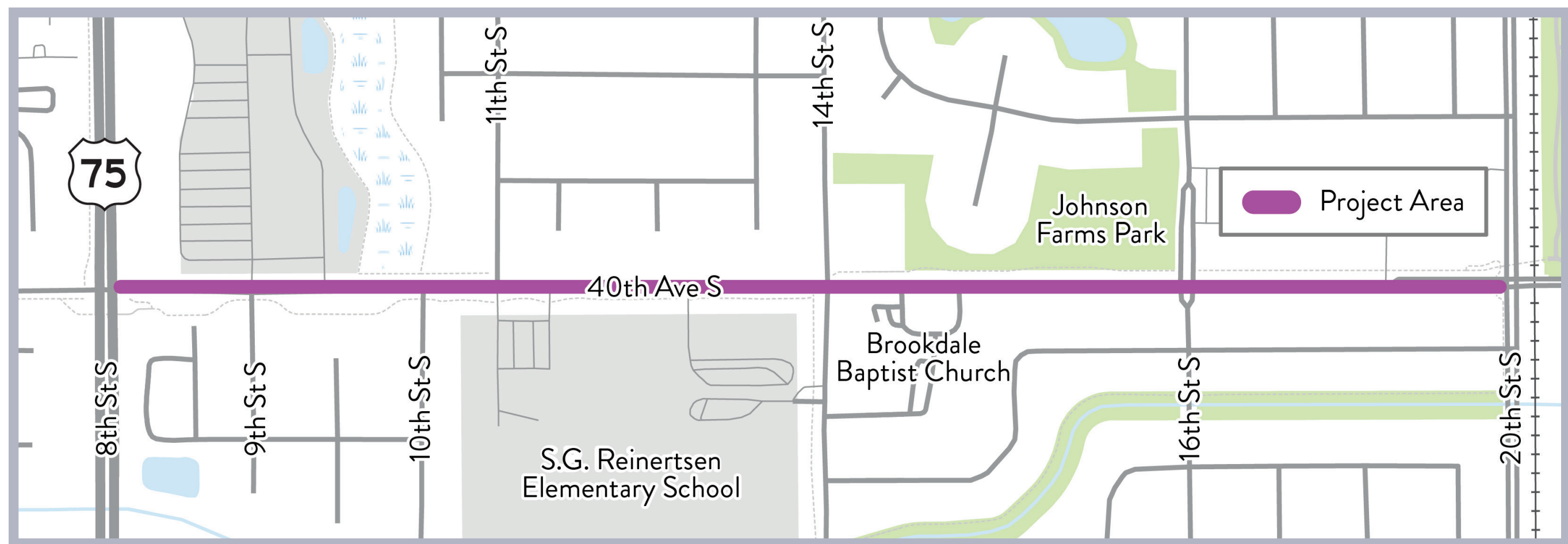




40th Avenue South Corridor PROJECT OVERVIEW

The City of Moorhead is making improvements to 40th Avenue South between 8th Street and 20th Street in 2026. This roadway is an important connection to residential areas, schools, parks, local businesses, and churches. This project is intended to make 40th Avenue South safer and more accessible for all road users, including drivers, pedestrians, and bicyclists.

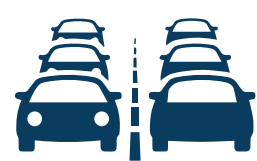
Project area



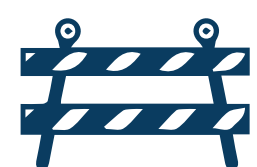
The goal of this project is to:



Enhance safety, especially for pedestrians and bicyclists



Reduce speeding and improve traffic flow



Maintain pavement and prepare for future growth

Historically, 40th Avenue has experienced crash rates well below the norm. However, the City’s commitment to address high safety standards along with increasing traffic and ongoing pedestrian and bicycle activity, has created a clear need for this study.

The Safe Systems Approach was adopted by the U.S. Department of Transportation as the guiding vision for addressing roadway safety. It builds and reinforces layers of protection to prevent crashes from happening and minimize the amount of harm and destruction caused when they do occur.

The Safe Systems Approach is built upon five elements:



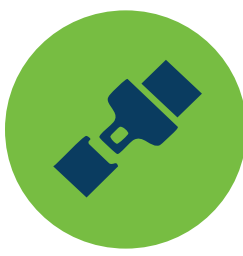
Safer people

All road users, including those walking, biking, riding, and driving, should always operate in a safe and responsible manner when on the roadway.



Safer speeds

Safer speed setting, education, and enforcement are promoted across all road environments to reduce kinetic forces associated with crashes to a tolerable level on the human body.



Safer vehicles

Vehicles are designed incorporating the latest technology and used in appropriate ways (such as always wearing a seat belt) to minimize crash severity and frequency.



Safer roads

Roads are designed to accommodate human mistakes, encourage safe behavior, and reduce crash severity and frequency.



Post-crash care

Receiving quick emergency medical care following a crash is essential to assist those who have been injured and to reduce fatalities.



Project contacts:

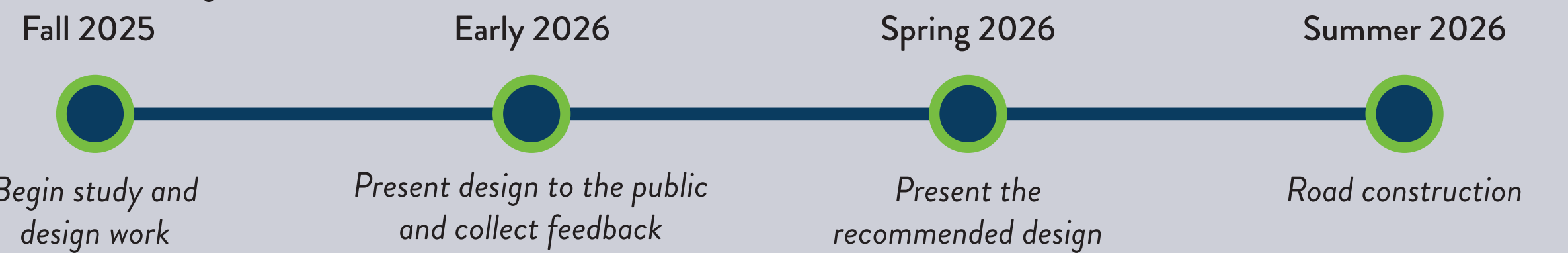
Tom Trowbridge, City Engineer, tom.trowbridge@moorheadmn.gov
Cody Christianson, Project Manager, Cody.Christianson@bolton-menk.com

Learn more and sign up for project updates:

moorheadmn.gov/departments/engineering/current-future-projects/40-ave-project



Timeline (subject to change)





