



City of Moorhead

11 St & 14 St Corridor Study



About the Project

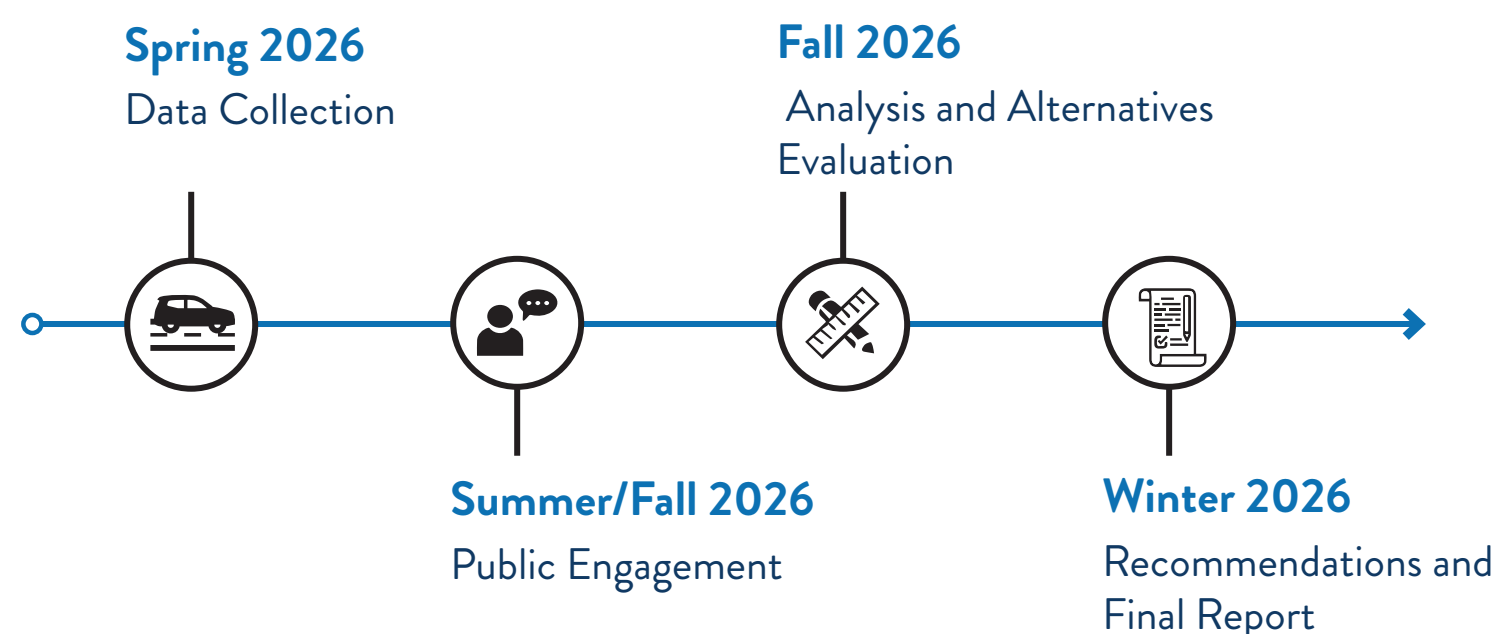
The City of Moorhead is studying the 11 St and 14 St corridors, which currently operate as a one-way street pair between Main Ave and 12 Ave S.

The project will include the following:

- Evaluate the corridors to recommend if converting them to two-way operations would improve safe and more effective multimodal travel for people walking, biking, taking transit, and driving
- Collect and analyze traffic, safety, and multimodal data to understand existing conditions
- Develop and compare corridor alternatives, including short- and long-term improvements
- Conduct stakeholder and community engagement to receive input and inform project recommendations
- Prepare a final report with findings, evaluation, and recommended concepts and next steps.



Timeline



Project Area

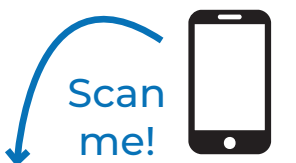


Stay Engaged

For more information and provide your input, scan the QR code or visit the project website:

moorheadmn.gov/11and14StCorridorStudy

- ☒ Visit the WEBSITE for more information
- ☒ Take the ONLINE SURVEY to share your experiences





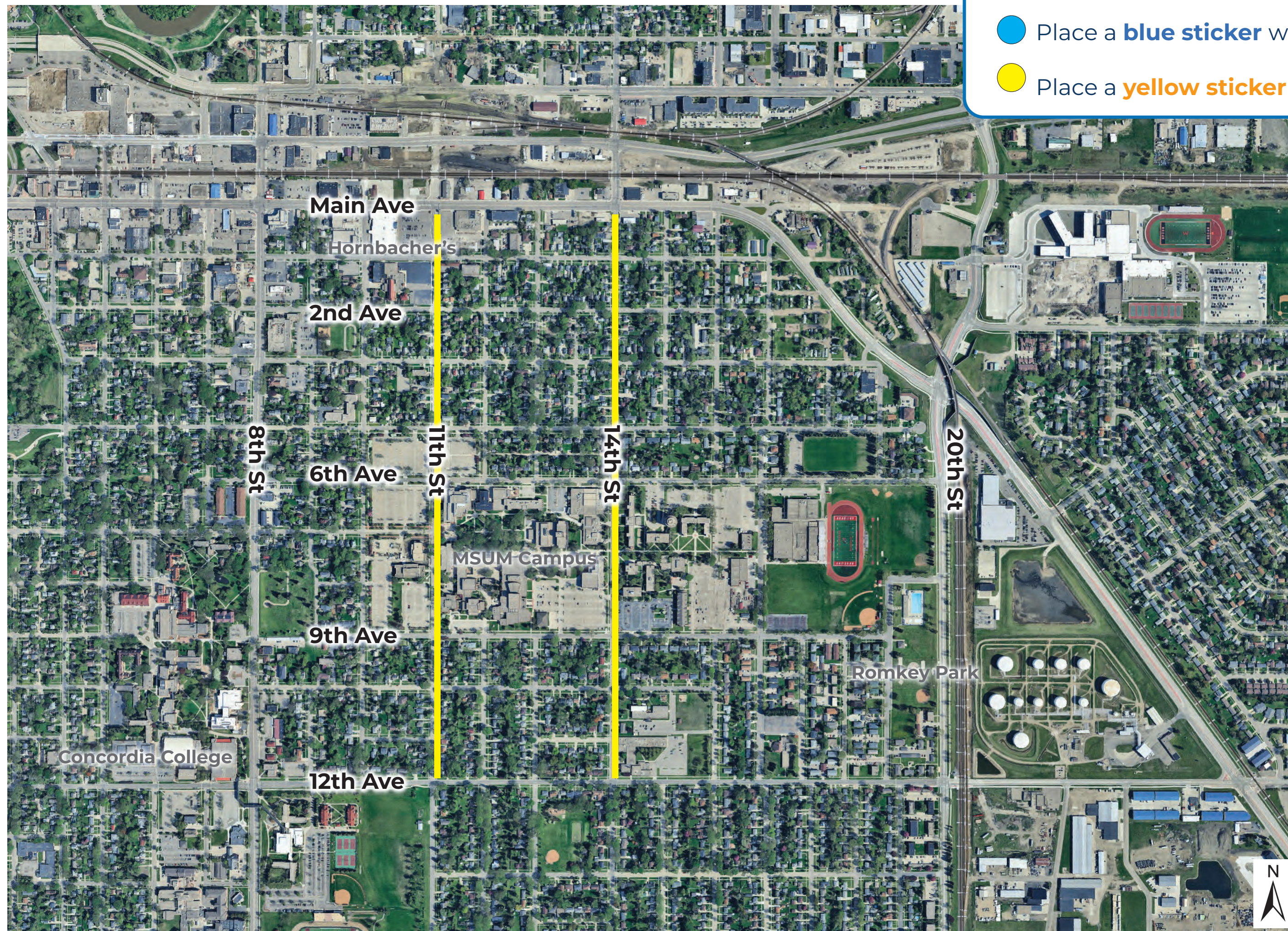
City of Moorhead 11 St & 14 St Corridor Study



