

Hennepin Ave - Douglas to Lake Crash Analysis

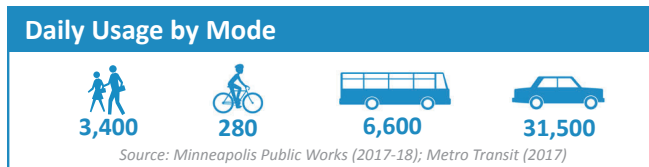
2016-March 2019



Hennepin Ave Corridor

Safety / Crash Analysis

The portion of Hennepin Ave. through Uptown, between Douglas Ave. and Lake St., is a heavily used roadway by all modes of travel. It was built over 60 years ago and is slated for reconstruction to address infrastructure deficiencies, congestion, inadequate pedestrian, bicycle and transit facilities, and the corridors crash history.*



With the City's commitment to eliminating deaths and severe injuries on our streets, a focus of the Hennepin Ave. roadway reconstruction project is identifying and addressing safety issues along the corridor. The following document reviews crashes that occurred

Key Findings

- Pedestrians and bicyclists are involved in a low percentage of overall crashes (11%), but they make up the majority of crashes that result in injuries (57%)
- The Hennepin Ave Corridor has a larger percentage of pedestrian and bicyclist crashes (11% overall, 57% severe injury) than the city as a whole (approx. 5% overall, 38% severe/fatal)
- All pedestrian/bicyclist crashes resulting in incapacitating injuries (5) occurred either at the 25th St. intersection or between 27th St. and Lagoon Ave.
- The majority of pedestrian and bicyclist crashes at intersections involved vehicles turning onto or off of the corridor (54%)
- Parked or parking vehicles were involved in the majority of crashes coded as crash type "other" between intersections (80%)
- Half of the pedestrian crashes on the corridor occurred in relation to parking activities, three of which resulted in incapacitating injuries
- All crashes resulting in incapacitating injuries occurred between 25th St. and Lagoon Ave.
- The majority of crashes (69%) occurred at signalized intersections
- There are sustained crash issues between: 24th St. and 25th St., 26th St. and 28th St., and 29th St. and Lagoon Ave.
- Rear-end crashes make up 32% of all crashes along the corridor
- Weather does not appear to be a significant contributing factor as 65% of the crashes occurred when the roadway was dry
- Speeding was not reported as a contributing factor in corridor crashes

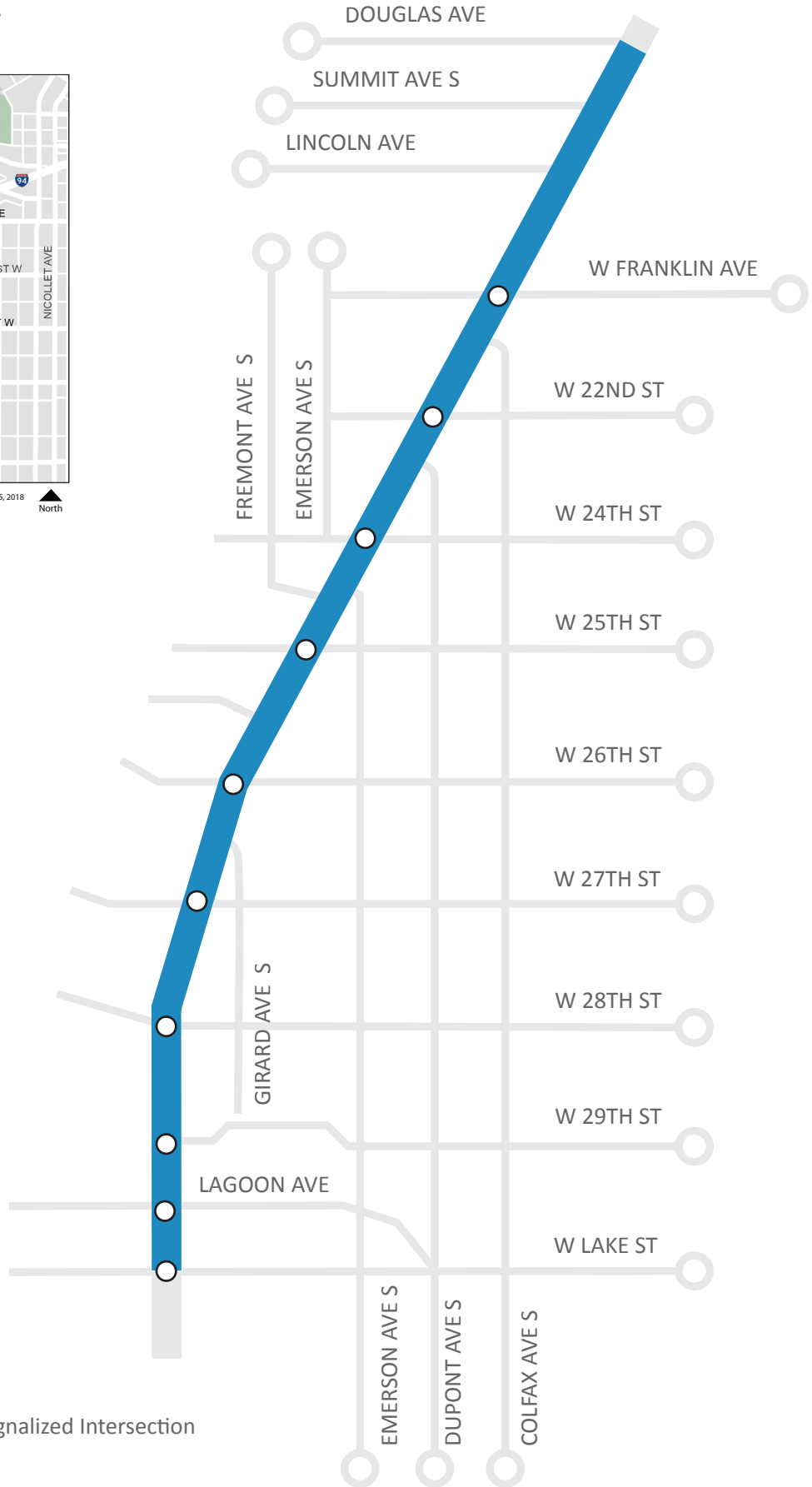
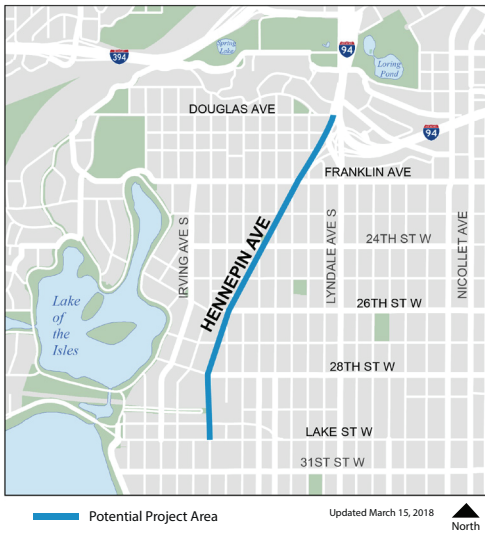
VISION ZERO MINNEAPOLIS

The City of Minneapolis has joined the national Vision Zero movement to eliminate deaths and severe injuries on our streets. To reach this ambitious goal, we are working with people from across our community to develop an Action Plan for making our transportation network safe for everyone. When it comes to decisions about the way our streets look, feel, and operate, protecting human life will always be the top the priority.

over the past 3 years to identify trends and areas of concern. This will help inform the design of the future Hennepin Ave. and create a safer place for those who travel along and across the corridor.

