Vancouver’s Mobility Future:
“Automating” Policy into Sustainable Results
Vancouver City Council, January 30th, 2018

Presented by Dale Bracewell
Manager, Transportation Planning
Engineering Services
AUTOMATED + CONNECTED VEHICLES:
IMPLICATIONS FOR VANCOUVER & NEXT STEPS
Auto Industry Megatrends

- Automated
- Connected
- Electric
- Shared
Potential Benefits

• Improved safety
• Increased mobility options
• Fewer cars overall = More space for walking, cycling, transit, public realm
• Decreased emissions
• Complement mass transit with flexible, on-demand shared service
• Improved transportation planning tools through better data
• Increased productivity during commute time
Potential Risks

• More driving: Longer commutes and induced sprawl
• Worsened health: Decreased walking and cycling
• Reduced investment in mass transit
• Hacking & cybersecurity threats
• Loss of privacy
Potential Rate of Automated Vehicle Adoption

If autonomous vehicle implementation follows the patterns of other vehicle technologies it will take one to three decades to dominate vehicle sales, plus one or two more decades to dominate vehicle travel, and even at market saturation it is possible that a significant portion of vehicles and vehicle travel will continue to be self-driven, indicated by the dashed lines.

Source: Autonomous Vehicle Implementation Predictions Implications for Transport Planning, September 2017. Todd Litman, Victoria Transport Policy Institute
Space Required to Transport 48 People

Source: Cycling Promotion Fund
Foundation for Transportation in Vancouver
For all trips originating in the City of Vancouver.
2008 data source: TransLink Trip Diary Survey. Trips by commercial drivers (couriers, taxis, trucks, and bus drivers) not included.
City of Vancouver
Sustainable Mode Share Trends & Targets

For all trips beginning or ending in the City of Vancouver. Source: 2008, 2011 Translink Trip Diaries; 2013-2015 Panel Surveys, excluding recreational trips; Transportation 2040 mode share targets.
“Instead of adapting our cities to accommodate new transportation technologies, we need to adapt new transportation technologies to our cities in ways that make them safer, more efficient, and better places to live and work.”

-- Janette Sadik-Khan, Transportation Principal at Bloomberg Associates and NACTO Chair
Preparing for the Future of Mobility

1. Planning & Policy Development
2. Working with Others
3. Explore & Test Innovation
4. Planning for Resilience
5. Future Proof Parking & Civic Infrastructure
1. Planning & Policy Development

- Continue to advance municipal and regional objectives
- Council direction to advance ACES
- Internal working group
- Long range transportation planning
The City will change . . . How?
2. Working with Others

- Capacity-Building and Awareness
- Regional Coordination
- National and International Collaboration
2. Working with Others

- Regional Coordination
- National and International Collaboration
NACTO Blueprint for Autonomous Urbanism

Safety is the Top Priority

Mobility for the Whole City

Rebalance the Right-of-Way

Manage Streets in Real Time

Move More with Fewer Vehicles

Public Benefit Guides Private Action
3. Explore & Test Innovation

- Electric Vehicle Ecosystem Strategy
- Electric Bus Trial
- Shared Mobility
- SMART Cities
ELECTRIC VEHICLES – Current State

• Largest Municipal Electric Fleet In Canada
  o Across VPD, VF&RS, Parks, and Engineering services
    o 56 Light Duty
    o 33 Recreational and Construction
    o 53 Hybrid
3. Explore & Test Innovation

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<th>Service</th>
<th>Companies</th>
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<td>Taxi Services</td>
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% of adults who are car share members

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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<td></td>
<td>13%</td>
<td>20%</td>
<td>26%</td>
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3. Explore & Test Innovation

Changing Gears: Exploring the car-sharing culture shift in Metro Vancouver

January 2018

Highlights

- 26% of survey respondents have disposed of at least one private vehicle to car-share
- 40% have avoided acquiring a private vehicle due to car-sharing preference
- As many as 5% of all moving autos are car-share vehicles in some Vancouver neighbourhoods

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3. Explore & Test Innovation

- Electric Vehicle Ecosystem Strategy
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4. Planning for Resilience

#ResilientCities

We are 100 Resilient Cities

Learn what that means for you.
5. Future-Proof Parking & Civic Infrastructure

- District Parking
- Design for Flexibility and Adaptability
PEOPLE-MOVING CAPACITY: Vancouver Urban Transportation Modes
(in persons per hour per direction - 3 metre lane width)

PRIVATE MOTOR VEHICLE
700—1,100

REGULAR BUS
1,000—2,000

2-WAY PROTECTED BIKE LANE
2,000—3,000

B-LINE BUS
2,000—4,000

WEST COAST EXPRESS
3,000—5,000

SIDEWALK
5,000—6,500

SKYTRAIN
16,000—26,000

Typical private motor vehicle capacity on Vancouver arterial streets and potential capacities for walk, bike and transit.

January 2018
Vancouver Arterial Street

This street can serve up to 20,000 people per hour
People Moving Capacity in a Growing City - FUTURE

Vancouver Arterial Street

This street can serve up to 18,000 people per hour.
People Moving Capacity in a Growing City - FUTURE

Vancouver Arterial Street

This street can serve up to 42,000 people per hour.
Vancouver Arterial Street

This street can serve up to 50,000 people per hour.
People Moving Capacity in a Growing City - **FUTURE**

**Vancouver Arterial Street**

This street can serve up to **50,000** people per hour

(as compared to the present of **20,000** people per hour)
RE-IMAGINING OUR STREETS
Re-allocate road space as automated, connected, electric, & shared vehicles become real
• Fewer + narrower travel lanes
• Fewer on-street parking spaces
• More pick-up + drop-off spaces
• More space for civic priorities
• Smart infrastructure

RE-IMAGINING OUR STREETS
Re-allocate road space as automated, connected, electric, & shared vehicles become real
Bringing It All Together

- Automated
- Connected
- Electric
- Shared

Type of Vehicle

Mobility as a Service
Bringing It All Together

Automated

Connected

Electric

Shared

Type of Vehicle

Mobility Pricing

Mobility as a Service
WHAT IS MOBILITY PRICING?

The *It's Time* project is being guided by three key objectives:

- **Reduce traffic congestion** on roads and bridges across the Metro Vancouver region, so people and goods can keep moving, and businesses can thrive.

- **Promote fairness** to address concerns around the previous approach to tolling some roads and bridges but not others, as well as providing affordable transportation choices.

- **Support transportation investment** to improve the current transportation system in Metro Vancouver for all users.
Vancouver’s Future Mobility: Next Steps

1. Building Capacity & Awareness
   - Police, Fire & Rescue Services, Park Board
   - Preparing for operational testing/piloting

2. Long Term Planning & Resiliency
   - City Core 2050
   - Community Plans

3. Transportation Policy Development
   - Report back to Council in 2019 to clarify the City’s intention to accelerate innovation while achieving our City goals