



New Hope, Minnesota Safe Routes to School Demonstration Project

Project Summary and Evaluation



JANUARY 2020

ACKNOWLEDGMENTS

Thanks to the City of New Hope, City of Brooklyn Park, Robbinsdale Area Schools, and Meadow Lake Elementary staff, students, and families. This work would not have been possible without your support, energy, and creativity. In particular, we are grateful for the participation of the following people:

- Jeff Alger, Community Development Specialist, City of New Hope
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- Tim Fournier, Police Chief, City of New Hope
- Cindy Sherman, Planning Director, City of Brooklyn Park
- Lowell Holtz, Director of Operations and Student Safety, Robbinsdale Area Schools
- Megan Allen, and all Stantec in the Community volunteers who participated in the project installation



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Introduction

Demonstration projects are short-term, low-cost, temporary roadway projects used to pilot potential long-term design solutions to improve walking, biking and public spaces. Projects may include, but are not limited to, bicycle lanes, crosswalk markings, curb extensions and median safety islands.

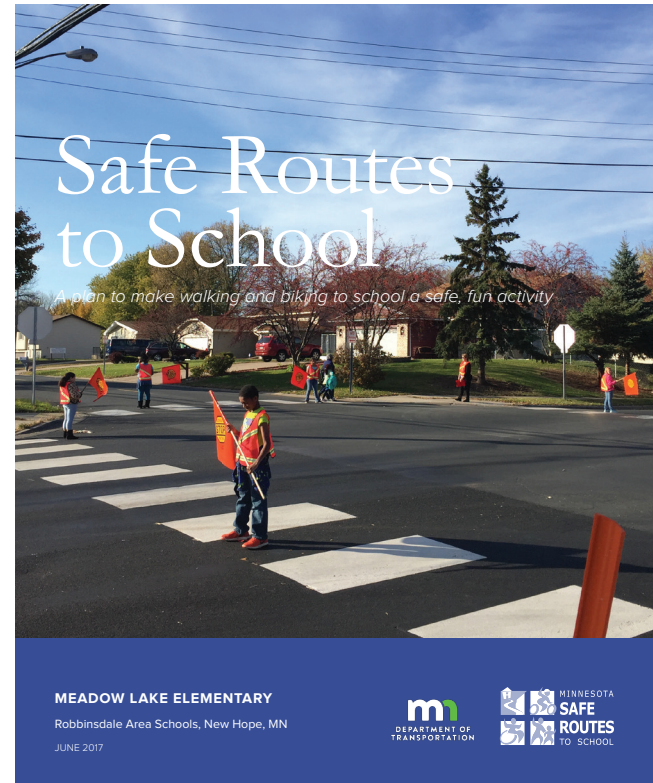
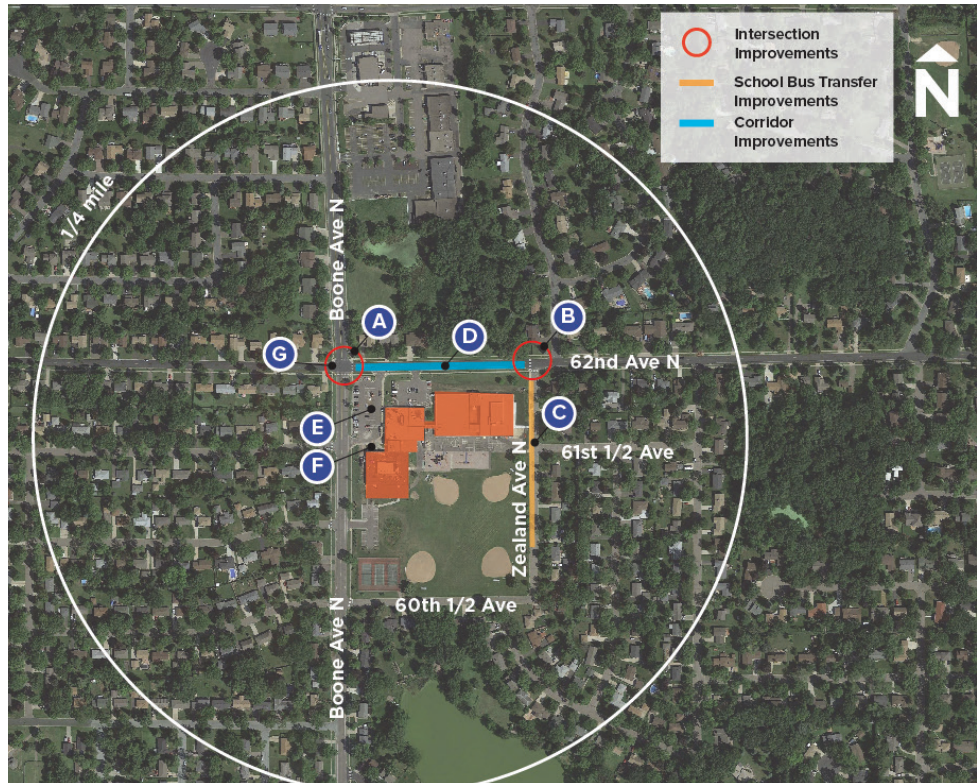
Demonstration projects allow public agencies, community partners, and people walking, biking, taking transit, and driving to evaluate potential infrastructure improvements before potentially investing in permanent changes.