40th Avenue South Corridor EXISTING ISSUES



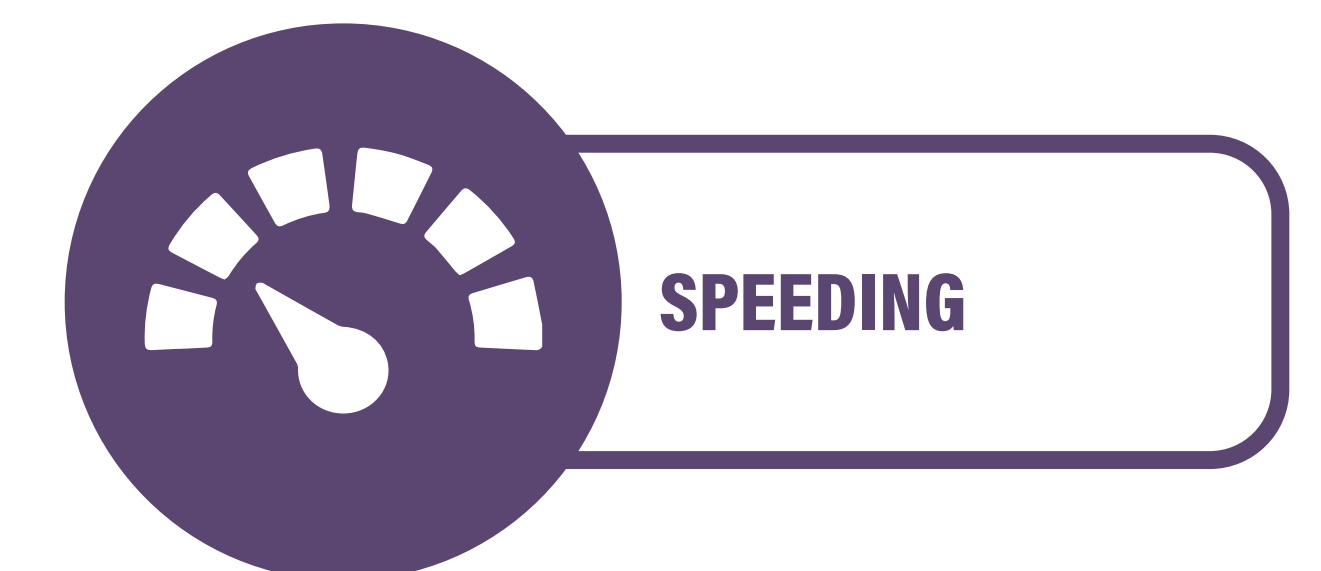
**PEDESTRIAN
SAFETY**



**PEDESTRIAN/
VEHICLE CONFLICT**



**FACILITY
BARRIER**



SPEEDING



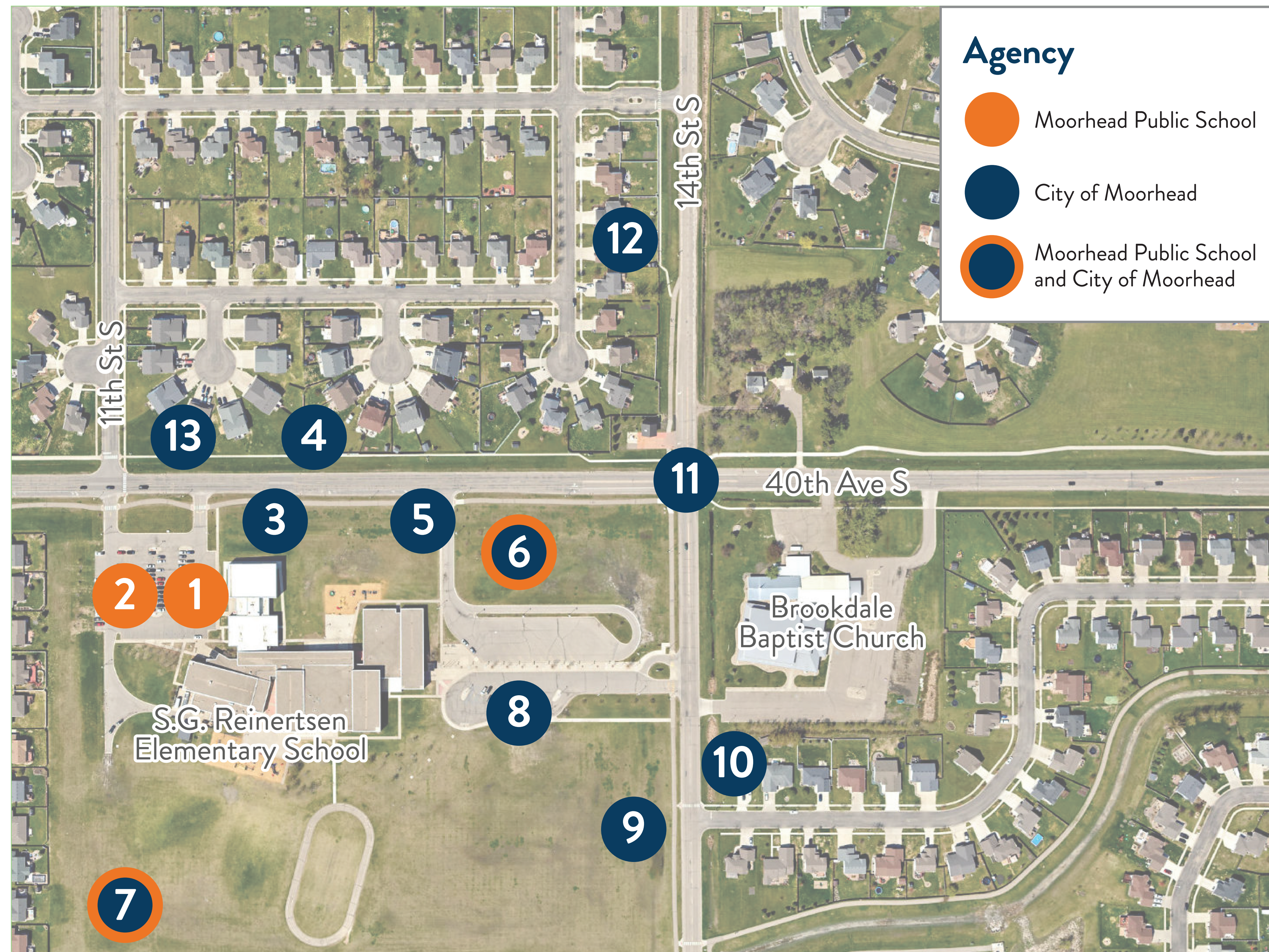
**AREA
CIRCULATION**

Within the project area, 40th Avenue South is an urban, two-lane corridor that connects local streets to bigger roadways. The area is mostly residential with a commercial portion on the northeast corner of the intersection of 8th Street South and 40th Avenue South. Major destinations include S.G. Reinertsen Elementary, Johnson Farms Park, and Brookdale Baptist Church.



