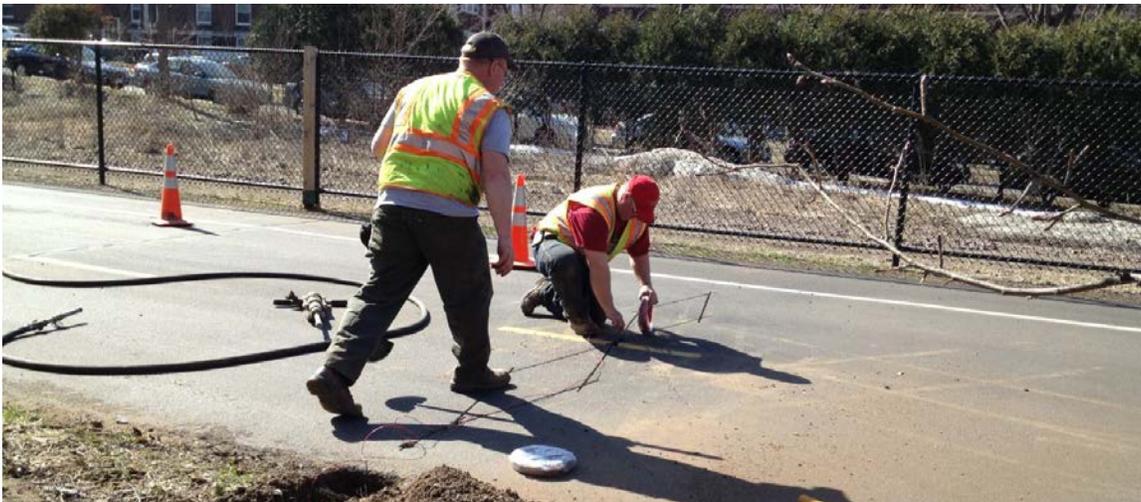


# Bicycle and Pedestrian Traffic Counts

From Research to Deployment



*Installation of inductive loop and passive infrared sensors to count bicycle and pedestrian traffic.*

## Overview

The Minnesota Department of Transportation (MnDOT) is developing plans for statewide bicycle and pedestrian monitoring at a number of locations throughout Minnesota. The purpose of monitoring is to generate information about bicycle and pedestrian traffic volumes and patterns that can be used to inform state, regional, and local planning and engineering initiatives and to assess important transportation policies and programs such as Complete Streets and Toward Zero Deaths. The approach will be based on well-established principles of vehicular traffic monitoring and designed to be integrated with vehicular monitoring programs over the long term. The approach involves establishment of permanent, continuous monitoring stations at a limited number of locations throughout the state along with a larger number of short-duration monitoring locations. The purposes of the permanent monitoring stations are to track trends in traffic over time, to provide insight into exposure to risk for safety analyses, to identify patterns in traffic that can be used to interpret and extrapolate short-duration counts into annual traffic estimates, and to develop performance indicators to track progress relative to MnDOT goals and objectives. The purposes of short-duration monitoring are to document variations in traffic volumes on different types of roads, to provide broad geographic coverage across the state, and to assist with evaluation of transportation investments and innovative safety treatments. Because of resource limitations, the plan does not propose comprehensive monitoring for the entire state. Instead, the plan proposes a limited number of permanent “index” sites and a greater number of short-duration monitoring sites that can inform transportation planning and engineering in each district or region of Minnesota.

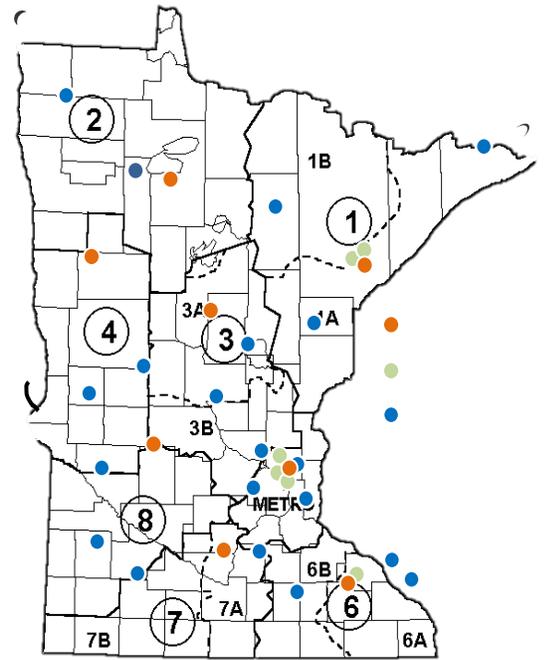


## Permanent Index Monitoring Sites

MnDOT proposes to establish a network of 30 to 40 permanent index monitoring sites throughout the state, with a 3-5 locations in each region or MnDOT district. The goals for location of the index sites are to include a range of types of bicycle and pedestrian infrastructure (e.g., arterials, collectors, county roads and local streets with bicycle lanes or shoulders, protected bike lanes and multi-use trails) in a range of settings (e.g., urban, suburban, rural) that are near different types of land uses that may generate different traffic patterns (e.g., commercial, mixed-use, universities.)

The index sites will be selected in consultation with MnDOT district staff and representatives of local, regional, and state agencies in each district. MnDOT will assist with and coordinate development of the network of index sites, but may not install or maintain all sites.

Implementation of the network will depend on partnerships established with local agencies. To facilitate maintenance, there may be advantages to locating index sites in communities where MnDOT district offices are located. The network will include permanent monitoring sites established in 2014 in Duluth (Lake Front Trail; Scenic 61 shoulder), Eagan (Trunk Highway 13 shoulder), and Minneapolis (Central Avenue bike lane; W. River Parkway Trail). MnDOT anticipates archiving monitoring results from the index sites, developing performance indicators from the results, and providing guidance to local jurisdictions in interpretation and use of data in engineering applications such application of signal warrants.



## Short-duration Monitoring Sites

MnDOT proposes to undertake short-duration monitoring at a number of locations in districts throughout the state in 2015-16 to provide greater understanding of variations in bicycle and pedestrian traffic volumes in different contexts and to identify different types of traffic patterns that can be used to establish “factor groups” for purposes of analysis and extrapolation. Factor groups are groups of sites with similar hourly or seasonal traffic patterns such as commuter patterns with morning and evening peaks on weekdays or multipurpose patterns with even traffic flows throughout weekends and weekdays. In addition, short-duration sites may be selected to provide other information such traffic volumes before and after installation of new bicycle or pedestrian facilities. All short-duration sites will be selected in consultation with local and regional agencies and MnDOT district staff.

Short-duration sites generally will be continuously monitored for five to seven days between May and October because research indicates that error in extrapolation to annual traffic volumes is minimized with samples of this duration during periods when traffic volumes are highest. This period is longer than short-duration monitoring for vehicles (i.e., 48 hours) because bicycle and pedestrian traffic varies more in response to weather.

## For More Information

Visit: [www.dot.state.mn.us/bike/research/research.html](http://www.dot.state.mn.us/bike/research/research.html)

Or contact: Lisa Austin, MnDOT Office of Transit, 651-366-4193, [lisa.austin@state.mn.us](mailto:lisa.austin@state.mn.us)