CAR DEPENDENCY : TRENDS, CONSEQUENCES AND SOLUTIONS

Jérôme Laviolette
Ph.D. Student, Chaire Mobilité, Polytechnique Montréal
Transport & Climate Change Fellow, David Suzuki Foundation

MINING WATCH : TURNING DOWN THE HEAT
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OTTAWA

CONCEPT OF CAR DEPENDENCY

(1) Car-centric policies and planning

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(A) Popular culture

(B) Advertisement

CONCEPT OF CAR DEPENDENCY

Automobility : car dependent societies, cities and people

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(2) Development of a car culture : symbolism and positive image of the car

(A) Car-centric urban planning

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NEGATIVE CONSEQUENCE OF OUR AUTOMOBILITY SYSTEM

Environment & climate

Society and living spaces

Health & Safety

Economy and finances

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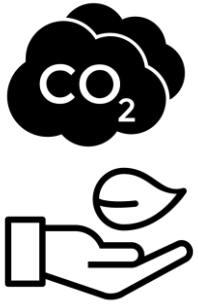

- GHG and air pollution
- Non-renewable ressource extractions
- Lost of fertile lands

Society and living spaces

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20 to 40 % of our cities are paved

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Society and living spaces

- Most inequitable mobility system
  Ex : social exclusion
- Road & parking space (heat island effect, barrier effects, lost of natural spaces, etc.)
- Parked car = opportunity cost
- Lost of quality of life due to traffic for all

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- Number of car accidents = f(vkt)
- ↓ physical activity & ↑ Obesity
- Respiratory & other health problems
- Stress and depression from traffic and noise pollution

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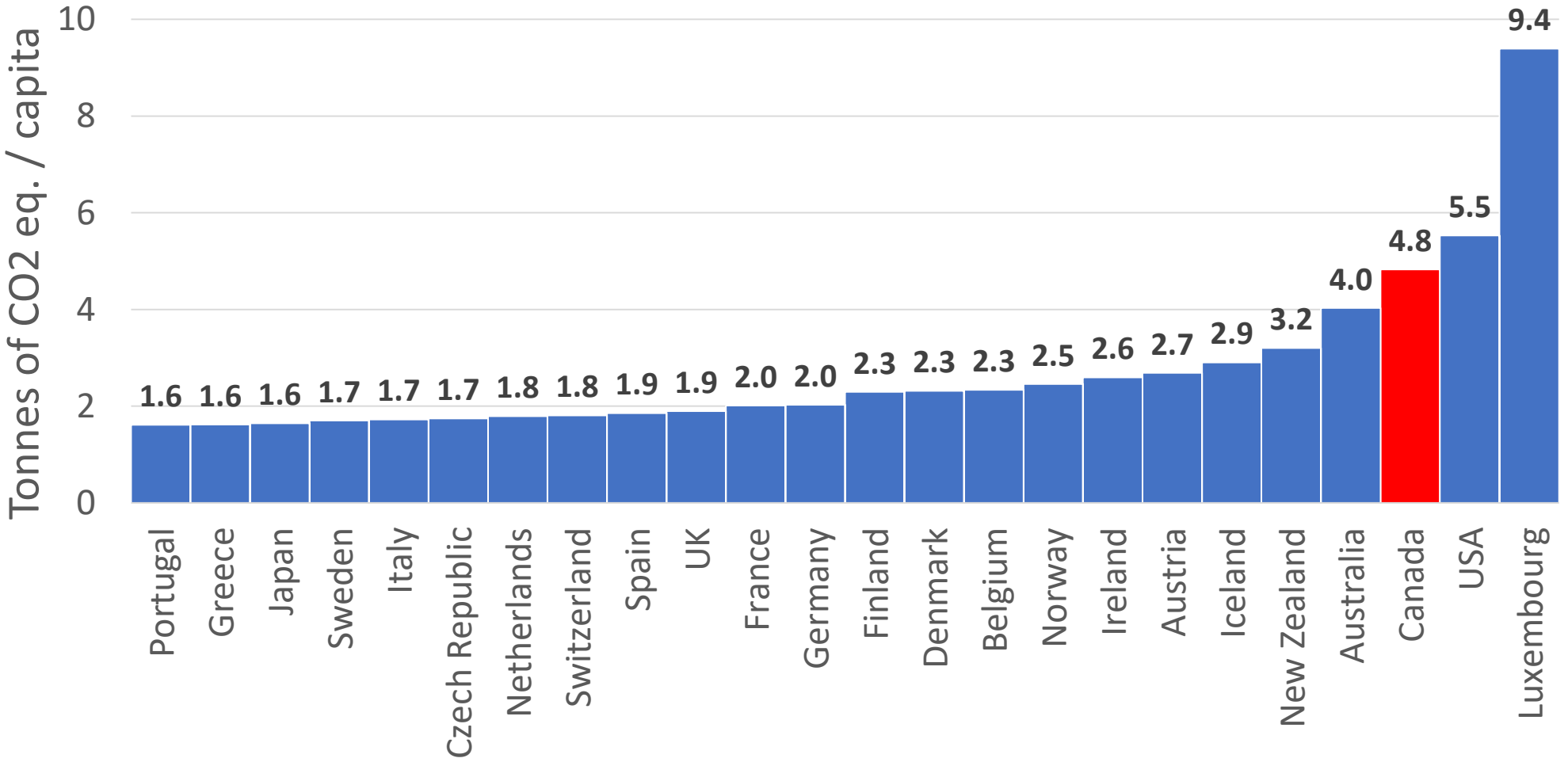
Economy and finances

- In Quebec : commercial deficit
- VERY High cost of congestion
- Household budget : 2nd expenses after housing
- Infrastructures deficit = ↑ in cost for gov.
- Increased health cost & more

CANADA : TOPPING THE CHART FOR TRANSPORT GHG EMISSIONS / CAPITA



Source : OECD data (2019)

MOBILITY SOLUTIONS : THE NEED FOR GLOBAL IMPACT ASSESSMENT

Move more **PEOPLE** (and goods) NOT more vehicles.