40th Avenue South Corridor SAFE ROUTES TO SCHOOL

The 2025 Moorhead Safe Routes to School Plan recommended the following to improve safety for students walking and biking to S.G. Reinertsen Elementary:



Recommendations

1. Widen and realign sidewalk immediately west of school building to eliminate pedestrian obstacles, such as light poles, vehicle bumpers and hitches, and allow sufficient room for pedestrian-bicycle circulation. Repair or replace damaged concrete as needed.
2. Stripe 60" (5') access aisle for handicapped car spaces to comply with ADA standards.
3. Consider repair or reconstruction of asphalt shared-use path due to deteriorated condition.¹
4. Consider widening north sidewalk along 40th Avenue South to connect existing shared-use paths.¹
5. Widen curb cuts and extend detectable warning panels along shared-use path at all parking lot entrances.¹
6. Stripe crosswalk at east parking lot entrance.¹
7. Consider extending pathway network to include direct connections to neighborhoods to the west and south.
8. The school is currently undergoing a traffic and parking lot reconfiguration study.
9. Enforce "No Parking" signs or allow parking on the west side of 14th Street (this block only). This would allow extra pick-up and drop-off space and could act as traffic calming.
10. Extend 41st Avenue's south sidewalk to 14th Street and install a crosswalk across 41st Avenue South.¹
11. Consider installation of a roundabout or traffic signal* at the intersection of 14th Street and 40th Avenue South to reduce queue lengths and traffic delays.¹
12. Consider extending the shared-use path north along 14th Street.
13. An RRFB is proposed at the east lot entrance instead of 11th Street.

*Traffic study determined traffic signal is not warranted.

¹ Part of the 40th Avenue Improvement Plan.



40th Avenue South Corridor ENHANCED PEDESTRIAN CROSSINGS

**Making 40th Avenue South safer for people walking and biking is a top priority.
Here are some improvements being considered:**

Pedestrian refuge island

The project team recommends pedestrian refuge islands on 40th Avenue South on the west side of **10th Street**, the west approach of the S.G. Reinertsen Elementary **pickup/drop-off lot**, and the west side of **20th Street**.

- A pedestrian refuge island is a median in the middle of the road where people can wait if they cannot cross the entire street at once.
- Research has found that pedestrian refuge islands reduce pedestrian crashes by **56% on average**.
- Pedestrian refuge islands can also help slow traffic as the road feels narrower and less comfortable for drivers.
- Longer medians are preferred to reduce speeds and facilitate snowplowing operations.



Figure 1: Pedestrian refuge island on Highway 25 in Buffalo

Rectangular Rapid Flashing Beacon (RRFB)

The project team recommends RRFBs on 40th Avenue South on the west approach of the S.G. Reinertsen Elementary **pickup/drop-off lot** and the west side of **16th Street**.

- A Rectangular Rapid Flashing Beacon (RRFB) is a set of bright, flashing lights at a crosswalk. People push a button to turn them on when they want to cross.
- When RRFBs are used, most drivers (**up to 98%**) stop for people at the crosswalk compared to a **25% yield rate** when no crossing enhancement is present.
- Research has found that RRFBs can reduce pedestrian crashes by **up to 47%**.



Figure 2: Rectangular Rapid Flashing Beacon (RRFB)

Reducing roadway widths

The project team recommends removing right turn lanes on **40th Avenue South** to enhance walking and biking safety.

- Removing right turn lanes will narrow the roadway at intersections, which shortens pedestrian crossing distances and reduces the number of conflict points between vehicles and pedestrians/cyclists.
- Narrower roadways also reduce traffic speeds. Case studies in Minnesota have found that reducing roadway widths slows speeding by 2 mph on average.

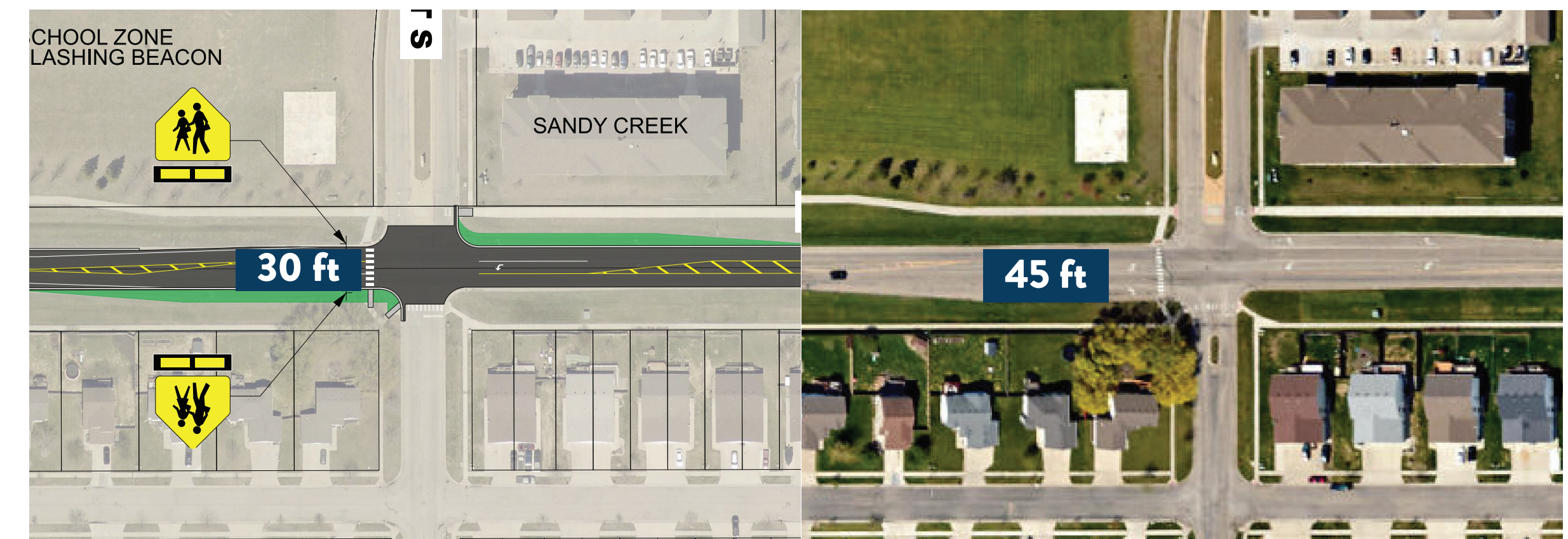
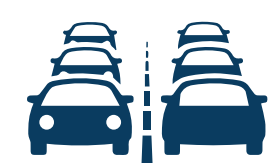


Figure 3: Concept vs. current roadway width at 16th Street S and 40th Ave S intersection



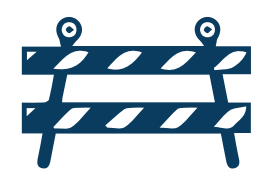
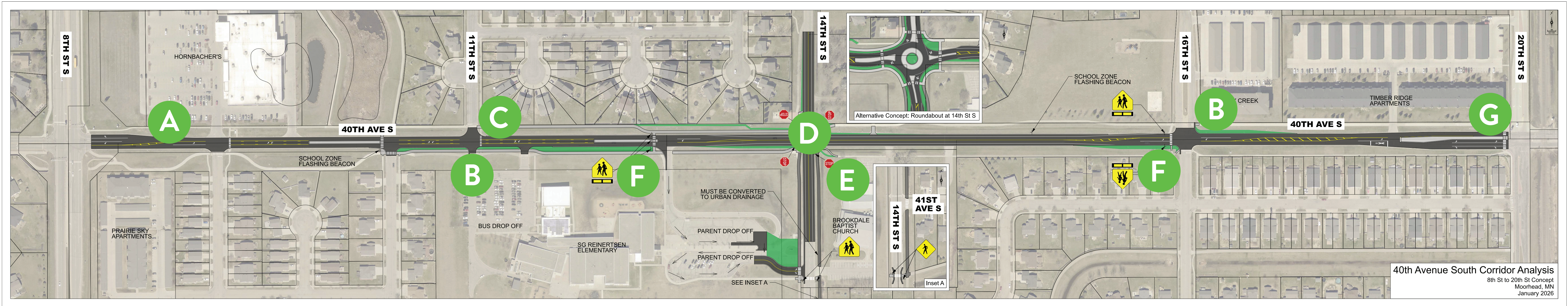
Pedestrian safety



Speed reduction



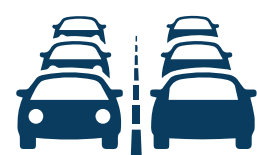
40th Avenue South Corridor IMPROVEMENT PLAN DETAILS



A. **Pavement conditions:** The roadway will be resurfaced to extend the life of the pavement.



E. **14th Street multimodal improvements:** The project will add sidewalks and crosswalks along 14th Street to make it safer to walk along and cross the street.



