



Fond du Lac Band of Lake Superior Chippewa Big Lake Road Safe Routes to School Demonstration Project

Project Summary and Evaluation



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ACKNOWLEDGMENTS

Thanks to Carlton County, Fond du Lac Ojibwe School, and Fond du Lac Band of Lake Superior Chippewa (FDL) staff for contributing time and expertise to this project. In particular, we are grateful for the participation of the following:

- Jamie Adams, FDL Economic Development Planner
- Jason Hollinday, FDL Planning Director
- KaRee Lockling, FDL Injury Prevention Coordinator
- Samantha Martin, SHIP
- Jennifer Murray, Superintendent
- JinYeene Neumann, Carlton County Engineer
- Carlton County Sign Shop staff



TABLE OF CONTENTS

- Introduction2
- Project Overview3
- Evaluation and Results7
- Recommendations for Long-Term Change9

More Local

Two Safe Routes to School demonstration projects to open along Big Lake Road

Starting in mid-October, two intersections along Big Lake Road will look a bit different. The Tribe is working with state and county partners to install temporary street improvements to provide more comfortable spaces for people walking and biking. The two installations, referred to as "demonstration projects," will be installed at the intersections of Big Lake Road and University Road/Brevator Road and at Big Lake Road and Trettel Lane/Reservation Road. Demonstration projects use low-cost and temporary materials like traffic paint and flexible plastic posts to test and evaluate potential long-term roadway changes.

Over the past several months, the Tribe has been working with the Minnesota Department of Transportation (MnDOT) and Carlton County to identify the challenges faced for people walking and biking across Big Lake

Road (also known as Carlton County Road 7). The two intersections were chosen based on nearby destinations in the area, including the Fond du Lac Ojibwe School. The June 30 crash that left a 13-year old bicyclist seriously injured reinforced the need for changes to the roadway. "Several projects over the years have identified these intersections as dangerous. Tribal members have told us that drivers are going too fast on Big Lake Road and it makes it very hard to cross," said MnDOT Project Manager Hannah Pritchard.

The goal of the project is to make walking and biking across Big Lake Road easier, safer, and more comfortable. It will use paint and flexible plastic posts to reduce crossing distances, narrow the roadway to slow traffic, and increase visibility of people walking and biking. "A demonstration project gives the Fond du Lac community

a chance to try things out before they become permanent. It also raises awareness of some of the challenges for people walking and biking in the area." Pritchard said.

The outcomes from this demonstration project could influence more permanent changes, too. Next spring, Carlton County plans to resurface this section of Big Lake Road and will be considering how to make it more welcoming to people walking and biking. Project staff plan to evaluate the installation by measuring speeds and administering a public perception survey.

The design shown with this article is scheduled to be installed the week of Oct. 12. People driving in the area should expect to slow down on Big Lake Road as crews install the project. Once installed, one of two turn lanes in each direction at both intersections will be closed, though drivers will



still be able to make all turning movements from a shared lane. "The left and right turn lanes were just installed at these intersections a few years ago, but we thought it was important to find space for people crossing Big Lake Road to be able to cross one direction at a time. We're hopeful that drivers will adapt to the change easily," said Pritchard.

This project is funded by the Minnesota Department of

Transportation through their Safe Routes to School program and is being installed in partnership with Carlton County. To learn more about demonstration projects, visit <https://dot.state.mn.us/saferoutes/demonstration-projects.html> or contact MnDOT Project Manager Hannah Pritchard at hannah.pritchard@state.mn.us.







Introduction

Demonstration projects are short-term, low-cost, temporary roadway projects used to pilot potential long-term design solutions to improve walking, bicycling, 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, bicycling, taking transit, and driving to evaluate potential infrastructure improvements before potentially investing in permanent changes.

The demonstration project installed on Big Lake Road originated from a Safe Routes to School (SRTS) plan completed in 2015. Working with the County to create the SRTS Plan, the Arrowhead Regional Development Commission (ARDC) identified locations near the Fond du Lac Ojibwe School that were barriers for students and families walking and biking to school. The plan recommended to meet with Carlton County to review the existing conditions for students walking or bicycling through these intersections. Safety issues were identified as well as potential improvement measures.

In an effort to build momentum toward permanent implementation, MnDOT worked with local stakeholders to pilot recommendations at two high-priority locations using a demonstration project.

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



Project Overview

The 2015 Fond du Lac Ojibwe School SRTS Plan identified locations on surrounding streets where students were facing challenges when walking and biking to school. Often, these challenges were due to wide streets and lack of separated space, resulting in high vehicle speeds, reduced visibility, and poor driver yielding behavior.