Improve the **quality of life** and mobility for all
WHILE minimazing collective impacts

- Identify relevant indicators
- Correctly assess the impacts of potential solutions

CAR OWNERSHIP TRENDS IN CANADA : 2000 TO 2017

Population : + 20 %
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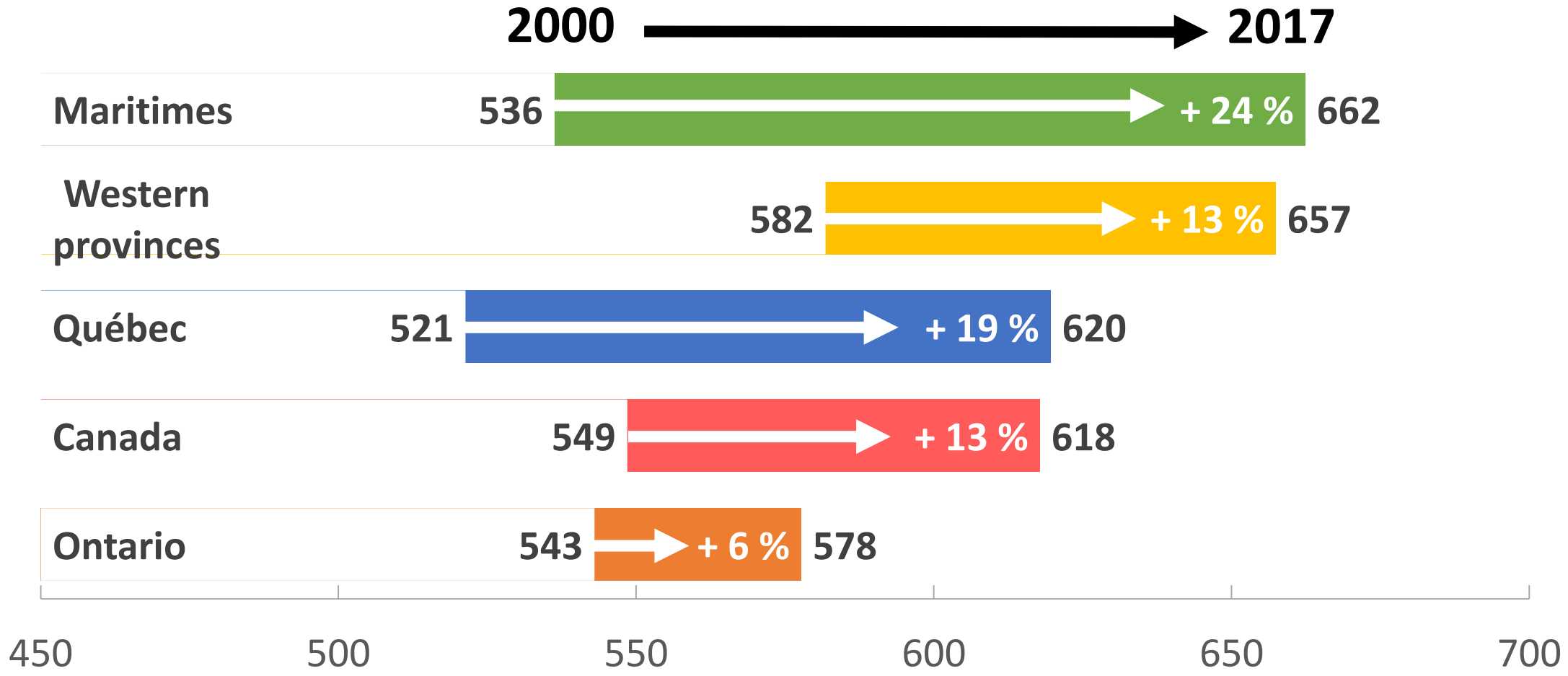
Car ownership rates in number of licensed vehicles (<4500 kg) / 1000 people



Source : Statistique Canada (2018)

CAR OWNERSHIP TRENDS : LARGER AND HEAVIER

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- **Taking up more space when moving = WORSENING TRAFFIC**
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(Average for QC Fleet, 2016)

8.4 l/100 km

10.8 l/100 km

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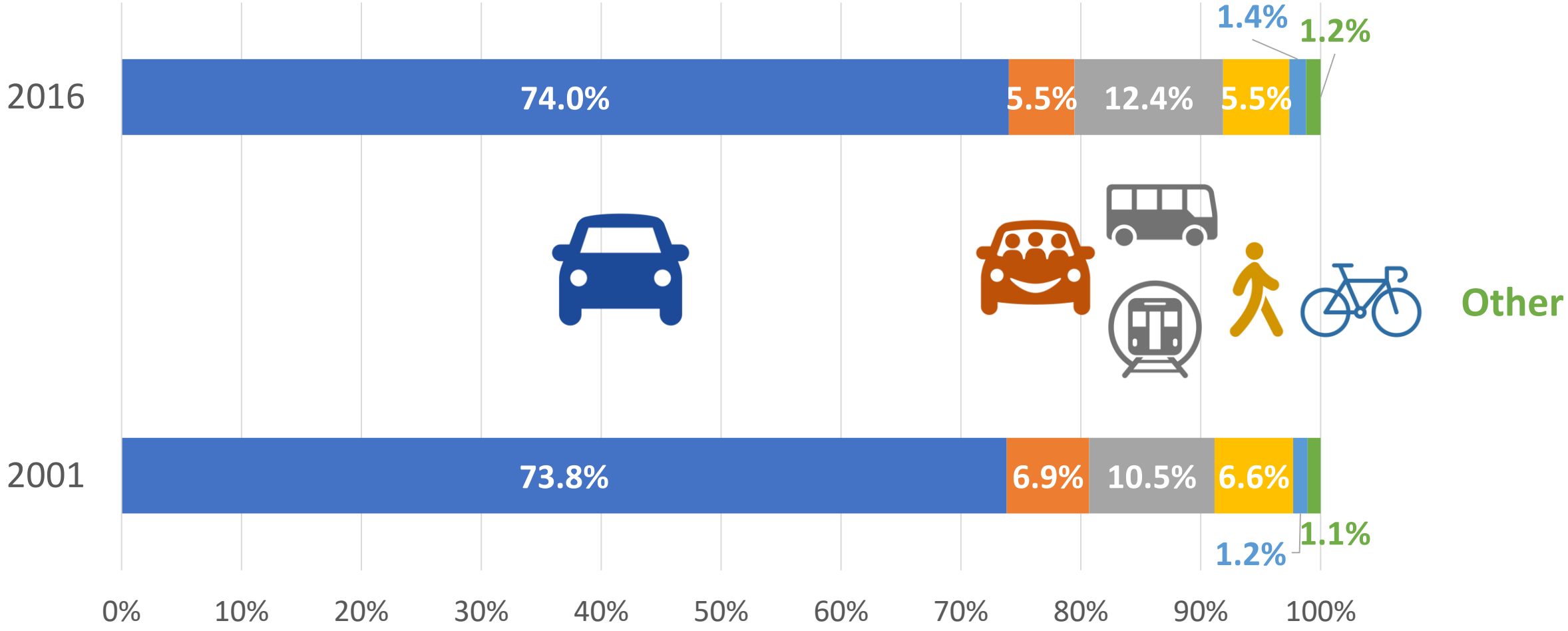
MOBILITY TRENDS : COMMUTING MODE SHARE IN CANADA