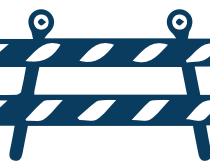
B. **Right-turn lane removals:** The project will remove several right-turn lanes on 40th Avenue South. Current and future traffic counts show that most intersections in the project area do not have enough right-turning vehicles to require a special lane. Removing right turn lanes makes the street narrower, so people have fewer lanes to cross and drivers are encouraged to slow down.



F. **16th Street improvements:** Flashing pedestrian crossing lights called Rectangular Rapid Flashing Beacons (RRFBs) will be added at 16th Street and the school pick-up/drop-off. See the “enhanced pedestrian crossings” board for more information.



C. **Pedestrian refuge islands:** To better connect the trail system and improve safety, pedestrian refuge islands will be added in key crossing locations. See the “enhanced pedestrian crossings” board for more information.

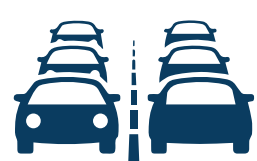


G. **20th Street intersection:** Currently, this intersection does not have enough traffic to require a traffic signal, but it will eventually as Moorhead grows. The intersection is being prepared for a future traffic signal, but will remain a two-way stop for the time being with a proper pedestrian refuge island.

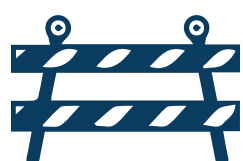
D. **14th Street intersection improvements:** See following boards



Pedestrian safety



Speed reduction



Street improvements

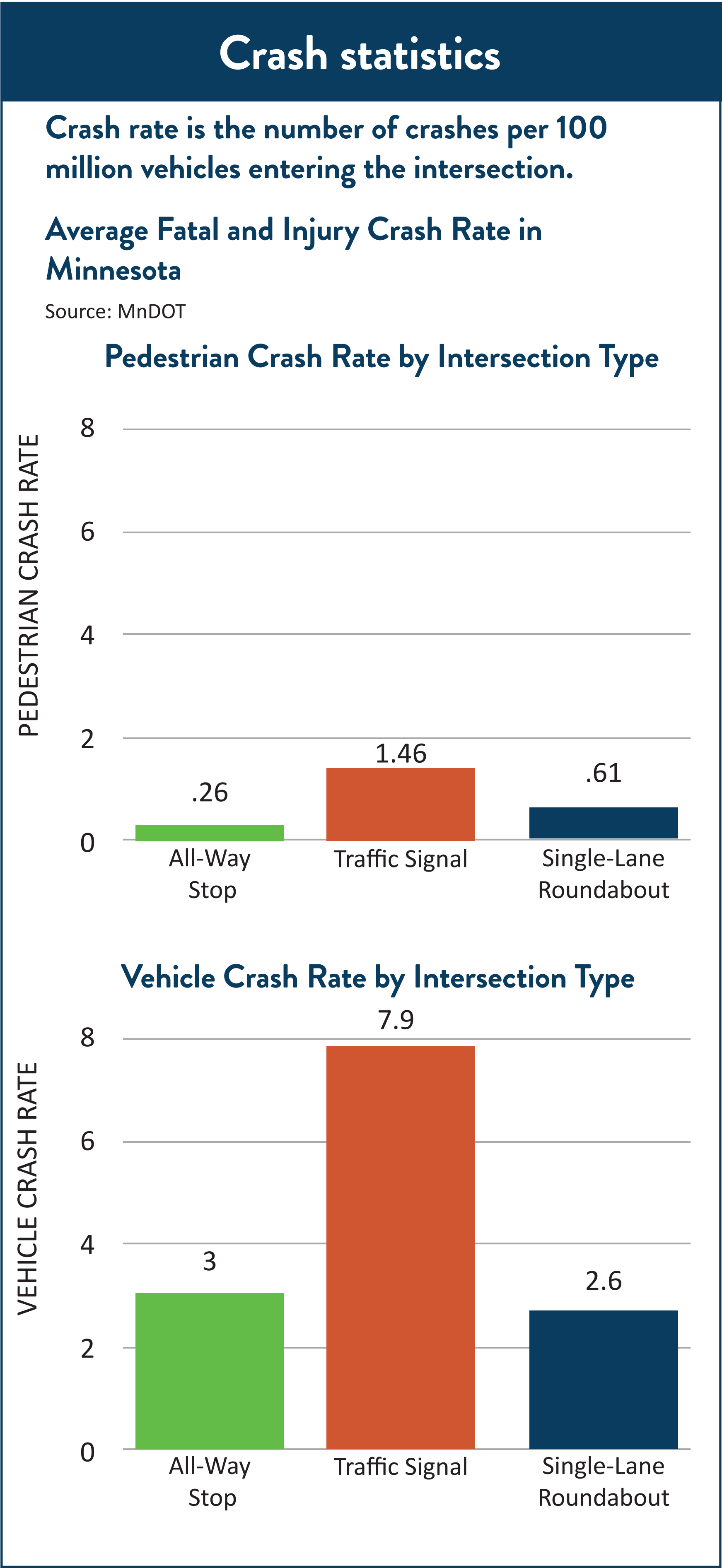
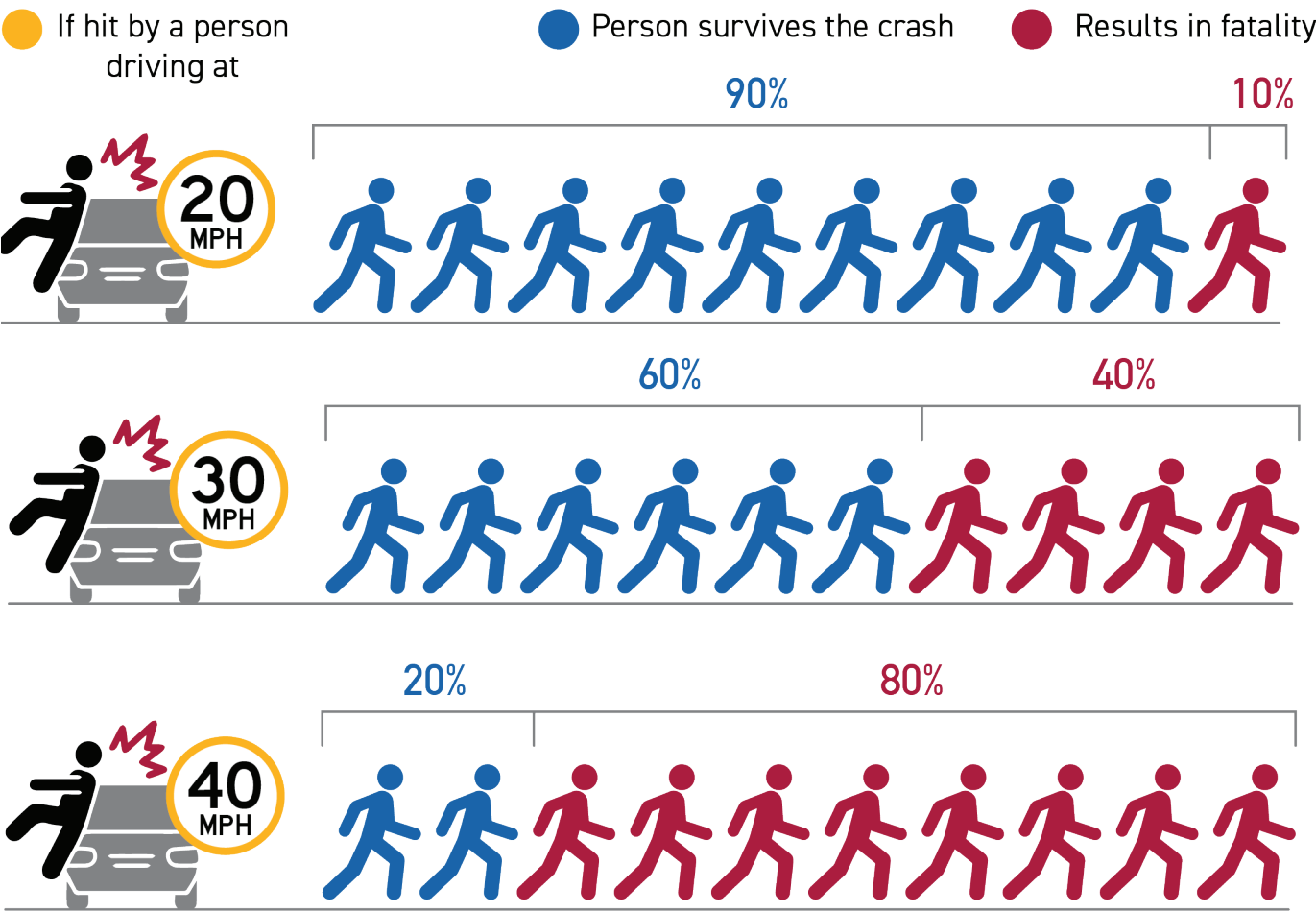


