





COMMUNICATION UPDATE

TO:	Mayor and Members City Council
DATE:	March 29, 2021
SUBJECT:	Connected Vehicle Test Environment Equipment Install and Launch (TOM2102/DISP21001) (City Wide)
WARD(S) AFFECTED:	City Wide
SUBMITTED BY:	Edward Soldo Director, Transportation Operations & Maintenance Public Works
SIGNATURE:	
SUBMITTED BY:	Cyrus Tehrani Chief Digital Officer City Manager's Office
SIGNATURE:	

The purpose of this Communication Update is to provide City Council with an update on the Connected Vehicle Test Environment install and launch.

The Centre for Integrated Transportation and Mobility (CITM), in partnership with provincial Autonomous Vehicle Innovation Network (AVIN), the Innovation Factory, the City of Hamilton, and McMaster University, have started to install sensors on three street lighting poles in the City this week. The intent of this pilot initiative is to create a “test environment” network on select city streets in Hamilton for connected vehicle research as originally shared with Council via Connected & Autonomous Vehicles Test Bed (PW19097) and subsequent updates.

Key information to know includes:

As part of the Smart Mobility and Connected Vehicle Pilot project the installation of the equipment by CITM is scheduled to be complete at the following locations by March 26, 2021:

- Three poles along Stone Church Road near the intersections of Ottawa Street, Nebo Road and Dartnall Road; also

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

SUBJECT: Connected Vehicle Test Environment Equipment Install and Launch (City Wide) – Page 2 of 5

- The private test environment located at McMaster Innovation Park and the Cen-Met building have already been installed and is fully operational;
- Data collected includes video, still images, sound, RADAR, LIDAR, and environmental data. No personally identifiable information is captured, and this equipment obscures license plates and faces. No facial recognition is utilized or permitted;
- There is no speed enforcement of any kind associated with the equipment;
- The main focus is for traffic management, traffic safety, public safety, and connected vehicles use cases;
- The use and approval of highly autonomous (i.e. Level 4 and 5 automation) “Driverless” vehicles are governed by and must be approved for use by the Province. The focus of this test environment is more aligned to Smart Mobility and Connected Vehicles;
- There is clear signage on every pole that describes the equipment, whom to contact for more information, and a website that details both the technology use and how data is captured, used and stored. The primary contact and telephone number listed is for CITM;
- There no installation or ongoing costs to the City associated with this pilot project;
- The City’s Customer Contact Centre has been advised of this initiative and has been provided a list of FAQ’s to help address resident questions/concerns and there is website and phone number display on the signs located at each pole where residents can also get more information specifically <https://citm.ca/dtpr/> or by calling 905-667-2597; and
- CITM in partnership with the City and McMaster University will issue a media release about this initiative with further detail in April.

FREQUENTLY ASKED QUESTIONS

Why is the City of Hamilton undertaking this initiative?

This is a joint project between Public Works, Transportation Operations & Maintenance and the Digital and Innovation Office in partnership with the Provinces Autonomous Vehicle Innovation Network (AVIN - <https://www.avinhub.ca/>) and the Centre of Integrated Transportation and Mobility (CITM - <https://citm.ca/>) which is located at McMaster Innovation Park and is part of the Innovation Factory Regional Innovation Centre. There are several academic partners including the McMaster Institute for Transportation and Logistics (MITL - <http://mitl.mcmaster.ca/>) also involved with this project.

How long is this pilot project?

Currently pilot funding for this project is until April 2022 but the hope is the Province will extend the provincial funding for all six regional development sites.

How much did this cost the City?

The equipment, installation and operation of the equipment for the duration of the pilot is paid for by the Province's Autonomous Vehicle Innovation Network (<https://www.avinhub.ca/>) and co-ordinated via the Centre for Integrated Transportation and Mobility (CITM -<https://citm.ca/>).

How can I find out more information?

Visit <https://citm.ca/dtpr> or call the Centre for Integrated Transportation and Mobility at 905-667-2597.

What is a connected and autonomous vehicle test environment? Why is this important to the city?

A connected and autonomous vehicle test environment is simply equipment that is part of either public or private right of way space that allows for the mounting and testing of various technologies that support research and development. Use cases can include traffic, traffic safety, vision zero, connected vehicle data, environmental data collection and similar use cases. Hamilton was one of six locations selected provincially to host a regional development sites working to advance intelligent infrastructure and pave the way for connected autonomous vehicles. This also aligns to the Economic Development target ICT industry sector and can help bring research, research funding to Hamilton and its academic partners and potentially new businesses interest in this work to further diversify the City's economy.

