

Road Safety Research and What it Tells Us

National and International Data and Decade of Action

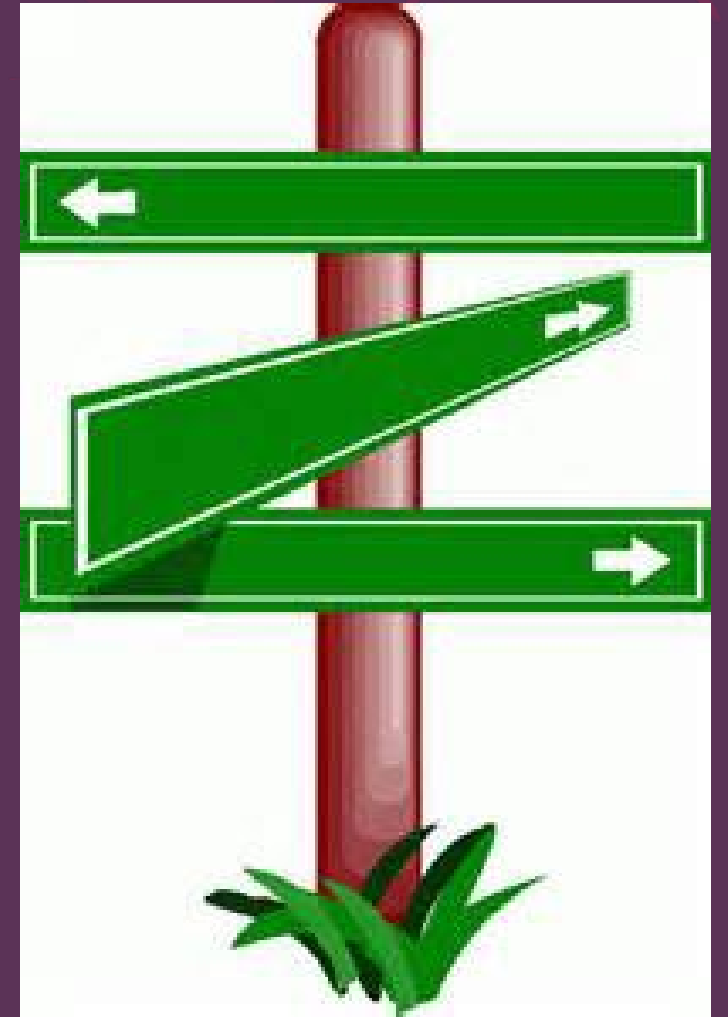
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CCMTA Education Sessions

Monday June 3, 2024

Agenda

- Road Safety Data
- International Road Traffic Database (IRTAD)
 - Global Safety Reports
- UN Decade of Action for Road Safety 2.0
- Canada's current standing



Canada, 2021

- Over 1 million kilometres of roadway
 - 415,600 are paved
 - 17,000 kilometres are expressways
 - National Highway System is 38,000 kilometres
- Crashes
 - 1,630 fatal crashes, with 1,768 victims
 - 77,933 injury crashes with 8,185.3 seriously injured
- Population
 - 38.3 Million People
 - 90% live within a 100 kilometres of US border

Crash Data

- Road transportation is a key economic, social and safety challenge which must be assessed in various ways
- Collision data is important for tracking the health of the road network and the safety of road users
- Sources of crash data
 - Police Reported – often reflecting the most serious
 - Self Reported
 - Insurance Reported

Crash Data...

- Data usage
 - Collision data is used to track fatalities and injuries
 - Identify road safety challenges including user behaviours, dangerous locations or unsafe vehicles
 - Provide valuable data for public policy and legislation
 - Support the development and monitoring of Road Safety Strategies
 - Provide data to internationally organizations (WHO, UN)
- Data used to populate the NCDB On-line [National Collision Database Online 1.0 - Transport Canada](#)
 - Only reports limited data common elements
 - Data only presented nationally

Crash Data Challenges

- Incomplete national data due to lack of collection or reporting
- Timeliness of the data
- Difficult to understand
- Detailed crash investigations (TC Teams) are expensive
- Attempts are underway to develop a NCDB estimation model to be able to provide useable timely, national data

Exposure Data

- Measures exposure to risk and is important to better understand road safety challenges
- Many ways to estimate exposure
 - Fuel sales
 - Population size
 - Vehicle counts on roads or highway (AADT)
- Typically, they are gross estimates of exposure
 - Not broken down by vehicle types, road users
 - Difficult and expensive to collect

Exposure Data...