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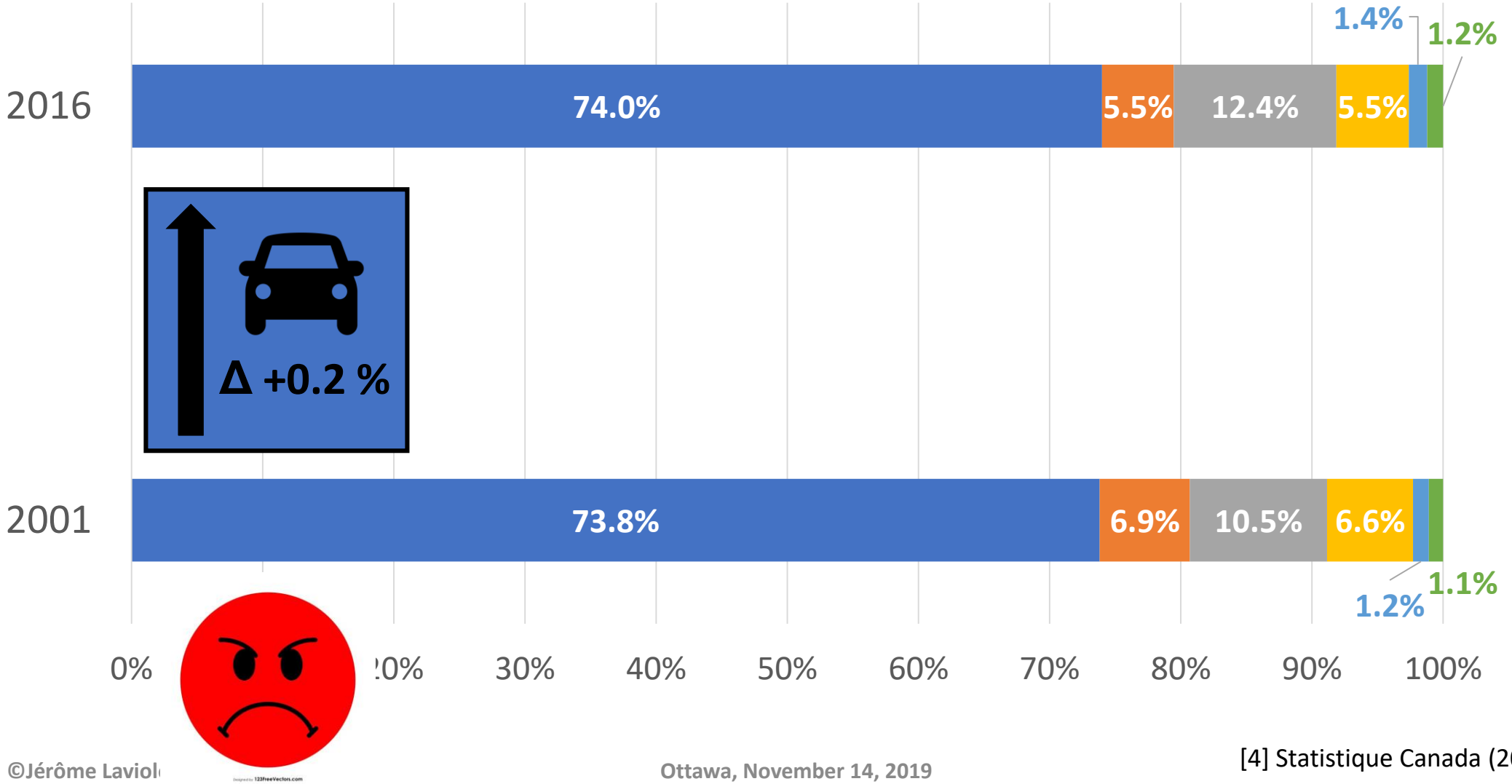

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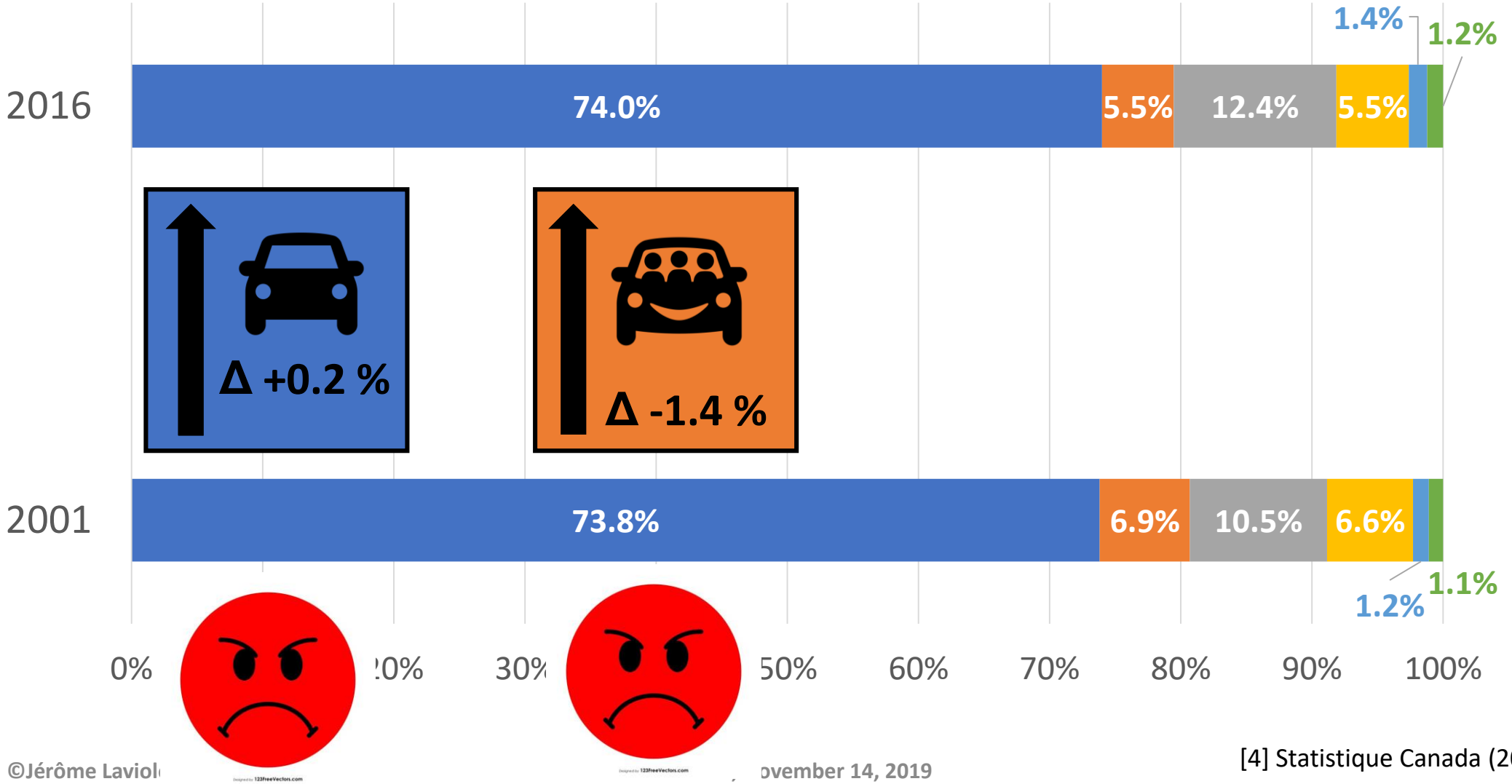

