Forecast: winter warming trend

Asphalt's always ready for repairs with a generator-powered heating system.

Over the last decade, nearly all the roads that wind through 170-year-old Irondequoit, N.Y., have had to be patched. Repeatedly. Bordering three bodies of water — Lake Ontario, the Genesee River, and Irondequoit Bay — the Rochester suburb experiences temperatures ranging from the midteens to almost 90° F, with an average monthly rainfall of 2.8 inches.

The public works department used a "throw-and-roll" method to apply a cold- or hot-patch asphalt mix into potholes. Predictably, this method produced short-term repairs and usually resulted in throwing out leftover material.

In the mid 1990s, the department bought a propane-operated and oil-heated patcher that provided a longer-lasting and more pliable repair. But the hopper wasn't insulated, and because the propane couldn't be used to heat the asphalt while the truck was in motion, the material would cool down and become less pliable as crews traveled from site to site. Again, crews often had to throw away valuable material.

The department stretched out the machine's life as long as possible, but eventually the time came to upgrade. The department set aside part of its 2008 capital budget to invest in a machine that keeps asphalt at a consistent temperature whether or not it's in motion, using an onboard hydraulic-powered AC generator instead of propane or oil to heat its insulated hopper. The flameless pothole

(continued)

WHO:
Department of Public Works, Irondequoit, N.Y.

NO. LANE MILES: 328

NO. COMPLAINTS IN 2008: 260

NO. COMPLAINTS IN 2009: 134

The flameless patcher's electric-heat system allows the Irondequoit (N.Y.) Department of Public Works to use nearly 100% of its purchased material. The swivel material chute moves to the left or right, allowing for multiple pothole and shoulder repairs from one location. Photos: Bergkamp Inc.

With increased patch quality, Irondequoit saves 10 man-hours some weeks producing new patches like this instead of performing repetitive repairs.

patcher, manufactured by Salina, Kan.-based Bergkamp Inc., keeps the material at about 145° F overnight and during storage; in the morning, the operator adjusts the temperature to heat the asphalt to 275° F for patching. Other repair tools, such as a jackhammer, vibrating plate compactor, and an air wand that blows out debris and sprays tack coat, are stored on the back of the unit.

"With other methods, we'd often revisit about a quarter of the previously patched areas three to five times per season," says Jeff Graves, labor foreman and a 28-year department veteran. Now we patch roads with high traffic volumes without worrying about them for a long time."

Since the department began using the unit, it hasn't had to perform any repeat patches, even on the town's most frequently used road, Culver Parkway, which logs about 3,000 vehicles daily. In addition, Graves estimates the unit saves crews about 10 hours a week on repairs.

Graves expects to get 10 years of service from the unit. "We use nearly 100% of the material purchased and buy less," he says. "We're even using it for trenches and sidewalk repairs."

With the propane-operated pothole patcher, the department was unable to use approximately 10% of the repair material it bought each week. At an average of $67/ton, the department is saving at least $200 a week. In addition, crews are making fewer trips to the asphalt plant, saving on diesel fuel costs.

Between December and February, Irondequoit experiences average temperatures down to 20° F. "We can go out nearly every day with this unit," Graves says. "To test it out, I picked a 9-degree day with a stiff wind chill and parked it outside. After 90 minutes, the unit kept the material at the proper temperature. The repairs are holding up very well with the thawing and freezing temperatures."

Direct feedback from residents regarding the new machine has been limited, but Graves says he isn't getting near the number of complaints as in the past.

"Before, we repatched potholes and at times had trouble providing an acceptable road surface," he says. "Now, we can address the potholes when they're just an annoyance and before they turn into a dangerous condition." **PW**

— Bill Cooper is the director of sales and marketing for Bergkamp Inc.

For a video of how a "flameless" patcher works, visit the "article links" page under "resources" at **www.pwmag.com.**

Web Extra