40th Avenue South Corridor

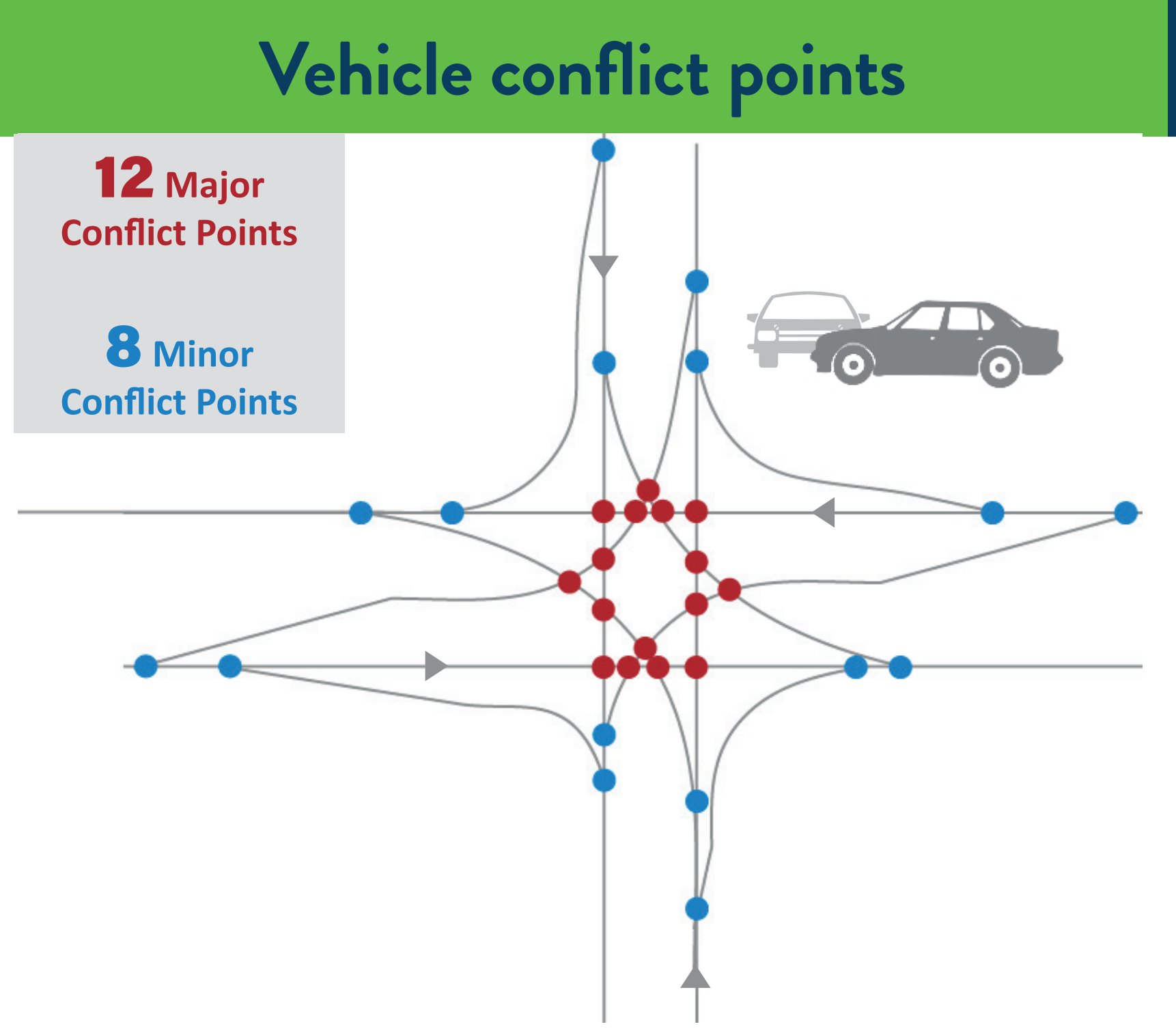
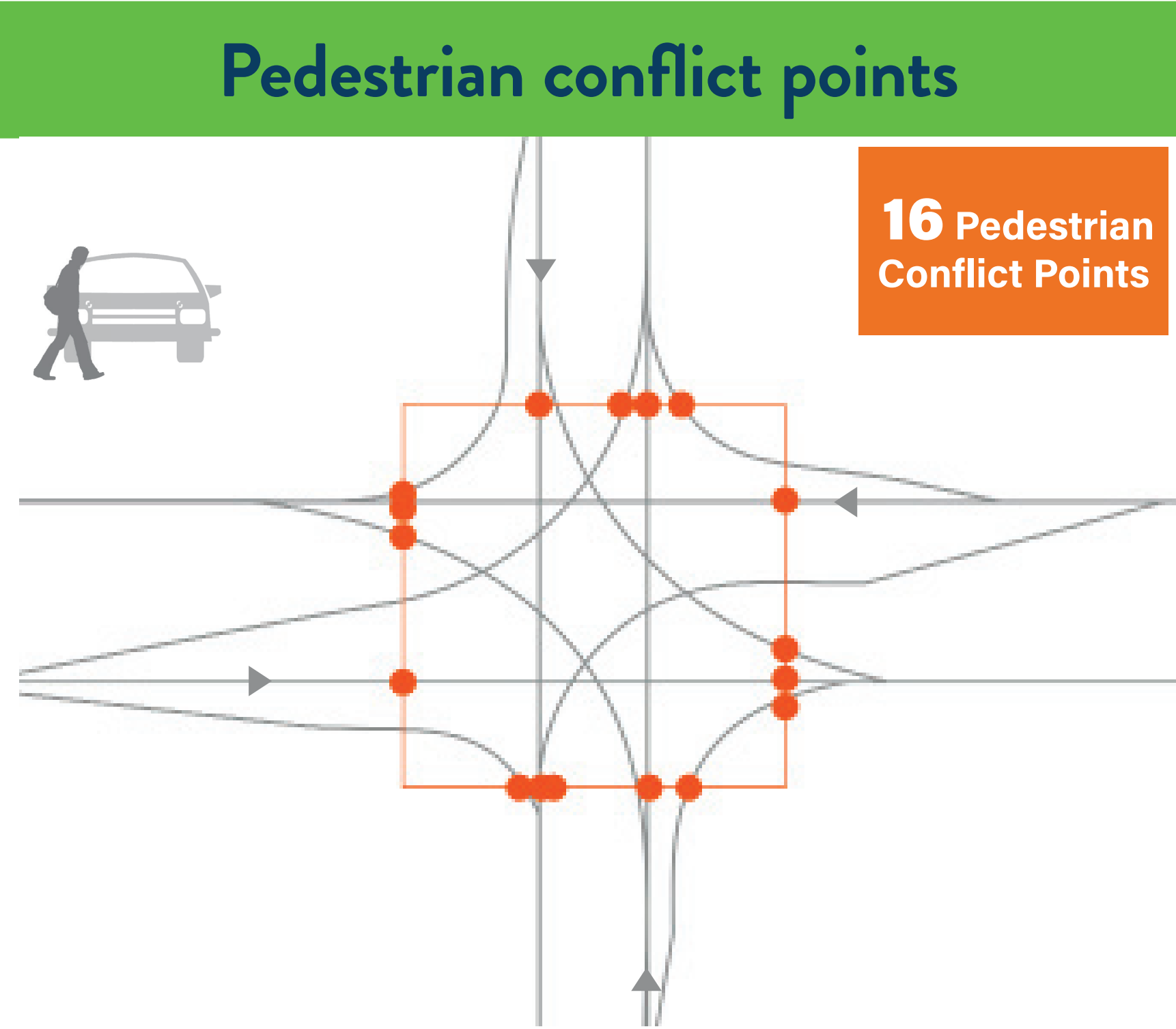
40TH AVENUE SOUTH & 14TH STREET: WHY NOT A TRAFFIC SIGNAL ?