The demonstration project installed in New Hope, Minnesota originated from a Safe Routes to School (SRTS) plan completed in 2017. In partnership with the City of New Hope, Robbinsdale Area Schools, Meadow Lake Elementary, and other local stakeholders, the Minnesota Department of Transportation (MnDOT) identified locations near the school that were barriers for students and families walking and biking to school. The plan also provided potential solutions to improve these locations, along with relative priorities.

In an effort to build momentum toward

permanent implementation, MnDOT worked with local stakeholders in New Hope and at Meadow Lake Elementary to pilot recommendations at one high-priority location using a demonstration project.

This summary describes the planning, design, and implementation of the Meadow Lake demonstration project, and includes findings from the project evaluation.

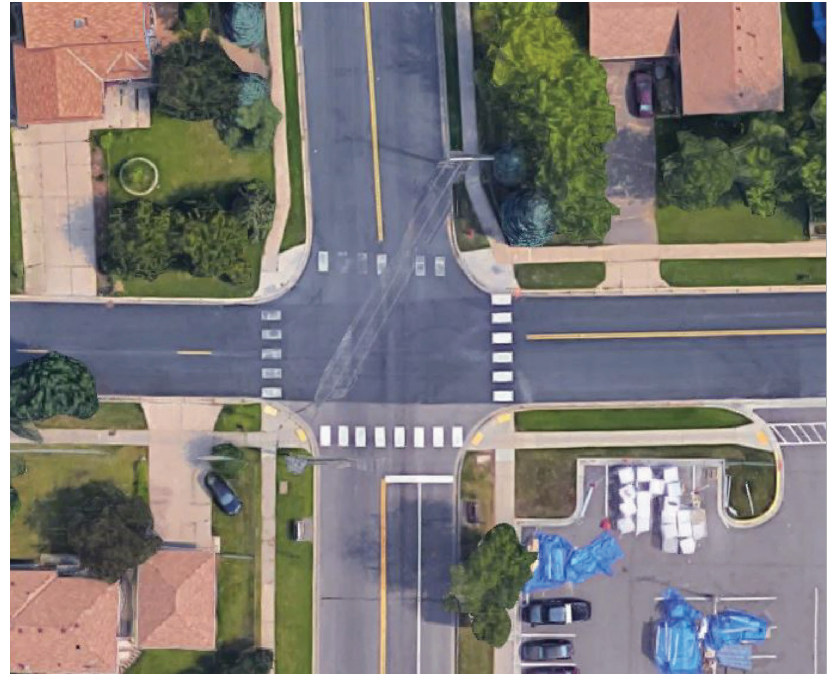


Project Overview

The 2017 Meadow Lake SRTS Plan identified locations on campus and on surrounding streets where students were facing challenges when walking and biking to school. Often, these challenges were due to wide streets and potential conflicts where space is shared between modes, leading to uncomfortable and potentially unpredictable conditions.

The intersection of Boone Avenue N and 62nd Avenue N was observed to be particularly challenging for students walking to and from Meadow Lake. Because of this, it was identified in the 2017 Plan as a "high" priority for improvement. Drivers traveling north on Boone Avenue N towards I-694 were observed to be particularly encroaching on the crosswalk, even when student crossing guards were present. A northbound Boone Avenue N to eastbound 62nd Avenue N right-turn lane exists currently, but was observed to be used infrequently relative to the northbound through lane. Additionally, the design of the parking lot access onto 62nd Avenue N was observed to have visibility challenges between people walking and driving. Drivers attempting to exit the parking lot onto westbound 62nd Avenue N would encroach on the crosswalk and cause congestion. The photos and aerial imagery on the right show the intersection of Boone Avenue N and 62nd Avenue N as well as the parking lot access.