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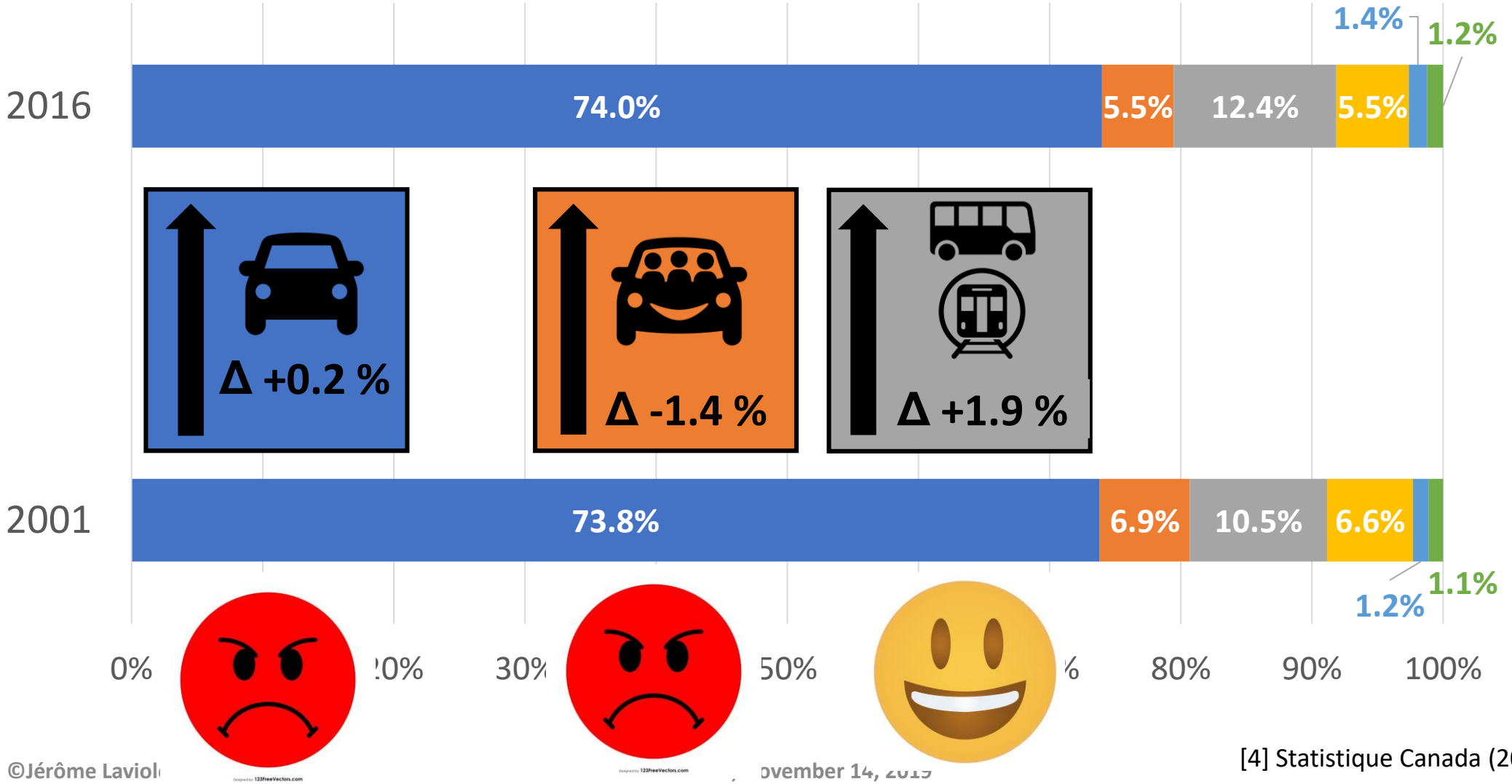

