Partnering to Achieve Automobility
Windsor-Essex Economic Development Corporation & Miovision
automobility

The secure, zero-emission movement of people, goods and services using advanced information technologies.
WINDSOR-ESSEX FRAMEWORK FOR ACTION: AUTOMOBILITY (CACYE)

**Connected**
- A key catalyst for economic growth will be wireless connectivity, enabled by 5G deployment.
- Over 1,850 kilometres of fibre optic cable installed throughout the Windsor-Essex.
- Average download speed in Windsor is 17.46 Mbps.
- Top 10 of basin Canada average speed is 150 Mbps.

**Initiatives Underway:**
- Deployment of Mirovision equipment is a good start to create a Region-wide Smart Corridors with CV2X technology.
- Construction started on the world’s technology-advanced Gordie Howe International Bridge.
- ITS Canada will host its annual conference in Windsor in 2022.

**Automonomous**
- Windsor-Essex has the highest location quotient for automation in Canada.
- Windsor-Essex designated as one of the six Regional Technology Development sites for CAVs including VR OWE.
- FCA Pacific is the vehicle of choice by many tech companies.
- Tech start-ups impacting the proliferation of automotive technologies.

**Initiatives Underway:**
- Partnership with Detroit Mobility Lab.
- Discussions underway with Israel Innovation Authority and others to establish a collaboration program for automotive technology.
- Discussions underway to establish bi-national academic linkages in mobility.

**Cybersecurity**
- Cybersecurity in the Automotive and Manufacturing Sector is becoming increasingly critical.
- Automotive industry is most vulnerable.

**Initiatives Underway:**
- Work underway to develop a coordinated strategy for Region to be Canadian leader in automotive cybersecurity by:
  - Supporting local companies to protect them from cyber threats.
  - Positioning local companies to be compliant under the new ISO Standard on automotive cybersecurity.
  - Increasing local educational and training opportunities.
  - Sponsoring/attending conferences and
  - Creating a Cyber Range for critical infrastructure (border crossings).

**Electrification**
- Global shift to zero-emission vehicles (ZEVs) due to emission regulatory requirements, technology (especially CAVs), consumer acceptance, oil prices.
- Canada investing $300M (over 3yrs) on purchase incentives for eligible ZEVs and $130M (over 3yrs) on Electric Vehicle and Alternative Fuel Infrastructure Deployment.
- APMA announces “Project Arrow” - 100% Canadian-made ZEV Design Contest.

**Initiatives Underway:**
- University of Windsor’s CHARGE Lab is world-class research and innovation in the area of electric vehicle engineering.
- Partner with PEM Motion (Germany) to establish Canada’s first-ever ramp-up factory (WEM Motion Automobility Hub).
Miovision is scheduled to deploy approx. 1000 Smart Traffic Intersections in Detroit.

Deployment of Miovision TrafficLink Platform equipment in Windsor will better:

- better understand traffic flow between Detroit and Windsor
- identify opportunities for improving efficiencies
- extend Michigan’s Smart Corridor into Canada

Results to Date:

- Miovision Smart Traffic Equipment installed in Windsor on Canada’s busiest trade corridor (Huron Church Road) with access to traffic data, dashboards and reports.
- Discussions underway with the City of Windsor to deploy more between both border corridors.
- Utilize City of Windsor open data portal to share value data with researchers and SME’s looking to propose solutions to improve traffic flows through border corridor.
- Worked with Miovision to host a challenge at Winhacks 2020 – first Mobility Hackathon in the region where students utilized data to propose travel time challenge solution.
- Ongoing efforts to identify complimentary V2X solutions that will work with Miovision technology to support C/AV tech development.
Miovision - Bringing connectivity, cameras and AI to the intersection to help cities improve traffic flow, reduce emissions and enhance citizen experience.
Using Data for Impact

Transportation Planning
Traffic Operations
Congestion Mitigation
Traffic Safety
Smart City
Growth of Sensor Networks & Structured Data

Explosion of Connected Sensors

Explosion of Structured Data
Our Vision - The End Result

Status Quo
Unconnected Hardware, Narrow Capabilities, Not Extensible

Unconnected Intersections
Individually re-timed every 3-5 years. Minimal sensor investments.

Proprietary Local Network Connected Intersections:
Connected locally and synchronized at limited scale

Miovision - Connected City
The Power of And

Data-Driven Intersection Ecosystem:
Miovision’s open platform allows external developers to create specialized applications, bolstering smart intersection capabilities

Fully Connected Smart City:
The ultimate IoT-powered “end-state”. Traffic signals communicate with connected entities in other parts of city infrastructure. Data fuels initiatives ranging from emergency response to vehicle-to-intersection (V2I) communication for connected & autonomous vehicles
Turning Video into Data
Split Performance Measures

Split Failures → Split Trends

**Split Failures (GoR and RoR5 > 80%):** Indicates Split Failures.

**Heavy Traffic (60% < GOR and ROR5 < 80%):** Highly saturated but not failing. Indicates a potential but not imminent problem.

**OK (Good) (GoR > 80%, low RoR5):** Indicates excellent Green Utilization.

**Random Arrivals (low GoR, RoR5 > 60%):** Random Arrivals of vehicles.

**Spare Capacity (both GoR and RoR5 are low):** Indicates excess capacity.
Split Performance Measures
Solving Split Failures
Questions

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