



Report to: Development Services Committee

Meeting Date: September 11, 2023

SUBJECT: Markham and Vaughan Auto Mobility Demonstration Zone
PREPARED BY: Chris Rickett, Director, Economic Growth, Culture and Entrepreneurship

RECOMMENDATION:

1. That the report entitled “Markham and Vaughan Auto Mobility Demonstration Zone” be received;
2. That City staff be authorized to enter into an agreement with the Province of Ontario and the City of Vaughan to develop and implement the Auto Mobility Demonstration Zone;
3. That City staff receive delegated authority from Council to undertake and implement automotive and mobility demonstration projects as part of the Auto Mobility Demonstration Zone;
4. That City staff provide regular status reports to the Development Services Committee; and,
5. That City staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

This report seeks Council’s approval for staff to work with the Province of Ontario and the City of Vaughan to develop and launch a shared Auto Mobility Demonstration Zone (DZ).

BACKGROUND:

In Ontario’s 2021 Budget, the Government committed \$56.4 million over four years to create the Ontario Vehicle Innovation Network (OVIN). OVIN focuses on maximizing investments and impacts across Ontario’s entire automotive value chain, including a shift towards smart and clean technologies. Through a range of programs, OVIN is linking large companies (partnering with original equipment manufacturers (OEMs), Tier 1, etc.), fleet operators, municipalities and utilities with Ontario start-ups and small- to medium-sized enterprises (SMEs) to encourage product innovation and open collaboration.

One of OVIN’s programmatic streams includes supporting the creation of DZs, which are dedicated physical locations for showcasing advanced automotive technologies and smart mobility solutions.

In partnership, the cities of Markham and Vaughan jointly applied and have successfully secured funding in the amount of \$2.5M through March 31, 2025, from OVIN to deploy a DZ in each municipality. The DZs will be dedicated physical locations for showcasing

advanced automotive technologies, smart mobility solutions, and their integration into urban environments. They will also provide an opportunity for Markham and Vaughan to explore solutions to transportation and mobility challenges they face, such as first and last-mile connectivity, pedestrian safety and reducing greenhouse gas emissions.

In Markham, the DZ will be in Markham Centre. Vaughan will have a specific focus on the Vaughan Metropolitan Centre. Both Markham and Vaughan DZs will provide companies that have smart mobility technologies and solutions opportunities to test, validate and showcase to potential customers, partners and residents in a controlled, real-world environment and accordance with applicable laws, regulations and approvals.

The Auto Mobility Demonstration Zones align with the Digital Markham Strategy, which plans to transform Markham into a “frictionless city” that provides streamlined services and experiences by 2025. As part of the Digital Markham Strategy, a main objective is to foster “The City as a Platform” by developing a “living lab” in Markham for rapid prototyping new initiatives. It also aligns with the new Markham Secondary Plan and the planned Markham Centre Secondary Plan Smart City Strategy, which aims to use smart technology to achieve the outcomes associated with creating dense, livable, walkable, healthy, sustainable, and connected communities.

The Auto Mobility Demonstration Zones will quite literally become “living labs.” The DZs will promote collaboration within and across municipalities to advance automotive, mobility and smart city technologies to improve residents' quality of life while generating new economic opportunities for Ontario-based companies.

Additionally, as part of the Digital Markham Strategy, the City is working towards creating favourable regulatory environments that facilitate digital innovation, agility and economic development. This involves developing and refining policies that support innovation and are responsive to emerging technologies. The Auto Mobility DZs will enable policy research and analysis and the development of recommendations, frameworks and resources for future policy concerning mobility solutions in municipalities across Canada.

Moreover, from an economic development perspective, the City is currently focused on growing its autotech cluster. York Region is home to Canada’s largest independent automotive parts and electronics manufacturing cluster, most of which are located in Markham and Vaughan. As part of Canada’s second-largest technology cluster, Markham is also home to over 440 businesses in the automotive sector, including GM, Honda, Hyundai, NGK, Mitsubishi, Multimatic, Magna and Tesla. The research and development that happens in Markham touches just about every vehicle on the road.

Autotech activities concentrated in Markham are helping drive the electric vehicle transition. GM Canada’s Technical Centre is focused on automated driving, electrification, next-generation infotainment systems and new technologies for mobility solutions. Virtually every carmaker globally uses Qualcomm semiconductor technologies for in-vehicle communications, entertainment, and advanced driver assist systems. And Veoneer Canada develops the next generation of cutting-edge automotive

safety electronics (driver monitoring systems, night vision, HD mapping), assisting in developing advanced driver-assistance systems.