- 2000 to 2010 Statistics Canada oversaw collection
- Subsequently Transport Canada used data collection devices in four provinces
- CCMTA developed a model to estimate exposure
- Newer technologies offer opportunities to update exposure data
 - Cell phones
 - Navigation systems
 - Streetlight Mobility Data [Why StreetLight: Our Data - StreetLight Data](#)

Impaired Driving Data

- Impaired driving data has been important in the development of *Criminal Code of Canada* and driver improvement programs
- Alternative Data Collection
 - Fatality Database monitors Coroners and Medical Examiner data
 - Roadside nighttime, daytime and commercial vehicles surveys
 - Currently under review
 - Single nighttime run off road surrogate for impaired driving crash

Other road safety data sources

- Telephone surveys
 - CCMTA recently completed one
 - Special topic surveys
- Observation Surveys
 - Cell phone use
 - Impaired driving
 - Seat belts
- Naturalistic Driving Studies
 - Technologies are making these cheaper and easier

International Road Traffic and Accident Database (IRTAD)

History

- Began in 1988 by German's Federal Institution for Roads responding to demands for international comparison data
- Currently operated by the International Transport Forum (OECD)
- Compiles and analyzes global crash data to support policy development
- Supports the development of road safety observatories in developing world

Data Elements

- Crash data
 - Fatalities, injury crashes, hospitalized, injuries by
 - road type (motorways, urban roads, rural roads)
 - road user (pedestrians, cyclists, car occupants, others)
 - Age, gender, seat position in the car
- Exposure data
 - vehicle-kilometres, modal split vehicle fleet, by type of vehicles
- population
- driving licences
- Other safety data
 - seatbelt wearing rates
 - helmet wearing rates

OECD databases

- Reports data by country members
- Contains a number of types of data
 - Road collisions (deaths and injuries due to road crashes) (IRTAD)
 - Passenger transport (inland passenger movement)
 - Freight transport (total movement of goods using inland transport)
 - Passenger vehicle registrations (new vehicle passenger registrations)
 - Infrastructure investment (new infrastructure investment)
 - Infrastructure maintenance (public maintenance spending)

Global Status Report on Road Safety

- World Health Organization (WHO) responsible agency
- Overview of the state of road safety worldwide and promotes best practices
- American regional coordinator is Pan American Health Organization (PAHO)
- Each country has a National Data Coordinator (NDC)
- NDC oversees a committee to respond to the very detailed questionnaire

Global Status Report...

- Report often prepared in advance of a Global High Level Road Safety Meeting
- Addresses safety by region and by countermeasures
- Specifically identify best practices safety countermeasures
- Often the report contains a country profile
 - One-page standardized safety data for each reporting country

Canada

Population: 36 289 824 | Income group: High | Gross national income per capita: US\$ 43 660



INSTITUTIONAL FRAMEWORK	
Lead agency	Canadian Council of Motor Transport Administrators, Council of Ministers Responsible for Transportation and Highway Safety
Funded in national budget	No*
National road safety strategy	Yes
Funding to implement strategy	Partially funded
Fatality reduction target	Continual downward trend in fatalities over time (2016-2025)
SAFER ROADS AND MOBILITY	
Audits or star rating required for new road infrastructure	Partial
Design standards for the safety of pedestrians / cyclists	Yes
Inspections / star rating of existing roads	Yes
Investments to upgrade high risk locations	Yes*
Policies & investment in urban public transport	Yes
SAFER VEHICLES	
Total registered vehicles for 2015	23 923 806
Cars and 4-wheeled light vehicles	22 067 778
Motorized 2- and 3-wheelers	709 258
Heavy trucks	1 056 219
Buses	90 551
Other	0
Vehicle standards applied (UNECE WP.29)	
Frontal impact standard	Yes
Electronic stability control	Yes
Pedestrian protection	No
Motorcycle anti-lock braking system	No
POST-CRASH CARE	
National emergency care access number	Partial coverage
Trauma registry	Subnational
Formal certification for prehospital providers	—
National assessment of emergency care systems	No
DATA	
Reported road traffic fatalities (2015)	1 858* (70% M, 30% F)
WHO estimated road traffic fatalities (2016)	2 118
WHO estimated rate per 100 000 population (2016)	5.8

