Facilities Management’s (FM) Landcare professionals added anti-icing to the university’s winter maintenance program in 2006, resulting in cost savings and reduced environment impact.

**Pretreatment**

Before a forecasted snow event, Landcare now sprays salt brine anti-icing agent on roadways and liquid magnesium chloride solution on sidewalks. Both solutions prevent ice layers from forming and bonding with the surface, which makes removal faster and easier. The telltale white lines seen on surfaces indicate that an area has been pretreated. Besides saving time, the pretreatment also means less sand, salt and ice melt is needed, saving money and reducing impacts to local waterways.

**Efficiency and Sustainability**

At the outset of the anti-icing initiative, Landcare replaced expiring equipment with more modern models capable of distributing all of the necessary materials, and trained employees to properly calibrate and operate the machinery. By increasing awareness and proper application rates, Landcare was able to significantly decrease the amount of de-icing chemicals used.

**Results**

After piloting anti-icing in 2006, Landcare expanded the program in 2007 with exceptional results.

Environmentally, there are now approximately 1,947 less tons of sand, 313 fewer tons of salt and 67 less tons of de-icing chemicals entering the storm water system. This has led to improved water and air quality and decreased silt build-up.

The program’s impressive results caught the eye of the Freshwater Society, which awarded the University of Minnesota’s Landcare group with an environmental leadership award at the organization’s 2007 Road Salt Symposium.

On the financial side of things, Landcare estimates that changes to its snow removal program have reduced the annual percentage of sand used on icy surfaces by 99%, saving the University approximately $16,160 annually; salt applications have been reduced by 41%, reducing costs by about $15,190 per year; and ice melt usage has dropped by 51%, saving around $27,470 each year. Anti-icing also saves the University approximately $60,902 in annual labor costs by reducing de-icing activities, snow removal, floor cleanup, salt/sand extraction and turf repair.

**Benefits**

**Cost Savings**

FM’s anti-icing program has reduced costs associated with using sand, salt and ice melt.

**Efficiency**

De-icing significantly lowers time spent on snow removal, building floor cleanup, salt/sand extraction and turf repair. Resources are then reallocated to other campus maintenance and beautification projects.

**Environmental Impact**

Less salt/sand and fewer chemicals are left on surfaces to enter the storm sewers, improving water and air quality while decreasing silt build-up.

**Bottom Line**

Total Annual Savings $110,000