



**WindsorEssex**  
ECONOMIC DEVELOPMENT

**miovision**

**Partnering to Achieve Automobility**

*Windsor-Essex Economic Development Corporation  
& Miovision*

## DEFINITION

# automobility

au·to·mo·bil·i·ty | \ ˌ ɒ - t ō - m ə - ' b i - l ə - t ē

*the secure, zero-emission movement of people, goods and services using advanced information technologies.*



Auto Manufacturing

Automation

Automobility



# WINDSOR-ESSEX FRAMEWORK FOR ACTION: AUTOMOBILITY (CACyE)



## Connected

- A key catalyst for economic growth will be wireless connectivity, enabled by 5G deployment
- Over 1850 kilometres of fibre optic cable installed throughout the Windsor-Essex
- Average download speed in Windsor is 17.46 Mbps
- Top 10 cities in Canada average speed is 150 Mbps

### Initiatives Underway:

- Deployment of Miovision equipment is a good start to create a Region-wide Smart Corridors, with C-V2X technology
- Construction started on the world's technology-advanced Gordie Howe International Bridge
- ITS Canada will host its annual conference in Windsor in 2022



## Autonomous

- Windsor-Essex has the highest location quotient for automobility in Canada
- Windsor-Essex designated as one of six Regional Technology Development sites for CAVs, including VR CAVE
- FCA Padfica 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 collaboration program for automotive technology
- Discussions underway to establish bi-national academic linkages in mobility



## Cybersecurity

- Cybersecurity in the Automotive and Manufacturing Sectors is becoming increasingly critical
- Automotive industry is most vulnerable

### Initiatives Underway:

- Work under way to develop a coordinated strategy for Region to be Canadian leader in auto 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 3 yrs) on purchase incentives for eligible ZEVs and \$130M (over 5 yrs) 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 PBM Motion (Germany) to establish Canada's first e-vehicle ramp-up factory (WE Motion Automobility Hub)



## CROSS-BORDER TRAFFIC MONITORING

- 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.



A wide-angle street view of a city intersection, likely in San Francisco, showing tall buildings, trees, and a tram. The scene is captured from a low angle, looking down the street. The sky is overcast. The text "Miovision" is overlaid in the center of the image.

# Miovision

**Miovision - Bringing connectivity, cameras and AI to the intersection to help cities improve traffic flow, reduce emissions and enhance citizen experience .**