*As of 2018, the Hennepin Ave. corridor from Douglas Ave. to Lake St. was identified as a Crash Concentration Corridor for pedestrians, bicycles and vehicles, and a High Injury Network for pedestrians and vehicles. Source: 2018 CITY OF MINNEAPOLIS VISION ZERO CRASH STUDY

Figure 1.
HENNEPIN AVE CORRIDOR
 Douglas to Lake



Methodology

The study used crash data obtained from Hennepin County between January of 2016 and March of 2019. The crash data was utilized to analyze information about the crashes along the corridor and at intersections such as:

- Crash Type (e.g. rear-end, head-on, sideswipe)
- Severity Type (e.g. fatalities, incapacitating injuries, property damage)
- Critical Crash Index (CCI) – this was calculated for each intersection and segment to identify trends and potential areas for improvement.

Critical Crash Index

The Critical Crash Index is a tool to assist in the identification of problem areas along the corridor. It is the ratio of the observed crash rate to the critical crash rate. While the crash rate calculation allows for comparison of locations with similar designs but different volumes, the critical crash rate calculation adjusts the average rate based on exposure and is a statistically adjusted crash rate to account for the random nature of crashes.

A critical index of 1.0 or more indicates a potential safety concern.

A previous study of crashes was completed for the Hennepin Ave. Corridor using data provided by the Minnesota Crash Mapping Analysis Tool (MnCMAT) for the period from 2013-2015. This analysis showed that there were six intersections and zero segments that were above the Critical Crash Index threshold of 1.0. From 2016-March 2019 there were two intersections and five segments that were above the Critical Crash Index threshold. We suspect that the difference is due to more detail provided in the crash data to better attribute it to its location and identify the type of crash under the current format, rather than changes in crash characteristics or roadway conditions. The only outlier between the two periods of analysis was the Franklin Ave. intersection which had a decrease in the Critical Crash Index from 1.00 in 2013-2015 to 0.54 in 2016-March 2019.

Data Summary

Time Period - 2016 to March 2019

Total Crashes - 304

Deaths - 0

Injuries - 49

Crashes Involving Pedestrians and Bicyclists - 33

Analysis - Intro

Of the 304 crashes that occurred along the corridor from 2016 to March of 2019:

- 79% of crashes occurred between 24th St. and Lake St.
- The Douglas Ave. and Lincoln Ave. intersections had zero crashes.
- The Lagoon Ave. intersection had the most crashes with 39.
- Seven crashes resulted in incapacitating injuries (severity type A) and 42 resulted in non-incapacitating injuries (severity type B).
- No fatalities occurred on this portion of Hennepin Ave. from 2016 to March of 2019.
- Roughly 10% of crashes involved a pedestrian (30) or bicyclist (3), the majority of which occurred at signalized intersections (26).

Crashes by Location

Two intersections and four segments along Hennepin Ave were above the Critical Crash Index of 1.0, indicating a potential crash issue (see Figure 2). These locations include:

Intersections:

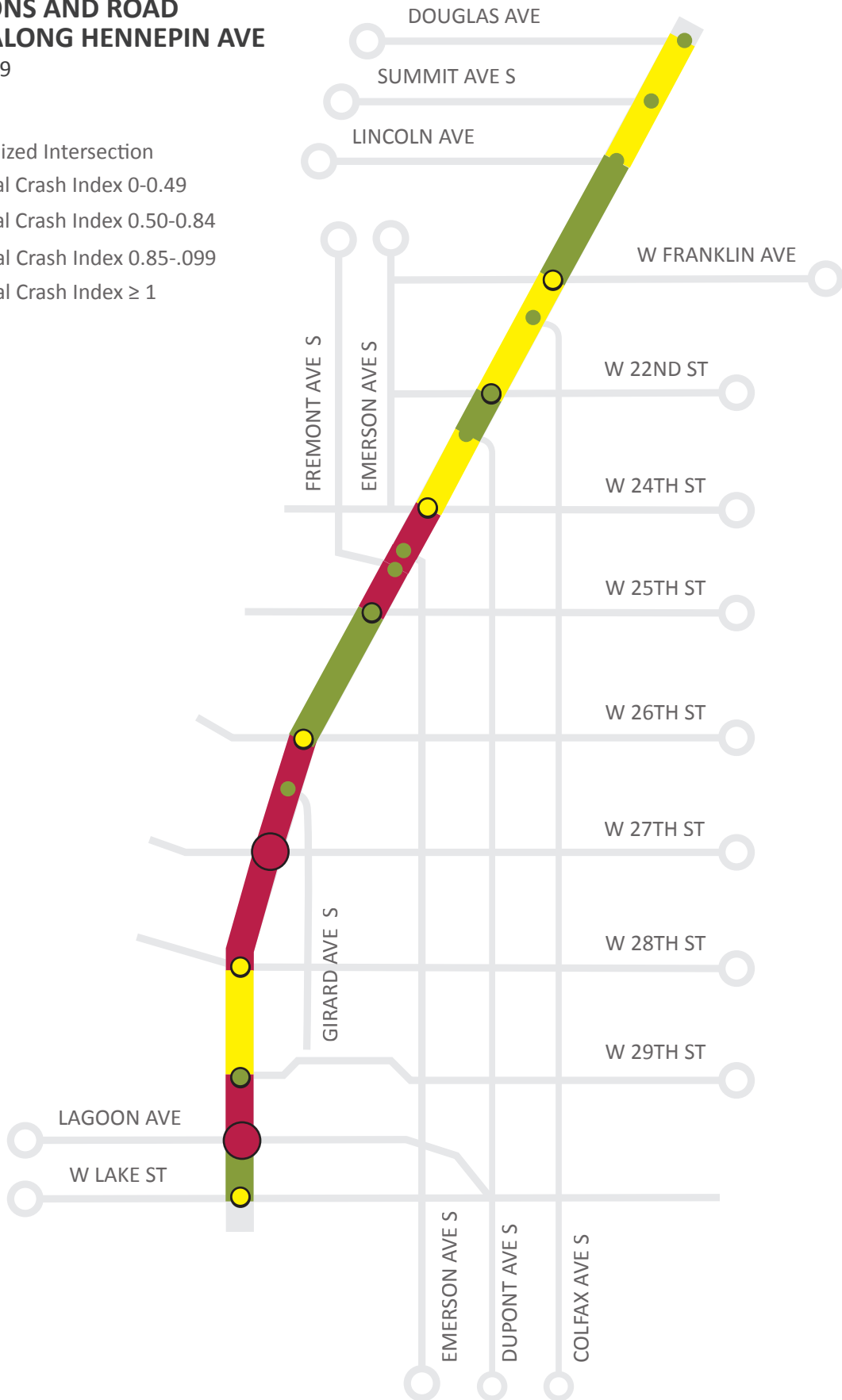
- 27th St (1.05)
- Lagoon Ave (1.08)

Segments:

- 24th St to 25th St (1.06)
- 26th St to 27th St (1.85, 1.83)
- 27th St to 28th St (1.40)
- 29th St to Lagoon Ave (1.04)

Figure 2.
CRITICAL CRASH INDEX FOR
INTERSECTIONS AND ROAD
SEGMENTS ALONG HENNEPIN AVE
 2016-March 2019

- Signalized Intersection
- Critical Crash Index 0-0.49
- Critical Crash Index 0.50-0.84
- Critical Crash Index 0.85-.099
- Critical Crash Index ≥ 1



Crashes by Type

The following graphs show the types of crashes that occurred at both intersections and along segments between intersections. Most intersections had a mix of rear-end, sideswipe and right-angle collisions, while crashes between intersections were primarily reported as “other”.