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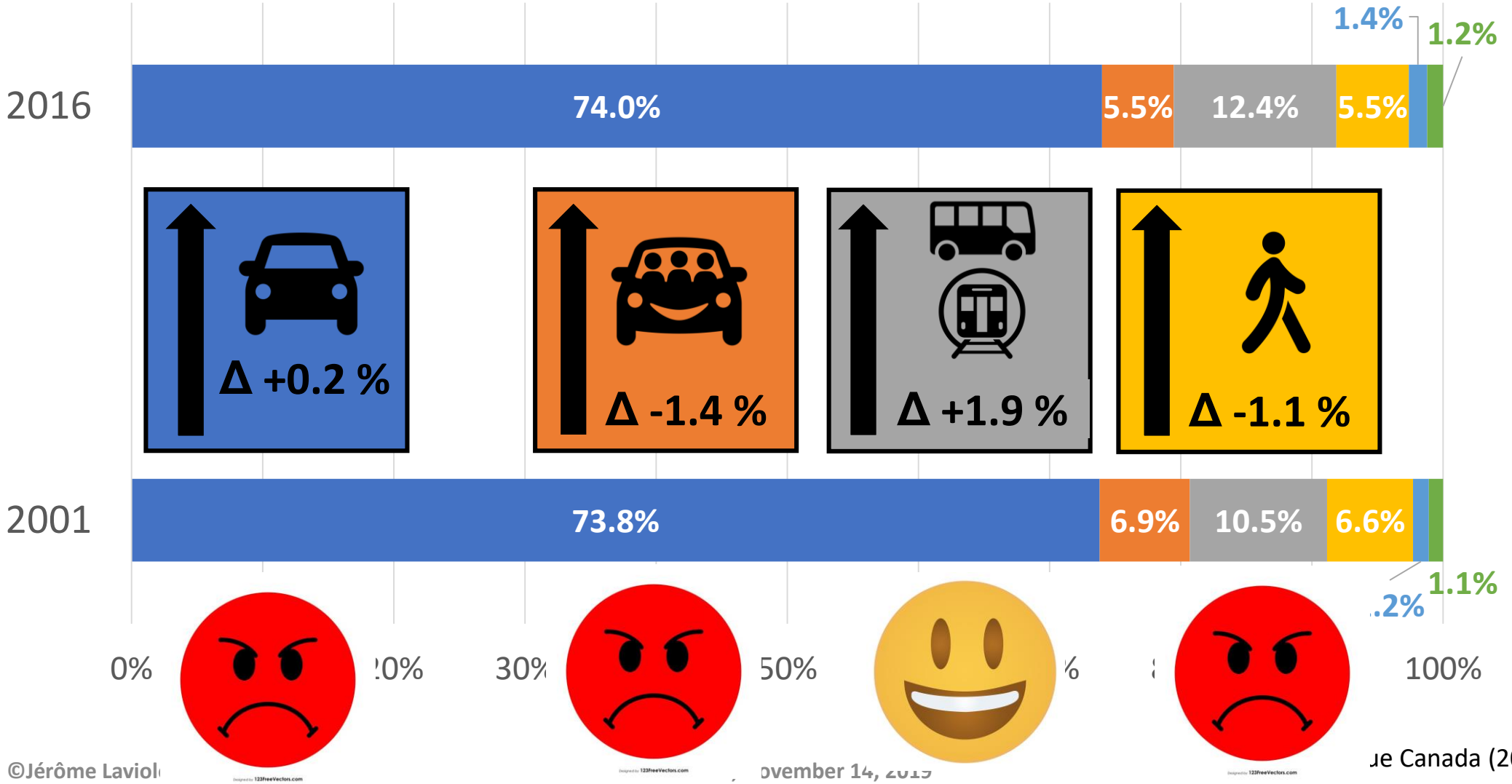

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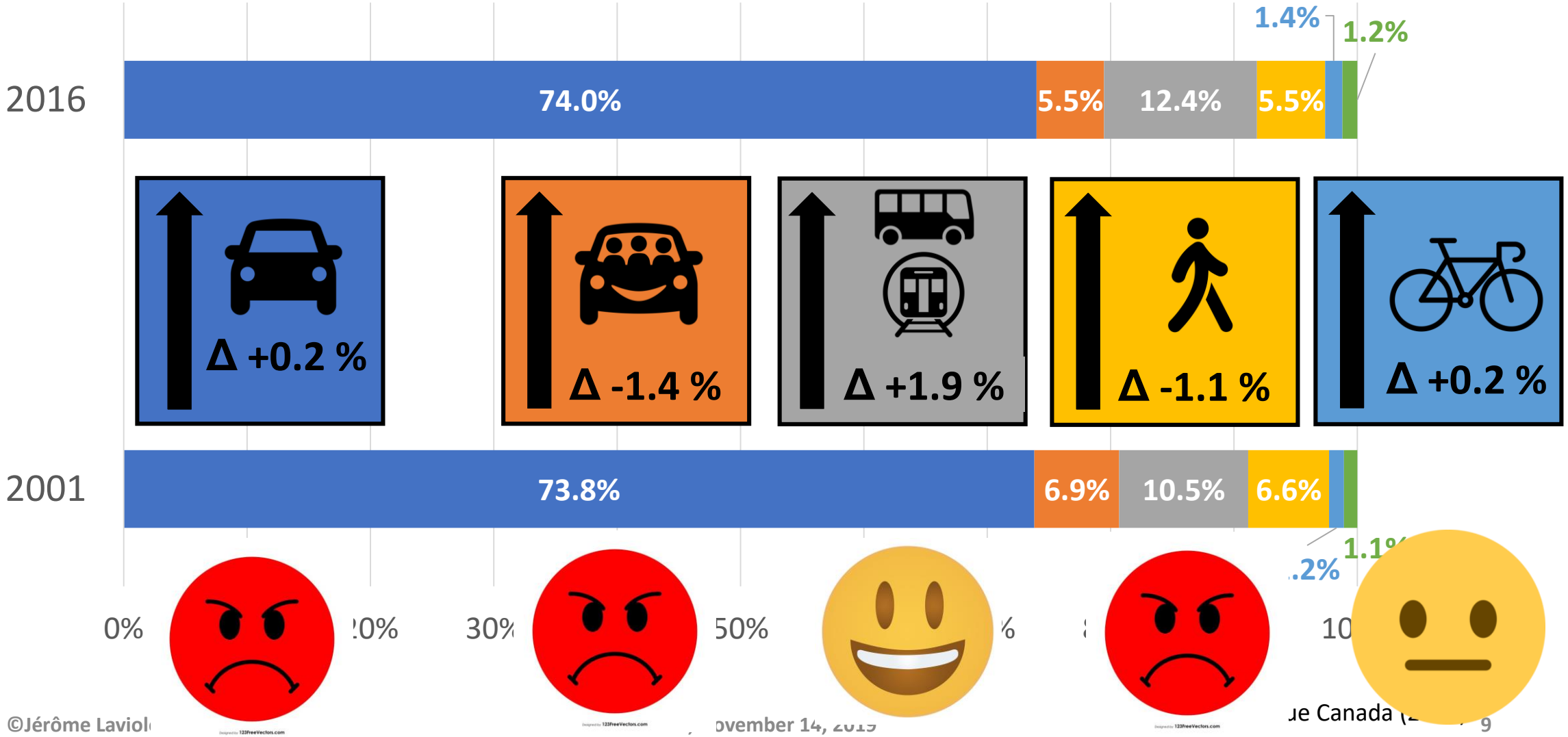