Mapping Activity

Where do you live, work, or visit?

- Place a **red sticker** where you live.
- Place a **blue sticker** where you work.
- Place a **yellow sticker** on places you visit frequently.



11th Street at 5th Ave



14th Street at 4th Ave



City of Moorhead

11 St & 14 St Corridor Study



11th Street Existing (Southbound)

Main Ave - 2nd Ave

Walk

10 ft

Boulevard

8-10 ft

Travel Lane

13 ft

Left Turn Lane

12 ft

Travel Lane

13 ft

Boulevard

5 ft

Walk

6 ft

2nd Ave - 9th Ave

Walk

8 ft

Boulevard

8-10 ft

Travel Lane

15 ft

Travel Lane

15 ft

Boulevard

8-10 ft

Walk

4.5-6 ft

9th Ave - 12th Ave

Walk

6 ft

Boulevard

8-10 ft

Bike and Travel Lane

15 ft

Travel Lane

15 ft

Boulevard

8-10 ft

Walk

6 ft

Two-way segment to remain a two-way. No changes proposed.

Existing on-street bicycle route between 6th Ave and 9th Ave.

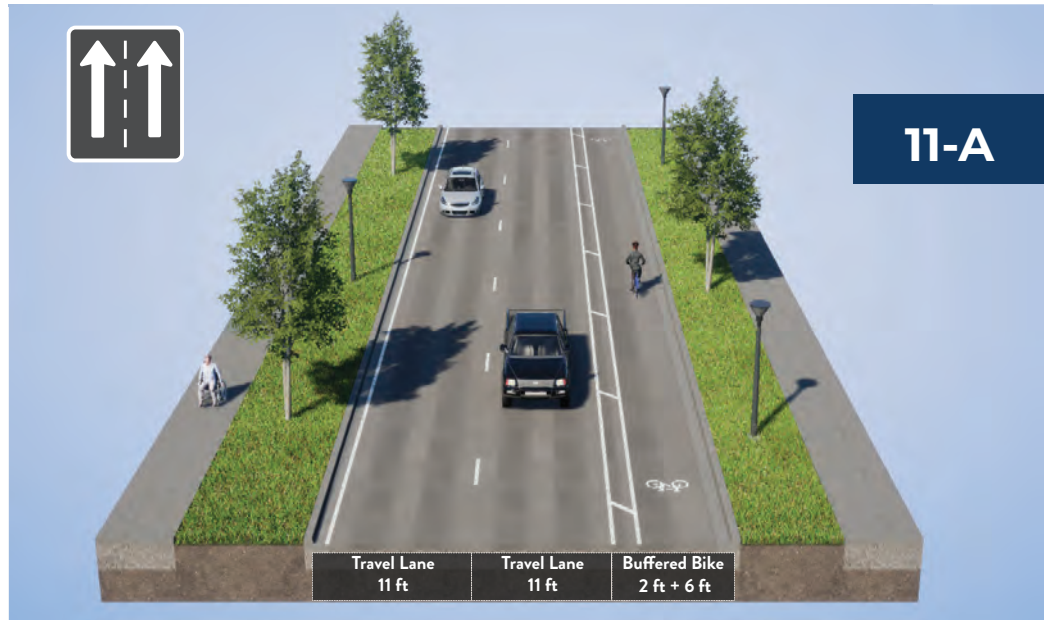
Parking prohibited in left lane; parking prohibited 8AM-5PM and Tuesdays 1AM-7AM in right lane.

Short-Term Alternatives: 11th Street

The City is considering short-term improvements that could be funded and completed within the next five years. These may include low-cost changes to improve traffic flow and safety, such as updated signs, pavement markings, and traffic controls. The improvements would fit within the existing roadway width, with no changes to curb lines or special assessments for adjacent property owners.

Place a dot on the one alternative you prefer!

One way | Unprotected buffered bike lane | No parking



Safety & Ped/Bike Comfort

Accessibility, Mobility, & Emergency Response

Cost

\$

\$

\$

\$

\$

Pros	Cons
- Simple implementation - Added separation for bikers - Preferred for emergency vehicle mobility and response time	- Lower access and circulation benefit for transit and drivers - Additional maintenance for striping

Two way | Unprotected bike lanes | No parking



Safety & Ped/Bike Comfort

Accessibility, Mobility, & Emergency Response

Cost

\$

\$

\$

\$

\$

Pros	Cons
- Bike lanes on both sides - Improve access and response times for emergency vehicles - Speed management	- Less separation for bikers - Higher implementation cost to change to 2-way

Place dots here for 11-A

Place dots here for 11-B



City of Moorhead

11 St & 14 St Corridor Study



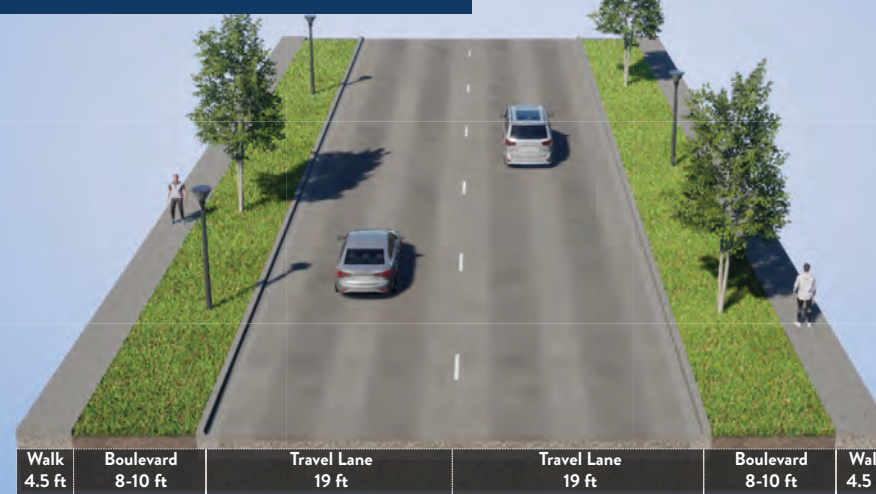
Short-Term Alternatives: 14th Street

The City is considering short-term improvements that could be funded and completed within the next five years. These low-cost changes could include updated signs, pavement markings, and traffic controls to improve traffic flow and safety. Improvements would stay within the existing roadway width, with no changes to curb lines or special assessments for adjacent property owners.

