foot and further widening the barrier between neighborhoods created by the freeway. 3-lane on-and off-ramps can be found along I-35W, I-94, and Highway 62. MnDOT is the responsible jurisdiction for on- and off-ramps in Minneapolis. The 3-lane off-ramps from Hiawatha Avenue to Lake Street were removed in 2024. The northbound 31st Street off-ramp from I-35W was converted from a 3-lane frontage street to a 2-lane off-ramp in 2021.

Figure 5: State Highway 62 off-ramp approaching Penn Avenue South. Note the sign prohibiting pedestrians to cross.



Source: Google Maps Streetview, 2022

3) SAFETY BACKGROUND

3-lane one-way streets present significant safety challenges in all urban environments; Minneapolis is no different. The wide layout of these streets encourages speeding and form a wide barrier to cross on bike and foot.

Of the 15.1 miles of conventional 3-lane one-ways on 27 streets, approximately 12.2 miles (80 %) are on the 2022 High Injury Streets (HIS) map identified in the Minneapolis <u>Vision Zero Action Plan (2023-2025)</u>. These HIS miles are located on 18 streets and are listed below. For some of these streets, not the entirety of the 3-lane one-way street is identified as a HIS; these non-HIS blocks were not included in the HIS mileage calculation.

Conventional 3-Lane One-Ways segments classified as High Injury Streets (2022):

Downtown

- o 5th Ave South from 10th Street South to South Washington Ave
- o 3rd Street from 5th Ave South to 2nd Ave North
- o 4th Street from 2nd Ave North to Park Ave
- o 6th Street from Hennepin Ave to Park Ave, and from 11th Ave South to 13th Ave South
- o 7th Street from 11th Ave South to 2nd Ave North
- o 8th Street from La Salle Ave to 13th Ave South

- o 9th Street from 5th Ave South to Hawthorne Ave
- o 10th Street from Glenwood Ave to 5th Ave South
- o 11th Street from 5th Ave South to Hawthorne Ave
- o 12th Street from Hawthorne Ave to 2nd Ave South
- Phillips
 - o 26th Street from 10th Ave to Portland Ave
 - o 28th Street from Chicago Ave to 10th Ave

County-owned 3-lane one-way streets classified as High Injury Streets (2022):

- Downtown
 - o Portland Ave from 17th Street South to East Franklin Ave
- Northeast
 - o 1st Ave NE from Central Ave to the Mississippi River
- Phillips
 - o Park Ave from just north of 32nd Street East to just north of 28th Street East
 - o Portland Ave from 29th Ave East to just south of 31st Street East
- Southeast
 - 4th Street from 17th Ave SE to just east of I-35W
 - University Ave from 8th Ave SE to 17th Ave SE
- Uptown
 - Lagoon Ave from South Emerson Ave to just west of East Bde Maka Ska Parkway
 - o Lake Street from just west of East Bde Maka Ska Parkway to Dupont Ave South

MnDOT-owned 3-lane one-way streets classified as High Injury Streets (2022):

- Southeast
 - 4th Street from 2nd Ave SE to Central Ave, and from just east of I-35W to 8th Ave SE

In addition, the 11th Ave SE frontage street intersection with Hennepin Ave E is identified as a high injury intersection.²

3.a) Crash Data

The graphs below show the number of injury crashes per mile, the number of injury crashes per mile by vehicle traffic volume, fatal and severe crashes per mile, and pedestrian and bicycle crashes per mile on 3-lane one-way streets. The crash data covers 2018 through 2022 on conventional 3-lane one-way streets.³

Crash data highlights:

• Streets that stand out for the high number of crashes per mile include the MnDOT operated portion of 4th Street SE near the I-35W ramp, as well as County operated Park Avenue and Portland Avenue in the Phillips neighborhood.

² For more information, see the High Injury Streets map on page 11 of the <u>Minneapolis Vision Zero Action Plan</u> (2023-2025).

³ Crash data graphs include County streets Park Ave (from 18th Street East to 4th Street South) and Portland Ave (from 5th Street South to East Franklin Ave) in Downtown Minneapolis, which were converted to 2-lane one-ways in 2024.

- When controlling for the daily traffic volumes on the streets, 2nd Ave North shows a high number of crashes.
- Portland Avenue in the Phillips neighborhood stands out for the number of fatal and severe injuries per mile.
- Pedestrian and bicycle crashes per mile are the highest on the MnDOT controlled portion of 4th Street SE near I-35W, as well as 9th Street in Downtown.