OTHER PROBLEMATIC NUMBERS

Based on estimation by Polytechnique Montréal's Chaire Mobilité
with OD-Survey data :

- **25 %** of all vehicles in the Greater Montreal area are not used during an average weekday
- Vehicles spend **95 %** of their time parked
- Vehicles are carrying a LOT of empty seats: ONLY **22 % of seats** **are occupied.**

Avg. occupation rates
(Montreal area)

6h-9h	**1.12**
9h-12h	1.22
12-15h	1.20
15h-18h	**1.16**
18h-21h	1.28
21h-24h	1.12

OUR BEST SOLUTIONS

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- **SHOULD BE BASED ON COLLECTIVE IMPACTS, NOT INDIVIDUAL FREEDOM** – Take into account individual choices but prioritized solutions with greater collective impacts

FUNDAMENTAL HIERARCHY OF COLLECTIVE SOLUTIONS

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1.REDUCE

TARGET : Reduce TOTAL Vehicle-km travelled (VKT)

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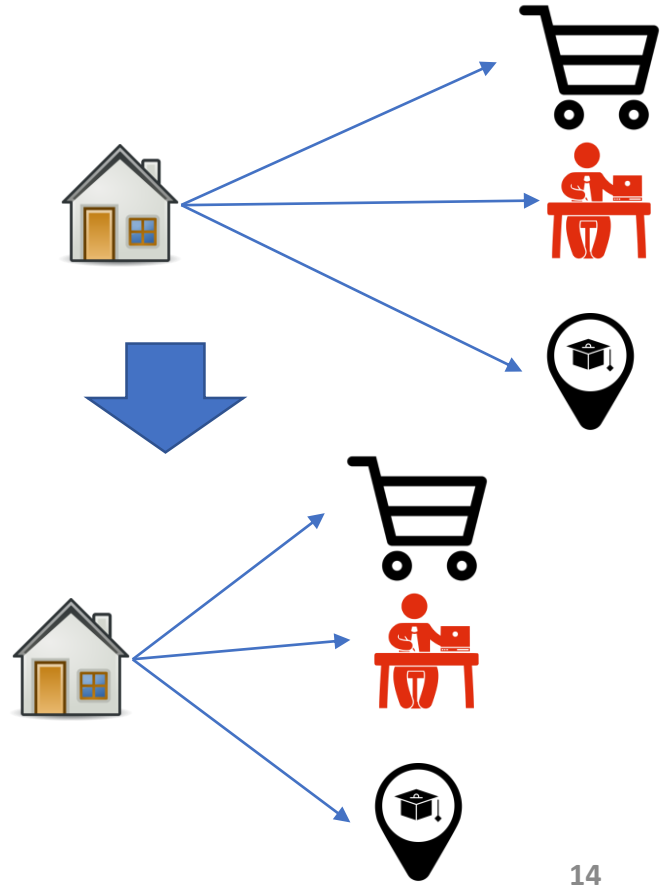
3.IMPROVE

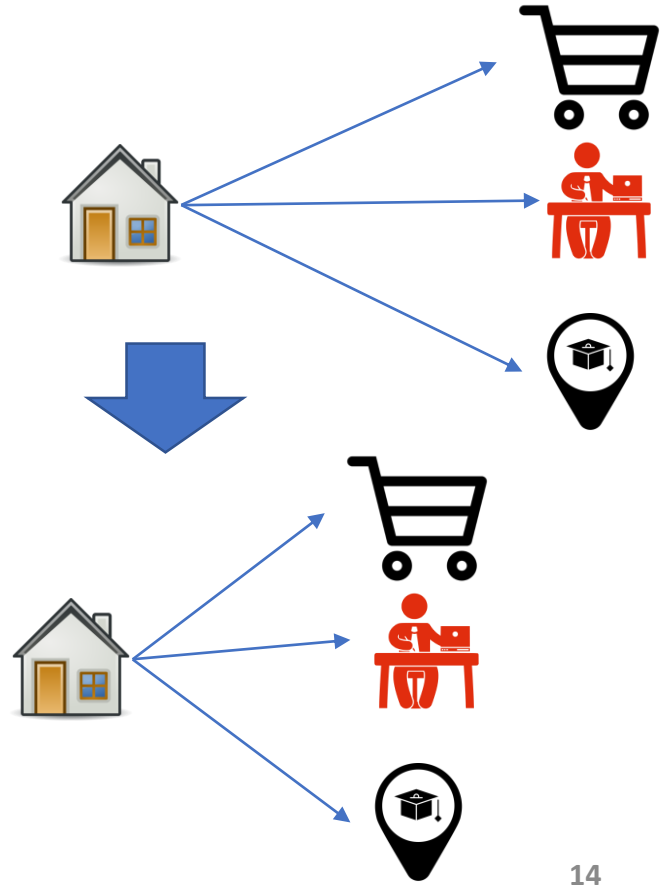
TARGET : Reduce the impact of each VKT

1. SOLUTIONS FOR REDUCING VKT



1. SOLUTIONS FOR REDUCING VKT

Solution : Reduce travel distance



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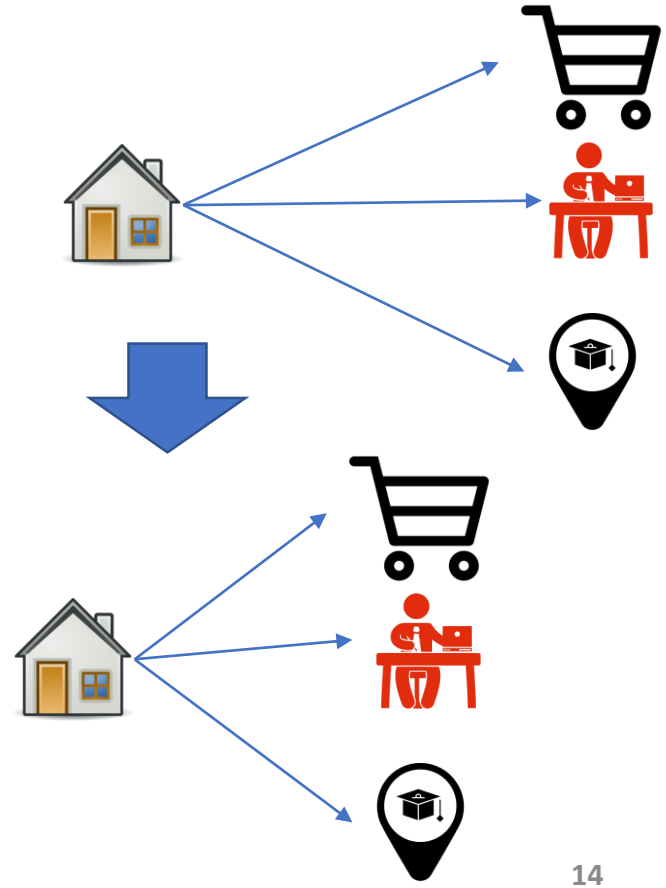
Solution : Reduce travel distance

