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Using predictive modeling has helped elected officials and taxpayers understand their agency's proactive approach and compare the benefits of an Optimized vs a Worst-First Strategy.

### **What if you could show leaders the impact of current funding scenarios vs increased funding scenarios on network condition?**

**Austin Potts, Polk County's Pavement Manager, did just that. Using predictive modeling has helped elected officials and taxpayers understand their agency's proactive approach and compare the benefits of an Optimized vs a Worst-First Strategy.**

#### BACKSTORY:

Prior to 2015, Polk County managed over 2,500 centerline miles of paved roads like many agencies - with a "worst first" approach that spent the bulk of the agency's budget each year on the worst roads in the network. Treating this massive network with traditional mill/inlay and overlay projects only allowed them to treat 70-90 miles per year, and relied on spreadsheets to manage planning. Under this strategy, the overall network was falling into increasingly worse condition, and the backlog was growing..

Leaders like Pavement Management Engineer, Austin Potts, decided it was time for a change. His goal was to improve Polk County's network condition, minimize costs to taxpayers, and maximize benefits to the traveling public. The work began with an excellent team of Consulting Engineers who helped Polk County assess their overall condition, implement a Pavement Management System, and utilize predictive planning tools to analyze the impact of various strategies on the network overall.

#### PROBLEM:

Austin and his team considered many things before implementing any kind of expansion of their treatment toolbox. They relied heavily on their consulting partners, leveraged resources like roadresource.org to explore various treatment options and compare savings, and began gathering the data they needed to make long-term decisions. They wanted to balance the needs of the network with taxpayers demands and communication to bring the entire community along.

In 2015, Polk County launched their proactive approach to pavement management with a heavy use of preservation and recycling to stretch resources further. It started with highlighting key benefits of an optimized approach.

After five years of gaining ground with an Optimized approach, Polk County worked with their engineering team to run a scenario analysis to explore the impact of various funding structures and treatment strategies on the network overall.

They were able to show that over a seven-year period, using an Optimized approach instead of Worst First thinking, they could demonstrate significant progress without any budget increase. An optimized strategy would reduce their backlog by \$28M, increase lane miles in good condition by 28% (and decrease lane miles in poor condition by 13%), treat 42% more lane miles overall, and increase the network's total condition by 8 points - from a score of 39 on the Pavement Condition Index to a score of 47.

The team was engaged. Now it was just a matter of public perception in regards to preservation. Polk County hangs door hangers with educational content before any preservation work is done to explain the impact, expectations, and that taxpayer money is being better spent. In more populated areas they offer public meetings in advance to walk through anticipated schedules and programs. Austin wants to assure the public about the importance of keeping good roads good.

Since 2015, the ability to use preservation and recycling treatments provided Polk County a more cost-effective approach by extending pavement life and increasing the number of miles preserved per fiscal year. Their expanded toolkit includes a variety of strategies such as Rejuvenation, Crack Seal, Chip & Cape Seal, Microsurfacing, Fog & Scrub Seals, Cold In-Place Recycling and Full Depth Reclamation.

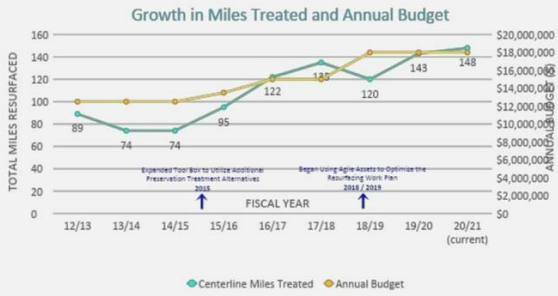
However, the team at Polk county wanted to take it one step further. They knew that at current funding levels, the needs of their network outpaced their resources. Like many pavement managers, their budgets were insufficient to deliver the type of network their taxpayers expected. They performed additional analysis to demonstrate the impact to the complete network over the course of the next seven years at current funding levels, decreased funding levels, and increased funding levels. Projections show that unless the agency's budget more than doubles, leaders can expect a decline in overall pavement condition.

#### SOLUTION:

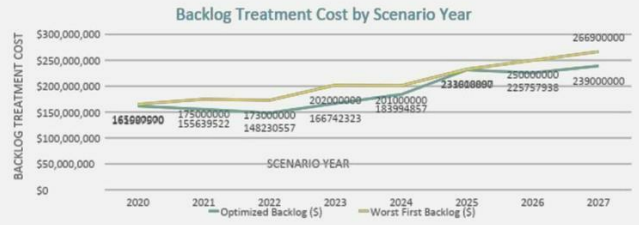
Today Polk County treats 450-500 lane miles of roadway each year - a drastic improvement over their previous strategy. They work closely with their consulting engineers, and credit them with being important partners in revamping the agency's approach.

Polk County has built a supportive and collaborative relationship with elected officials by using predictive modeling to demonstrate the network-level impact of various funding scenarios, and a "worst-first" vs an "optimized" pavement management strategy. Plans for the future include discussions about an increased budget to support maintaining current network conditions, and the agency is hopeful that the hard work of predictive planning will provide the data leaders need to justify an increased investment.

#### PHOTOS:



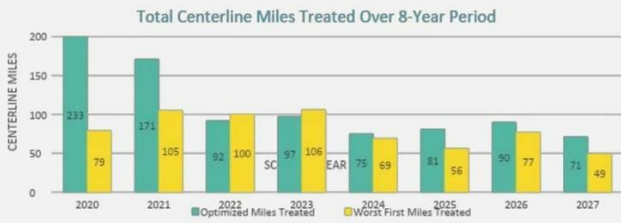
Growth in Miles Treated and Annual Budget



Total Backlog Cost in 2027:

**\$ 27.9 Million**

Backlog Treatment Cost by Scenario Year



Total Miles Treated in 8-Year Period (Total Network = 2,530 miles):

**42%**

Total Centerline Miles Treated Over 8-Year Period