Figure 6: All Injury Crashes per Mile, 3-Lane One-Way Segments, 2018-2022

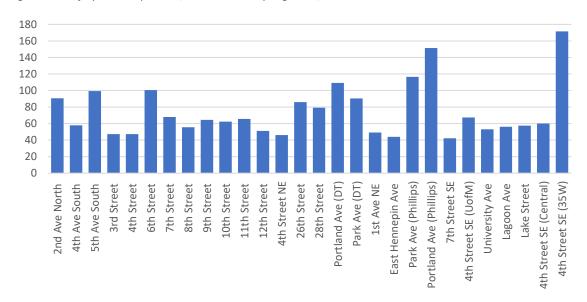
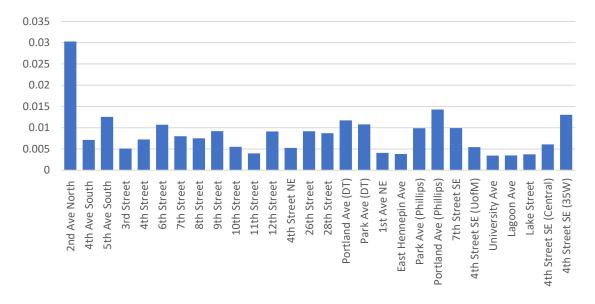


Figure 7: All Injury Crashes per Mile, by Daily Traffic Volume, 3-Lane One-Way Segments, 2018-2022



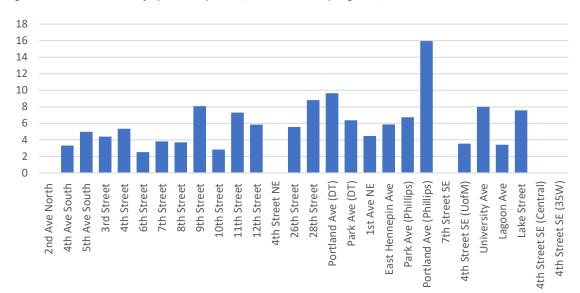
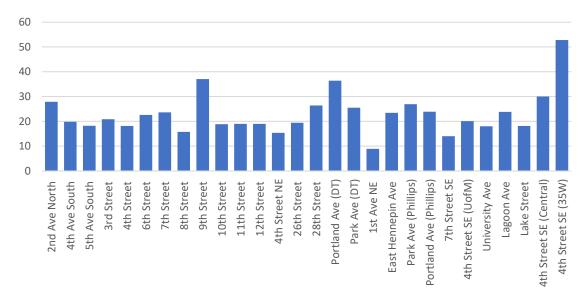


Figure 8: Fatal and Severe Injury Crashes per Mile, 3-Lane One-Way Segments, 2018-2022





4) TRAFFIC DATA AND STREET OPERATIONS

4.a) Traffic Volumes

Daily vehicle traffic volumes can vary along the length of a street, especially on longer segments considered in this study. The table below shows the highest and lowest average daily traffic volumes along the conventional 3-lane one-way streets. Minneapolis Public Works considers 3-lane one-way streets with fewer than 750 vehicles per lane during peak hour as a threshold for lane conversion consideration, along with the role of the street in the network, circulation, traffic safety, land use context, loading and curbside uses, access needs, and event traffic. Peak hour volumes vary by street between morning, afternoon, and event traffic peaks. Average daily traffic volumes are shown in Figure 10.

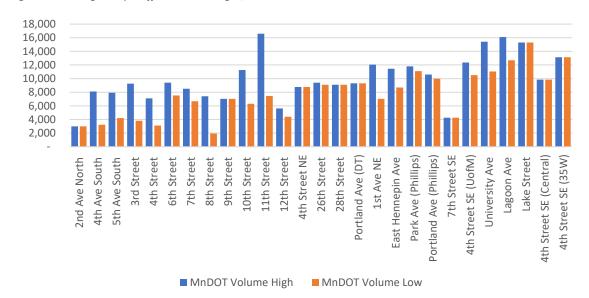


Figure 10: Average Daily Traffic Volume Ranges, 2019-2022

Source: MnDOT Traffic Mapping Application. https://www.dot.state.mn.us/traffic/data/tma.html

4.b) Signalized Intersections, Parking, and Double Turn Lanes

On Downtown streets, signals are present on almost all intersections along the length of the 3-lane one-ways. Signals often require queuing space for turning movements and to prevent backups to the previous intersection, increasing the right-of-way (ROW) width need for the streets and increasing the pedestrian crossing distances at intersections.

Outside of Downtown, streets such as Park and Portland in Phillips, University and 4th Street in SE Minneapolis, and Lake and Lagoon in Uptown primarily intersect with smaller neighborhood streets and have fewer signals. These 3-lane one-ways pose a barrier for pedestrians to cross the streets that are currently designed for higher-speed vehicle throughput in neighborhoods.