Policy Instrument : Integrated land-use planning

- Build based on the 5 D'S : density, design, distance to destination, distance to transit and diversity (mixity of use)
  - → SET minimums
- Transform current neighborhoods
- Limit sprawl through legislation and green belts
- Social housing



1. SOLUTIONS FOR REDUCING VKT

Solution : Reduce travel distance

Example of information & regulatory instrument :

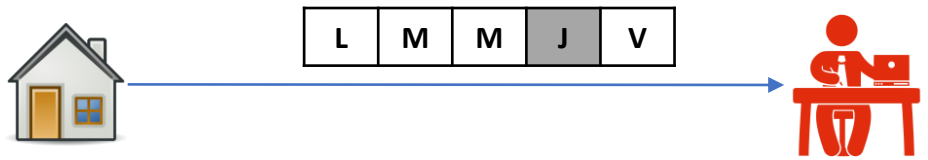
- Better integration of transport cost in mortgage evaluation
- Provide information on real cost of living considering the need for a second car and additionnal travel time
- Promote urban & dense neighborhood lifestyles
- Promote local shopping

1. SOLUTIONS FOR REDUCING VKT

Solution : Reduce the number of trips

Regulatory & Information instruments to encourage :

- Teleworking (1/5 days)
- Distance learning
- 5 days in 4



Through workplace and schools mobility plans

2. SOLUTIONS FOR SHIFTING TO ACTIVE TRANSPORT

Solution : Improve active transport attractivness

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- Workplaces : showers, indoor bike parking, etc.

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This could save 5.7 millions motorized km travelled / day.

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Regulatory and information instruments :

- Cycling awareness and promotion campaigns
- Workplace active mobility plans and rewards
- Cycling training at school
- Kilometric Allowance for biking to work
- Cycling to shop « passport » and discounts

2. SOLUTIONS FOR SHIFTING TO PUBLIC TRANSPORT

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- **Improve accessibility** : proximity, quality, safety, etc.
- **Reduce waiting time (real & perceived)**
  → Improve frequency (10 min MAX)
  → improve safety & quality of bus stops
- **Vehicle time** → time valorisation, improve confort
- **Reduce correspondances** → changing mode/line = HUGE perceived time penalty
- **Provide real time information** → trip planning & schedule
- **Payment** → better integration, simplified fares, social fares
- **Efficency & reliability** → REMOVE bus & trams from car traffic : bus lanes, transit priority signals
- **PROMOTE any bonification of existing service** → Encourage people to switch to PT

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9 passenger in a bus = same fuel consumption then a car with 1.2 pers. onboard

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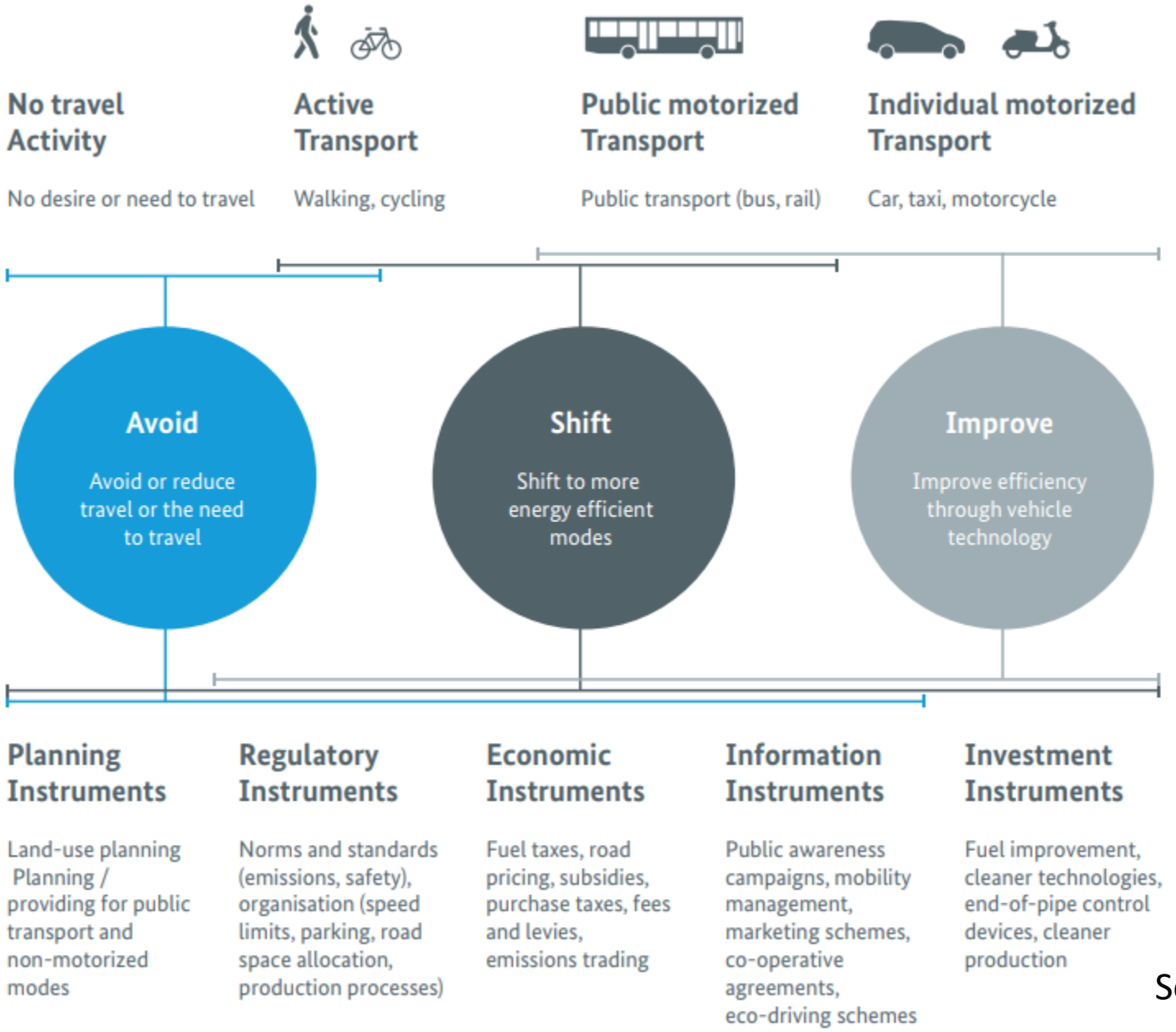
- **Favor low-emissions/zero-emissions vehicles :**
  - Additionnal sales tax based on emission levels
  - Low-emissions/zero emission zones in central districts