Of the 304 crashes reported between 2016 and March 2019,

- **32% were rear-end crashes** - Of the rear-end crashes, 92% occurred at intersections which is typical of such crashes. Most intersections had somewhere between 30 and 40% rear-ends, however Franklin Ave, 25th St. and 27th St. had near or above 50% rear-end crashes.
- **18% were sideswipe** - Of the 54 sideswipes, 72% occurred while the primary vehicle was driving straight or weaving. This may be due to the peak period left-turn restrictions and no left turn lanes or phases at most intersections, paired with a 4 lane cross section, which can lead to an increase in weaving traffic. Turning movements and parking do not appear to be primary contributing factors in sideswipe crashes with 14% occurring during a turning movement and 6% occurred while parking. The intersections at 24th St. and Lake St. had higher than average percentage of sideswipes (33% and 32% respectively) compared to the average of 20%. All six sideswipes at 24th St. and six of the eight at Lake St. involved vehicles driving straight or weaving.
- **12% were right-angle** - Right-angle crashes are more typical on corridors without protected left-turn phases (now that there is not an option to select left-turn crash type in crash reports) and also at intersections that are unsignalized. Lagoon Ave., where there is a protected/permissive left-turn phase for northbound, had a higher than average rate of right-angle crashes with 21%. Crash reports indicate that the majority of right-angle crashes at Hennepin Ave. and Lagoon Ave. involve motorists at the intersection disregarding traffic controls. No clear directional component is evident in the data.
- **4% were head-on** - The intersection at 24th St. has a noticeably higher percentage of head-on collisions with 22% (4 of the 18 crashes). Three of the four head-on crashes at 24th St. involved a vehicle taking a left turn.
- **and 34% were “Other”** - Segment crashes were overwhelmingly labeled as “other” (65%). Of the segment crashes marked “other” for crash type, 80% involved a parked or parking vehicle.

Crash Types

■ Rear End

■ Right Angle

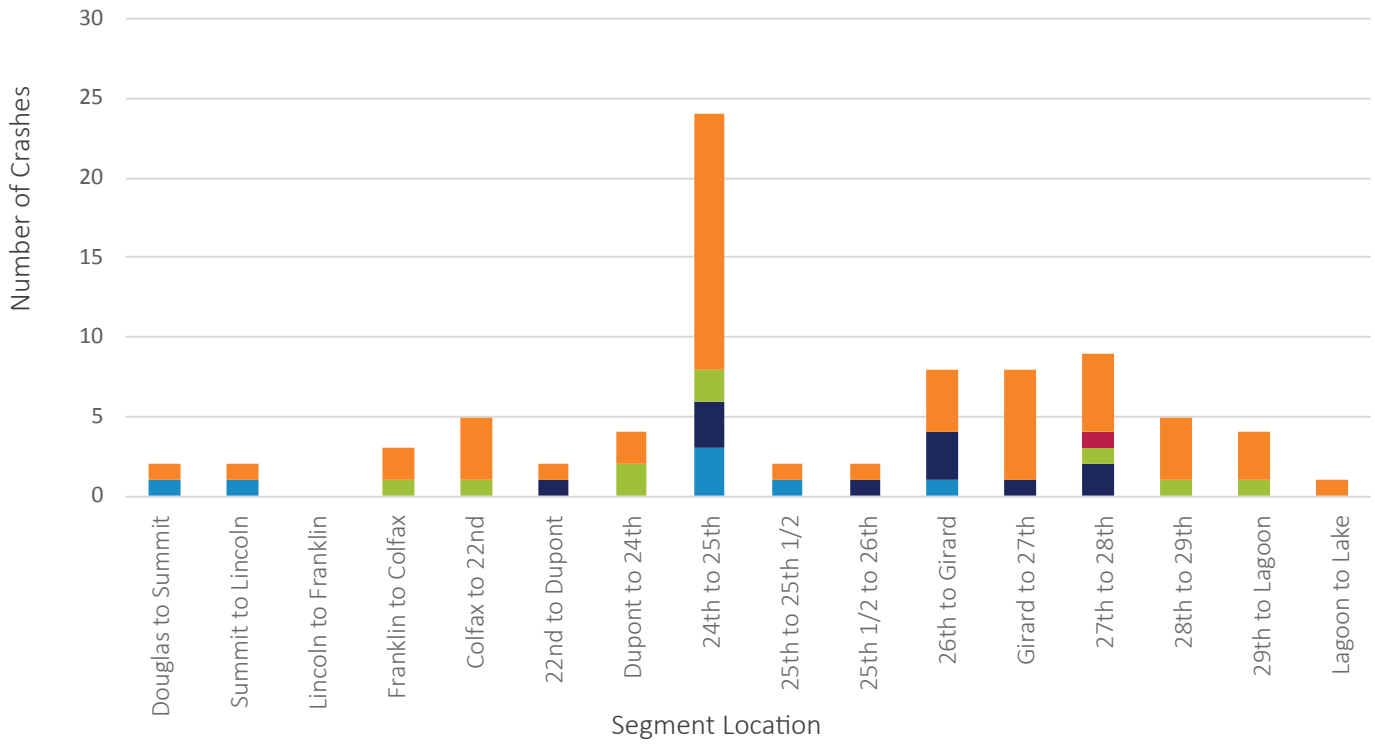
■ Side Swipe

■ Head On

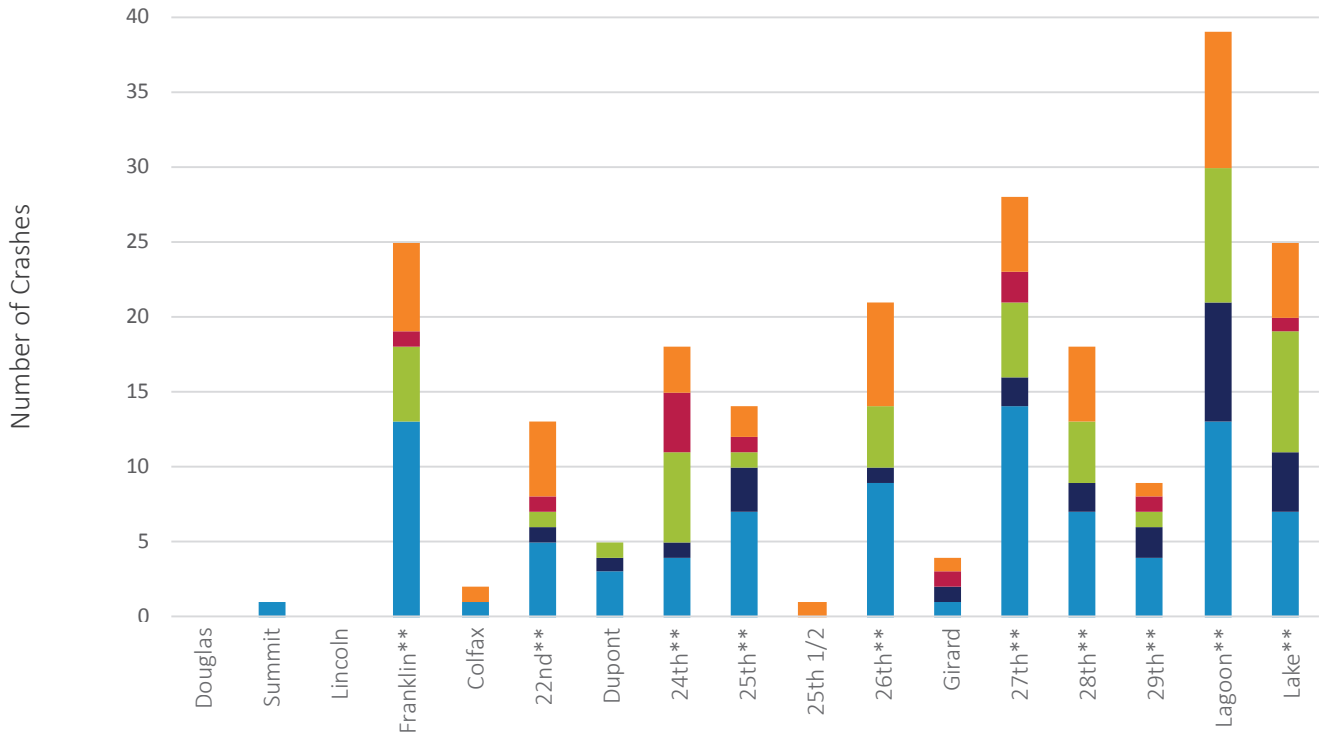
■ Ran Off Road

■ Other

Segment Crash Type



Intersection Crash Type



Crashes by Injury

Of the 304 crashes, seven crashes resulted in incapacitating injuries (severity type A) and 42 resulted in non-incapacitating injuries (severity type B). No fatalities occurred during this period.

