



Bethel Park, PA

Challenges

The Municipality of Bethel Park is a primarily residential community located seven miles southwest of Pittsburgh, Pennsylvania. It is the 17th largest municipality in Pennsylvania with a population of approximately 34,000 residents.

Prior to adopting RoadBotics by Michelin technology, Bethel Park's municipal engineers would visually inspect the 118-mile road network on a yearly basis. This process would take two weeks to complete, and the results were subjective relative to the engineer completing the survey. Additionally, the Municipality did not have a standard for rating the roads based on the visual assessment.

The resulting visual survey information was entered into one of two asset management software programs. One program was easy to use, yet subjective. The other was complex and not user-friendly, yet offered the level of analysis the engineers preferred.

The process was time-consuming and subjective using multiple programs over time, and municipal engineers lacked sufficient asset management software to view and analyze the data.

Bethel Park sought an alternative approach to assessing their roads.

Solution

Bethel Park found a viable solution to their pavement assessment needs with



CLIENT

Bethel Park, PA

CHALLENGES

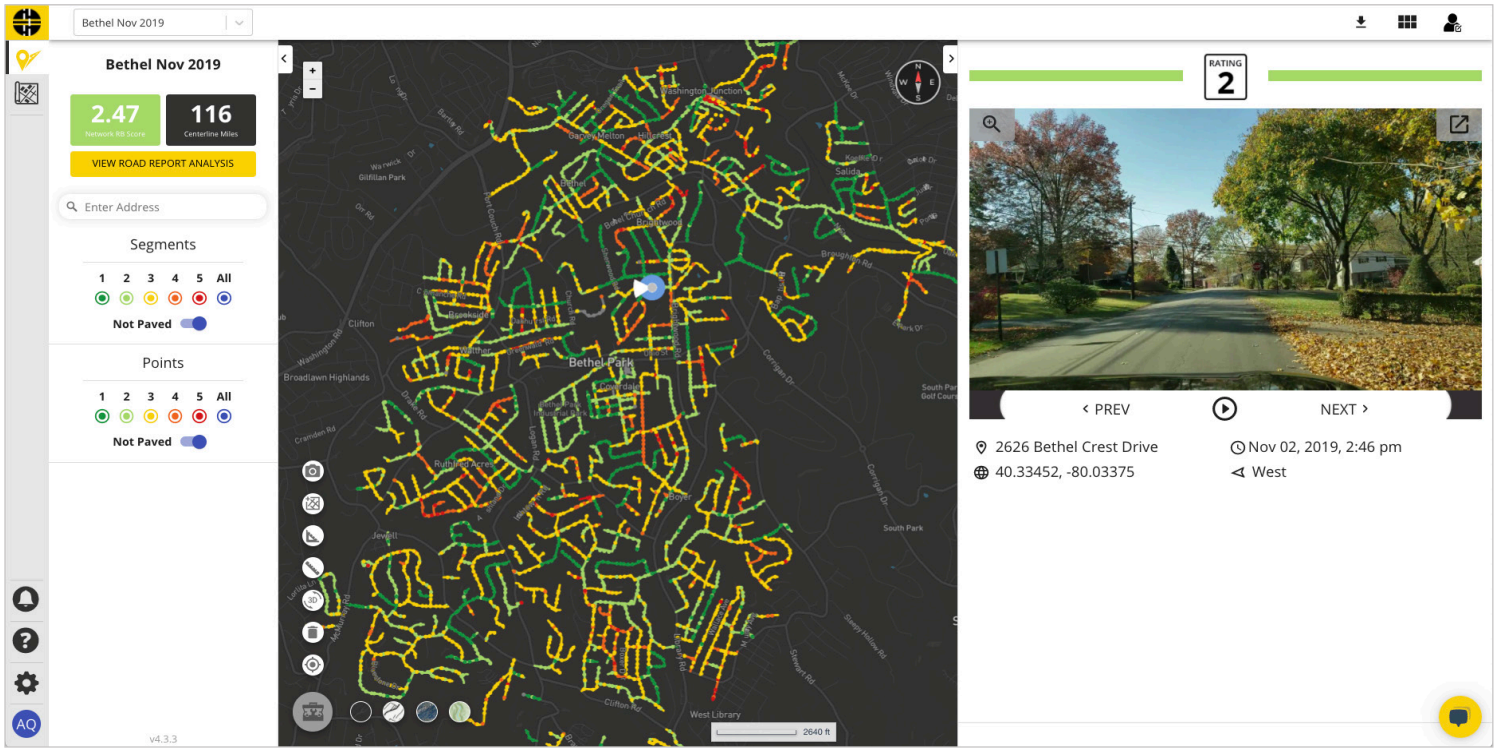
- Time-consuming, subjective visual pavement condition survey process
- Needed a standard for ratings