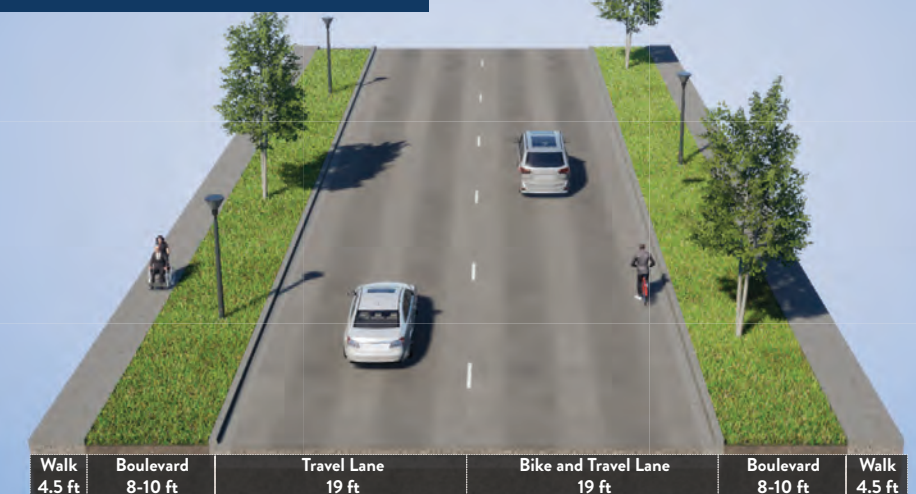
Place a dot on the one
alternative you prefer!

14th Street Existing (Northbound)

Main Ave - 6th Ave

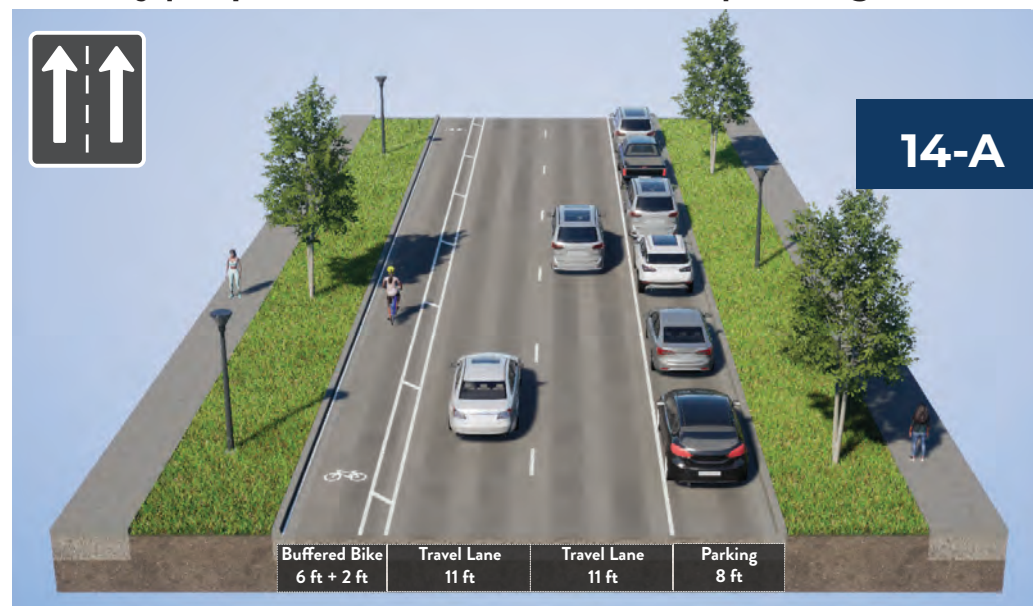


6th Ave - 12th Ave



Existing on-street bicycle route between 6th Ave and 9th Ave.

One way | Unprotected buffered bike lane | Parking one side



Safety & Ped/Bike Comfort ●●●●○
Accessibility, Mobility, & Emergency Response ●●●●○
Cost \$\$\$\$

Pros

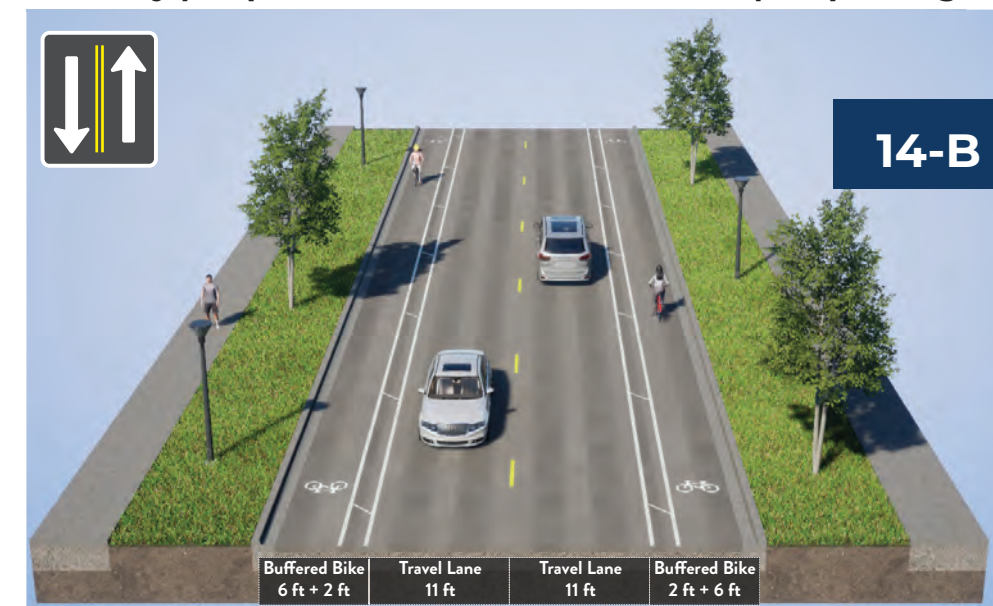
- Buffer for bikers
- Maintains parking
- Speed management