Severity Type A Crashes (Incapacitating Injuries):

W 25th St. &

Two severity type A crashes occurred at the W 25th St. intersection, one involving a bicyclist and one involving a pedestrian. The bicyclist crash involved a car taking a left turn into a bike, failing to yield to the bicyclist. No cause data was given for the pedestrian crash.

Girard Ave.

A right-angle crash occurred involving two vehicles, a westbound left turning vehicle failed to yield to a northbound through vehicle.

Between 27th St. and 28th St.

The crash was documented between 27th St. and 28th St., but according to the officer's notes actually occurred at the intersection of 27th St. A bicyclist was traveling eastbound and was noted as disregarding the traffic control. The motorcyclist was traveling westbound and struck the bicyclist when traveling through the intersection.

28th St.

Sideswipe crash involving a vehicle and motorcycle, a northbound vehicle changed lanes and hit a motorcyclist.

Between 28th St. and 29th St.




Involved a pedestrian and motorist, both indicated as traveling SB on Hennepin Ave. The pedestrian was documented as having disregarded traffic control and under the influence.

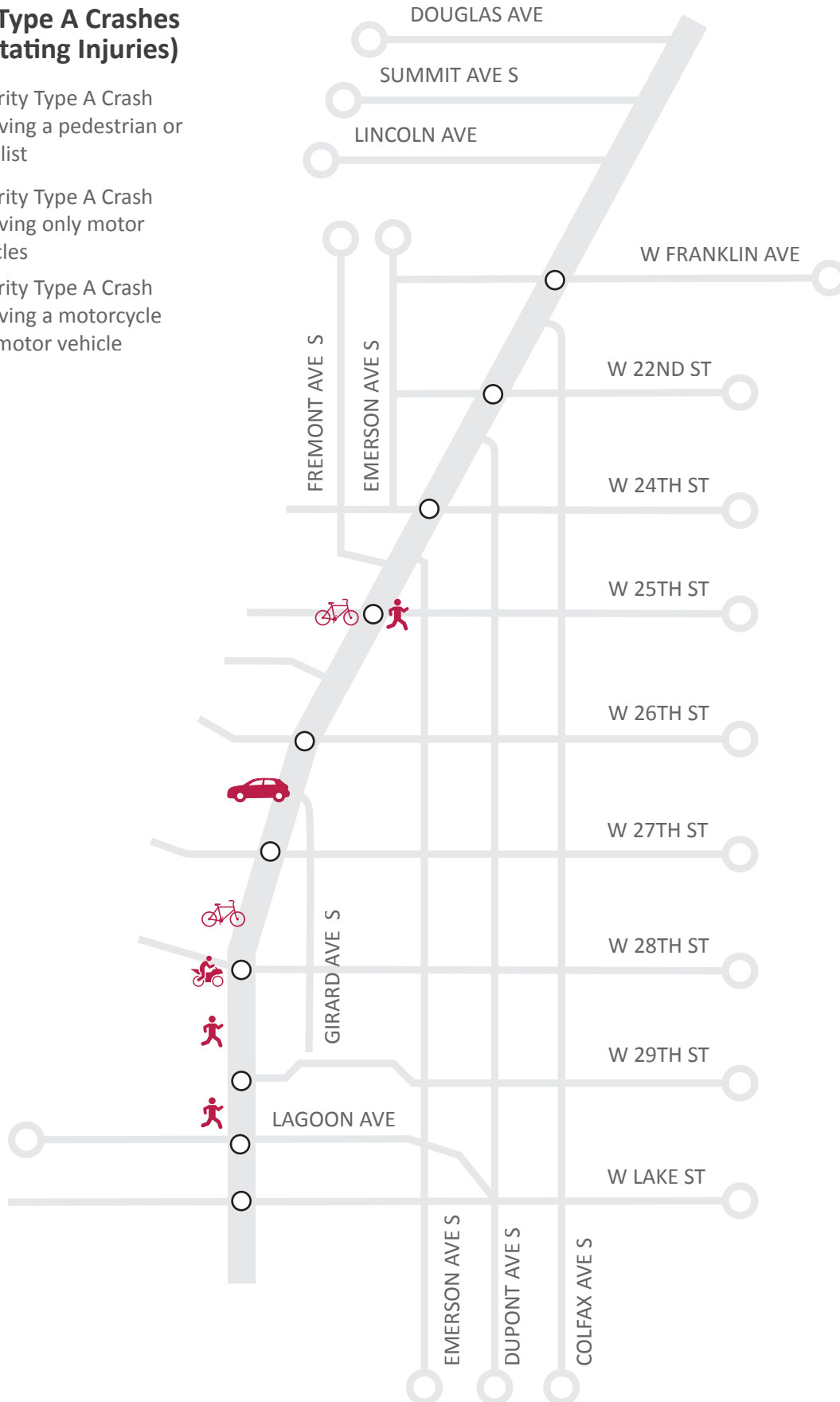
Between 29th St. and Lagoon Ave.

According to the officer's notes, the pedestrian was standing next to a parked car in the NB direction when they were struck by an NB vehicle. No contributing factor was provided.

Figure 3.

Severity Type A Crashes (Incapacitating Injuries)

-  Severity Type A Crash involving a pedestrian or bicyclist
-  Severity Type A Crash involving only motor vehicles
-  Severity Type A Crash involving a motorcycle and motor vehicle



Pedestrian and Bicyclist Crashes

While pedestrians and bicyclist are involved in a relatively low percentage of overall crashes (11%), they make up the majority of crashes that result in injuries (57%). For this reason, the City is committed to prioritizing the most vulnerable users through its Vision Zero initiative. The following is an analysis of the crashes involving pedestrians and bicyclists along Hennepin Ave. to inform safety improvements along the corridor.

As described above, a previous crash review using MnCMAT data included the period from 2013-2015. Combining this data with the more recent data from Hennepin County from 2016 through March 2019 yields 6-1/4 years of pedestrian and bicycle crash data from which to obtain trends for Hennepin Avenue.

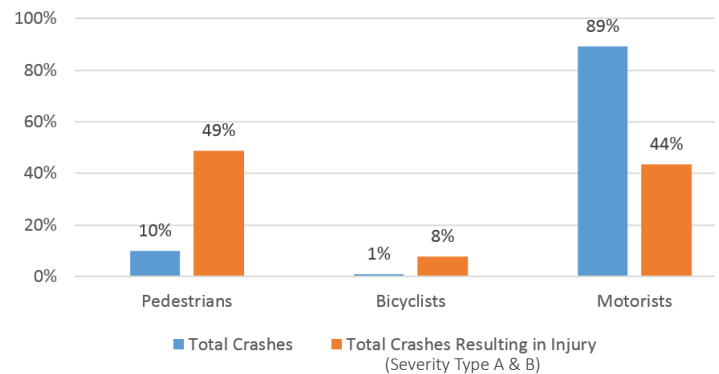
Overall Trends from 2013 to March 2019

- Total of 69 crashes over the 6 1/4 years (including one scooter crash)
- 76% Pedestrian involved crashes.
- 24% Bicyclist involved crashes.
- The action of a vehicle making a left turn was involved 42% of the time while right turns were involved 9% of the time.
- Vehicle factors resulting in a pedestrian crash involve failing to yield (28%), improper turn (2%), distraction (3%) and disregarding the traffic control (5%).
- One scooter involved crash (Given the change in scooter usage during this time period and new coding under crash reports, this low scooter percentage is unlikely to represent current trends).

