



Windsor, ON

Case Study

Overview

- 1 The City of Windsor partnered CITYROVER to increase the efficiency of road maintenance operations and to ensure an elevated level of resident satisfaction.
- 2 Since the application of CityROVER, the City has noticed several significant positive changes, including: an estimated \$2.56 million in operational and productivity improvements, the spring patching program to be completed twice as fast, and 90% less pothole claims being made.
- 3 The City continues to use CITYROVER and expanded to using a total of three devices to assist in road inspections.

Limitations of Previous Methods

After updating the City's road maintenance procedures in 2010 to include GPS, the City of Windsor continued to search for different solutions to improve upon their road maintenance operations. Their system at that time relied on sending "scouting" staff to patrol the City's roads, logging and reporting any deficiencies that were noticed. However, the process was time consuming, as it was often necessary to drive for extended periods of time. In addition, they were required to multitask, splitting their attention between driving safely and looking for different types of deficiencies and issues, resulting in some being missed.



Challenges

The City of Windsor has a population of over 233,000 and a road network consisting of over 2,450 lane km. The City, the southern most in Canada, is linked to the United States through various routes, including the Ambassador Bridge.

As such, more than 27% of all trade between Canada and the U.S. flows through it. With growing traffic volumes and fluctuating weather conditions, the City experiences a vast number of potholes every year.

In order to uphold an elevated level of resident satisfaction and meet the Municipal Benchmarking Network (MBN) objectives for road users, the City searched for new solutions to improve its road maintenance operations. In 2010, they made a transition from a "drive-and-patch" method to one that utilized GPS tracking with manual push-button tagging. However, although an improvement, the City continued to look for innovative solutions that would create even more optimizations in road maintenance.

- > Previously, the City's pothole repair process required staff to patrol the roads for prolonged periods of time, resulting in longer pothole repair times and some deficiencies being missed.
- > The GPS tracking system that was being used required manual staff operation and provided limited data on the reported deficiency.
- > With the high traffic volume, limited funding and labour shortages, it was imperative to find a new and more efficient solution to reduce repair times and maintain ideal road conditions for the commuters.

\$2.56M

PRODUCTIVITY
IMPROVEMENTS VALUE

+900%

MORE DETECTIONS

90%

DECLINE IN CASES

Solution

Upon learning about CITYROVER, the City of Windsor partnered with Visual Defence on a pilot project in March 2020.

A CITYROVER device was installed in a municipal vehicle with the provided windshield mounting kit. Using CITYROVER is quick and easy, as the user is only required to turn the device on and begin driving. The artificial intelligence application uses the smartphone's camera to automatically detect and identify various potential road hazards such as potholes without requiring any additional input from the driver.

At the same time, CITYROVER generates incident data and uploads it to the cloud, which can be easily accessed by the City staff through the web interface so that they may accurately quantify the number of potholes there are in a certain area. As such, they are able to identify high priority areas and create repair plans to distribute among crew members so that they can ensure smooth roads for the commuters.



The CITYROVER system uses powerful AI technology to accurately identify and report road deficiencies. It is reliable and extremely easy to use. The provided windshield mounting system secures CITYROVER enabled devices to the patrol vehicle, creating a seamless experience.

Results

The City of Windsor has since expanded to a total of three CITYROVER devices for data collection during road inspections on a variety of municipal vehicle types (e.g. waste management, bylaws and maintenance vehicles). Collected data can then be organized and managed by the city staff members to develop repair plans both quickly and efficiently, preparing patch maps for each of the City's service zones for repair crews to tend to.

Since its implementation, the City has noticed a 90% decline in pothole claims. In addition, they have tripled their incident reporting capacity with each device, with a total of 900% more road deficiencies being identified compared to its previous scanning method.



In total, the City experiences productivity improvements valued at approximately \$2.56 million, with their spring patching programing being completed twice as fast as before.

As of 2022, the City of Windsor's road operations are fully automated through the CITYROVER partnership, leading to better maintained roads that are safer for drivers, pedestrians and cyclists.

"Working with CITYROVER is a fantastic relationship. Right from the start, they're able to meet our needs, they're very responsive, the technology is very easy to adapt. It's extremely organized. They're a fantastic partnership for a municipality like ours."



Phong Nguy,
Manager of Contracts,
Field Services and Maintenance,
City of Windsor

"It saves us time from searching for them [potholes] when they're already found for us."



Tony Varacalli,
Maintenance Supervisor,
City of Windsor

"This unit takes a lot of stress off of them [scouting staff]. It's like having another pair of eyes on the roadways at all times - safety being one of our number one concerns. This unit has helped us achieve that goal"



Ralph Prestia,
Maintenance Supervisor,
City of Windsor