Cons

- Lower access and circulation benefit
- Additional maintenance for striping

Place dots here for 14-A

Two way | Unprotected buffered bike lanes | No parking



Safety & Ped/Bike Comfort ●●●●○
Accessibility, Mobility, & Emergency Response ●●●●○
Cost \$\$\$\$

Pros

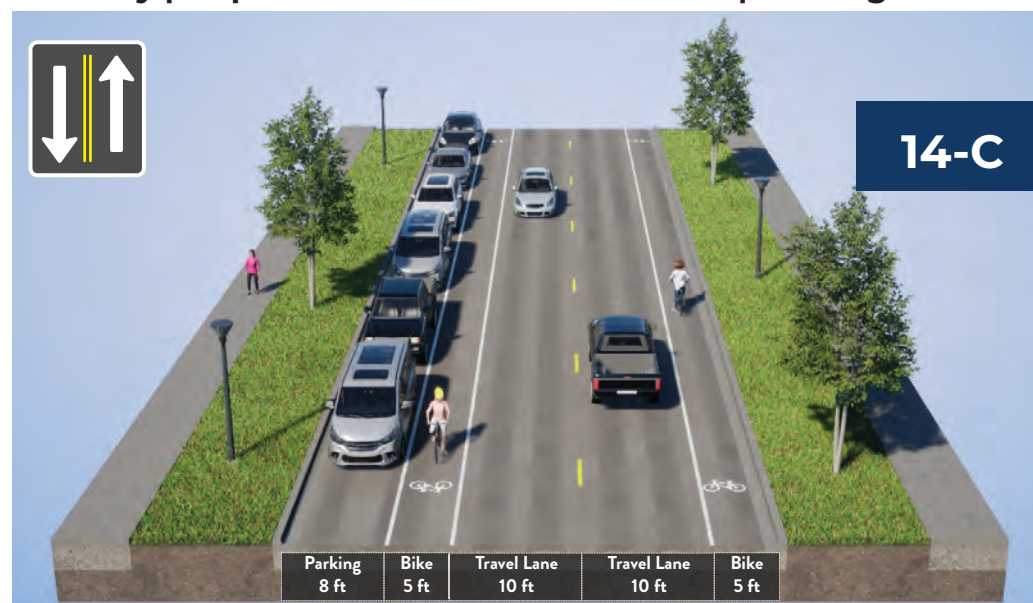
- Buffered bike lanes on both sides
- Improve access and response times for emergency vehicles
- 2-way may improve safety/mobility for all drivers

Cons

- No parking
- Additional maintenance for striping
- Higher cost for converting to 2-way

Place dots here for 14-B

Two way | Unprotected buffered bike lanes | Parking one side



Safety & Ped/Bike Comfort ●●●●○
Accessibility, Mobility, & Emergency Response ●●●●○
Cost \$\$\$\$

Pros

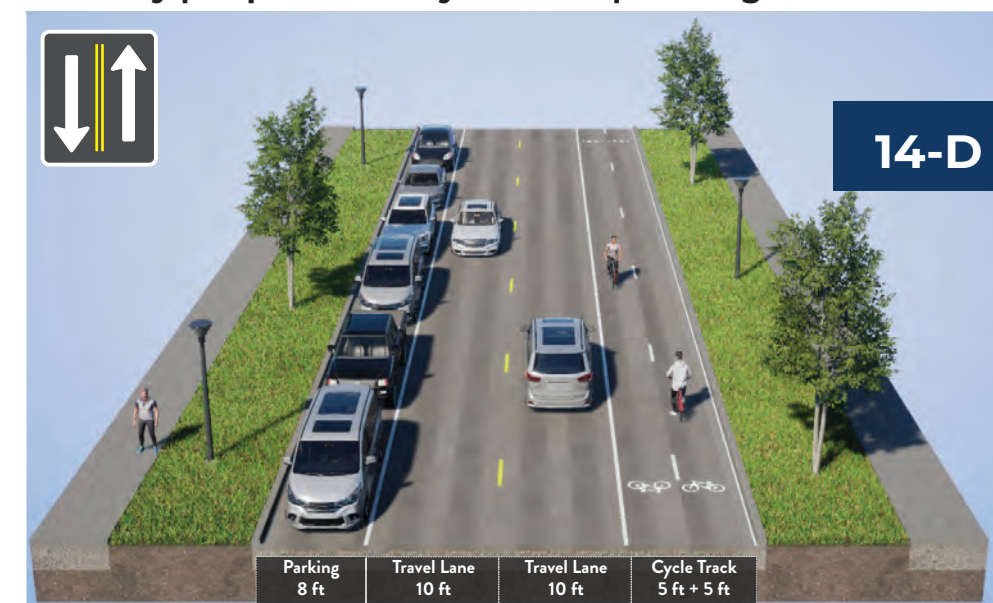
- Maintenance
- Maintains parking
- Speed management

Cons

- Lower biking comfort without protection and adjacent to parking lane

Place dots here for 14-C

Two way | Unprotected cycle track | Parking one side



Safety & Ped/Bike Comfort ●●●●○
Accessibility, Mobility, & Emergency Response ●●●●○
Cost \$\$\$\$

Pros

- Maintains parking
- Provides wide facility for biking

Cons

- Cycle track may confuse drivers
- No buffer for bike lanes
- May impact transit and emergency response
- Unconventional design for neighborhood

Place dots here for 14-D



City of Moorhead

11 St & 14 St Corridor Study



Long-Term Alternatives: 11th Street

The City is considering long-term improvements that would make more physical changes to the corridor. These would be completed as part of future roadway projects, potentially in 5–10 years or longer, depending on funding and opportunities to coordinate with other projects.

Special assessments may be needed under the City’s Special Assessment Policy. Impacts to trees, on-street parking, and utilities would be minimized where possible.

Place a dot on the one alternative you prefer!