How does the “test environment” technology work?

The technology as initially installed consist of three main components. Cellular equipment to connect the equipment to the research network that allows information gathered by the equipment on the street lighting to be collected and analyzed. There is an Internet of Things (IoT) device(s) that collect different type of data as well as what is called Vehicle-to-Everything (V2X) roadside technology allows for communication between test vehicles that have the in-vehicle technology installed to communicate with the roadside technology.

Where are the “test environment” locations in Hamilton?

Some equipment is located as part of the McMaster Innovation Park (MIP) area on Longwood Road and in the parking lots at MIP and currently three lighting poles along Stone Church Road near the intersections of Ottawa Street, Nebo Road and Dartnall Road.

I noticed these new strange boxes and equipment added to the street pole at x location(s). What are they and what do they do?

The equipment consists of four main components:

SUBJECT: Connected Vehicle Test Environment Equipment Install and Launch (City Wide) – Page 4 of 5

1. Weatherproof, ESA-certified electrical connection boxes;
2. IoT (Internet of Things) sensors that collect various data - data collected includes video, still images, sound, RADAR, LIDAR, and environmental data. No personally identifiable information is captured, and this equipment obscures license plates and faces. No facial recognition is utilized or permitted;
3. V2X (Vehicle to Everything) hardware that connected select CITM- affiliated vehicles to the CITM managed network; and
4. Cellular communications equipment – part of the CITM's private data-only network.

How will the City protect the identity of residents if you have cameras recording their every move at these test environment locations?

This equipment will be used to study traffic, traffic safety, connected vehicle technologies and environmental factors. The system is design with privacy in mind and does not capture any personally identifiable information and individuals, vehicles, licenses plates or similar identifiable information.

I understand the street pole in my ward is being used as a “test environment” location, how will the data being collected be used?

The data collected will be used to support research and development of technologies and use cases that can help evolve connected vehicle and similar technologies and provide an opportunity for one of kind research to occur in Hamilton.

This equipment will be used to support Ontario-based companies as they develop and build technologies for the connected / autonomous vehicle and smart city infrastructure industries, as well as for fundamental research by groups such as McMaster's Institute for Transportation and Logistics as they work with government agencies to develop traffic and logistics policies and programs for supply chain management. The boxes you see are either electrical connection boxes, IoT (Internet of Things sensors) or V2X (Vehicle to Everything) systems that transmit data from connected vehicles to the CITM network.

Data is used to study traffic, traffic safety, and environmental factors. The system is design with privacy in mind and does not capture any personally identifiable information and individuals, vehicles, licenses plates or similar identifiable information.

How will this benefit the City?

Hamilton was one of six locations selected provincially to host a regional development sites working to advance intelligent infrastructure and pave the way for connected autonomous vehicles. This also aligns to Economic Development target ICT industry sector and brings can help bring research, research funding to Hamilton and its academic partners and potentially new businesses interest in this work to further

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

SUBJECT: Connected Vehicle Test Environment Equipment Install and Launch (City Wide) – Page 5 of 5

diversify the City's economy.

How will the public know this equipment has been installed and where?

Each pole where this equipment will be mounted will have clearly marked signage that explain the purpose of the equipment, what type of data it can collect, limitations on the type of data used and who to contact to get more information. A sample of the signage and sample of equipment on poles is shown below.

**SMART MOBILITY & CONNECTED VEHICLE
PILOT PROJECT**

The **Centre for Integrated Transportation and Mobility (CITM)**, in partnership with the City of Hamilton and McMaster University, have installed sensors on this pole for research and development to study traffic management and connected vehicles.

Data collected includes video, still images, sound, RADAR, LIDAR, and environmental data. No personally identifiable information is captured, and this equipment obscures license plates and faces. No facial recognition is utilized or permitted.

To learn more visit www.citm.ca/dtpr, call (905) 667-2597, or scan the QR code below with your smartphone.

Research & Development Mobility

De-identified Photo De-identified Video Sound Environmental RADAR & LIDAR

AVIN Ontario Hamilton citm Innovation FACTORY UNIVERSITY OF TRANSPORTATION & LOGISTICS

Pole #:



If you have any questions respecting this communication, please contact Cyrus Tehrani, Chief Digital Officer, by phone at ext. 2261 or by email at Cyrus.Tehrani@hamilton.ca.

APPENDICES AND SCHEDULES ATTACHED

N/A