

Becket Injects Longevity Into Paved Roads

By DANIEL DEMAINA

With about sixty miles of roads, ranging from connectors between state highways to steep mountain roads, and a limited budget, rural Becket faces a familiar challenge: stretching its Chapter 90 funds as far as possible. That's why, under Highway Superintendent Christopher Bouchard, the town of 1,800 began using a new kind of full-depth reclamation process to extend the life of its paved roadways, which account for about half of the town's roads.

Instead of milling the road and trucking the old asphalt off-site, road crews leave the pulverized material in place, grade it and roll it, and then pave it over with hot asphalt as the finishing course. This is not such an unusual approach, but crews then make a second pass to inject emulsified asphalt at least four inches below the surface, providing an additional structural layer and, hopefully, a longer lifespan.

"The reason we started using it is the roads just aren't holding up," says Bouchard, who was the highway superintendent in Otis before coming to Becket in 2013. "And we're on such a long paving cycle, by the time we get back with Chapter 90 money, and [with] town funds the way they are, we had to look at a different way of doing it. Typical full-depth reconstruction, bringing in gravel, it's cost-prohibitive."

On May 12, Town Meeting approved a general fund budget of \$6.4 million, with the Highway Department accounting for about \$800,000 of the total. In fiscal



Road crews work on a paving project last summer in Becket. The rural town has been using a new process to extend road lifespans. (Courtesy photos)

2018, the state awarded Becket \$238,326 in Chapter 90 funds.

Becket Board of Selectmen Chair Bill Elovirta, who served as the town's highway superintendent for three decades until his retirement in 2007, says the town relies almost exclusively on Chapter 90 funds for its paving and road construction. "Sometimes we have to wait a couple years to get enough to do a project," he says. "The only town money we'll use sometimes is [for] oil [asphalt] and stone, or just sealing a road, and that would be town money. But as far as paving, we never really put up any town money—it's all Chapter 90."

Bouchard estimates that the town is probably saving a quarter of the cost of the typical mill-and-fill approach to full-depth reclamation projects, but if the roads last longer, the savings could be anywhere from half to three-quarters of the cost of the town's previous approach.



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“For the full-depth reclamation we are looking at, it’s \$7 a square yard,” he says. “A regular full-depth reclamation, you’re probably \$20-plus a square yard. You have to dig it out, bring the proper gravels in, and work your way up.”

“It’s time-saving, too,” he adds. “Typically it’s only one lane closed. Once it’s rolled, the traffic can stay right on it.”

Elovirta says injecting roadways with stabilizing materials isn’t new in itself, but there’s been trial and error involved. When he was the highway superintendent, a similar process pulled up the blacktop, and machinery used hammers to smash that blacktop, which would be regraded and then injected with calcium chloride to bind the material before paving over. The calcium only served as a binder for the regraded materials, however, not as an additional stabilizing layer. A later process used a cement injection, but the town found that those roadways “tended to crack,” Elovirta says.

“[The asphalt injection] seems to be working well, and it’s not just Becket—many hill towns here are doing the same process,” he says.

In addition to longevity, Bouchard says the process has an added benefit: recycling in place has less environmental impact than milling and trucking old asphalt off-site.

Although he’s optimistic, Bouchard says more time is needed to fully evaluate whether the process will achieve the hoped-for roadway longevity. “I’m only five years into this process now, so we need to get out ten years to see if it in fact is going to be better,” he says. “But until you try it, you don’t know.” ❁