* A self-sustaining organization through membership fees and data services

† At many provincial and municipal levels of government

‡ Canadian Motor Vehicle Traffic Collision Statistics. Used within 30 days of crash

SAFER ROAD USERS*	
National speed limit law	Yes
Max urban speed limit	50 km/h
Max rural speed limit	50 - 100 km/h
Max motorway speed limit	80 - 100 km/h
Local authorities can modify limits	Yes
Enforcement	0 1 2 3 4 5 6 7 8 9 10
Predominant type of enforcement	Manual
National drink-driving law	Yes
BAC limit – general population	0.04-0.08 g/dl ^a
BAC limit – young or novice drivers	0.00-0.08 g/dl
Random breath testing carried out	Yes*
Testing carried out in case of fatal crash	All drivers tested
Enforcement	0 1 2 3 4 5 6 7 8 9 10
% road traffic deaths involving alcohol	30% [†]
National motorcycle helmet law	Yes
Applies to drivers and passengers	Yes
Helmet fastening required	Yes
Helmet standard referred to and/or specified	Yes
Children passengers on motorcycles	Not restricted
Enforcement	0 1 2 3 4 5 6 7 8 9 10
Helmet wearing rate	98% Drivers [‡] , 98% Passengers [‡]
National seat-belt law	Yes
Applies to front and rear seat occupants	Yes
Enforcement	0 1 2 3 4 5 6 7 8 9 10
Seat-belt wearing rate	95% Front seats [‡] , 89% Rear seats [‡]
National child restraint law	Yes
Children seated in front seat	Allowed in a child restraint
Child restraint required	— [‡]
Child restraint standard referred to and/or specified	Yes
Enforcement	0 1 2 3 4 5 6 7 8 9 10
% children using child restraints	91% [‡]
National law on mobile phone use while driving	Yes
Ban on hand-held mobile phone use	Yes
Ban on hands-free mobile phone use	No
National drug-driving law	Yes

* These data take into consideration subnational laws. A criteria is answered "Yes" if at least 80% of the subnational entities meet the criteria

^a National BAC limit is set at 0.08 g/dl. However, in practice all subnational entities have provided their own BAC limits that are reflected in the range above.

[†] Legislation requires probable cause to test drivers

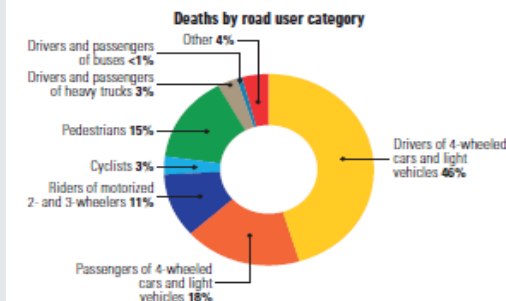
[‡] 2017, The Alcohol and Drug Crash Problems in Canada: 2014 Report, The Traffic Injury Research Foundation of Canada

[§] 2016, Police observation

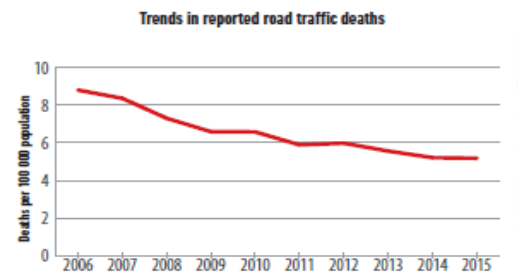
^{||} 2010, Results of Transport Canada's Rural and Urban Survey of Seat Belt Use in Canada 2007-2010

