York Region Transit, ON

Case Study

Overview

1. York Region Transit initiated a pilot project for the CITYROVER for Transit technology in order to develop a new method of monitoring and maintaining public transit infrastructure.

2. Using buses outfitted with CITYROVER AI smart cameras, the Region is able to easily conduct more frequent and consistent inspections.

3. York Region has recorded marked efficiency improvements with respect to repair times and quality of data collected, with the total boost being valued at an estimated $783,758.94 and the equivalent value of 8.8 million dollars of CCTV at stops.

4. York Region has pioneered this technology into the transit sector, and has received recognition from organizations including Smart Cities Connect Smart 20 for its innovative solution for public transit asset maintenance.

Challenges

York Region Transit (York Region) has a large service area, of 1700 square kilometres (656 square miles), which consist of nine area municipalities: the Town of Whitchurch-Stouffville, Town of Aurora, City of Vaughan, City of Richmond Hill, City of Markham, Town of East Gwillimbury, Town of Newmarket, Township of King, and Town of Georgina.

The Region's public transit organization, York Region Transit (YRT), is responsible for transporting commuters to and from their destinations across huge expanse of land, with over 6000 bus stops within their jurisdiction. YRT supports approximately 80,000 commuters daily and 21.1 million annual trips; it is paramount that proper maintenance of transit facilities are upheld for the safety of all passengers.

Limitations of Previous Methods

The method that was previously employed for transit facility maintenance involved dedicated operators travelling to each of the Region's 6000 bus stops to manually take note of the condition of the shelter and its amenities. Once the inspections were completed, Regional staff would compile the reports and prepare maintenance or repair plans accordingly. This was supplemented with resident reports in the event that damages or hazards are observed between inspections.

Due to YRT's large service area, the maintenance process was prolonged and tedious, with the Region only being able to collect details during inspections or through passenger complaints. As such, many deficiencies are missed or left unattended for an extended period of time, resulting in prolonged public risk exposure.

Solution

In 2023, York Region Transit found an opportunity to partner with CITYROVER in piloting the CITYROVER for Transit technology to optimize their maintenance and repair operations. CITYROVER for Transit is an AI-powered smart camera system dedicated solely to the autonomous inspection of public transit facilities and amenities to better manage transit infrastructure.

CITYROVER AI smart cameras were installed into YRT buses, allowing them to collect relevant data as the buses make their way across the YRT service area. The devices automatically identify and detect various deficiencies, including overflowing waste receptacles and broken glass, while the buses continue their daily routes. The collected data is then used to generate timely, detailed reports that regional staff can review through the web interface.

Using these reports, York Region Transit staff are able to determine important factors, such as the type of damage and its severity, and make informed decisions when preparing efficient repair plans. As a result, the Region's staff are able to address potential hazards in a timely manner.

Implementation Results

- York Region Transit began a partnership to pilot the CITYROVER for Transit technology in 2023.
- York Region Transit mounted CITYROVER AI smart cameras onto the buses in the YRT fleet to automatically collect incident data while the buses continue their daily routes.
- With CITYROVER cameras installed, York Region Transit is able to conduct regular inspections on the condition of their transit infrastructure, and access timely reports to prepare efficient plans for targeted repairs.
- Since its implementation, York Region Transit has experienced a number of noticeable benefits, including: cost savings, productivity boosts, and improved rider safety.

"In York Region, we always strive for innovations. York Region Transit has leading edge technology systems installed on buses, such as colision avoidance, driver monitoring to monitor fatigue, and this was just a perfect fit implementing AI solutions and working with CITYROVER."

Igor Zaslavsky
Manager, Transit Management Systems, York Region, ON

Results

The cameras collect daily snapshots of the Region's transit infrastructure at multiple angles, allowing staff members to gain a better understanding of the different deficiencies across their bus network. Thus, the Region is able to take proactive action in the maintenance and repair of bus shelters, leading to an increase in rider safety, satisfaction and experience.

Recognition

Some of the awards York Region Transit has won for its innovative use of CITYROVER for Transit technology include:

MISA ONTARIO 2024
Excellence in Municipal Systems

"Recognizing an Ontario municipality that has successfully undertaken a significant initiative or set a new standard that other municipalities may follow."

Connected Infrastructure Award
Intelligent Transportation Systems Canada

"Celebrating exceptional contributions within the intelligent transportation systems industry in Canada."

Smart 20 Awards 2024
Smart Cities Connect

"Honoring the most innovative and influential projects each year."