Because of the challenges observed at both the intersection of Boone Avenue N and 62nd Avenue N and the nearby parking lot access, this area was selected by local stakeholders to pilot curb extensions, a lane reduction, and turning restrictions using temporary paint, signage, and flex posts.



Drivers encroach on crosswalks of 62nd Ave N and Boone Ave N during dismissal of students at Meadow Lake Elementary.



Making it Happen

CHOOSE LOCATION (SPRING 2019):

MnDOT and consultant staff met with staff from City of New Hope, City of Brooklyn Park, and Meadow Lake Elementary to review recommendations from the 2017 SRTS Plan and determine which infrastructure recommendations, if piloted as a demonstration project, would have the greatest impact on safe and comfortable walking and biking to school. The group observed dismissal of students and confirmed the challenges described in the 2017 SRTS Plan were still applicable. From this meeting and subsequent conversations, the intersection of Boone Avenue N and 62nd Avenue N was selected for a demonstration project. The parking lot access was included, as well.

DESIGN (SUMMER 2019): MnDOT and consultant staff worked with the New Hope City Engineer to design the intersection to reduce crossing distances, calm traffic, and improve visibility. Because the boundary between New Hope and the City of Brooklyn Park is 62nd Avenue N, staff from Brooklyn Park were involved in the design, too. Metro Transit staff were also engaged in the design discussion, as routes 721 and 767 stop at this intersection. District transportation and local emergency services staff were consulted to ensure school buses and emergency vehicles were able to operate in the intersection safely.

Once the design was finalized and reviewed by the City Engineers, the New Hope Public Works Department ordered the demonstration project materials.

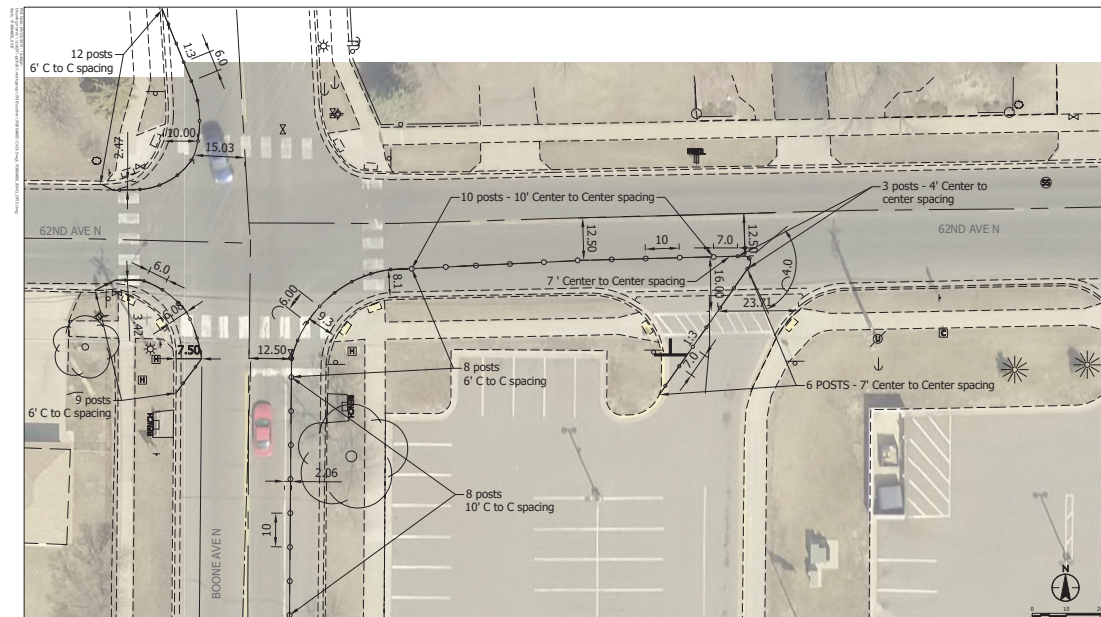
INSTALLATION (SEPTEMBER 2019):

Approximately 25-30 New Hope community members, project stakeholders, and volunteers installed the demonstration on one day at the beginning of the 2019 school year.

First, the intersection pavement was cleaned of debris and allowed to dry. Next, the curb lines were outlined with chalk following the design dimensions shown below. Law enforcement controlled traffic while workers painted the inside of the curb extensions, the right turn lane, and the parking lot turn restriction.

Next, the curb line was painted with temporary white paint, existing pavement turning arrows were covered with black tape, and the flex posts were affixed to the pavement using butyl pads. Finally, turn restriction signage was installed in the parking lot.