One way | Unprotected buffered bike lane | No parking



Safety & Ped/Bike Comfort	●●●●○
Accessibility, Mobility, & Emergency Response	●●●●○
Feasibility & Cost	\$\$\$\$\$
Maintenance	●●●●○
Community Character & Environment	●●●●○

Pros	Cons
- Can fit within existing roadway width - Lower cost - Improved bike comfort - Minimal impact to trees - Simpler implementation	- Less physical separation compared to other alternatives for bike lane - Lower access and circulation benefit maintaining one-way

Place dots here for 11-1

One way | 10-ft shared use path | No parking



Safety & Ped/Bike Comfort	●●●●○
Accessibility, Mobility, & Emergency Response	●●●●○
Feasibility & Cost	\$\$\$\$\$
Maintenance	●●●●○
Community Character & Environment	●●●●○

Pros	Cons
- Speed management - Narrower crossing distance - Maintenance - Minimal tree impact	- Higher cost - Mixes bikes and peds on shared-use path - Access - Frequent driveway crossings

Place dots here for 11-2

Two way | 8-ft raised bikeway | No parking



Safety & Ped/Bike Comfort	●●●●●
Accessibility, Mobility, & Emergency Response	●●●●○
Feasibility & Cost	\$\$\$\$\$
Maintenance	●●●●○
Community Character & Environment	●●●●○

Pros	Cons
- Increased comfort for bikers - Separates bike/peds - Speed management	- Higher cost - Unconventional design for neighborhood - Frequent driveway crossings - Increased impervious surfaces - Tree impact

Place dots here for 11-3

Two way | 10-ft shared use path | No parking

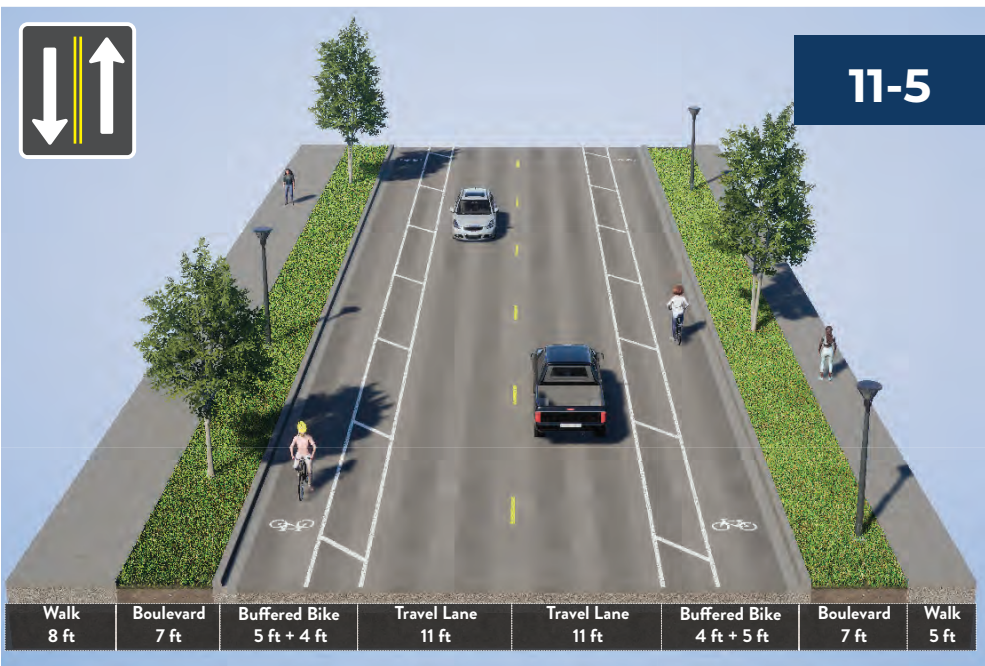


Safety & Ped/Bike Comfort	●●●●○
Accessibility, Mobility, & Emergency Response	●●●●○
Feasibility & Cost	\$\$\$\$\$
Maintenance	●●●●○
Community Character & Environment	●●●●○

Pros	Cons
- Speed management - Narrower crossing distances - Maintenance - Minimal tree impact - Improved access/mobility with 2-way	- Frequent driveway crossings - Mixes bikers and pedestrians - Increased cost associated with converting to two-way and adding shared-use path

Place dots here for 11-4

Two way | Unprotected buffered bike lanes | No parking



Safety & Ped/Bike Comfort	●●●●○
Accessibility, Mobility, & Emergency Response	●●●●○
Feasibility & Cost	\$\$\$\$\$
Maintenance	●●●●○
Community Character & Environment	●●●●○

Pros	Cons
- Improved bike comfort - Minimal impact to trees - Speed management	- Less physical separation compared to other alternatives for bike lane - Widens roadway/increased construction cost

Place dots here for 11-5



City of Moorhead

11 St & 14 St Corridor Study



Long-Term Alternatives: 14th Street

The City is considering long-term improvements that would make more physical changes to the corridor. These would be completed as part of future roadway projects, potentially in 5–10 years or longer, depending on funding and opportunities to coordinate with other projects.

Special assessments may be needed under the City’s Special Assessment Policy. Impacts to trees, on-street parking, and utilities would be minimized where possible.

Place a dot on the one alternative you prefer!

One way | Unprotected buffered bike lane | Parking one side



Safety & Ped/Bike Comfort	●●●●○
Accessibility, Mobility, & Emergency Response	●●●●○
Feasibility & Cost	\$\$\$\$\$
Maintenance	●●●●○
Community Character & Environment	●●●●○

Pros	Cons
- Lower cost due to fitting within existing roadway width - Improved bike comfort - Minimal impact to trees, - Simpler implementation - Can fit within existing curb width	- Less physical separation compared to other alternatives for bike lane - Lower access and circulation benefit maintaining one-way

Place dots here for 14-1

Two way | 10-ft shared use path | 10-ft raised bikeway | Parking one side



Safety & Ped/Bike Comfort	●●●●●
Accessibility, Mobility, & Emergency Response	●●●●○
Feasibility & Cost	\$\$\$\$\$
Maintenance	●●●●○
Community Character & Environment	●●●●○

Pros	Cons
- Increased comfort for bikers - Separates bikes/peds - Speed management	- Higher cost - Unconventional design for neighborhood - Frequent driveway crossings - Increased impervious surfaces - Tree impact

Place dots here for 14-3

One way | Shared use path | Parking one side



Safety & Ped/Bike Comfort	●●●●○
Accessibility, Mobility, & Emergency Response	●●●●○
Feasibility & Cost	\$\$\$\$\$
Maintenance	●●●●○
Community Character & Environment	●●●●○

Pros	Cons
- Speed management - Narrower crossing distances - Maintenance - Minimal tree impact	- Higher cost - Mixes bikers and pedestrians on shared-use path - Access - Frequent driveway crossings

