



# 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 transit stop inspection, with the service boost valued at an estimated \$783,758.94 and coverage which would be equivalent to a multimillion dollar system at a fraction of the cost.
- 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.

**22M**  
Annual Rides

**6,000**  
Transit Stops

**500**  
Transit Vehicles

### Challenges

York Region Transit (York Region) has a large service area, of 1,700 sq. ks. (656 sq. mi.), which consists 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 a huge expanse of land, with over 6,000 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 asset management involved a dedicated inspector travelling to each of the Region's 6,000 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 public reports in the event that damages or hazards were observed between inspections.

Due to YRT's large service area, the manual inspection was challenging, with the Region only able to collect details during inspections or through passenger complaints. As such, sometimes deficiencies were missed or left unattended for an extended period of time.

## 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 has scaled its ability to conduct regular inspections on the condition of their transit infrastructure, and access timely reports to prepare efficient plans for targeted repairs and contractor work planning.
- > Since its implementation, the technology has demonstrated capacity to improve: cost savings, productivity boosts, and improved rider safety.

## Outcome

The cameras collect 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 transit stops, leading to an increase in rider safety, satisfaction and experience.



“

**“In York Region, we always strive for innovations. York Region Transit has leading edge technology systems installed on buses, such as collision 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

”

## Recognition

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



**MISA ONTARIO**  
*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**  
*Smart Cities Connect*

“Honoring the most innovative and influential projects each year.”