The intersections of Big Lake Road (CR 7) at Brevator/University Rd and Reservation Rd/Trettel Ln were observed to be particularly challenging for students walking to and from the School. Additionally, the UMN Road Safety Institute identified pedestrian safety as FDL's top concern, and noted Big Lake Road as a "hot spot." Furthermore, the Fond du Lac Tribal Transportation Safety Plan identified Big Lake Road "at-risk," including the intersection of Big Lake Road & Trettel Lane. The UMN Humphrey School identified 31 crossings per day at Big Lake Road & Trettel Lane and recommended to consider equity in future roadway improvements, not just efficiency.

There has been general interest in this geographic area from other partners after a June 2020 crash; this includes MnDOT Office of Traffic Engineering, State Aid (Statewide), MnDOT District 1, MnDOT District 1 State Aid, and Carlton County (with a focus on upcoming work on Big Lake Road). There is a parallel SRTS Engineering Study happening on this corridor, which started in the summer of 2020.

The photos on the right show long crossings across multiple lanes, large corner radii, and unmarked crosswalks without crossing signs (top left: Big Lake Road & Reservation Rd/Trettel Ln; top right: Big Lake Road & Brevator/University Rd). The bottom photo shows a recently completed sidepath on the south side of Big Lake Road between University Rd and Trettel Ln.

Because of their proximity to the school and the documented challenges, these two intersections were selected by local stakeholders and the County Engineer to pilot high visibility crosswalks, lane reductions, median refuge islands, and curb extensions using traffic paint and flex posts.



Making it Happen

CHOOSE LOCATION (AUGUST 2020): MnDOT and consultant staff met with the County Engineer and staff from FDL to review recommendations from previous studies (including the 2015 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. From this meeting and subsequent conversations, the intersections of Big Lake Road at Brevator/University Rd and Reservation Rd/Trettel Ln were selected for a demonstration project.

DESIGN (SEPTEMBER 2020): MnDOT and consultant staff worked with the Carlton County Engineer to design the intersection to reduce crossing distances, calm traffic, and improve visibility (see example concept design for one of the two intersections to the right). District and local transportation staff were consulted to check that school buses, emergency vehicles and freight vehicles were able to be accommodated within the intersections.

Once the design was finalized and reviewed by the County Engineer, MnDOT and consultant staff ordered the demonstration project materials.

INSTALLATION (OCTOBER 2020): Approximately 16 FDL, MnDOT, consultant, and Carlton County staff installed the demonstration project on October 13.

First, the intersections' pavement was cleaned of debris. Next, the curb lines were outlined with chalk following the design dimensions, and the interiors were painted with earth tone

paint. The curb extensions were outlined with white paint and lined with white flex posts.

In coordination with traffic control crews, high-visibility crosswalks were painted using paint and a rectangular stencil. Median refuge islands were painted using yellow lines and yellow flex posts. Temporary crossing signs were placed at crosswalks and in advance on far west and east Big Lake Road project extents. Lane assignment signs and arrow modifications were made to reflect lane reductions implemented as part of the project.

Photos of the installation are shown on the following page.



PROJECT SUMMARY

INSTALLATION DATE: October 2020

DAYS TO INSTALL: 1

MATERIAL COST: ~\$30,000

STAFF USED TO INSTALL:

Approximately 16

FEATURED ELEMENTS INSTALLED:

- Seven curb extensions
- Seven high-visibility crosswalks
- Four lane reductions
- Two median refuge islands







Evaluation and Results

Thoughtful evaluation can help to build support for active transportation and achieve long-term goals around equitable street design. Carlton County and FDL can use information and data collected before and after the installation to inform changes to the project design. This section discusses 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 and discussing conflicts, circulation patterns, and the behavior of people sharing the road. Following the installation, the team observed again and concluded the following:

- School bus drivers and private vehicles appeared to approach the intersection and make turning movements at slower speeds
- People waiting to cross Big Lake Road were able to stand within the temporary curb extensions and median refuge islands for increased visibility
- During the time the demonstration project was installed, a few flex posts were damaged at the curb extensions due to large vehicles making the turns.