[¶] Child restraint laws are enacted at subnational level. While all provinces require the use of child restraints, they provide different age / height criteria to specify the period for mandatory use of child restraints / booster seats

^{||} 2010, Canada National Survey on Child Restraint Use, Completed for Transport Canada, in partnership with AUTOT21



Source: 2015, Canadian Motor Vehicle Traffic Collision Statistics



Source: Canadian Motor Vehicle Traffic Collision Statistics

Results from 2023 Report

- 84 countries have a dedicated road safety agency
- 117 have a national road safety plan
- Countries use general revenue or dedicated taxes to fund road safety programs
- Crashes are the leading cause of death for 5- to 29-year-olds and 12th for all people



Sustainable Development goals

- Developed in 2012 to replace Millennium Development goals (SDG)
- 17 major goals with a number of sub-goals
- Key goals for road safety are:
 - 3.6 Half the deaths and injury from traffic collisions
 - 11.2 Safe affordable, accessible and sustainable transport system
- Other related sub-goals



Specific Road Safety Goals

- SDG considered too large and complex for individual issues
- 2017 UN release 12 key goals specific to road safety
- Designed as a road map to a 50% reduction in deaths
- Canada's Road Safety Strategies address these issues (NSC)
- Work at CCMTA also important in pursuing these goals

Box 4: Global Voluntary Performance Targets for Road Safety Risk

Factors and Service Delivery Mechanisms, 2017

TARGET 1
2020



Target 1: By 2020, all countries establish a comprehensive multisectoral national road safety action plan with time-bound targets.

TARGET 2
2030




Target 2: By 2030, all countries accede to one or more of the core road safety-related UN legal instruments.

TARGET 3
2030



Target 3: By 2030, all new roads achieve technical standards for all road users that take into account road safety, or meet a three star rating or better.

TARGET 4
2030




Target 4: By 2030, more than 75% of travel on existing roads is on roads that meet technical standards for all road users that take into account road safety.

TARGET 5
2030




Target 5: By 2030, 100% of new (defined as produced, sold or imported) and used vehicles meet high quality safety standards, such as the recommended priority UN Regulations, Global Technical Regulations, or equivalent recognized national performance requirements.

TARGET 6
2030




Target 6: By 2030, halve the proportion of vehicles travelling over the posted speed limit and achieve a reduction in speed-related injuries and fatalities.

TARGET 7
2030



Target 7: By 2030, increase the proportion of motorcycle riders correctly using standard helmets to close to 100%.

TARGET 8
2030



Target 8: By 2030, increase the proportion of motor vehicle occupants using safety belts or standard child restraint systems to close to 100%.

TARGET 9
2030



Target 9: By 2030, halve the number of road traffic injuries and fatalities related to drivers using alcohol, and/or achieve a reduction in those related to other psychoactive substances.

TARGET 10
2030



Target 10: By 2030, all countries have national laws to restrict or prohibit the use of mobile phones while driving.

TARGET 11
2030



Target 11: By 2030, all countries to enact regulation for driving time and rest periods for professional drivers, and/or accede to international/regional regulation in this area.

TARGET 12
2030



Target 12: By 2030, all countries establish and achieve national targets in order to minimize the time interval between road traffic crash and the provision of first professional emergency care.

GLOBAL PLAN

DECADE OF ACTION FOR ROAD SAFETY 2021-2030

The **Global Plan** describes what is needed to achieve that target, and calls on governments & partners to implement an integrated

SAFE SYSTEM APPROACH



WHAT TO DO?

HOW TO DO IT?

WHO TO DO IT?