Detailed Analysis from 2016-March 2019

From January 2016 to March of 2019 there were 33 total pedestrian and bicyclist crashes, 79% of which occurred at signalized intersections.

Percentage of Total Crashes by Mode vs. Percentage of Total Crashes Resulting in Injury by Mode



At Intersections:

From 2016-March 2019, every traffic signal along Hennepin Ave. had at least one pedestrian or bicyclist crash, with the exception of Hennepin Ave. at 28th St. which had none. No pedestrian or bicyclist crashes occurred at unsignalized intersections during this period.

There were 25 pedestrian crashes and one bicyclist crash at Hennepin Ave. intersections, the majority of which were the result of *vehicles turning left off of Hennepin Ave. into pedestrians* (13). There were also eight instances during which *pedestrians crossed the road against traffic controls*.

Between Intersections:

Five pedestrian crashes and two bicyclist crashes occurred along segments of Hennepin Ave. during this same period. Of these seven crashes, 3 were incapacitating injury crashes (two pedestrians and one bicyclist) and 4 non-incapacitating injury crashes (three pedestrians and one bicyclist). While the intersections at 28th St. and 29th St. showed lower pedestrian/bicyclist crash totals, the segments in this area had 2 pedestrian and 1 bicyclist crash which resulted in an incapacitating injury. After reviewing the available crash data and officer notes, mid-block crossings do not appear to be a contributing factor.

Parking, however, does appear to be a contributing factor with half of all pedestrian crashes along the corridor (15) occurring related to parking activities, three of which resulted in incapacitating injuries.

**Details for the incapacitating injury crashes (Type A Severity) can be found in the Crash Severity section.*

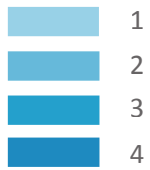
Figure 4.

**PEDESTRIAN AND BICYCLIST INVOLVED
CRASHES ALONG HENNEPIN AVE**

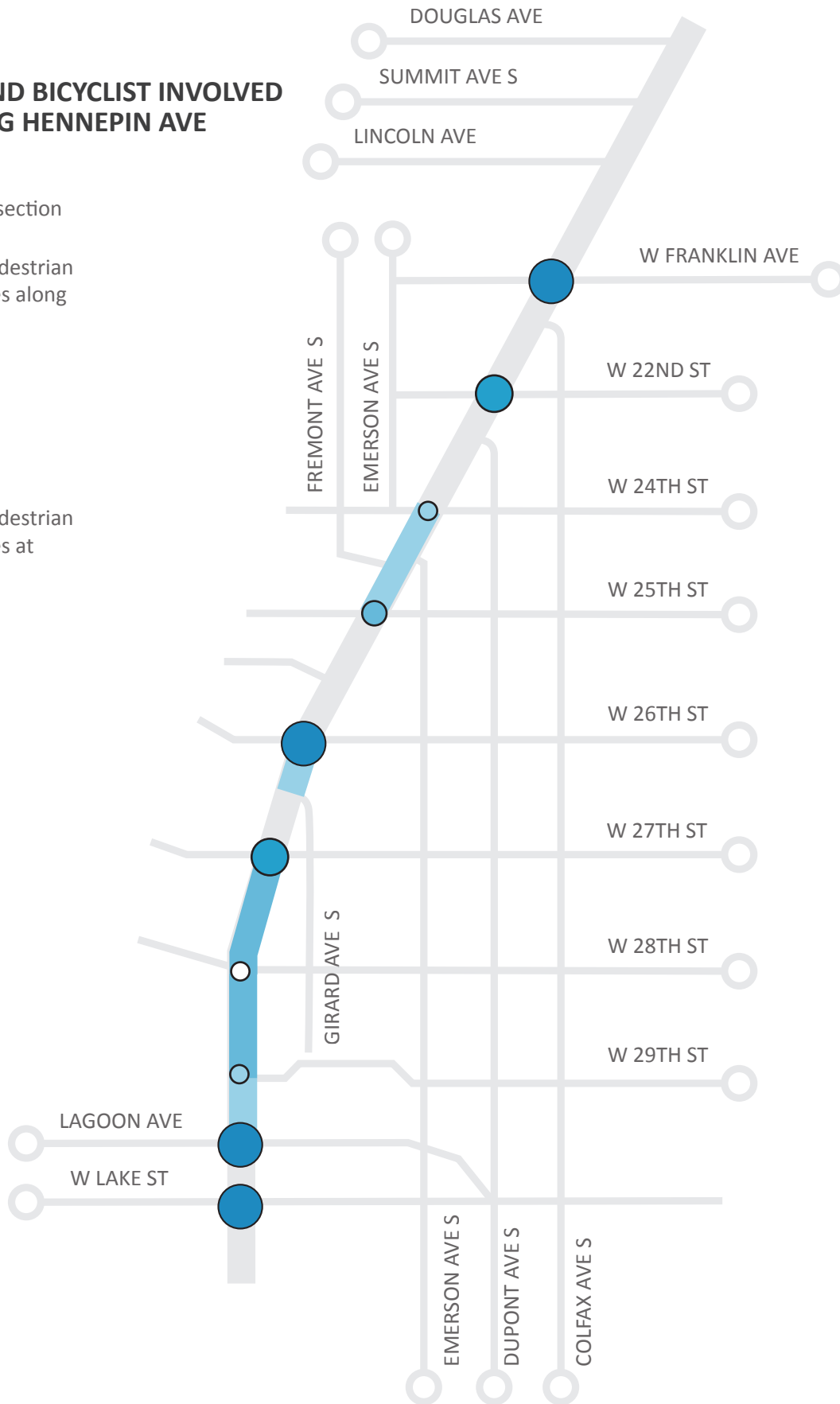
2016-March 2019

○ Signalized Intersection

Total Number of Pedestrian
and Bicyclist Crashes along
Segments



Total Number of Pedestrian
and Bicyclist Crashes at
Intersections



Areas with Identified Safety Concerns

Based on Critical Crash Rates and crashes that resulted in severe injury, there are three main focus areas.

24th St. and 25th St.

Crash data from 2013-2015 and 2016-March 2019 show critical crash indices above the 1.0 threshold, indicating sustained crash issues between 24th St. and 25th St. on Hennepin Ave.

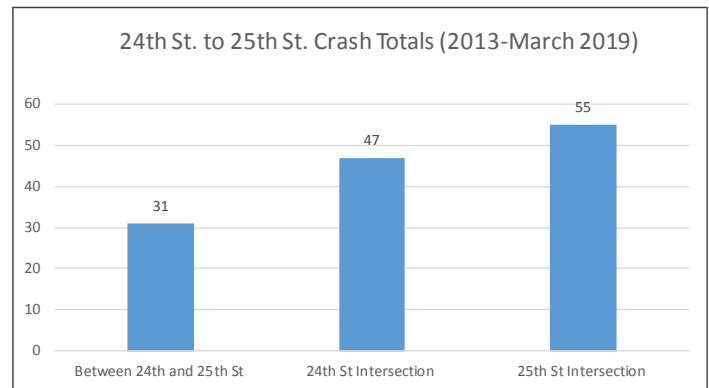
From 2016 to March of 2019 there were two severe crashes (type A severity), three crashes resulting in visible injury (type B severity) and 54 reports of property damage. Both severe crashes involved a pedestrian or bicyclist and occurred at the 25th St. intersection.