Place dots here for 14-2

Two way | 10-ft shared use path | Parking both sides



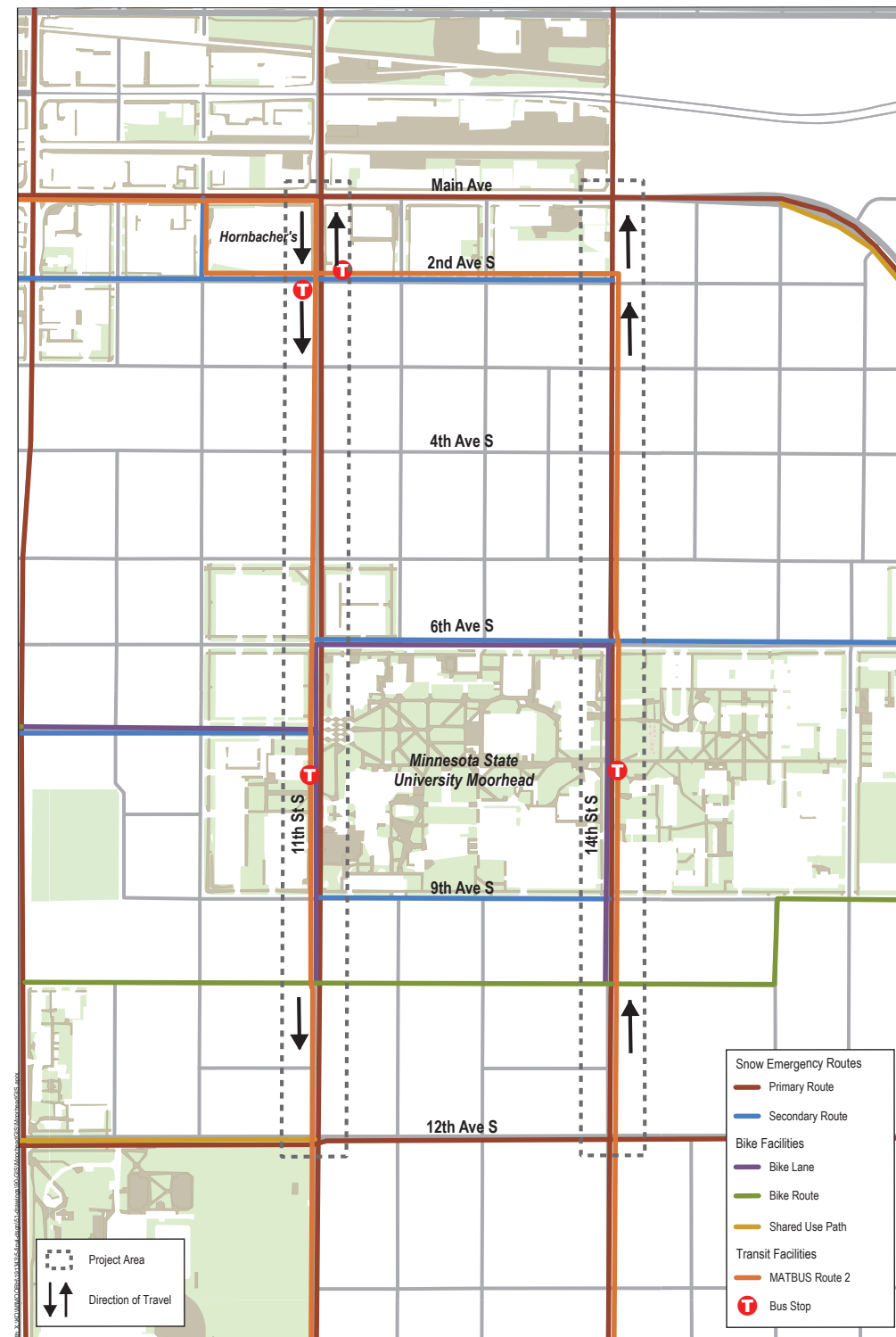
Safety & Ped/Bike Comfort	●●●●○
Accessibility, Mobility, & Emergency Response	●●●●●
Feasibility & Cost	\$\$\$\$\$
Maintenance	●●●●○
Community Character & Environment	●●●●○

Pros	Cons
- May fit within existing curb width - Parking both sides - Maintenance - Minimizes driveway impact	- Mixes bikers and pedestrians - Low parking demand may encourage higher travel speeds - Frequent driveway crossings

Place dots here for 14-4

Existing Conditions

Existing Transportation Facilities

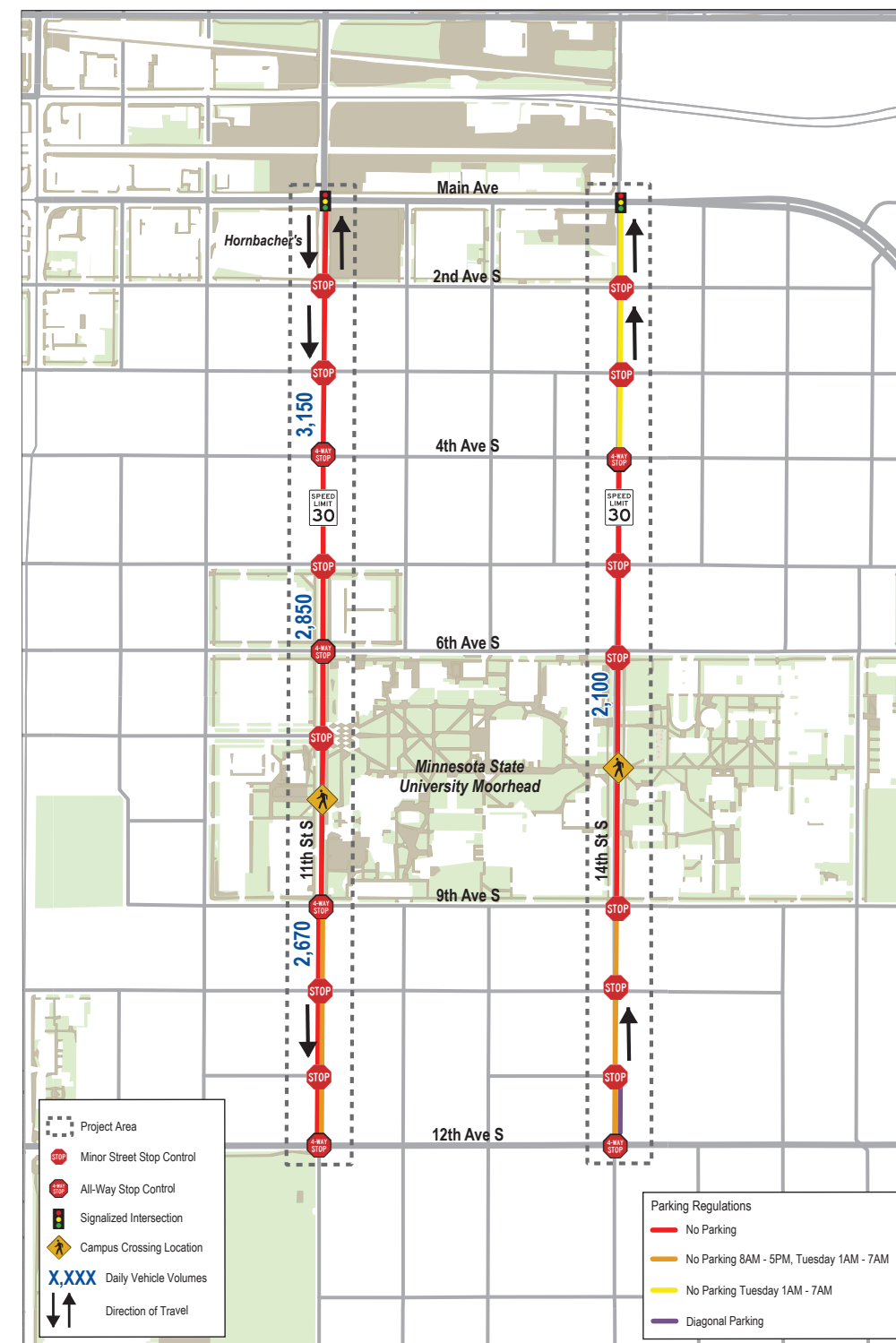


Crash Data 2021-2025



- No fatal crashes occurred in the study area
- Most crashes occurred at the two signalized intersections on Main Avenue, including two bicycle-related crashes and one severe motorcycle injury crash at 11th Street.
- Minimal crashes occurred along 11th St and 14th St between 2nd Avenue and 12th Avenue