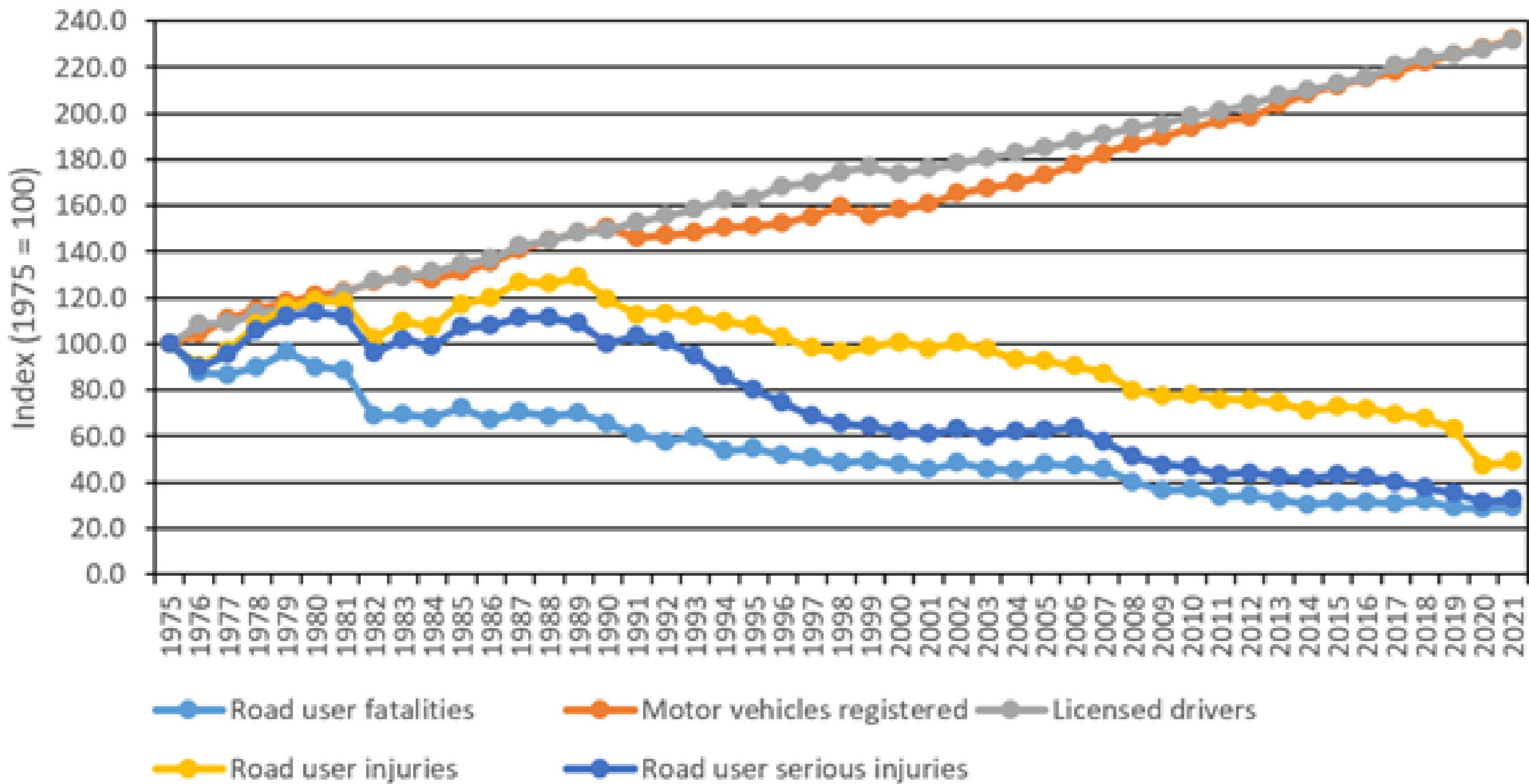


UN General Assembly Resolution 74/299 declared a **Decade of Action for Road Safety 2021-2030**, with the target to reduce road traffic deaths & injuries