Some 3-lane one-ways have intersections with double right or double left turn lanes. These intersections see sideswipe and side-impact collisions from cars that do not turn with the same arc radius or continue straight from the turn lane. They also limit the visibility of pedestrians in the cross walk. Streets with double right or double left run lanes include:

- 2nd Ave North from 5th Street North to 3rd Street North
- 4th Ave South from South Washington Ave to 10th Street South
- 5th Ave South from 10th Street South to South Washington Ave
- 9th Street from 5th Ave South to Hawthorne Ave
- 10th Street from Twins Way to Park Ave
- 11th Street from 5th Ave South to Hawthorne Ave
- 4th Street NE from Central Ave to 1st Ave NE
- 4th Street SE from Oak Street SE to just east of I-35W
- Highway frontage streets and off-ramps

The ROW on almost all the 3-lane one-ways includes parking, in many cases on both sides of the street. Often, these parking spaces are metered.⁴ This indicates a demand to visit destinations along the 3-lane one-ways today, which conflicts with the original intended vehicle throughput function provided by 3-lane one-ways.

Table 2: Signalized Intersections and Parking Availability

Number of Signalized Intersections	Signals per Mile	Predominant Parking Availability
	20.9	Metered, both sides
9		Metered, both sides
9		Metered, both sides
12	13.2	Metered, both sides
12	11.8	Metered, both sides
11	13.8	Metered, both sides
15	11.5	Metered, both sides
12	11.1	Metered, left side
9	14.5	Metered, both sides
14	13.2	Metered, both sides
9	13.1	Metered, both sides
8	11.7	Metered, both sides
3	23.0	Metered, both sides
4	11.1	Metered one block, left side off-peak only
2	17.6	No parking
10	10.7	Metered, both sides
11	14.0	Metered, both sides
5	11.2	Metered, both sides
6	17.6	Metered, both sides
4	9.0	Both sides
2	8.0	Both sides
1	14.0	Metered, right side
8	9.5	Metered in Dinkytown. No parking elsewhere, except Sunday mornings on left
0	8 N	Metered in Dinkytown. No parking elsewhere, except Sunday mornings on left
		Metered, both sides
-		Metered, both sides
		No parking
		Left side
	Signalized Intersections 3 9 9 12 12 11 15 12 9 14 9 8 3 4 2 10 11 5 6 4 2 1	Signalized Intersections per Mile 3 20.9 9 14.9 9 14.9 12 13.2 12 11.8 11 13.8 15 11.5 12 11.1 9 14.5 14 13.2 9 13.1 8 11.7 3 23.0 4 11.1 2 17.6 10 10.7 11 14.0 5 11.2 6 17.6 4 9.0 2 8.0 1 14.0 8 9.5 8 8.0 5 8.5 5 7.6 1 15.0

4.c) Transit Use and Prioritization

Bus routes use 3-lane one-ways to navigate through the city as they often serve as major arterials between neighborhoods. These streets present a potential opportunity for the conversion of general purpose traffic lanes to transit priority lanes, providing a transit advantage. 3-lane one-way streets span multiple blocks and are often paired with another 2- or 3-lane one-way operating in the opposite direction. One-way street pairs pose a challenge to transit, as bus stops in opposite directions are one block apart, weakening the route legibility and increasing the walking distance either at the arrival or at the return of a roundtrip.

⁴ For a detailed look at metered parking spaces in Minneapolis, see https://www.minneapolismn.gov/getting-around/parking-driving/street-parking-meters/parking-meters/parking-meter-map/

Metro Transit consolidated most routes Downtown on north-south and east-west spines, operating buses with high frequency. The spines are also listed as <u>Transit Priority Projects</u> in the Transportation Action Plan.

Table 3: Transit Operations

	Metro Transit	TAP Transit	Average Daytime	Passenger Delay
3-Lane One-Ways	Routes	Priority Corridor	Bus Frequency	(hours)*
2 nd Ave North	None	No		
4 th Ave South	22	Yes	<20min	3
5 th Ave South	22	Yes	<20min	8
3 rd Street	17, 18, 852	No	<30min	
4 th Street	852	Yes	30min	73
6 th Street	14, 94	Yes	20min	85
7 th Street	C, D, 5, 9, 14, 22, 94	Yes	<10min	290
8 th Street	C, D, 5, 9, 22	Yes	<10min	173
9 th Street	61	No	30min	
10 th Street	61	No	30min	
11 th Street	645	No	30min	61
12 th Street	645	No	30min	59
4 th Street NE	E, 6	Yes	30min	119
26 th Street	27	No	60 min	
28 th Street	27	No	60 min	
Portland Ave (DT)	9	No	30min	
1st Ave NE	E, 4, 6, 11, 61	Yes	<10min	430
East Hennepin Ave	E, 4, 6, 11, 61	Yes	<10min	430
Park Ave (Phillips)	None	No		
Portland Ave (Phillips)	27	No	60 min	
7 th Street SE	4, 25, 61	No	<30min	430
4 th Street SE (UofM)	E, 2, 6	Yes	<10min	119
University Ave	E, 2, 6	Yes	<10min	119
Lagoon Ave	B, 17, 27, 38	No	<10min	
Lake Street	B, 17, 27, 38	No	<10min	
4 th Street SE (Central)	E, 6	Yes	30min	119
4 th Street SE (35W)	E, 6	Yes	30min	119

^{*}Passenger delay is a metric that weights the vehicle delay by the ridership of a route. It is the cumulative delay experienced by all passengers. For example, the fastest 2 percent of trips travel a segment in 3 minutes. If a rush hour bus travels that segment in 5 minutes, it is experiencing 2 minutes of vehicle delay. If the bus has 20 riders on board, there would be a total of 40 minutes of passenger delay for that segment. Passenger delay information not available for all streets. Source: Metro Transit.