Source : SUTP (2019)

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  - Activity location : planning for minimizing transport needs
  - Optimize space-time organization of our cities

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  - Travel Demand Management. Ex: kilometric tax

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  - Sell the benefits
  - Adopt controversial policies in stages

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- **Packaging :** policies & strategies need to complement each other
- **Specific policies** need to be tailored to each city and region
- **Engaging stakeholders** through large coalitions to build political support for policy change is crucial

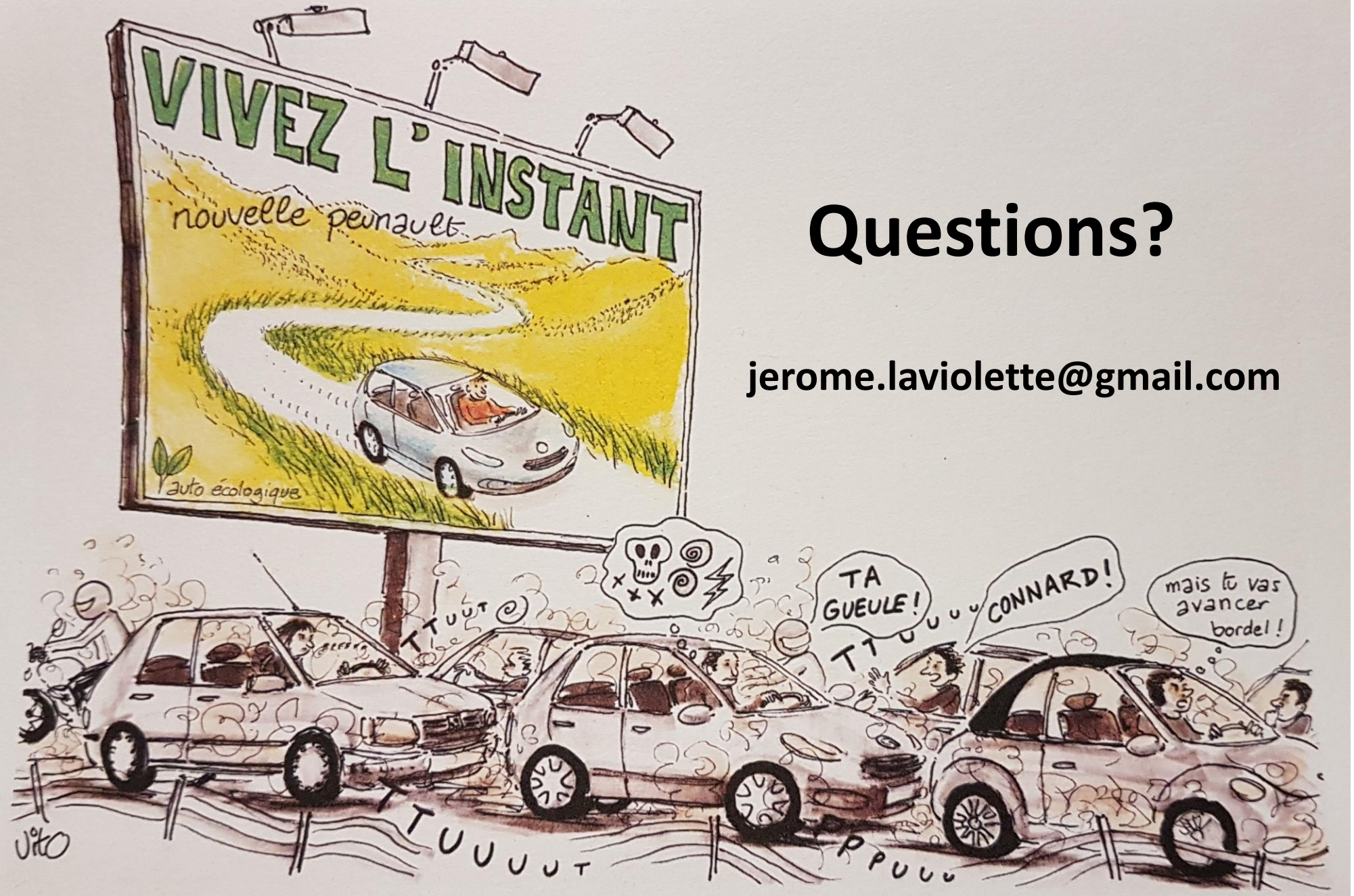
IN SUMMARY

A few things to remember :

- **There is no miracle solutions :** change will happen by working on all fronts to change the system and achieve sustainable mobility goals
- **Packaging :** policies & strategies need to complement each other
- **Specific policies** need to be tailored to each city and region
- **Engaging stakeholders** through large coalitions to build political support for policy change is crucial
- **Selling a new narrative : iniating a culture change**
  - Limit the impacts of car advertising
  - Promote sustainable mobility and sustainable lifestyles efficiently

PROMOTING SUSTAINABLE MOBILITY & LIFESTYLES EFFICIENTLY

PHOTO BY COLLECTIVITÉS VIABLES (LEFT) AND BY MODACITY (RIGHT)



Questions?

jerome.laviolette@gmail.com

RÉFÉRENCES (3)

RÉFÉRENCES POUR LES DONNÉES STATISTIQUES

Calculs par Jérôme Laviolette en décembre 2018 et octobre 2019.

Sources des données :

Parts modales des déplacements domicile-travail. Ensemble du Québec. 2001-2006-2016 :

- Statistique Canada. (2017). Produit numéro 98-400-X2016322: Principal mode de transport pour la navette (20), durée du trajet domicile-lieu de travail (7). Tiré de lien.

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