**miovision**

# Using Data for Impact



Transportation  
Planning



Traffic  
Operations



Congestion  
Mitigation



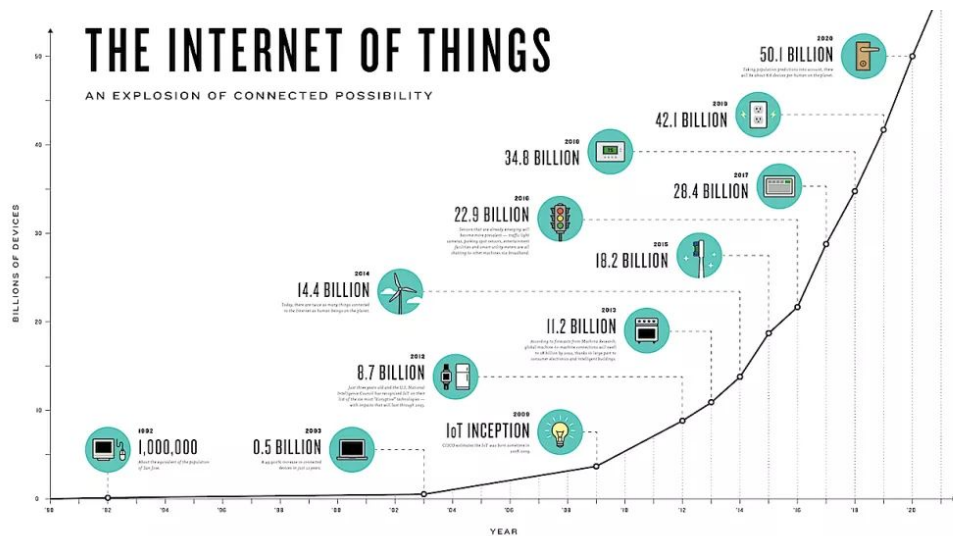
Traffic  
Safety



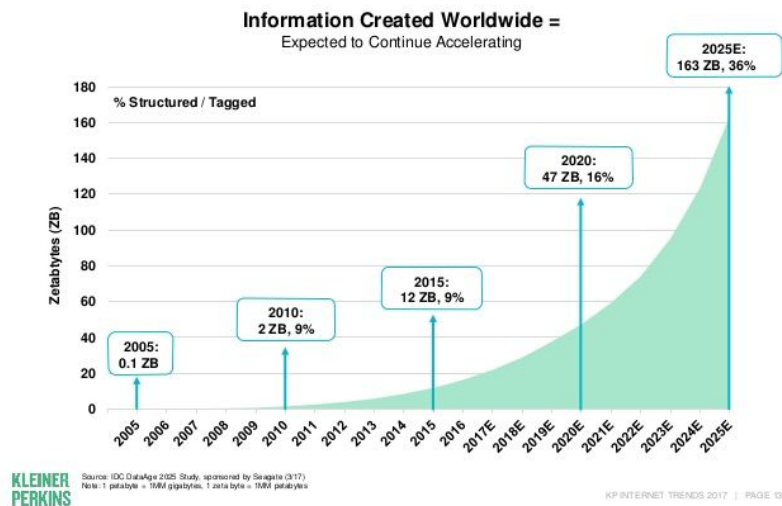
Smart  
City

# Growth of Sensor Networks & Structured Data

## Explosion of Connected Sensors



## Explosion of Structured Data





VS.







# Our Vision - The End Result

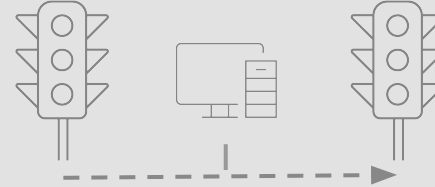
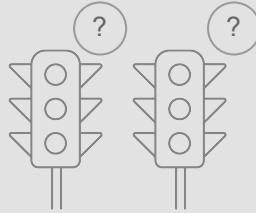
## Status Quo

Unconnected Hardware, Narrow Capabilities, Not Extensible

Incumbent

### 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

Innovation

### Data-Driven Intersection Ecosystem:

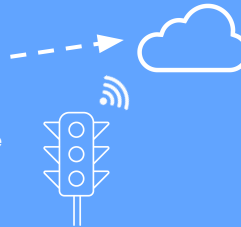
Miovision's open platform allows external developers to create specialized applications, bolstering smart intersection capabilities