4.d) Pedestrian and Bicycle Facilities

All 3-lane one-ways are on the City's <u>Pedestrian Priority Network</u>, a grid of streets that represent where people frequently walk. Almost all 3-lane one-ways are also on the City's <u>All Ages and Abilities (AAA) Bike Network</u>.

Both the Pedestrian Priority Network and AAA Network were developed by studying numerous factors that influence where people walk and bike, including transit services, high density areas, commercial activity, land use, and connections to schools and High Injury Streets for pedestrians and people biking.

Most 3-lane one-ways currently do not have curb protected bike facilities.

Table 4: Bike Facilities and Planned Network

3-Lane One-Ways	On AAA Network	Current Bike Facility
2 nd Ave North	Near-Term Low Stress	None
4 th Ave South	Long-Term Low Stress	Painted Bike Lanes
5 th Ave South	Long-Term Low Stress	Painted Bike Lanes
3 rd Street	Near-Term Low Stress	Painted Bike Lanes
		Top-of-Curb Protected for northern half,
4 th Street	Near-Term Low Stress	Painted Bike Lanes southern half
6 th Street	Long-Term Low Stress	Painted Bike Lanes
7 th Street	Long-Term Low Stress	None
8 th Street	Long-Term Low Stress	None
9 th Street	Near-Term Low Stress	Painted Bike Lanes
10 th Street	Near-Term Low Stress	Painted Bike Lanes
11 th Street	Connector Bikeway	Painted Bike Lanes
12 th Street	Connector Bikeway	Painted Bike Lanes
4 th Street NE	Near-Term Low Stress	None
26 th Street	Low Stress Bikeway	Bollard Protected Bike Lanes
28 th Street	Low Stress Bikeway	Bollard Protected Bike Lanes
Portland Ave (DT)	Near-Term Low Stress	Painted Bike Lanes
1st Ave NE	Near-Term Low Stress	Curb Protected
East Hennepin Ave	Near-Term Low Stress	Curb Protected
Park Ave (Phillips)	Near-Term Low Stress	Painted Bike Lanes
Portland Ave (Phillips)	Near-Term Low Stress	Painted Bike Lanes
7 th Street SE	No	Curb Protected
4 th Street SE (UofM)	Near-Term Low Stress	Curb Protected
University Ave	Near-Term Low Stress	Painted Bike Lanes
Lagoon Ave	No	None
Lake Street	Near-Term Low Stress	Curb Protected for western half
4 th Street SE (Central)	Near-Term Low Stress	Painted Bike Lanes
4 th Street SE (35W)	Near-Term Low Stress	Painted Bike Lanes

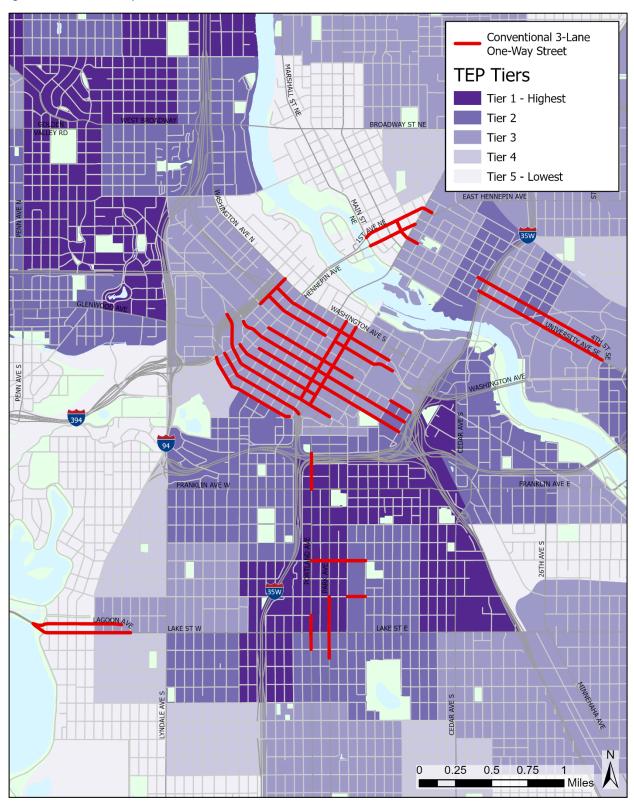
5) TRANSPORTATION EQUITY PRIORITY SCORES

Public Works published its <u>Racial Equity Framework for Transportation</u> in the spring of 2023, which established Transportation Equity Priority (TEP) scores for the City. The scores group Census tracts across the city into five tiers, calculated from two subscores (Base Equity and Equity+), inclusive of demographic factors.