A review of the crash types shows that there is a higher than average percentage of side swipes with 33% (compared to 18% along the corridor). This suggests weaving, merging or parking related issues through this area. Other indicators of parking related crashes are evident along the road segment between 24th St. and 25th St. From 2016-March 2019 there were 24 crashes, 58% of which involved a parked or parking vehicle.

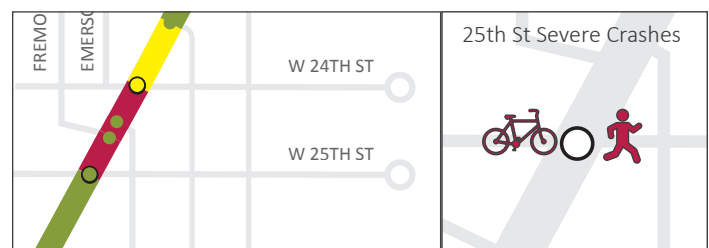
No directional trends are evident as there are a mix of Northbound and Southbound crashes. A total of 4 crashes involved travelers going in different directions, one of which involved a westbound vehicle and a northbound scooter.

Time of day may be a contributing factor with 48% of crashes occurring in the dark or sunset hours.

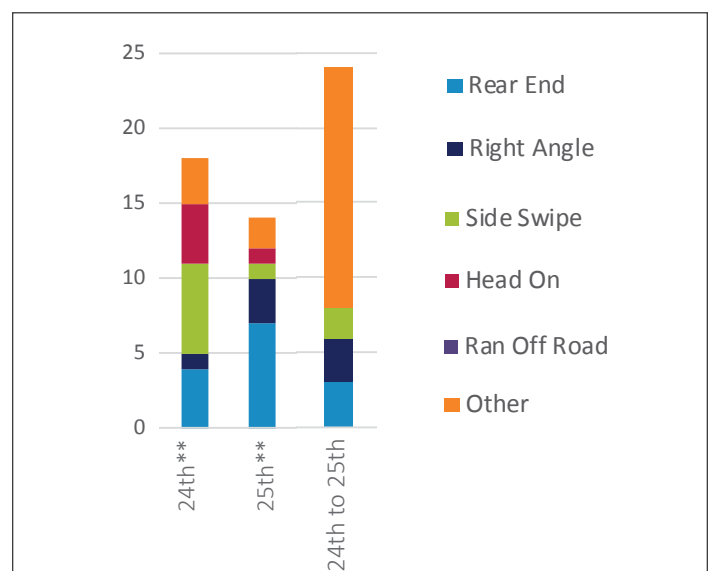
Reported Crashes from 24th St. to 25th St.



Critical Crash Index and Severe Crash Types



Crash Type



26th St. to 28th St.

The section of Hennepin Ave. from 26th St. to 28th St. covers approximately one-fifth of the corridor length, yet roughly one-third of all crashes occur in this area.

From the 2013-2015 reporting period to the 2016-March 2019 reporting period, crash totals in this area have stayed relatively consistent in distribution of crash types. From 2016 to March 2019, one intersection and the entire segment from 26th St. to 28th St. was above the Critical Crash Index, indicating a sustained crash issue.

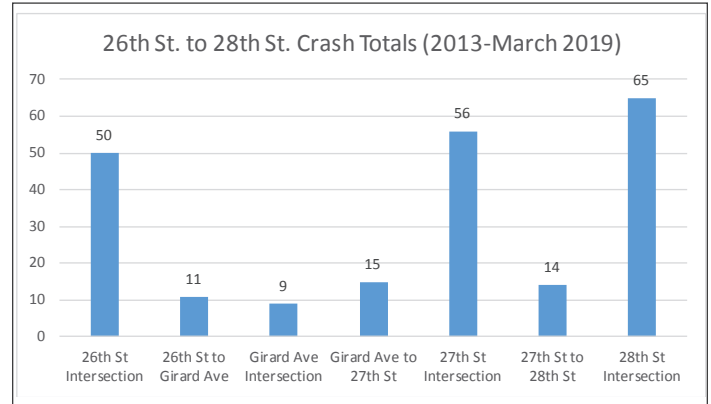
During this time, there were three crashes that resulted in severe injuries (type A severity) eight crashes resulting in visible injury (type B severity) and 53 reports of property damage. Of the severe crashes, one involved a pedestrian, one involved a bicyclist, and two involved a parking or merging vehicle. Both the pedestrian and bicyclist crashes were reported as the pedestrian and bicyclist disregarding the traffic controls.

A review of the crash types shows a higher rate of rear-end crashes at 27th St. (50% vs 40% corridor wide) and right-angle crashes between 26th St. and Girard Ave. (36% vs 14% corridor wide).

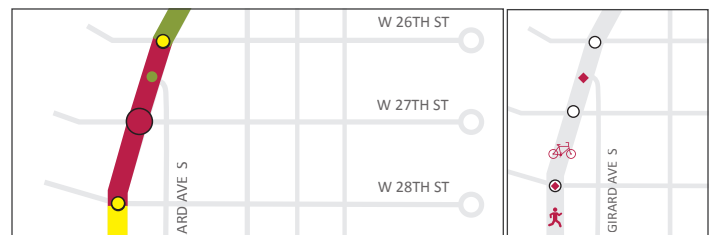
Of all the segment crashes in this area, 72% involved parked or parking vehicles, suggesting that parking along the corridor is a contributing factor to crashes in this area.

Time of day and direction do not appear to be significant contributing factors.

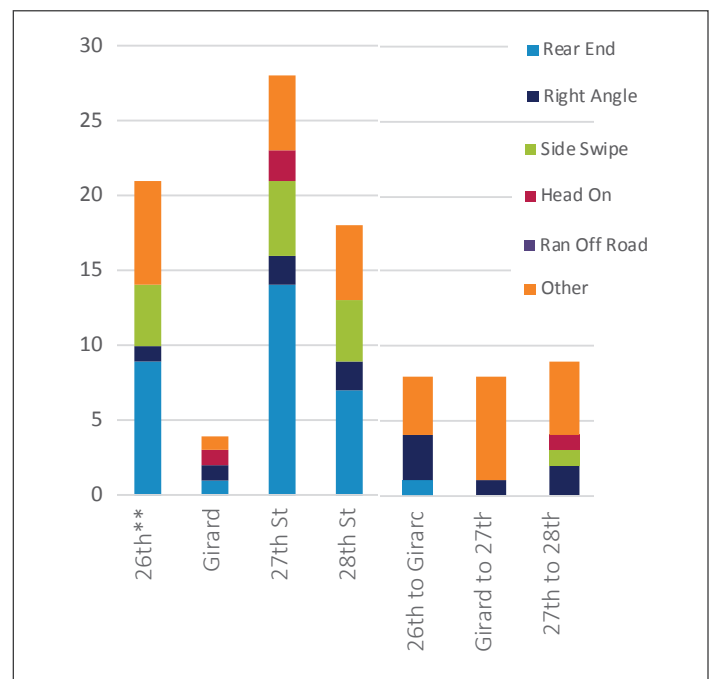
Reported Crashes from 26th St. to 28th St.



Critical Crash Index and Severe Crash Types



Crash Type



28th St. to Lake St.

The section of Hennepin Ave. from 29th St. to Lake St. covers approximately one-tenth of the corridor length, yet roughly one-quarter of all crashes occur in this area.

The intersection at Hennepin Ave. and Lagoon Ave. and the segment from 29th to Lagoon had Critical Crash Indices above 1.0 from 2016 to 2019, indicating sustained crash issues.