Given the transformation taking place in Markham in terms of its digital vision for the future and within the autotech sector, Markham has the potential to advance the knowledge base for automotive and smart mobility solutions in the following ways:

Investment Attraction: the collaboration of Markham and Vaughan's large automotive, mobility and tech companies will be leveraged to encourage investments from other companies looking to collaborate in developing automotive and mobility solutions. This will help advance the two cities' global image as next-generation leaders in auto technologies while increasing the competitiveness of York Region and Ontario's automotive supply chain by having local access to smart mobility innovation.

Active Solution Development: by bringing together companies in Markham and Vaughan and innovators, cities and end-users, the DZs will co-create solutions to support mobility solutions in urban environments that can be exported and shared with other communities.

Knowledge Sharing: the solutions demonstrated in the Markham and Vaughan DZs will help shape policy and regulatory frameworks locally and nationally, positioning both cities as leaders in the future of automotive and mobility solutions.

Government Procurement: both cities will work with companies leveraging the Markham Centre DZ to understand the process of selling to the government and helping them navigate how to sell their solutions to other jurisdictions.

OPTIONS/DISCUSSION:

The proposed Auto Mobility Demonstration Zones seek to achieve the following key objectives:

- 1) Provide a real-world environment to demonstrate innovative and emerging technologies that align with the City of Markham and Vaughan's transportation and mobility objectives.
- 2) To accelerate the change towards more attractive, competitive, and sustainable mobility choices by leveraging Connected, Autonomous, Shared and Electrified (CASE) technologies and the data collected and generated to enable effective services.
- 3) To support technology research and development while also developing and supporting local talent and encouraging local economic vitality, ultimately informing new mobility policies.

-
- 4) To determine if, where and how different technologies should be used and establish methods to manage liability risks.

1) Markham Centre as a Demonstration Zone:

Located in the heart of Markham's new downtown, Markham Centre (MC) encompasses a mixed-use community with over 26,000 residents and a commercial core that includes retail, hospitality and corporate offices. Markham Centre is also home to York University's new campus, scheduled to open in 2024, and the Unionville GO Station. Markham Centre will support approximately 170,000 people and jobs when fully built out.

MC provides an opportunity for large companies, fleet operators, startups, as well as small and medium-sized enterprises to collaborate, pilot and test connected and autonomous vehicle technologies, shared and integrated mobility solutions, as well as electric vehicle solutions in a real-world urban environment with end users, including residents, local businesses, university students, and employees working in the community.

Within MC, York University is currently constructing its new campus to welcome its first 4,300 students starting in 2024. In addition, a multi-modal transportation hub is being developed as part of the Unionville GO station between the City, York Region and Metrolinx to meet the transit needs of the community and their connections across the GTA.

While MC continues to be built out, the project features available lands that will support future development to evolve into new urban community nodes within its boundary over time. Given MC's current development path, it is poised to support new opportunities to: 1) engage and demonstrate mobility technologies within MC's existing urban environment; and, 2) help shape the future development of the remaining lands within the community.

A key component of MC will be the ability for participating companies to access a state-of-the-art 5G network provided by Rogers to test and research their solutions while providing critical feedback on the needs of mobility technologies in relation to leveraging 5G networks.

Potential Project areas may include:

- Autonomous Shuttle – Testing autonomous shuttle(s) and technologies that integrate with their systems
- Service Robots – Testing delivery of municipal services through service robots
- Software/Signaling – Testing new software and traffic control signalling to promote greater pedestrian and cyclist safety and traffic flow
- E-Scooters (First/Last KM) – Provide a testing and demonstration area for e-scooters to help shape municipal policy

The City of Markham will be supporting the DZ and will provide the following resources:

- Provide in-kind financial support for the DZ.
- Provide in-kind staff expertise and in-kind support to ensure the overall success of the DZ, as well as hire three dedicated staff funded by OVIN to manage the DZ.
- Act as a facilitator between the private and public sector partners.
- Leverage the City's transportation and infrastructure investments to demonstrate automotive and mobility solutions as part of the DZ.
- Form and manage the DZ Steering Committee, an internal staff project team, and advisory committees to support the management of the DZ and its associated projects.
- Promote the DZ as an opportunity for local and regional automotive and mobility technology solutions.
- Coordinate with various City and Regional departments, including opening up city infrastructure for testing.
- Request temporary bylaw exemptions.