Photos of the design and installation are shown below and on the following page.



TURNING MOVEMENTS - SRTS CONCEPT DESIGN - OPTION 2

CITY OF NEW HOPE, MN
SAFE ROUTES TO SCHOOL - MEADOW LAKE ELEMENTARY

DATE 9/12/2019 PROJ. NO. 193804800

FIGURE 3





Evaluation and Results

Thoughtful evaluation can help to build support for active transportation and achieve long-term goals around equitable street design. New Hope can use information and data collected before and after the installation to inform interim changes to the temporary design, or a permanent one. This section discusses some evaluation tools used and the results received.

IN-PERSON OBSERVATION AND PHOTOS

During installation, project staff and partners observed the demonstration project area while noting, photographing, and discussing conflicts, circulation patterns, and the behavior of people sharing the road. Ground level and drone photos were captured before and after the installation. Following the installation, the team observed again and concluded the following:

- Drivers encroaching on the crosswalks decreased
- Visibility of students and families improved
- The speed at which drivers made turning movements decreased

School staff observed that many drivers, however, were not complying with the NO LEFT TURN turn restriction when exiting the parking lot. Consequently, the exit lane was further narrowed, and the turn restriction sign was moved closer to the exit. See the photo on Page 9.

TRAFFIC COUNTS

A traffic analysis was conducted before and during the installation. Collecting this data allowed project staff to understand how traffic patterns change with the demonstration project in place. Preliminary Traffic Analysis results are shown on the following two pages.

PUBLIC PERCEPTION SURVEY

After the installation, an online public perception survey was sent to Meadow Lake families and area community members. Results from the survey are shown on Page 9.



PROJECT SUMMARY

INSTALLATION DATE: September 2019

INSTALLATION DURATION: One month

MATERIAL COST: \$5,000

PEOPLE USED TO INSTALL:

Approximately 25-30



PRELIMINARY TRAFFIC ANALYSIS

DATA COLLECTION

Turning movement counts (TMC) were collected at the following three intersections:

- Boone Avenue North and 62nd Avenue North
- Boone Avenue North and 60th ½ Avenue North
- Zealand Avenue North and 62nd Avenue North

The TMC were collected by Traffic Data Inc. The data was collected on 4 weekdays when traffic was not expected to be altered by any irregularities. Two collection days were done before the prototype was implemented, and two collection days were done after the prototype was installed and after driver behavior had time to adjust.

DATA ANALYSIS

In examining the traffic count data, a few things of note are revealed:

- The annual average daily traffic (AADT) of Boone Avenue North, south of 62nd Avenue North, is likely higher than previously reported. The most recent (2017) AADT for this segment is reported to be 6,500. The counts taken in this study consistently show an ADT of over 8,000.
- Peak hour traffic on Boone Avenue North is heavily directional with NB movements in the PM and southbound (SB) movements in the AM. Each is about 3-4 times larger than their counterpart during their respective peak hour.
- There appears to be a decrease in NB right-turning vehicles at the Boone Avenue North and 62nd Avenue North intersection during the PM peak hour while the prototype is in place. More data would be needed to verify this, but the data present shows a decrease of about 40-50 vehicles making this movement at that time. Half of these vehicles appear to be using 60th ½ Avenue North and Zealand Avenue North

to cut over to eastbound (EB) 62nd Avenue North. The other half appear to be avoiding the study area and making their EB movement at some point south of 60th ½ Avenue North.

- Traffic during the peak hours is heavy and could be exceeding what an All-Way Stop controlled intersection is capable of adequately handling. Signal Warrant Analysis could be considered as a next step.

SITE VISIT ANALYSIS

Site visits occurred during the prototype phase of the study for both peak hours. The following observations were made about the Boone Avenue North and 62nd Avenue North intersection during the site visits:

- Largest observed queue in the AM peak occurred on the SB approach and reached a max length of about 250-300'. This holds with the data collected. The SB thru is the heaviest movement at this time, but there is little traffic opposing its movement.
- Largest observed queue in the PM peak occurred on the NB approach and reached a max length of about 1100', nearly reaching 60th Avenue North. The data collected supports this observation. The NB thru movement of the PM peak is greater than the SB thru during the AM Peak, and had far more opposing traffic.
- Multiple time trials were conducted for the NB thru movement. The movement took over 2 minutes to complete. A failing Level of Service (LOS) at an unsignalized intersection is achieved when delay per vehicle exceeds 50 seconds.
- While the elimination of the NBR turn-lane was a contributor to the delay experienced in the PM peak, the extent of which cannot be determined without simulation modeling.
- It is possible that the intersection would receive a failing LOS during the PM peak. Simulation modeling would be needed to verify this LOS.