From 2016-March 2019, there were two crashes that resulted in severe injuries (type A severity), 11 crashes resulting in visible injury (type B severity) and 55 reports of property damage. Of the two severe crashes, both involved a pedestrian. The severe crash between 28th St. and 29th St. involved a pedestrian and motorist for which the pedestrian was documented as having disregarded traffic control and under the influence. The severe crash between 29th St. and Lagoon Ave. involved a pedestrian getting struck by a NB vehicle related to parking activities. No contributing factors were given.

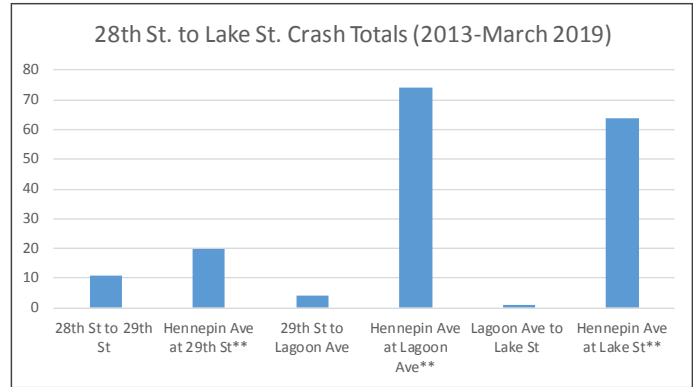
The types of crashes that occurred in this area have a different distribution than the corridor as a whole. Right-angle crashes are more frequent at Lagoon Ave. (21%) compared to the overall corridor (12%), Crash reports indicate that the majority of right-angle crashes at Hennepin Ave. and Lagoon Ave. involved motorists at the intersection disregarding traffic controls. No clear directional component is evident. Sideswipes are more common at Lake St. (32%) compared to the overall corridor (20%). Further analysis of sideswipes at Lake St. show that six of the eight crashes involved vehicles driving straight or weaving and two involved left turns. Five of the seven sideswipe crashes at Lake St. occurred in the EB direction. These may be the result of eastbound motorists switching lanes as they approach Hennepin Ave. to avoid turning vehicles in the shared through/turn lanes. Contributing factors were not provided in the majority of sideswipes in this area.

A directional factor is present at the:

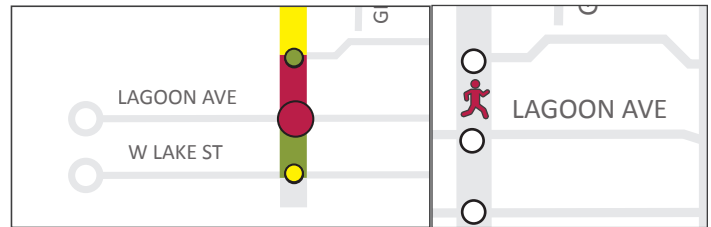
- 29th St. intersection with 78% of crashes occurring in the southbound direction.

- Lake St. intersection with 44% of crashes occurring in the eastbound direction and 28% of crashes occurring in the southbound direction.

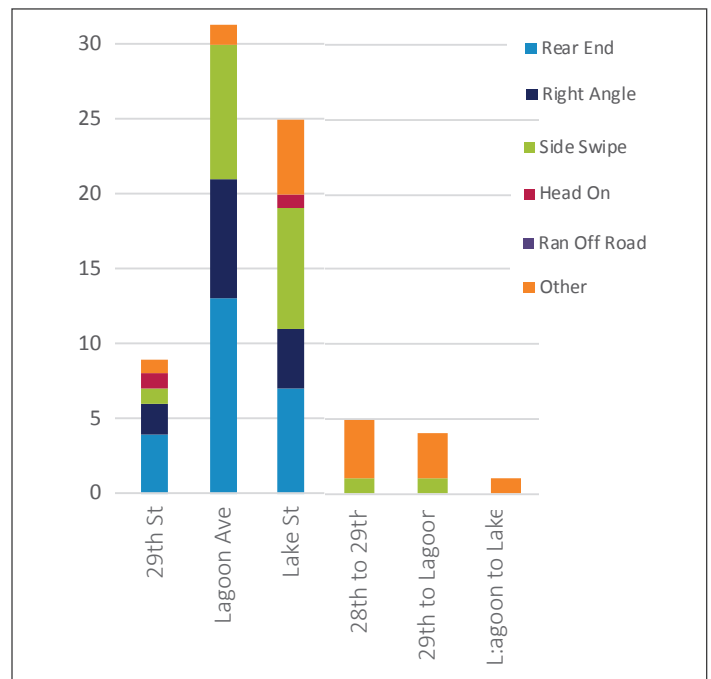
Reported Crashes from 29th St. to Lake St.



Critical Crash Index and Severe Crash Types



Crash Type



Hennepin Ave Corridor

Safety / [Appendices](#)

Appendix A

- Table A1 - Intersection Crash Data (Crash Severity & Critical Crash Index)

Appendix B

- Table A2 - Intersection Crash Data (Diagram Crash Type & Pedestrian/Bicyclist Crash Totals)

Appendix C

- Table A3 - Segment Crash Data (Crash Severity, Critical Crash Index, Diagram Crash Type & Pedestrian/Bicyclist Crash Totals)

Table A1 - Intersection Crash Severity & Critical Crash Index

Hennepin Ave Reconstruction Project
 2016 to March 2019 Crash Data
 MnDOT Crash Mapping Software Information

Hennepin Avenue Reconstruction Project Intersection	Crash Severity						Intersection Rates	Calculated Critical Rates	Calculated Critical Index
	Fatal	A	B	C	Property	Total	Crash Rate	Critical Crash Rate	Critical Index
Hennepin Ave at Douglas Ave	0	0	0	0	0	0	0.00	0.63	0.00
Hennepin Ave at Summit Ave	0	0	0	0	1	1	0.12	0.64	0.19
Hennepin Ave at Lincoln Ave	0	0	0	0	0	0	0.00	0.64	0.00
Hennepin Ave at Franklin Ave**	0	0	3	2	20	25	0.58	1.06	0.55
Hennepin Ave at Colfax Ave	0	0	0	0	2	2	0.06	0.40	0.15
Hennepin Ave at 22nd St**	0	0	5	1	7	13	0.39	1.11	0.35
Hennepin Ave at Dupont Ave	0	0	0	1	4	5	0.16	0.40	0.40
Hennepin Ave at 24th St**	0	0	1	4	13	18	0.59	1.13	0.52
Hennepin Ave at 25th St**	0	2	0	4	8	14	0.54	1.17	0.46
Hennepin Ave at 25th 1/2 St	0	0	0	0	1	1	0.04	0.44	0.09
Hennepin Ave at 26th St**	0	0	1	1	19	21	0.77	1.15	0.67
Hennepin Ave at Girard Ave	0	1	0	0	3	4	0.20	0.46	0.43
Hennepin Ave at 27th St**	0	0	3	4	21	28	1.27	1.21	1.05
Hennepin Ave at 28th St**	0	1	0	2	15	18	0.82	1.21	0.68
Hennepin Ave at 29th St**	0	0	3	1	5	9	0.45	1.23	0.37
Hennepin Ave at Lagoon Ave**	0	0	2	8	29	39	1.21	1.12	1.08
Hennepin Ave at Lake St**	0	0	6	2	17	25	0.74	1.11	0.67
TOTAL	0	4	24	30	165	223			

**Signalized Intersections

0% 2% 11% 13% 74%

Critical Rate Exceeded	Critical Index ≥ 1
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NOTES:
 Exceeding the Calculated Critical Rates indicated a sustained crash problem.