Existing Traffic Conditions



Speed Data



- Average speeds recorded were below the 30 MPH speed limit.
- Higher speeds were recorded on 14th Street than on 11th Street.

MSUM Campus Pedestrian Crossing and Driver Yielding Behavior

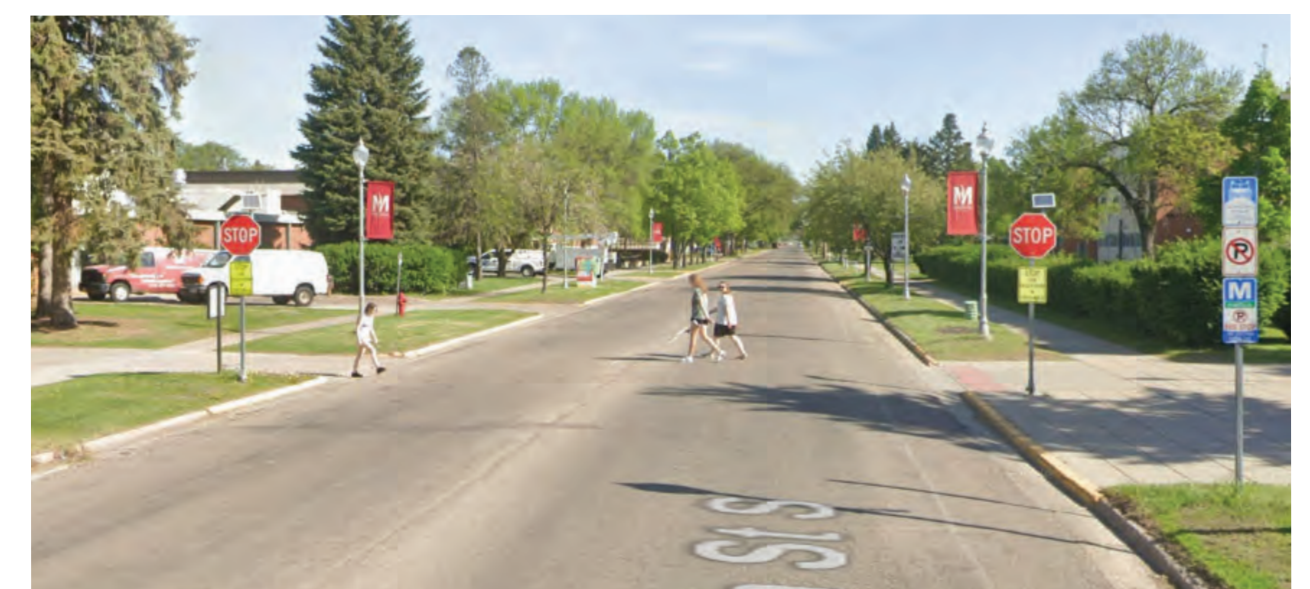


Observations during busy weekday periods (while MSUM was in session) showed crossing activity at 11th Street (RRFB crossing) and 14th Street (stop-controlled with flashing lights), which use different treatments to improve driver awareness and crossing safety.

- Heavy pedestrian volumes were observed during the weekday.
- All observed vehicles stopped for pedestrians to cross.
- Overall, most pedestrians did not have to wait to cross.
- Many students crossed outside the marked crossings.
- Rolling stops (under 3 MPH) were common at the 14th St stop signs.
- A small number of vehicles ran the stop signs at the 14th St crossing.



11th St Campus Pedestrian Crossing (Rectangular Rapid Flashing Beacon)

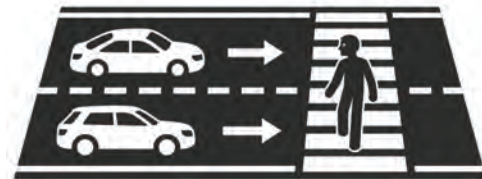


14th St Campus Pedestrian Crossing (Flashing Stop Sign)

One-Way Roadway:



PROs



People crossing only need to watch for traffic coming from one direction.



Handles more traffic with fewer delays.



Makes left turns easier.



CONs



A stopped car in one lane can block the view of a person crossing for drivers in the next lane.



Can increase vehicle speeds.



Splits transit stops onto separate streets.

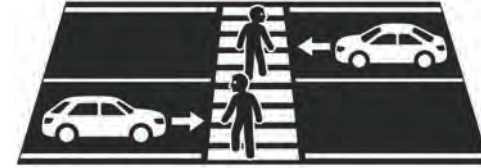


Can require longer routes and make it harder for visitors to find their way.

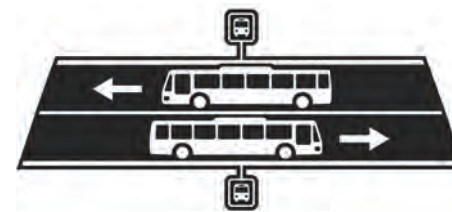
Two-Way Roadway:



PROs



Stopped cars are less likely to block other drivers' view of people crossing.



Keeps transit routes on the same street, making stops easier to reach and improves route consistency.



Oncoming traffic can encourage slower speeds.



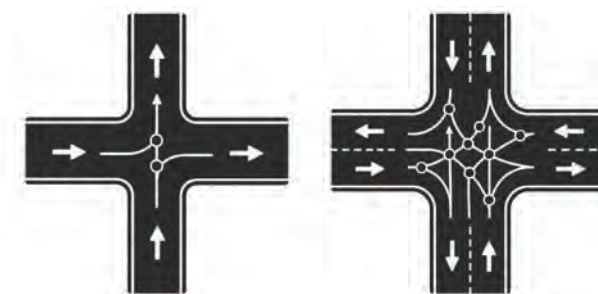
Makes destinations easier to find and reach.



CONs



Handles fewer vehicles than a two-lane one-way pair and can make trips take longer.