The Base Equity Score consists of five factors relating to race and income, which are given point values and then given a weight and added together. The Equity+ score consists of data that plays a critical and more nuanced role in transportation equity. Equity+ includes data on transportation, the environment, and potential users/population density.

Many 3-lane one-ways border two or more Census tracts and thus may have multiple TEP scores. Streets abutting Tier 1 and/or Tier 2 TEP areas include University Ave SE, 4th Street SE, 6th Street, 7th Street, 8th Street, 12th Street, 26th Street, 28th Street, Portland Ave, and Park Ave.

Figure 11: 3-Lane One-Ways and TEP Tiers



6) HISTORY AND EFFORTS ELSEWHERE

Many smaller and mid-sized cities are converting downtown one-way streets to bidirectional operations, while the downtowns of larger cities tend to keep one-way operations but reallocate the ROW to other transportation modes or uses. NACTO offers <u>guidance in its urban street</u> <u>design guide</u> to convert broad one-way streets to include cycle tracks, widened sidewalks and transit lanes, and optimize usage of the street as a public space.

Minneapolis converted Hennepin Ave and 1^{st} Ave N from one-way operations to bidirectional operations in 2009. This was done as an economic revitalization effort to boost healthier street life and improve traffic safety.

The benefits of conversion to bidirectional operations include:

- Slower speeds
- Shorter travel distances (reducing VMT)
- Better access to commercial destinations along the street
- <u>Better visibility</u> and legibility for transit operations, as one-way streets increase walking distances at either the origin or destination

Some drawbacks of bidirectional operations conversions include:

- Higher crash rates with left turns
- Limited ability to dedicate additional space to transit, biking, or additional streetscape
- Vehicle turn movements in both directions limit ability for bumpouts in street design
- Lower traffic throughput
- Emergency vehicle speeds

One-way streets offer simpler signal operations with two stages, allowing for a shorter traffic signal cycle than the four stages required for protected left turns at an intersection of two bidirectional streets.

New York City's major north-south avenues in Manhattan operate as one-way streets. In recent years, the city added bus lanes and protected bikeway facilities to some of the avenues to encourage multimodal operations, reduce pedestrian crossing distances, implement traffic calming, and add greening. Chicago added protected bikeways, bus lanes and bus platforms on four streets in Downtown through its Loop Link Project.

Figure 12: Washington Street, Downtown Chicago



Source: Google Maps Streetview, 2018

As part of its <u>Capital City Bikeway</u> program, Saint Paul maintained one-way operations on Jackson Street in Downtown, but eliminated a travel lane to reallocate the space for a raised bikeway and additional green infrastructure.

6.a) Minneapolis Approach

The City of Minneapolis intends to maintain one-way operations on the identified conventional 3-lane one-ways. The primary motivation for maintaining one-way operations is the opportunity to reallocate space for City modal priorities and placemaking. Benefits include dedicating space to active transportation and transit, green infrastructure, seating areas, delivery loading zones and drop-off parking locations, fewer turn movements to consider for intersection design, and promoting alternative uses from space dedicated to general purpose traffic lanes.

Most of the Downtown 3-lane one-ways classify as "Downtown Core" streets in the city's <u>Street</u> <u>Design Guide</u>.

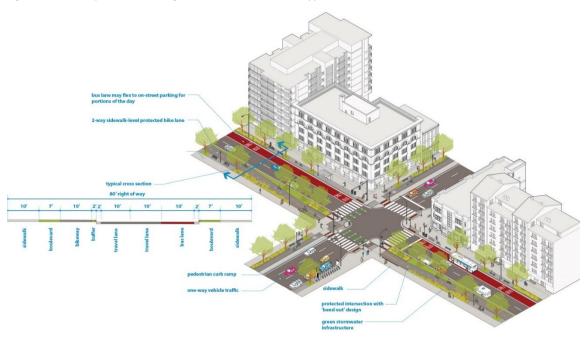


Figure 13: Minneapolis Street Design Guide, Downtown Core Typical Cross Section

7) RECENT AND PROGRAMMED IMPROVEMENTS

Examples of 3-lane one-way street recently reconfigured to 2-lane one-way streets in Minneapolis include:

- 4th Street in front of City Hall, between 3rd and 4th avenues South
- Park & Portland between Washington Ave and 46th Street, except for
 - o Park Ave from just north of 32nd Street East to just north of 28th Street East
 - Portland Ave from 17th Street South to East Franklin Ave, and from 29th Ave East to just south of 31st Street East
- University Ave SE and 4th Street SE between Central Ave and I-35W
- 26th Street and 28th Street, from Cedar Ave to Nicollet Ave, except for:
 - 26th Street from 10th Ave to Portland Ave

- o 28th Street from Chicago Ave to 10th Ave
- One block of 8th Street Downtown recently changed to two-lane operations for one block from Park Ave to Chicago Ave to allow for all day on-street parking on the north curb line

The 4th Street project achieved a lane reduction through a reconstruction project that moved curbs, while the others primarily consisted of restriping and the addition of plastic bollards.