Safety concerns

- Signals have the **highest crash rates** compared to other intersection types, **especially for pedestrians and bicyclists**.
- Putting in a traffic signal where it isn't needed can actually cause more crashes, especially rear-end crashes and crashes involving people walking or biking.
- Adding a traffic signal could let cars move through the intersection faster, **which could worsen speeding in the area**.
- Compared to roundabouts, signalized intersections have over three times as many places where cars and people cross paths, making crashes more likely.
- Based on state and national guidelines, there are not enough vehicles and pedestrians at this intersection to warrant a traffic signal. This is true for today and future (2050) traffic volumes.

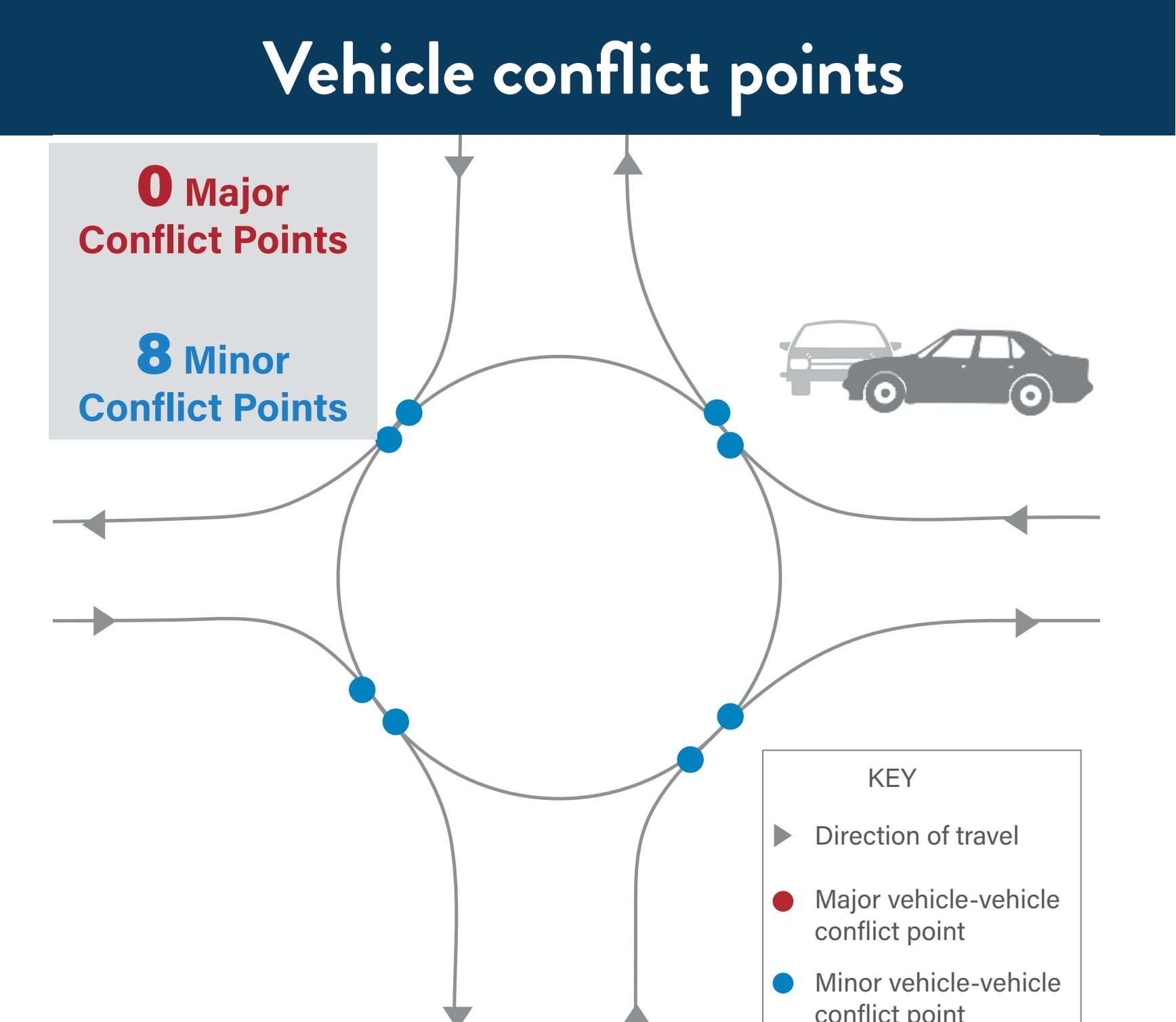
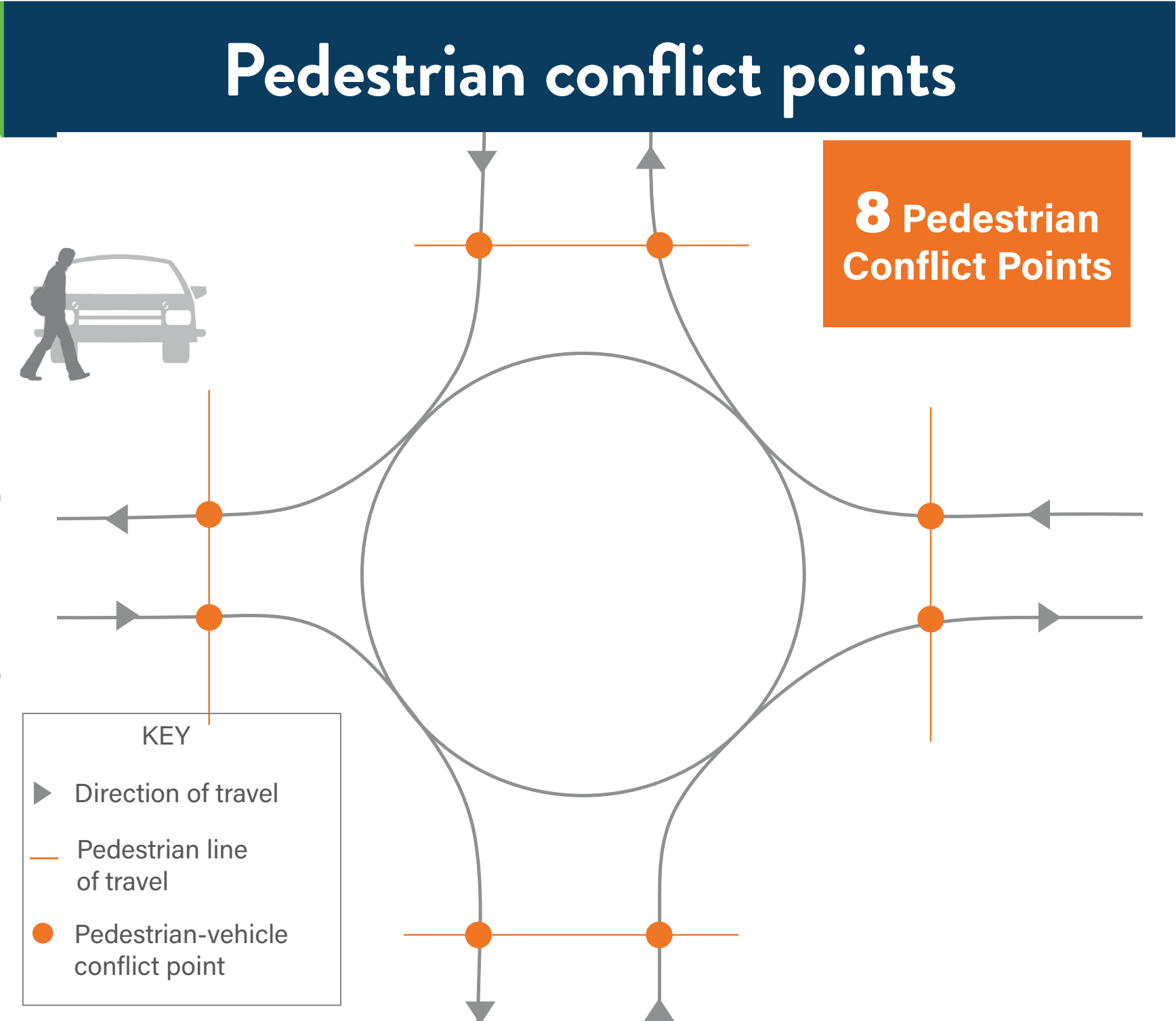


Traffic signals & all-way stop control



Minor Conflict Points:
More likely to cause minor collisions such as slow-speed rear-end crashes, resulting in minor injury. Slower speeds allow more time for drivers to react to pedestrians and reduce the risk of serious pedestrian injury

Single-lane roundabout

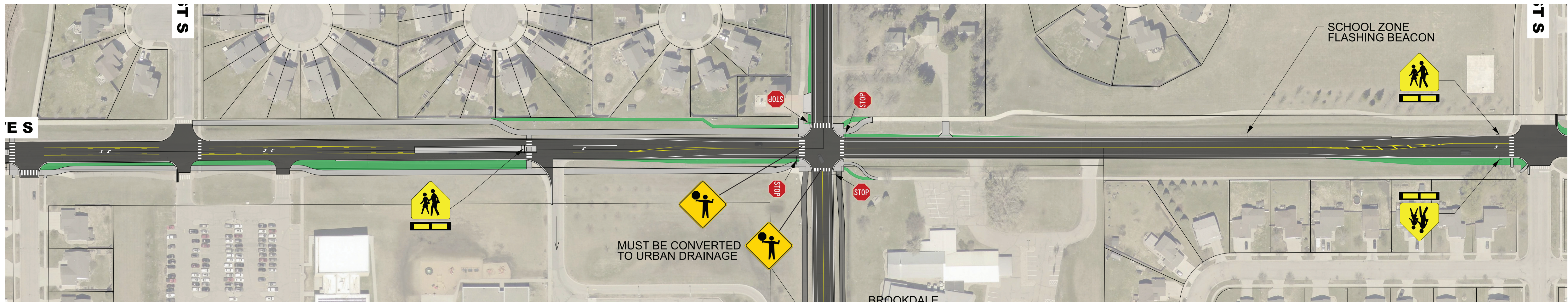


Major Conflict Points:
More likely to cause severe collisions such as T-bores and turning crashes, resulting in major injury or fatality to drivers or pedestrians



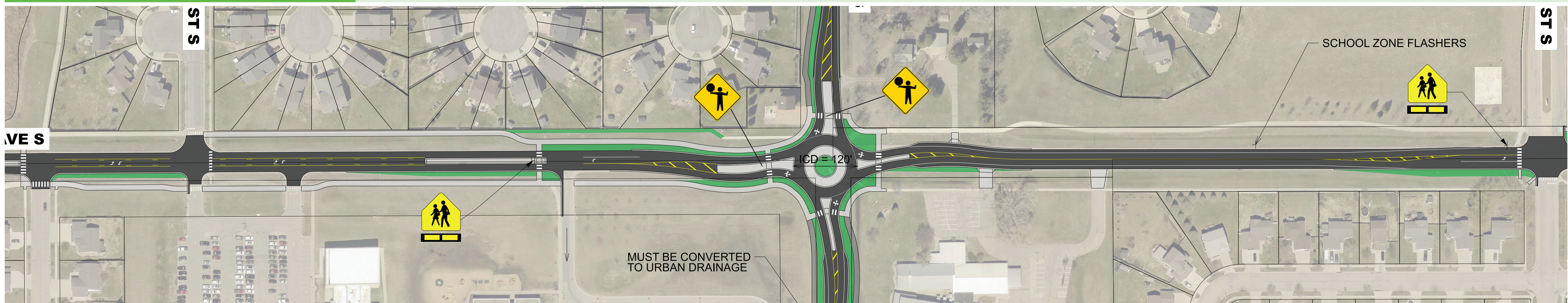
40th Avenue South Corridor

ROUNDAABOUT OR IMPROVED ALL-WAY STOP CONTROL?