MnDOT Statewide Average Rates (2015 Data; 3-Year)*	
Intersection Type	Crash Rate
Signal-High Vol. & Low Speed	0.72
Urban Thru/Stop	0.19



Table A2 - Intersection Diagram Crash Type & Pedestrian/Bicyclist Crash Totals

Hennepin Ave Reconstruction Project

2016 to March 2019 Crash Data

MnDOT Crash Mapping Software Information

Hennepin Avenue Reconstruction Project Intersection	Diagram - Crash Type							Intersection Rates
	Rear End	Right Angle	Side Swipe	Head On	Ran Off Road	Other	Total	Crash Rate
Hennepin Ave at Douglas Ave	0	0	0	0	0	0	0	0.00
Hennepin Ave at Summit Ave	1	0	0	0	0	0	1	0.12
Hennepin Ave at Lincoln Ave	0	0	0	0	0	0	0	0.00
Hennepin Ave at Franklin Ave**	13	0	5	1	0	6	25	0.58
Hennepin Ave at Colfax Ave	1	0	0	0	0	1	2	0.06
Hennepin Ave at 22nd St**	5	1	1	1	0	5	13	0.39
Hennepin Ave at Dupont Ave	3	1	1	0	0	0	5	0.16
Hennepin Ave at 24th St**	4	1	6	4	0	3	18	0.59
Hennepin Ave at 25th St**	7	3	1	1	0	2	14	0.54
Hennepin Ave at 25th 1/2 St	0	0	0	0	0	1	1	0.04
Hennepin Ave at 26th St**	9	1	4	0	0	7	21	0.77
Hennepin Ave at Girard Ave	1	1	0	1	0	1	4	0.20
Hennepin Ave at 27th St**	14	2	5	2	0	5	28	1.27
Hennepin Ave at 28th St**	7	2	4	0	0	5	18	0.82
Hennepin Ave at 29th St**	4	2	1	1	0	1	9	0.45
Hennepin Ave at Lagoon Ave**	13	8	9	0	0	9	39	1.21
Hennepin Ave at Lake St**	7	4	8	1	0	5	25	0.74
TOTAL	89	26	45	12	0	51	223	

Pedestrian Crashes	Bicycle Crashes
0	0
0	0
0	0
4	0
0	0
3	0
0	0
1	0
1	1
0	0
4	0
0	0
3	0
0	0
1	0
4	0
4	0
25	1

**Signalized Intersections

40% 12% 20% 5% 0% 23%

Critical Rate Exceeded



Table A3 - Segment Crash Severity, Critical Crash Index & Pedestrian/Bicyclist Crash Totals

Hennepin Ave Reconstruction Project

2016 to March 2019 Crash Data

MnDOT Crash Mapping Software Information

Hennepin Avenue Reconstruction Project			Crash Severity									Segment Rates		Calculated Critical Rates		Calculated Critical Index		Pedestrian Crashes	Bicycle Crashes
From	To	Road Section Type	Length (Miles)	Segment ADT	Fatal	A	B	C	Property	Total	Crash Rate	Critical Crash Rate	Critical Index						
Hennepin Ave	Douglas	Summit Ave	Urban 4-lane Undivided	0.08	6,600	0	0	0	0	2	2	3.37	4.83	0.70	0	0			
	Summit Ave	Lincoln Ave	Urban 4-lane Undivided	0.08	6,600	0	0	0	0	2	2	3.17	4.69	0.68	0	0			
	Lincoln Ave	Franklin Ave	Urban 4-lane Undivided	0.13	31,500	0	0	0	0	0	0	0.00	2.05	0.00	0	0			
	Franklin Ave	Colfax Ave	Urban 4-lane Undivided	0.06	26,500	0	0	0	0	3	3	1.55	2.85	0.54	0	0			
	Colfax Ave	22nd St	Urban 4-lane Undivided	0.08	26,500	0	0	0	0	5	5	2.00	2.59	0.77	0	0			
	22nd St	Duport Ave	Urban 4-lane Undivided	0.06	26,500	0	0	1	0	1	2	1.02	2.84	0.36	0	0			
	Duport Ave	24th St	Urban 4-lane Undivided	0.08	26,500	0	0	0	0	4	4	1.62	2.60	0.62	0	0			
	24th St	25th St	Urban 4-lane Undivided	0.14	19,900	0	0	2	0	22	24	7.25	6.81	1.06	1	0			
	25th St	25th 1/2 St	Urban 4-lane Undivided	0.08	19,900	0	0	0	0	2	2	1.02	2.84	0.36	0	0			
	25th 1/2 St	26th St	Urban 4-lane Undivided	0.06	19,900	0	0	0	0	2	2	1.49	3.32	0.45	0	0			
	26th St	Girard Ave	Urban 4-lane Undivided	0.07	16,500	0	0	1	0	7	8	6.25	3.38	1.85	0	1			
	Girard Ave	27th St	Urban 4-lane Undivided	0.07	16,500	0	0	0	0	8	8	6.16	3.36	1.83	0	0			
	27th St	28th St	Urban 4-lane Undivided	0.13	16,500	0	1	3	0	5	9	3.62	2.59	1.40	1	1			
	28th St	29th St	Urban 4-lane Undivided	0.14	16,500	0	1	1	0	3	5	1.89	2.53	0.74	2	0			
	29th St	Lagoon Ave	Urban 4-lane Undivided	0.05	16,500	0	1	0	0	3	4	3.85	3.71	1.04	1	0			
	Lagoon Ave	Lake St	Urban 4-lane Undivided	0.06	15,700	0	0	0	0	1	1	0.89	3.57	0.25	0	0			
TOTALS			1.36		0	3	8	0	70	81				5	2				
					0%	4%	10%	0%	86%										

NOTES:
Segments include crashes at driveway locations not included in Intersection Crash Table.

Critical Rate Exceeded	Critical Index ≥ 1
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Hennepin Avenue Reconstruction Project			Diagram - Crash Type							Total
From	To	Road Section Type	Rear End	Right Angle	Side Swipe	Head On	Ran Off Road	Other	Total	
Hennepin Ave	Douglas	Summit Ave	Urban 4-lane Undivided	1	0	0	0	0	1	2
	Summit Ave	Lincoln Ave	Urban 4-lane Undivided	1	0	0	0	0	1	2
	Lincoln Ave	Franklin Ave	Urban 4-lane Undivided	0	0	0	0	0	0	0
	Franklin Ave	Colfax Ave	Urban 4-lane Undivided	0	0	1	0	0	2	3
	Colfax Ave	22nd St	Urban 4-lane Undivided	0	0	1	0	0	4	5
	22nd St	Duport Ave	Urban 4-lane Undivided	0	1	0	0	0	1	2
	Duport Ave	24th St	Urban 4-lane Undivided	0	0	2	0	0	2	4
	24th St	25th St	Urban 4-lane Undivided	3	3	2	0	0	16	24
	25th St	25th 1/2 St	Urban 4-lane Undivided	1	0	0	0	0	1	2
	25th 1/2 St	26th St	Urban 4-lane Undivided	0	1	0	0	0	1	2
	26th St	Girard Ave	Urban 4-lane Undivided	1	3	0	0	0	4	8
	Girard Ave	27th St	Urban 4-lane Undivided	0	1	0	0	0	7	8
	27th St	28th St	Urban 4-lane Undivided	0	2	1	1	0	5	9
	28th St	29th St	Urban 4-lane Undivided	0	0	1	0	0	4	5
	29th St	Lagoon Ave	Urban 4-lane Undivided	0	0	1	0	0	3	4
	Lagoon Ave	Lake St	Urban 4-lane Undivided	0	0	0	0	0	1	1
TOTALS			7	11	9	1	0	53	81	
			9%	14%	11%	1%	0%	65%		

NOTES:
Segments include crashes at driveway locations not included in Intersection Crash Table.

MnDOT Statewide Average Rates (2015 Data, 3-Year)*	
Section Type	Crash Rate
Urban 4-lane Undivided	0.87
All Crashes Rate (for 24th to 25th)	3.87