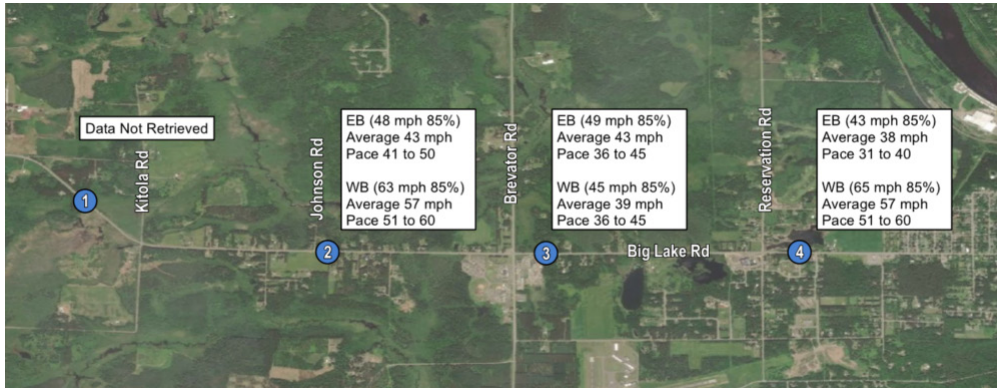
MOTOR VEHICLE DATA COLLECTION

Tubes were set on October 13 at four locations along Big Lake Road. The posted speed limit on Big Lake Road is 50 MPH. The purpose of the data collection effort was to collect weekday bi-directional speed data on the roadway immediately after the completion of the Demonstration Project installation at the two intersections.

Three of the four locations retrieved speed data, and only one site retrieved data for the full three days. The inconsistent amount of data retrieved between each site is likely attributed to several external factors, including a truck or heavy vehicle pinching the tube or the tube not being taut enough.

A summary of the speed data is shown in the table and figure below and on the following page. The data summarizes the total amount of time the tubes were in-place, including time that overlapped with the demonstration project installation which occurred throughout the full day on October 13.

Location on Big Lake Road (CR 7)	Data Retrieved	85 th Percentile Speed		Average Speed	
		Eastbound	Westbound	Eastbound	Westbound
1. West of Kitola Rd	0 hours				
2. East of Johnson Rd	30 hours	48 MPH	63 MPH	43 MPH	57 MPH
3. East of Brevator Rd/University Rd	18 hours	49 MPH	45 MPH	43 MPH	39 MPH
4. East of Reservation Rd	3 days	43 MPH	65 MPH	38 MPH	57 MPH



Overall, the eastbound travel speeds were lower than the 50 MPH posted speed limit, especially at the location east of Reservation Rd. Westbound travel speeds exceeded the 50 MPH posted speed limit near the Johnson Road and Reservation Road intersections. Lower westbound speeds were experienced near the University Road intersection, which may have been impacted by the demonstration project installation activity and traffic control.

PUBLIC SURVEY AND COMMUNICATION

Carlton County and project partners provided a press release and informational signs to invite community members to engage with the project and provide input. The informational signs included a short description of the project, contact information, and a QR code and link to access a public perception survey.

There were a limited number of recorded surveys; however, the majority of respondents indicated that traveling feels easier and safer with the changes, it is easier to see other road users, and driver speeds are lower. Overall, most people felt positive about the temporary changes becoming permanent. Respondents indicated that they like the following about the demonstration project:

- "It slowed down the traffic which is a plus"
- "It brought attention to the fact that something else is needed to ensure better safety to this intersection"
- "Crosswalks for pedestrians"

Ideas for improvement included lowering the speed limit, additional signage to encourage motorists to slow down, and a need to "continue the study to ensure that safety for all residents, both pedestrian and vehicles, is addressed."

Recommendations for Long-Term Change

Carlton County and partner stakeholders are interested in improving active transportation safety and connectivity in the near- and long-term. This demonstration project is a step towards safer and more comfortable walking and biking to and from Fond du Lac Ojibwe School, as well as other origins and destinations on either side of Big Lake Road. The designs evaluated during the demonstration project can provide several long-term benefits:

- Shorter pedestrian and bicyclist crossing distances
- Better pedestrian and bicyclist visibility at corners
- Slower driver turning movements and approach speeds
- Increased space for landscaping and other site furnishings

WHAT ASPECTS OF THE PROJECT WORKED WELL?

- The project was a chance to quickly and

efficiently plan, design, install, and evaluate the project.

- The project made it easier and safer to walk and bike in the area through:
 - Shortened crossing distances and increased visibility of people crossing the street.
 - Potential for increased yielding by motorists, due to slower speeds and increased conspicuity of the crosswalks
 - 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 long-term 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 appropriate driving behavior near schools.
- Consider using thermoplastic to create pavement markings. This material lasts longer than traditional traffic paint.

WHAT COULD BE CONSIDERED LONG-TERM?

- **STREET RESURFACING:** Carlton County plans to resurface 16th Street NE in the near future. It is recommended that more permanent elements of the demonstration project are incorporated into the scoping of this project.
- **WINTER MAINTENANCE:** Long-term design should consider winter maintenance and allow snow plows to navigate through curb extensions and median refuge islands. 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