With this option, the 14th Street intersection would remain an all-way stop without the existing right turn lanes.

	Ped/Bike Safety	Vehicle Safety	Traffic Flow	Impacts
IMPROVED ALL-WAY STOP	Removing the turn lanes and adding an RRFB crossing to the west means there are fewer lanes of traffic for pedestrians to cross. Continued use of school crossing guards, which have proven to be an effective safety measure for school operations.	When conflicting traffic isn't present, drivers tend to roll through stop signs. Data shows that over 50% of traffic currently rolls through these stop signs.	As traffic increases, delays will get worse at this intersection which could lead to riskier driver behavior.	There are no property impacts with modifying the all-way stop.
ROUNDAABOUT	Vehicles must slow down to 15-20 mph to go through the roundabout. Pedestrians cross one lane of traffic at a time with the pedestrian refuge islands. School crossing guards would still be on site during arrival and dismissal times, with an added RRFB crossing to the west.	Throughout Minnesota, the potential for a fatal/serious injury crash is 70% lower at a single-lane roundabout compared to an all-way stop.	Roundabouts keep traffic moving, reducing congestions and delays, even with Moorhead's future growth.	A roundabout would require a full reconstruction of the intersection and will have minor property impacts.



With this option, the intersection would be converted into a single-lane roundabout.



40th Avenue South Corridor PEDESTRIAN & BIKING SAFETY: 6 E'S



EVALUATION

Assessing which approaches are more or less successful, ensuring that programs and initiatives are supporting equitable outcomes, and identifying unintended consequences or opportunities to improve the effectiveness of each approach



EQUITY

Ensuring that Safe Routes to School initiatives are benefiting all demographic groups, with particular attention to ensuring safe, healthy, and fair outcomes for low-income students, students of color, students of all genders, students with disabilities, and others.



ENGINEERING

Creating physical improvements to streets and neighborhoods that make walking and bicycling safer, more comfortable, and more convenient.



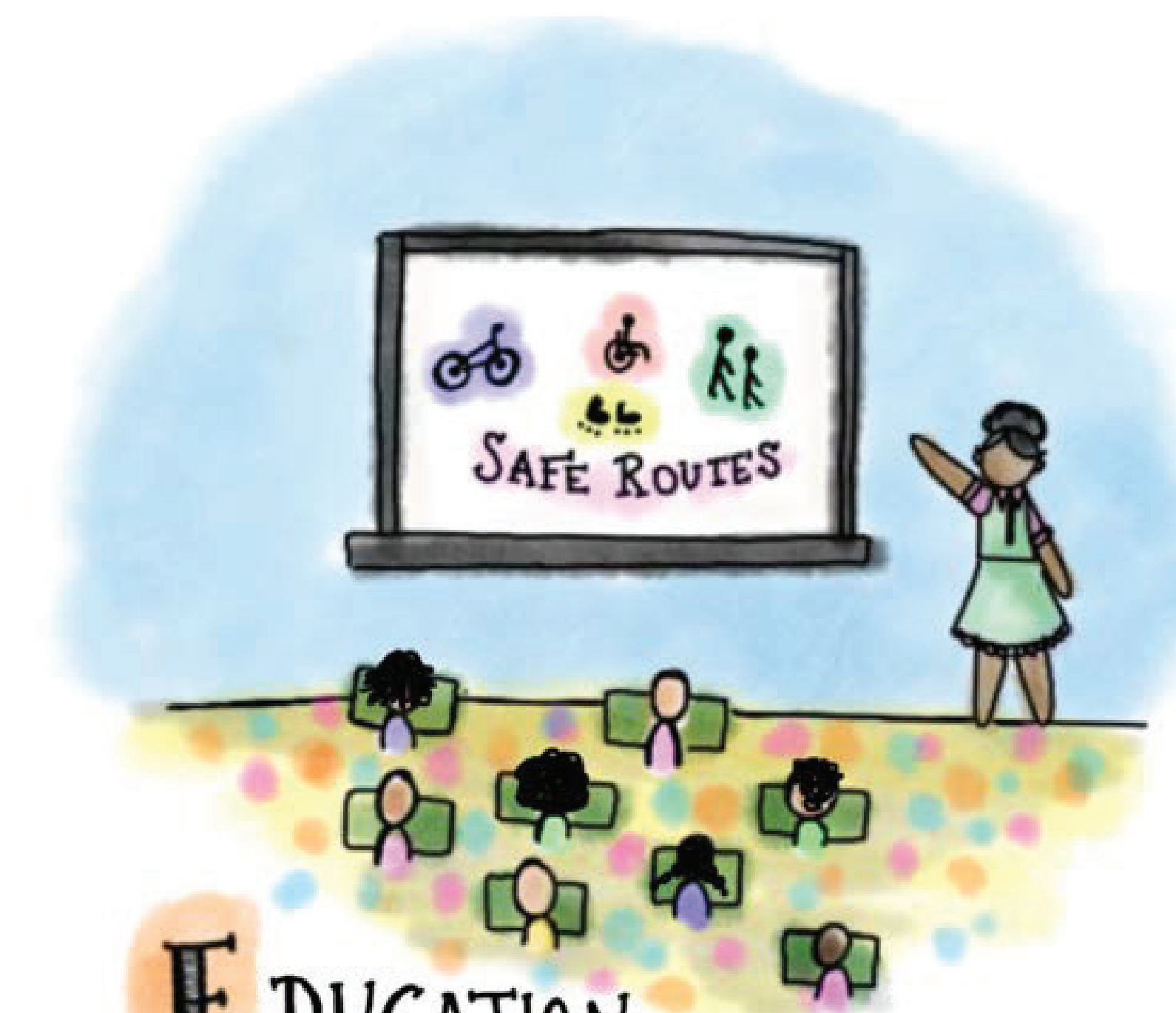
ENCOURAGEMENT

Generating enthusiasm and increased walking and bicycling for students through events, activities & programs



ENGAGEMENT

All Safe Routes to School initiatives should begin by listening to students, families, teachers, and school leaders and working with existing community organizations, and build intentional, ongoing engagement opportunities into the program structure.



EDUCATION

Providing students and the community with the skills to walk and bicycle safely, educating them about the benefits of walking and bicycling, and teaching them about the broad range of transportation choices