PRELIMINARY TRAFFIC RECOMMENDATIONS

The analysis presented above is limited by the current available scope. Signal warrant analysis and simulation modeling could be pursued to continue to determine the full extent of the impact that eliminating the NBR turn lane at Boone Avenue North and 62nd Avenue North has on the study area and what steps can be taken to mitigate the delays being experienced during the peak hours.

PUBLIC PERCEPTION SURVEY RESULTS

Results from 26 completed surveys are shown below. Overall, 46 percent of the respondents felt positively about the changes becoming permanent. The majority (58 percent) of people who completed the survey felt walking was safer and more comfortable with the changes.



Walking was easier and feels safer with the changes.

Biking was easier and feels safer with the changes.

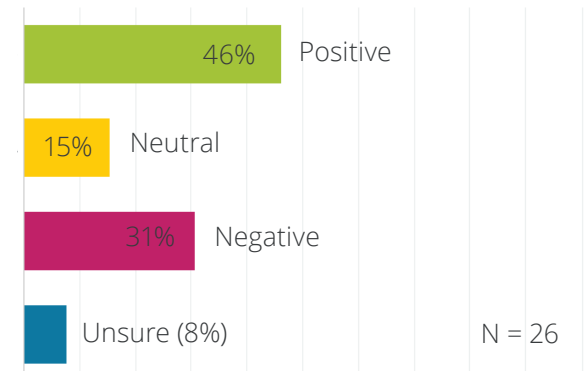
Drivers can more easily see people trying to cross.

Drivers waited for people to walk through the crosswalk.

People drove more slowly and cautiously than before the changes.

N = 26

How do you feel about any or all of these changes becoming permanent?



N = 26

Recommendations for Long-term Change

The Cities of New Hope and Brooklyn Park are dedicated to improving active transportation safety and connectivity in the near- and long-term. This demonstration project is one step towards safer and more comfortable walking and biking to Meadow Lake Elementary. The designs evaluated during the demonstration project can offer several long-term benefits:

- Shorter pedestrian crossing distances
- Better pedestrian visibility at corners
- Slower driver turning movements
- Less congestion in and out of Meadow Lake parking lot
- Increased space for landscaping and other furnishings

WHAT ASPECTS OF THE PROJECT WORKED WELL?

- The project was a chance to quickly and efficiently plan, design, install, and evaluate the project. Community members worked together to install the project.
- The project made it easier and safer to walk and bike in the area through:
 - Shortened pedestrian crossing distances and increased visibility of pedestrians crossing the street.
 - Added queuing space for crossing guards and people walking
 - Engagement around new ideas to promote active transportation

WHAT ASPECTS OF THE PROJECT COULD BE REFINED FOR LONG-TERM CHANGE?

- Share illustrative concepts of more permanent designs with the public. This could help avoid confusion by showing residents what permanent changes to the site could look like and could better communicate the project's intent.
- Educate families that drive to school about the importance of Safe Routes to School and allowable turning movements exiting the parking lot.
- If the project is to be installed again as a demonstration, consider using traffic paint to create pavement markings. This material lasts longer than the tempera paint used.

WHAT COULD BE CONSIDERED LONG-TERM?

- **INTERSECTION RECONSTRUCTION:** It is recommended that the Cities of New Hope and Brooklyn Park consider opportunities to install long-term improvements at the intersection using more permanent materials. There may be opportunities through scheduled Boone Ave N roadway improvements to allocate funding for changes at this intersection. Alternatively, infrastructure improvement funding for standalone intersections throughout New Hope should be considered for this specific intersection (aside from any corridor-wide improvements along Boone Ave N).

- **WINTER MAINTENANCE:** Long-term design should consider winter maintenance and allow snow plows to navigate through curb extensions. Curb extensions should be designed approximately one to two feet less than the full width of adjacent on-street parking; snow plows will be able to plow parallel to parked cars without hitting and potentially damaging the curb extensions. Reflective markers on poles and painted curbs can provide additional guidance. Street maintenance leaders should be included in the design of long-term intersection changes.

RECOMMENDED NEXT STEPS

- Coordinate with local leaders to discuss permanent changes
- Use the findings presented here and other data to develop additional design documents for a long-term concept
- Gather public and stakeholder input regarding the proposed long-term project
- Pursue available SRTS infrastructure grant funding through MnDOT