Introduces additional conflict points at intersections compared to a one-way intersection.

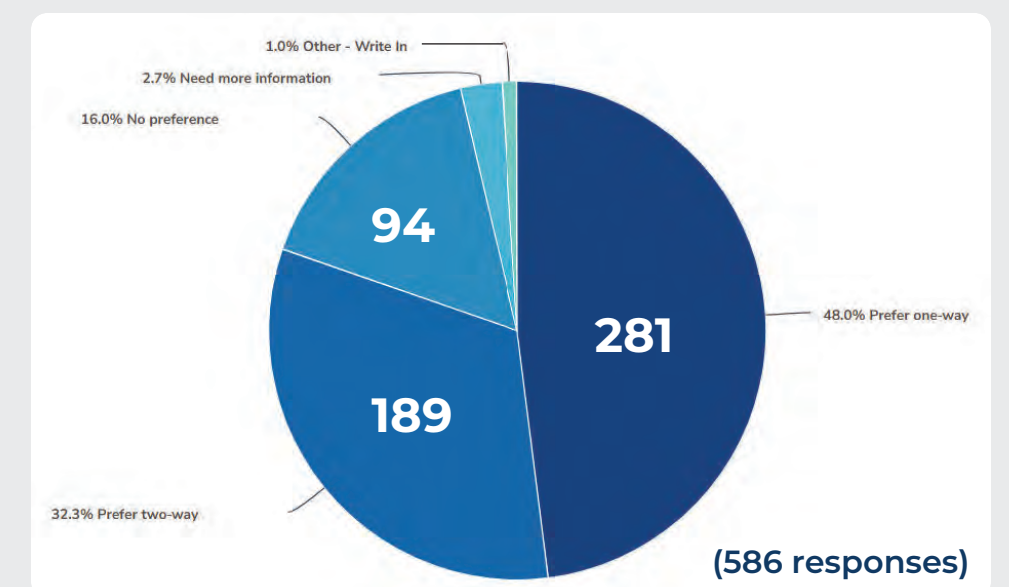


Can make truck deliveries and transit stops more difficult and block traffic compared to one-ways where cars can go around.



What We Heard: Online Survey and Open House 1 Feedback

1-way vs. 2-way Preferences



Corridor Priorities

52%

290 responses

Pedestrian safety

Top corridor priority

43%

243 responses

Manage vehicle speeds

Second-highest priority

23%

127 responses

Traffic calming

Curb extensions and medians

Pedestrian Crossing Safety Priorities

34%

194 responses

Warning lights / beacons

Most-supported intersection improvement

31%

177 responses

Crosswalk markings

Second-most-supported improvement

Common Themes in Online Comments

- Stop-sign compliance - Clearer driver expectations and compliance
- Sight lines and lighting - Better visibility at crossings and intersections
- Directional signage - Improve particularly through MSUM (if remains one-way)
- Locations of concern - 14th Street, within MSUM Campus Area



City of Moorhead

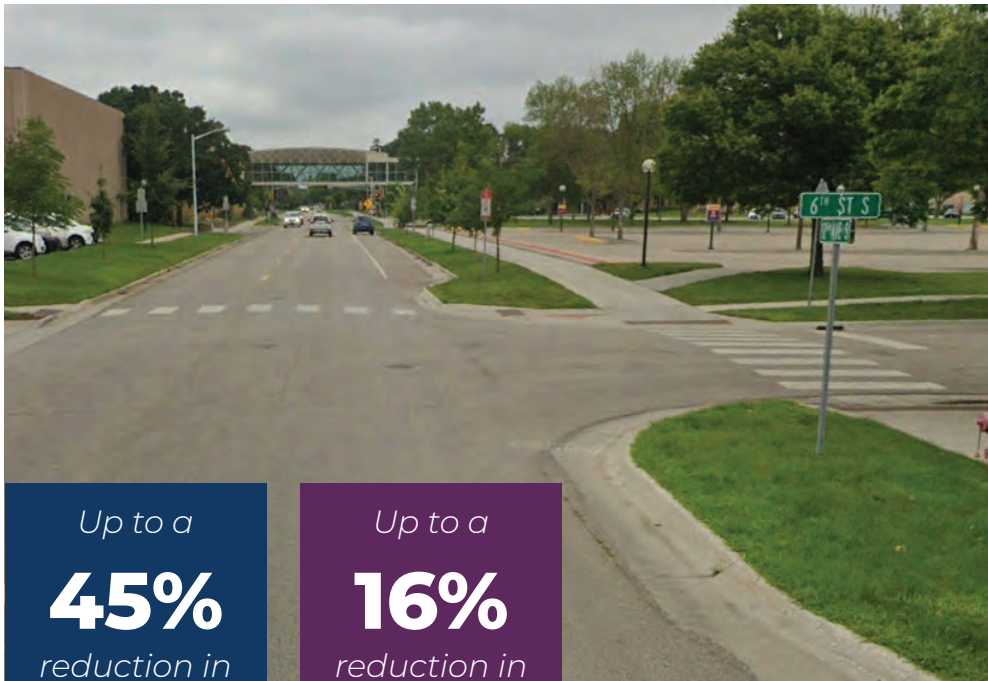
11 St & 14 St Corridor Study



SAFETY IMPROVEMENTS FOR PEDESTRIANS



Curb Extensions



Up to a
45%
reduction in
pedestrian
crashes

Up to a
16%
reduction in
85th percentile
speeds

Pros	Cons
Improves pedestrian visibility	Drainage/snow storage impact
Reduces crossing distance	Difficult with on-street bike lane design
Traffic Calming	
Manages parking near intersections	

\$ \$ \$ \$ \$

Crosswalk Visibility Enhancement



Up to a
40%
reduction in
pedestrian
crashes

Pros	Cons
Low-cost	Limited effectiveness on speed management
Improves awareness of crossing location	May need additional treatments
Can improve yielding behavior	
Easy to implement	

\$ \$ \$ \$ \$

Raised Crosswalk or Intersection



Up to a
45%
reduction in
pedestrian
crashes

Up to a
24%
reduction in
85th percentile
speeds

Pros	Cons
Improve pedestrian visibility	Higher cost
Slows vehicles	May affect emergency response/transit
Improves yielding	Drainage and winter maintenance considerations
Comfortable crossing environment	

\$ \$ \$ \$ \$

Rectangular Rapid Flashing Beacon



Up to a
47%
reduction in
pedestrian
crashes

Improves driver
yielding rates
up to
98%

Pros	Cons
FHWA proven safety countermeasure	Higher cost and maintenance
Increases yielding rates	May not reduce vehicle speeds
Highly visible	

\$ \$ \$ \$ \$

Sources: Federal Highway Administration (FHWA), Safe Transportation for Every Pedestrian (STEP) Program.
Federal Highway Administration (FHWA), Speed Management Toolkit.