



Snow and Ice Products for Bituminous Trails in Recreational and Critical Areas

Project Number 2010-06

Project Leader Craig Eldred

Agency City of Waconia Public Services
310 East 10th Street
Waconia, MN 55387

Phone 952-442-2615



Problem The City of Waconia wanted to improve winter maintenance service delivery on segments of residential bituminous trails and sidewalks within the community. The city was specifically concerned about trail segments with limited snow storage and those that received no direct sunlight. Critical sidewalk segments were located in the city's Main Square Park and near public facilities.

Solution The city began treating these trail and sidewalk areas with anti-icing and deicing winter maintenance liquids. The project included the creation of an application unit as well as the use of a blending station for winter maintenance liquids. Overall, the project allowed the city to reduce material use and staff time and to eliminate trail closures and safety issues.

Procedure A 5600 Bobcat Tool Cat unit was equipped with a sprayer tank and electric pump to serve as the application unit. During the winter of 2010–2011, the city used the application unit to apply three different deicing/anti-icing products to trails and sidewalks. Maintenance staff gathered measurements of service areas and the amount of material applied. They also compared application costs to previous practices.

Results The city experienced excellent results by implementing liquid anti-icing/deicing practices on its trails and sidewalks. Staff time and efforts on snow removal were reduced, even with the season's extreme snowfall amounts. No trail closures occurred because of snow, and even compacted snow was easily removed from pretreated surfaces. The city also experienced improvement on trails covered with snow compacted by snowmobiles.

Using the Bobcat allowed staff to maintain a consistent ground speed of 5 miles per hour when applying materials, which helped to maintain consistent application rates. Material costs were reduced by 75 to 85 percent as a result of using the liquid products instead of the dry application materials previously used.

Approximate Cost \$16,264

OPERA Funding \$5,000

Implementation The city has added a second application unit dedicated to sidewalks, complete with a hand-held wand for spraying steps and offset entrances. In addition, Waconia maintenance staff are continuing to work with other city staff to improve winter maintenance activities on sidewalks. They are specifically focused on reducing application rates and promoting the use of liquid treatment materials.

Status Complete

View the complete project report online at www.mnltap.umn.edu/opera.

Prepared by:

Minnesota Local Technical Assistance Program (LTAP)
Center for Transportation Studies
University of Minnesota
200 Transportation and Safety Building
511 Washington Avenue S.E.
Minneapolis, MN 55455-0375
Phone: 612-626-1077
Fax: 612-625-6381
E-mail: mnltap@umn.edu
Web: www.mnltap.umn.edu

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