SOLUTION

- RoadBotics by Michelin: Fast, objective, affordable road assessment

RESULTS

- Overall Road Network Condition improved
- Able to share their pavement with residents
- Saved time and money each year



View of RoadBotics by Michelin's RoadWay online dashboard

RoadBotics by Michelin. The Municipality received its first assessment in 2017, and they have completed five additional assessments since then.

“ *We're very satisfied with the assessments and would 100% recommend RoadBotics to every municipality to help them with their road maintenance.*

- Lou Lambros
Bethel Park Municipal Engineer

In contrast to its previous approach, the RoadBotics by Michelin assessment process saves the Municipality resources and streamlines their data onto a single, user-friendly platform, RoadWay. The ease and efficiency of smartphone technology allows municipal engineers to complete data collection for the entire network in one day, as opposed to two weeks.

Once the pavement data has been collected, RoadBotics by Michelin's Artificial Intelligence (AI) analyzes it by identifying surface distresses and then producing conditional ratings for every ten feet of the road.

RoadBotics by Michelin's standard ratings are on a 1-5 scale, where 1 equates to 'no or minor surface distress' and 5 is 'major surface damage and/or critical fatigue issues.' AI technology replaces the inconsistency and subjectivity that results from manually gathering and interpreting pavement conditions with accurate and objective data.

Bethel Park uses RoadBotics by Michelin assessment data to develop yearly and long-term pavement plans. The annual assessments serve as a starting point for that year's maintenance program, and the data is also the cornerstone of the Municipality's five-year Road Program that began in 2019.

Not only does the data allow municipal engineers to better manage roads, but the high-resolution imagery also gives them up to date information on adjacent infrastructure assets such as sidewalks, curbs, and driveways.

In terms of financial savings, the RoadBotics by Michelin assessment process and results save the Municipality \$4,000 per year when compared to their previous method.

Results

Like most local governments, budgets for road repairs are

tight for Bethel Park. The Municipality's best solution for maximizing Capital Improvement Funds is to identify roads in the worst condition, then schedule those for resurfacing and repair.

Along with considerations such as traffic loading, underground utilities, and the condition of adjacent curbs and inlets, RoadBotics by Michelin conditional data allows the municipality to make unbiased decisions on what roads need to be repaired.

The assessment data shows municipal engineers which roads are in the worst condition (5 rated roads) and also which are degrading and how quickly. As Lou Lambros, Municipal Engineer, explains, "We can see how level 3 and 4 streets are changing each year. It gives us an idea of how much time we have before they reach level 5, and we need to repair them."

And their strategy is working. From 2018 to 2019, Bethel Park's overall network score has improved by 0.78 points.

In 2018, their road network was in 'fair' condition with a RoadBotics by Michelin rating of 3.25. In one year, their resurfacing and repaving efforts improved their network to 'good' condition with a score of 2.47. The table below shows the change in the percentage of roads at each rating from 2018 to 2019.

RoadBotics Road Rating	% Prevalence in 2018	% Prevalence in 2019
1	9.06%	18.68%
2	21.15%	31.77%
3	23.01%	35.44%
4	28.94%	11.69%
5	17.85%	2.42%

There was a significant increase in the percentage of 1 and 2 rated roads within the network and, conversely, a reduction of 4 and 5 rated roads - demonstrating the Municipality's pavement plan positively impacts the surface conditions of the road network as a whole.

In addition to having a successful strategy, Bethel Park is sharing its pavement plan with residents. The five-year Road Program is posted on the Municipality's website with a map identifying the roads subject to repair each year. Residents are informed on what to expect if their road is scheduled for repairs as well, which Mr. Lambros notes, "saves us [time] on numerous phone calls and inquiries."



RoadBotics
by Michelin

Empowering cities to assess roads
objectively using artificial intelligence

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