Historic Lexington, Massachusetts is leading the charge once again with a comprehensive program that improves the town's network and saves tax dollars.

- Decreased the townâ€™s repair backlog from $20.35 million in 2012 to just $7.25 million in 2020
- Residentsâ€™ complaints are down and thank you messages are up
- PCI improved by 125% from an average of 68 in 2010 to an average of 85 in 2020
- Reduced the percentage of roads in poor condition to 15% from a high of 39% in 2010

BACKSTORY:

Lexington enjoys a cherished place American history for the "shot heard round the world." The town's Battle Green is the site of the first armed conflict between American Minutemen and British soldiers. Every year, several hundred thousand tourists visit the community to learn more about the American Revolution. The Town of Lexington covers 16.5 square miles with a network consisting of 284 lane miles of residential, main, sub-main and collector streets.

PROBLEM:

Prior to 2010, Lexington's average road condition was scored at a Pavement Condition Index (PCI) of 68. The town used three primary treatments: Hot Mix Asphalt (HMA) mill-and-fill, Full Depth Reclamation (FDR) and with what little money was left over, crack seal. Citizens and visitors were complaining about road conditions and the department had a repair backlog of more than $20 million.

> "The less you have, the more critical it is to really stretch your dollars and make sure that the better condition roads just do not slip."
>
> *— John Livsey, P.E. , Town Engineer*

SOLUTION:

Under the direction of Town Engineer John Livsey, P.E., Lexington instituted a top of the curve preventative maintenance approach with the ambitious goal of attaining an average PCI in the mid-80s.

"If you have less money, if your budget is being cut, or even just not being increased, it's the best time to perform preservation," explained Lexington's Livsey. "The less you have, the more critical it is to really stretch your dollars and make sure that the better condition roads just do not slip."

Operating with principles of "the right treatment, on the right road, at the right time," Mr. Livsey has expanded the town's road maintenance toolbox to eight applications, including crack seal, fog seals and rejuvenators, micro surfacing, cape seals, 1.5- to 2-inch HMA Thinlays, HMA mill-and-fill, cold-in-place recycling and FDR.

This strategy ensures the town deploys the appropriate application as an asphalt pavement deteriorates. Conditions are estimated using a Pavement Management System and the engineers work with contractors onsite to fine-tune the applications.

The town's efforts have yielded dramatic results since 2010. They've added net gains of new service life to the network for the past four years, while more than halving the network's backlog of required repairs. The network's average PCI has jumped to 85 in 2020. And the percentage of roads with less favorable conditions has dropped from 39% in 2010 to just 15% in 2020.

Another crucial part of Lexington's success is the town's proactive approach to communicating with residents. More than telling taxpayers where and when road projects are taking place, they explain what the project entails and why it's being done. They send letters, post signs on roads, and announce updates on social media.

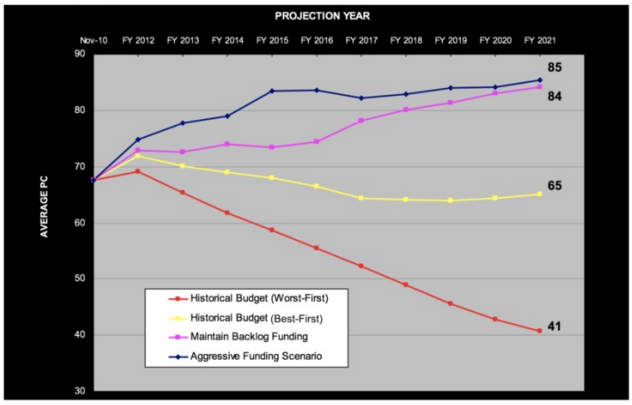
This year, the engineering department revealed that the system was so successful, they could cut their budget by $1.2 million per year and still maintain the high road quality. But with residents overwhelmingly supportive of the road program, Lexington's leaders opted to keep the original budget.

Not surprisingly, Mr. Livsey and the town of Lexington were presented with the 2020 James B. Sorenson Award for Excellence by FP2 (Foundation for Pavement Preservation). The Sorenson Award is presented by FP2 to recognize superior pavement preservation practice, usually to a city, township, county or state agency.

The Lexington program is a great model for achieving astounding success in a relatively short amount of time.

PHOTOS:

10 year projection



10 year forecast

Lexington's Expanded Toolbox

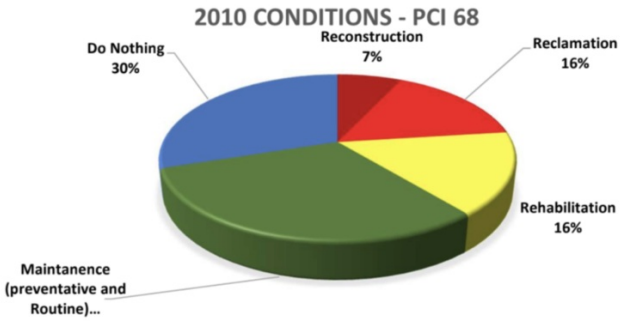
2009

- Crack seal
- Mill & Overlay
- Reclaim, grade and pave

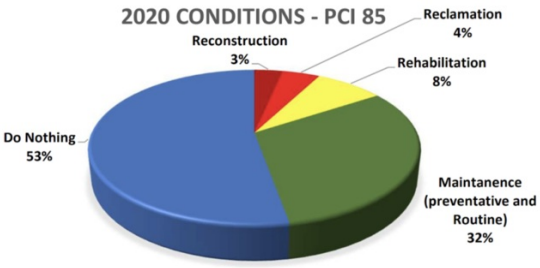
Today

- Crack seal
- Mill & Overlay
- Reclaim, Grade and Pave
- Double Micro
- Cape Seal
- Fog Seals
- Cold In-Place Recycling

Lexington's toolbox



2010 Network Conditions



2020 Network Conditions