However, many conventional 3-lane one-ways in Minneapolis are programmed for improvements in the coming years. Some through full reconstructions, and others through bikeway and transit projects that will bring significant traffic calming measures to these corridors. Some projects may reduce the total number of lanes from 3 to 2, while others convert one lane to a transit priority lane. An overview of planned work is listed in Table 5.

The following 3-lane one-ways do not have any planned or proposed improvements; all are under city jurisdiction:

- 2nd Ave North Downtown
- 3rd Street Downtown
- 8th Street Downtown Reconstructed from Hennepin Ave to Chicago Ave in 2019.

7.a) Transit Priority Implementation Workplan

Public Work is developing a Transit Priority Implementation Workplan to guide the implementation of transit priority projects along corridors with the greatest passenger delay to improve speed and reliability for transit riders. These projects could include signal priority, queue jumps, and transit priority lane treatments.

Table 5: Planned Improvements

Street/Project	Description	Completion Year	Will Improvements Reduce Lanes?
Hennepin & 1st Ave NE, 7th Street SE (Hennepin County)	Street improvements between Main Street and 8 th Street. BRT E & F Lines. Converts one lane to a transit priority lane. Adds curb protected bike lanes, wider sidewalks, green infrastructure, and stormwater improvements	2024	No - transit lane conversion
University & 4 th Street SE (Hennepin County)	Street improvements between I-35W and Oak Street. BRT E Line. Adds 2-way curb protected bikeway on University Ave, and one-way curb protected bikeway on 4 th Street.	2024-2025	No
University & 4 th Street SE (MnDOT)	MnDOT reconstruction from Central Ave to I-35W. Provides improvements to meet Americans with Disabilities Act (ADA) standards, bus stop improvements to correspond with the upcoming E Line Bus Rapid Transit route, and bike lane improvements.	2027-2028	No - 3 lanes will remain for one block of 4 th Street closest to Central Ave
Lake & Lagoon	Street Improvements associated with <u>B Line aBRT construction</u> . Converts one lane on both streets to a transit priority lane. Adds raised crosswalks, bumpouts, protected bikeway on Lake, signal improvements	2024	No - transit lane conversion
9 th & 10 th Street Corridor Improvements	Curb protected bikeway on 9 th St. South from 2 nd Ave N to 14 th Street E and on 10 th St. South from 2 nd Ave N to 14 th Street E	2027	Yes
28 th Street	Phillips Traffic Safety - Intersection improvements at 28th & Chicago and 28th & 10th Ave S	2025	No
26 th Street and 28 th Street	Phillips Traffic Safety Phase II - Improve pedestrian safety and ADA access at 27 intersections along 26 th , 27 th , and 28 th Streets	2026	TBD
Park & Portland Safety Improvements	Hennepin County Project south of I-94 to 46 th Street. Street improvements with ADA ramp improvements, reducing the number of general traffic lanes from 3 to 2, shortening crossing distances for pedestrians, adding a protected bikeway	2027	Yes
Safe Streets For All	Pedestrian islands, bumpouts, curb protected bikeways, and green infrastructure for: 4 th Ave South in Downtown 5 th Ave South Downtown 4 th Street Downtown (4 th Ave to Chicago Ave) 6 th Street Downtown (1st Ave N to Portland Ave) 11 th Street Downtown 12 th Street Downtown	2028-2029	TBD
4 th Street NE – E Line	METRO E Line station will be added to 4 th Street & Central Ave	2025	No
7 th Street Downtown	Reconstruction – awarded Regional Solicitation funds in 2024 for 2029 construction	2029	TBD

8) **RECOMMENDATIONS**

This study of 3-lane one-ways recommends the following capital project action items, areas to monitor, and items for further coordination.

8.a) Capital Project Action Items

- 1. When feasible as part of upcoming projects, convert 3-lane streets to 2 lanes on streets with fewer than 750 vehicles per lane during peak hour. Highest volume blocks could receive different treatments if appropriate. Any future changes to street lane capacity will be studied on a case-by-case basis as part of capital project development, which consider the role of the street in the network, circulation, traffic safety, land use context, loading and curbside uses, access needs, and event traffic. Peak hour volumes vary by street between mornings, afternoons, and large venue event traffic. Projects that move curb lines will need to consider watermain, stormwater, and sanitary sewer impacts.
- 2. Consider capital project proposals for future street reconfigurations for 2nd Ave North and 3rd Street in Downtown, which currently have no planned capital improvement projects.
- 3. With no upcoming capital improvement project for recently reconstructed 8th Street Downtown, consider transit priority lanes as an independent transit priority project.