App Developer



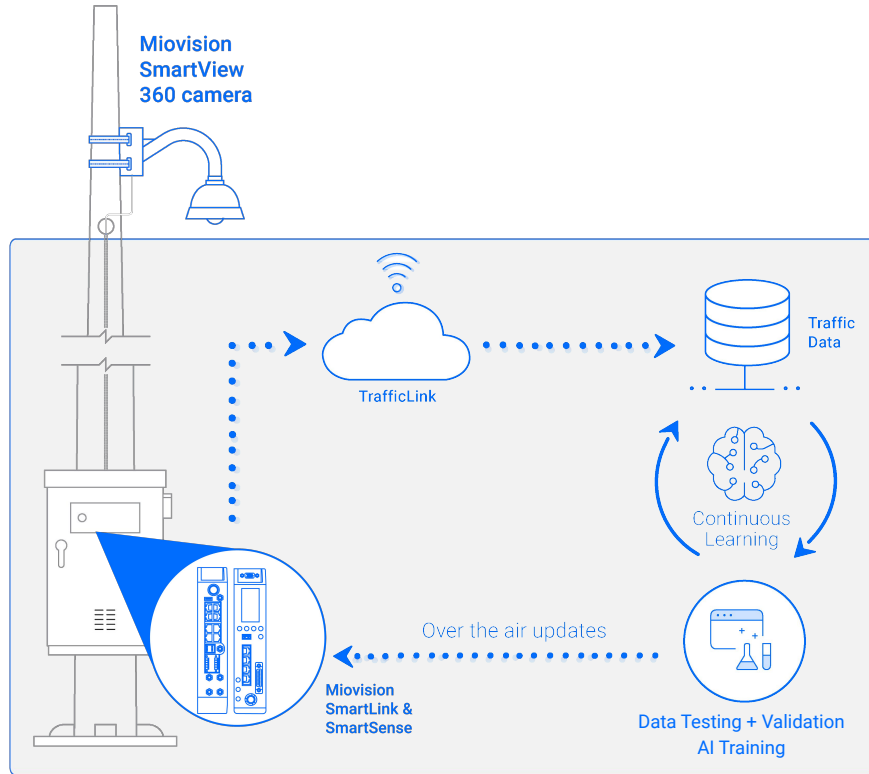
App Marketplace



### Fully Connected Smart City:

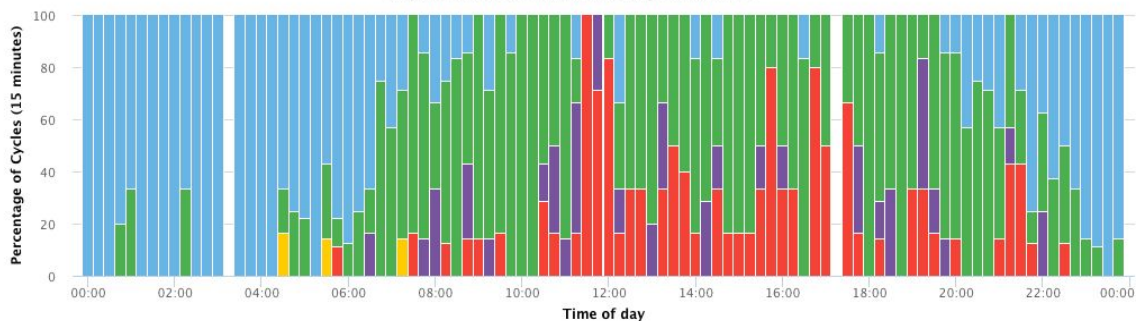
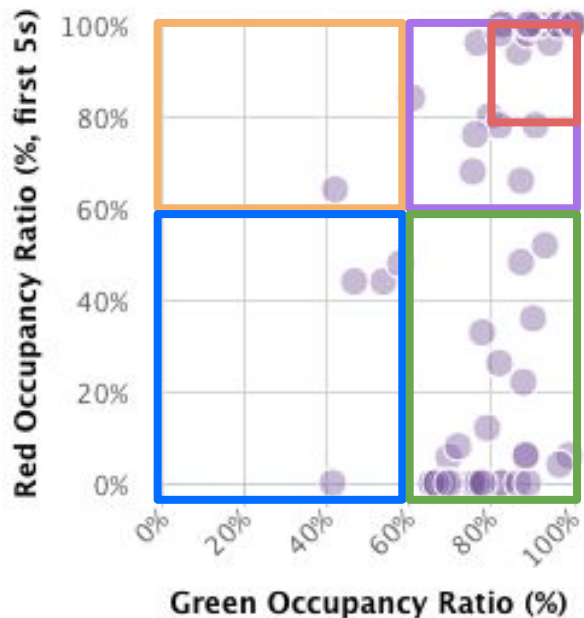
The ultimate IoT-powered "end-state". Traffic signals communicate with connected entities in other parts of city infrastructure. Data fuels initiatives ranging from emergency response to vehicle-to-intersection (V2I) communication for connected & autonomous vehicles

# 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.

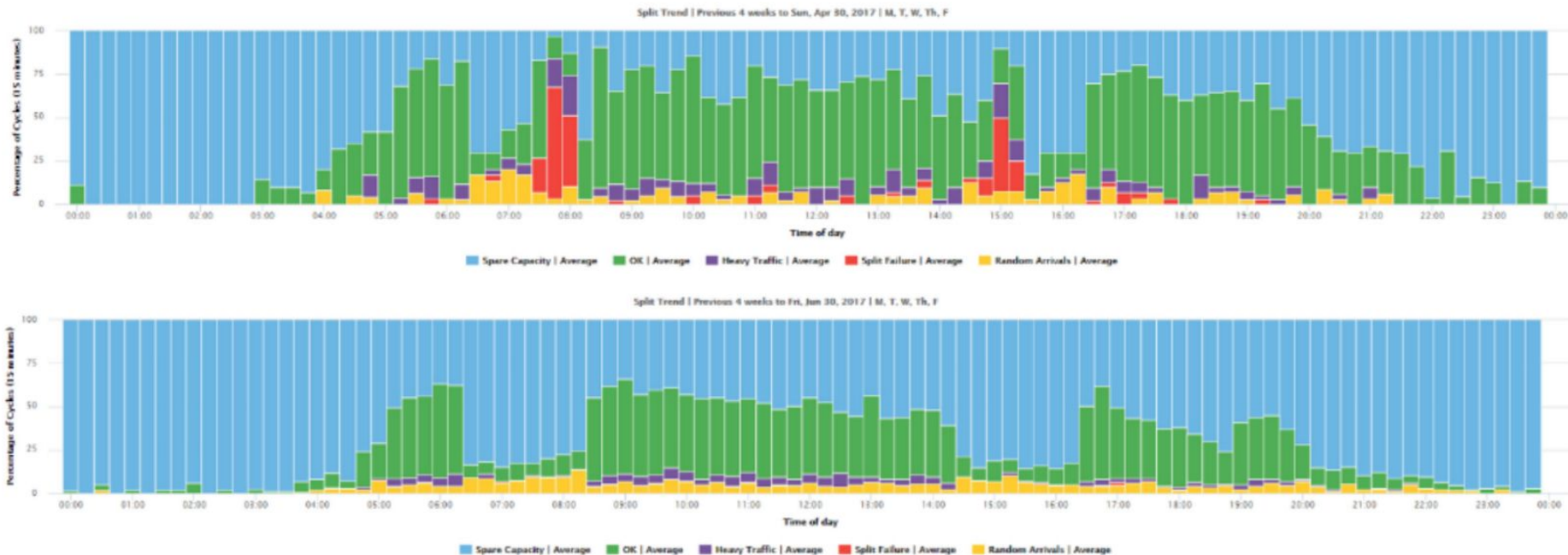
**Random Arrivals (low GoR, RoR5 > 60%):** Random Arrivals of vehicles.

**Spare Capacity (both GoR and RoR5 are low):** Indicates excess capacity.



# Split Performance Measures

## Solving Split Failures





# Questions



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