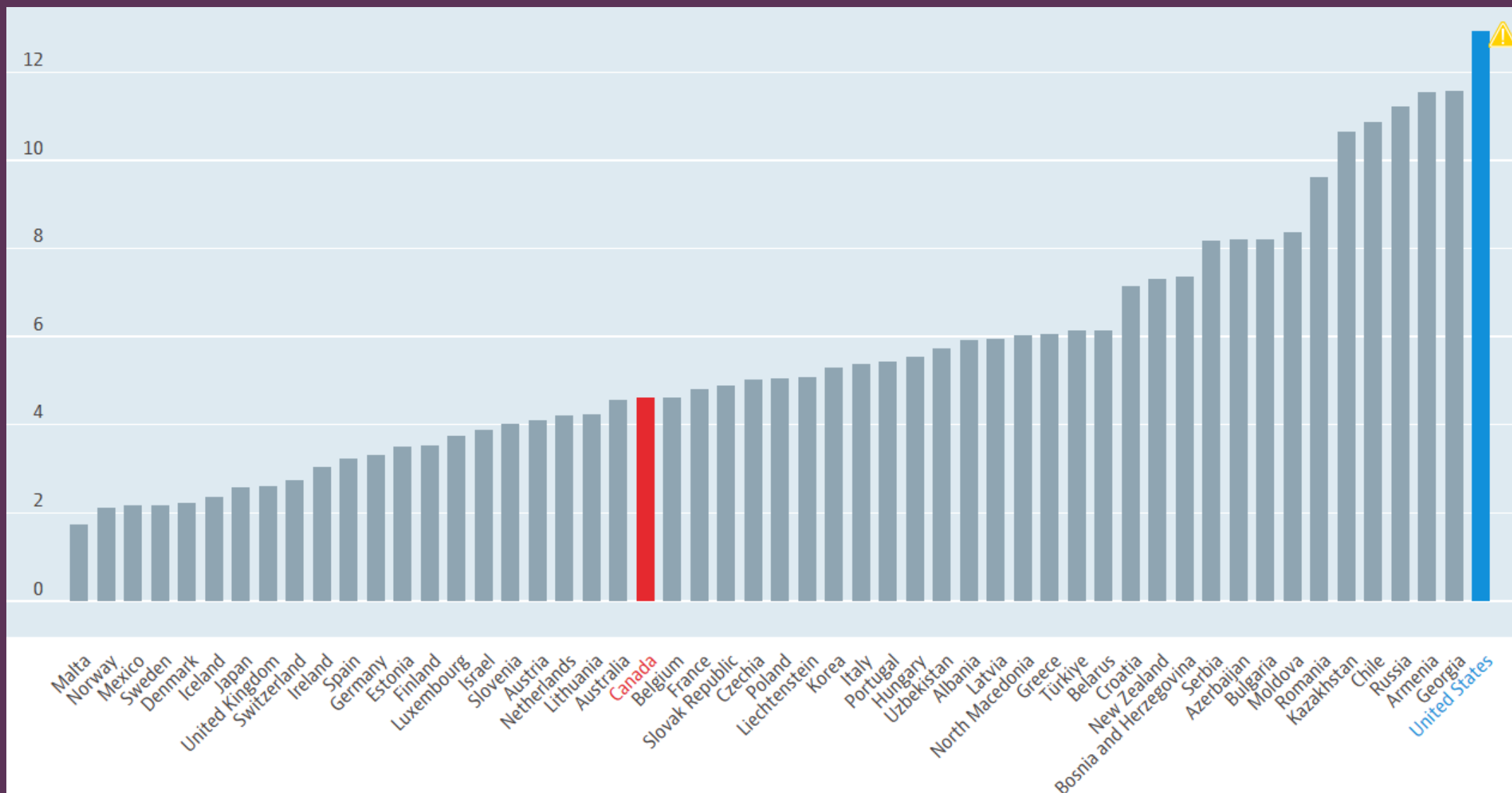
BY AT LEAST 50% during that period

Updated Road Safety Plan

- Very similar to the first road safety plan with few additions
 - Land Use Planning is now included
 - Lower speed limits, 30 km/h where traffic users interact
 - Increased focus on Equity
 - Increased focus on non-government stakeholders including
 - Civil society
 - Private sector
 - Funders
 - Canadian shortfall around participation of Post Crash Treatment in terms of data and reporting



Fatalities rate per 1 m population, 2021



The background of the image is a dense, overlapping collage of numerous small, rectangular sticky notes. These notes are in four primary colors: blue, green, pink, and yellow. Each sticky note features a large, bold, black question mark. The notes are scattered across the entire frame, creating a textured and busy visual effect.

Thank you for your attention Questions?

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