8.b) Monitor

- 4. As part of evaluating recent capital projects, monitor traffic volumes and safety statistics on streets with recent and upcoming lane conversions and the surrounding street network. This will quantify the benefits of lane conversions and inform future street designs.
- 5. Determine if lane conversions can be piloted on higher volume 3-lane one-way streets, beyond 750 vehicles per lane during peak hour. Temporary demonstration projects could close a lane and dedicate the space to alternative uses.
- 6. Evaluate double right- and left-turn lanes and remove wherever prudent to prevent sideswipe and side-impact collisions, and improve pedestrian safety at crossings. This applies to the streets listed in section 4.b.

8.c) Coordination

- 7. Coordinate on safety improvement with MnDOT, or conduct an independently study, for pedestrian and bike safety and access near highway on- and off-ramps, interchanges, and frontage roads. Study crash data and pedestrian access across highway barriers.
- 8. To the extend feasible with project funding and program year, coordinate street designs and traffic operations across upcoming projects in Downtown and study network effects.

 Projects are often limited in scope to a single corridor and changes to one affect operations on other Downtown streets. Coordinating projects as a network can identify which streets make good candidates for lane conversions that may allow for reduced crossing distances and adjusted signal timing.

9) APPENDIX

9.a) Current and Future Status of Conventional 3-Lane One-Ways

Table 6: Current and Future Status of Conventional 3-Lane One-Ways

3-Lane One-Ways	Section	Projects That May Change Lane Configuration	Completion Year
2 nd Ave North	from 5 th Street North to 3 rd Street North	N/A	
4 th Ave South	from South Washington Ave to 10 th Street South	Safe Streets For All	2028-2029
5 th Ave South	from 10 th Street South to South Washington Ave	Safe Streets For All	2028-2029
3 rd Street	from 9 th Ave South to 2 nd Ave North	N/A	
4 th Street	from 2 nd Ave North to 10 th Ave South (except City Hall)	Safe Streets For All (4 th Ave to Chicago Ave)	2028-2029
6 th Street	from Hennepin Ave to Park Ave, and from 11 th Ave South to 13 th Ave South	Safe Streets For All (1st Ave N to Portland Ave)	2028-2029
7 th Street	from 13 th Ave South to 2 nd Ave North	7 th Street Downtown Reconstruction	2029
8 th Street	from La Salle Ave to 13 th Ave South	N/A	
9 th Street	from 5 th Ave South to Hawthorne Ave	9 th & 10 th Street Corridor Improvements	2026
10 th Street	from Twins Way to Park Ave	9 th & 10 th Street Corridor Improvements	2026
11 th Street	from 5 th Ave South to Hawthorne Ave	Safe Streets For All	2028-2029
12 th Street	from Hawthorne Ave to 4 th Ave South	Safe Streets For All	2028-2029
4 th Street NE	from Central Ave to 1st Ave NE	METRO E Line station	2025
26 th Street	from 10 th Ave to Portland Ave	Phillips Traffic Safety Phase II	2026
28 th Street	from Chicago Ave to 10 th Ave	Phillips Traffic Safety Phase II	2026
Portland Ave (DT)	from 17th Street South to East Franklin Ave	Park & Portland Safety Improvements	2027
1st Ave NE	from Central Ave to the Mississippi River	Hennepin & 1st Ave NE (Hennepin County)	2024
East Hennepin Ave	from the Mississippi River to Central Ave	Hennepin & 1st Ave NE (Hennepin County)	2024
	from just north of 32 nd Street East to	Park & Portland Safety	2027
Park Ave (Phillips)	just north of 28 th Street East	<u>Improvements</u>	
Portland Ave (Phillips)	from 29 th Ave East to just south of 31 st Street East	Park & Portland Safety Improvements	2027
7 th Street SE	from East Hennepin Ave to Central Ave	Hennepin & 1st Ave NE (Hennepin County)	2024
4 th Street SE (UofM)	from Oak Street SE to just east of I-35W	University & 4 th Street SE (Hennepin County)	2024
University Ave	from 8 th Ave SE to Oak Street SE	University & 4 th Street SE (Hennepin County)	2025
Lagoon Ave	from South Emerson Ave to just west of East Bde Maka Ska Parkway	Lake & Lagoon	2024
Lake Street	from just west of East Bde Maka Ska Parkway to Dupont Ave South	Lake & Lagoon	2024
4 th Street SE (Central)	from 2 nd Ave SE to Central Ave	University & 4 th Street SE (MnDOT)	2027-2028
4 th Street SE (35W)	from just east of I-35W to 8 th Ave SE	University & 4 th Street SE (MnDOT)	2027-2028