2) Potential Impacts:

- Raise the profile of Markham, Vaughan, York Region and Ontario, as a global hub of smart mobility solutions and next-generation auto tech.
- Accelerate research and development, and grow local economic activity and talent.
- Ensure Markham, Vaughan and Ontario can capitalize on their existing automotive, mobility and technology sectors to grow their importance and ability to generate future economic opportunities.
- Solve local mobility challenges by facilitating collaboration between mobility companies, residents and local businesses to solve local mobility challenges that can be applied in other jurisdictions.
- Demonstrate innovative mobility technology solutions in a real-world environment with actual end-users.
- Incorporate sustainable transportation solutions that reduce greenhouse gas emissions.
- Expose the public to emerging technology and provide citizens with an educational experience.
- Gain insight to inform future city planning and policies by testing and demonstrating mobility technologies. Findings and outcomes can inform the development of Ontario's transportation infrastructure and network while being adopted by other municipalities by sharing outcomes, policy and regulatory templates, and solution providers.

3) Governance:

Steering Committee

A Markham Vaughan Demonstration Zone Steering Committee will be established to build public-private sector collaboration and ensure political alignment. The Steering

Committee's role will be to provide strategic direction and foster collaboration, and to create demonstration projects. The make-up of the Steering Committee will include:

- Private Sector Partners:
 - Markham: Rogers Communications, IBM, AMD, Syntronic, Microart, Honda, Qualcomm, and Remington Group.
 - Vaughan: SmartCentres, Mircom, Teledyne Optech, Martinrea International, Litens Automotive Group, PSP Services, Canada's Wonderland, FedEx Canada and United Parcel Service Canada
- Ecosystem Partners: OCI, ventureLAB, YSpace, Seneca-HELIX, York University, Vaughan Chamber of Commerce, Markham Board of Trade, York Region Transit, TTC and Alectra.
- Municipal Partners: Regional Municipality of York, City of Vaughan and City of Markham.
- Political Representation: Mayors of Markham and Vaughan, the Chair of the Economic Development and Culture Committee, as well as one local ward councillor for each municipality.

Additional steering committee members can be added if DZ staff identifies a demonstration project match with other Markham/Vaughan companies.

Municipal Advisory Sub-Committee

There will also be an internal Markham Advisory Sub-Committee to support DZ participants conducting demonstration projects on city space/infrastructure. This sub-committee will include municipal staff from the City and Region to assist in identifying and supporting demonstration projects. This will include staff from the following departments: Planning and Urban Design, Engineering, Operations, IT, Corporate Communications, Economic Development, Finance, and Legal and Risk Management.

This internal Sub-Committee of City and Regional staff will be leveraged to streamline decisions required from the DZ and to remove barriers to potential collaborations and demonstration projects.

Demonstration Project Teams

In addition to the Advisory Sub-Committee and DZ Steering Committee, each demonstration project approved for the DZ will have a dedicated project team. This will comprise municipal decision-makers, industry experts, and external stakeholders. The purpose will be to provide input into the project, help address barriers to implementation and support the project's overall success.

A project advisory committee will be formed for each project. These can include:

- Internal departments who would have a vested interest in the challenge;
- Internal departments who would need to approve;
- External agencies who would have a vested interest in the challenge;
- External agencies and organizations which would need to approve; and,

- External academia or SME who will provide appropriate evaluation criteria for the challenge.

FINANCIAL CONSIDERATIONS

As part of the agreement with the Province, the planned project will receive \$2.5 million, split evenly between the cities of Markham and Vaughan, meaning the City of Markham will receive \$1.25M towards its DZ. This funding will be used to hire dedicated staff for the project and provide project support, marketing and administration.

HUMAN RESOURCES CONSIDERATIONS

The management of the DZ will include three dedicated staff, as well as an industry-led Steering Committee. From a staffing perspective, the three staff dedicate 100% of their time to the DZ and report to the City of Markham's Economic Growth, Culture and Entrepreneurship Department while also supporting the City of Vaughan's DZ.

The project will also require staff resources from across the City of Markham, including from Planning and Urban Design, Engineering, Operations, IT, Sustainability and Asset Management, as well as Finance.

ALIGNMENT WITH STRATEGIC PRIORITIES:

Goal 2: Engaged, Diverse, Thriving and Vibrant City - Build Markham as the best place to live, invest, work, and experience rich diversity.

BUSINESS UNITS CONSULTED AND AFFECTED:

Economic Growth, Culture & Entrepreneurship
Finance Department
Planning and Urban Design
Engineering
Operations
Sustainability and Asset Management
IT

RECOMMENDED BY:

Chris Rickett
Director, Economic Growth, Culture
and Entrepreneurship

Arvin Prasad
Commissioner, Development
Services

ATTACHMENTS:

NA