9.b) Street Length and Jurisdictions

Table 7: Street Length and Jurisdiction

3-Lane One- Ways	Section	Centerline Length (Miles)	Туре	Primary Jurisdiction	Area
2 nd Ave North	from 5 th Street North to 3 rd Street North	0.14	Conventional	City	Downtown
4 th Ave South	from South Washington Ave to 10th Street South	0.61	Conventional	City	Downtown
5 th Ave South	from 10 th Street South to South Washington Ave	0.60	Conventional	City	Downtown
3 rd Street	from 9 th Ave South to 2 nd Ave North	0.91	Conventional	City	Downtown
4 th Street	from 2 nd Ave North to 10 th Ave South (except City Hall)	0.94	Conventional	City	Downtown
6 th Street	from Hennepin Ave to Park Ave, and from 11 th Ave South to 13 th Ave South	0.80	Conventional	City	Downtown
7 th Street	from 13 th Ave South to 2 nd Ave North	1.31	Conventional	City	Downtown
8 th Street	from La Salle Ave to 13 th Ave South	1.08	Conventional	City	Downtown
9 th Street	from 5 th Ave South to Hawthorne Ave	0.62	Conventional	City	Downtown
10 th Street	from Twins Way to Park Ave	1.06	Conventional	City	Downtown
11 th Street	from 5 th Ave South to Hawthorne Ave	0.69	Conventional	City	Downtown
12 th Street	from Hawthorne Ave to 4 th Ave South	0.68	Conventional	City	Downtown
4 th Street NE	from Central Ave to 1st Ave NE	0.13	Conventional	City	Northeast
26 th Street	from 10 th Ave to Portland Ave	0.36	Conventional	City	Phillips
28 th Street	from Chicago Ave to 10 th Ave	0.11	Conventional	City	Phillips
Portland Ave (DT)	from 17th Street South to East Franklin Ave	0.27	Conventional	County	Downtown
1st Ave NE	from Central Ave to the Mississippi River	0.45	Conventional	County	Northeast
East Hennepin Ave	from the Mississippi River to Central Ave	0.34	Conventional	County	Northeast
Park Ave (Phillips)	from just north of 32 nd Street East to just north of 28 th Street East	0.45	Conventional	County	Phillips
Portland Ave (Phillips)	from 29 th Ave East to just south of 31 st Street East	0.25	Conventional	County	Phillips
7 th Street SE	from East Hennepin Ave to Central Ave	0.07	Conventional	County	Southeast
4 th Street SE (UofM)	from Oak Street SE to just east of I-35W	0.85	Conventional	County	Southeast
University Ave	from 8 th Ave SE to Oak Street SE	1.00	Conventional	County	Southeast
	from South Emerson Ave to just west of East Bde Maka Ska		Conventional	County	Uptown
Lagoon Ave	Parkway	0.59	Convertional	Country	Lintario
Lake Street	from just west of East Bde Maka Ska Parkway to Dupont Ave South	0.66	Conventional	County	Uptown
4 th Street SE (Central)	from 2 nd Ave SE to Central Ave	0.07	Conventional	MnDOT	Southeast

3-Lane One- Ways	Section	Centerline Length (Miles)	Туре	Primary Jurisdiction	Area
4 th Street SE (35W)	from just east of I-35W to 8 th Ave SE	0.08	Conventional	MnDOT	Southeast
Stevens Ave	Lake, 35 th , 46 th , Diamond Lake Rd, I-35W	0.49	Frontage	MnDOT	South
2 nd Street South	35 th , 46 th , Diamond Lake Rd, I- 35W	0.26	Frontage	MnDOT	South
9 th Street South	25 th Ave S, I-94	0.05	Frontage	MnDOT	Seward
9 th Ave SE	University Ave, I-35W	0.07	Frontage	MnDOT	Southeast
10 th Ave SE	Hennepin, I-35W	0.04	Frontage	MnDOT	Southeast
11 th Ave SE	Hennepin, I-35W	0.11	Frontage	MnDOT	Southeast
Quarry Ramps	North and South, I-35W	0.16	Frontage	MnDOT	Northeast
East Lyndale Ave	Bassett Creek to 11 th Ave N, I-94	0.55	Frontage	City	Near North
West Lyndale Ave	North 7 th Street to Olson MH, I-94	0.19	Frontage	City	Near North
East Lyndale Ave	Vineland to Loring Park	0.10	Frontage	City	Loring Park
West Lyndale Ave	I-94 to Vineland	0.38	Frontage	City	Lowry Hill
4th Street North	Dowling Ave, I-94	0.05	Frontage	MnDOT	Camden
North Lyndale Ave	53 rd Ave, I-94	0.07	Frontage	MnDOT	Camden
49 th Ave North Ramp	I-94	0.05	Ramp	MnDOT	Camden
Broadway Ramps	I-94	0.21	Ramp	MnDOT	Near North
University Ave Ramps	I-35W	0.13	Ramp	MnDOT	Southeast
Quarry Ramps	I-35W	0.12	Ramp	MnDOT	Northeast
Industrial Boulevard Ramps	I-35W	0.13	Ramp	MnDOT	Northeast
Lyndale Ave South	Highway 62	0.05	Ramp	MnDOT	Southwest
Penn Ave South	Highway 62	0.04	Ramp	MnDOT	Southwest