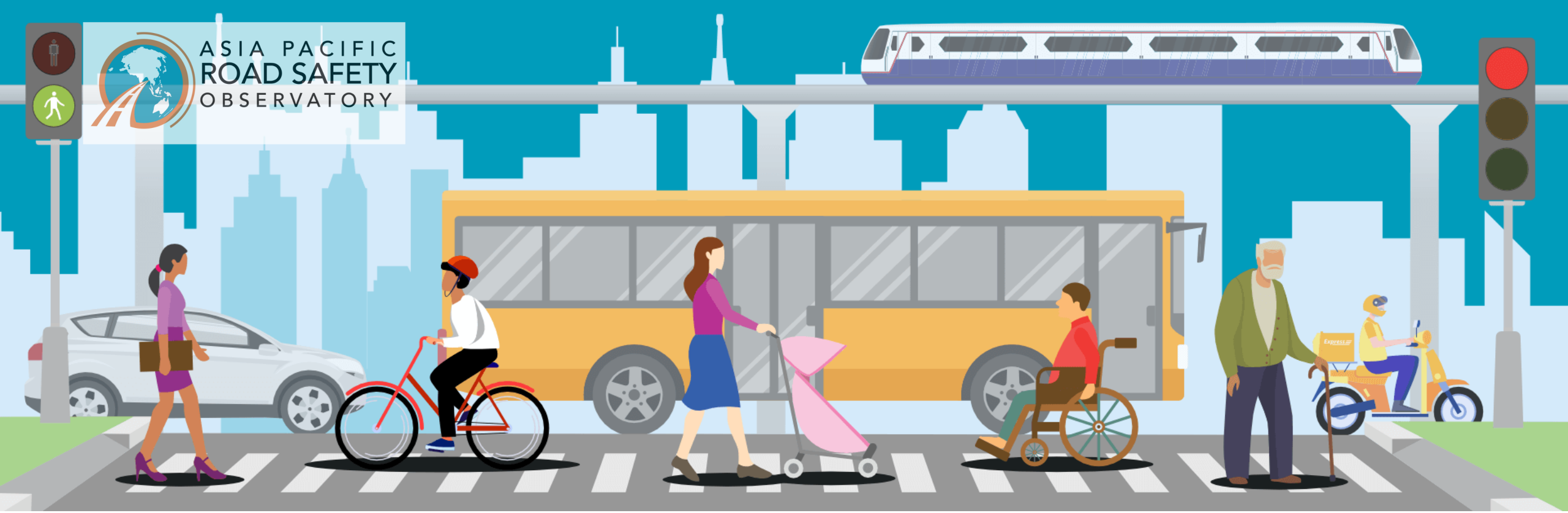


Recommended Crash Data Elements for APRSO Member Countries

Charles Melhuish and Mirick Paala

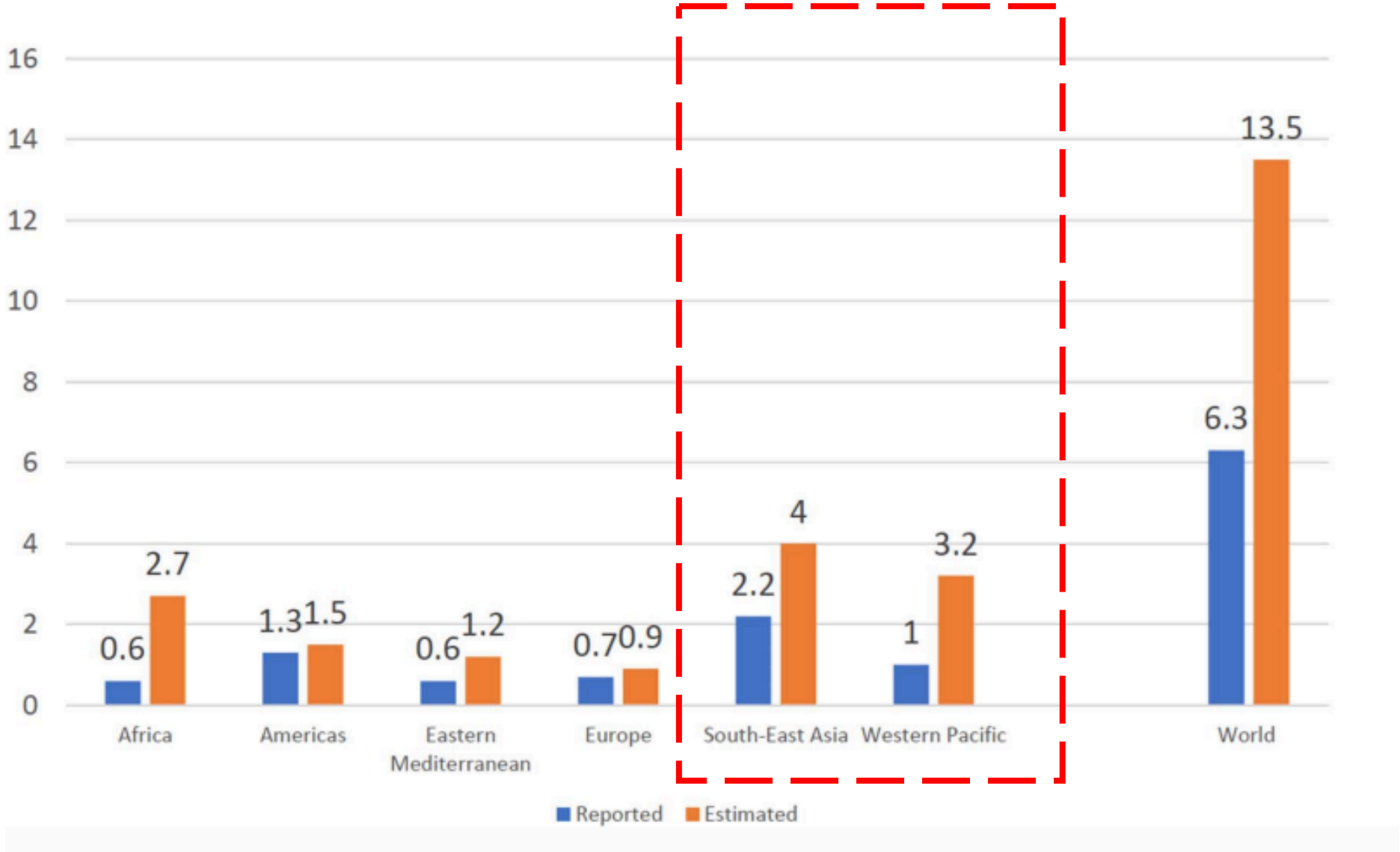
ADB
UNITED NATIONS ESCAP
Economic and Social Commission for Asia and the Pacific
FIA
International Transport Forum
THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

FIA Foundation
www.fiafoundation.org
GRSF
Global Road Safety Facility
Quality Infrastructure Investment Partnership
MANAGED BY WORLD BANK GROUP
UKaid
from the British people

Presentation Outline

- Issues on Underreporting
- Literature Review on Minimum Crash Data Elements
- Recommended Crash Data Elements for APRSO Member countries
- Next steps: Road Safety Indicators, Data Requirements of APRSO

Underreporting of Crash Data in Asia



Underreporting of Crash Data in Asia

- Police and hospitals often use manual forms which are open to interpretation and errors
- Locations are not exactly identified
- The whole data collection process is tedious and complicated for the police
- Overall lack of data quality assurance measures
- Main cause of crashes is mostly recorded as human error
- Other datasets are not leveraged

Literature Review Methodology

- Reviewed multiple manuals providing minimum crash data elements
- Compared data elements, definitions, method of collection
- Basis to create minimum crash data elements for APRSO member countries

- Published by WHO in September 2010

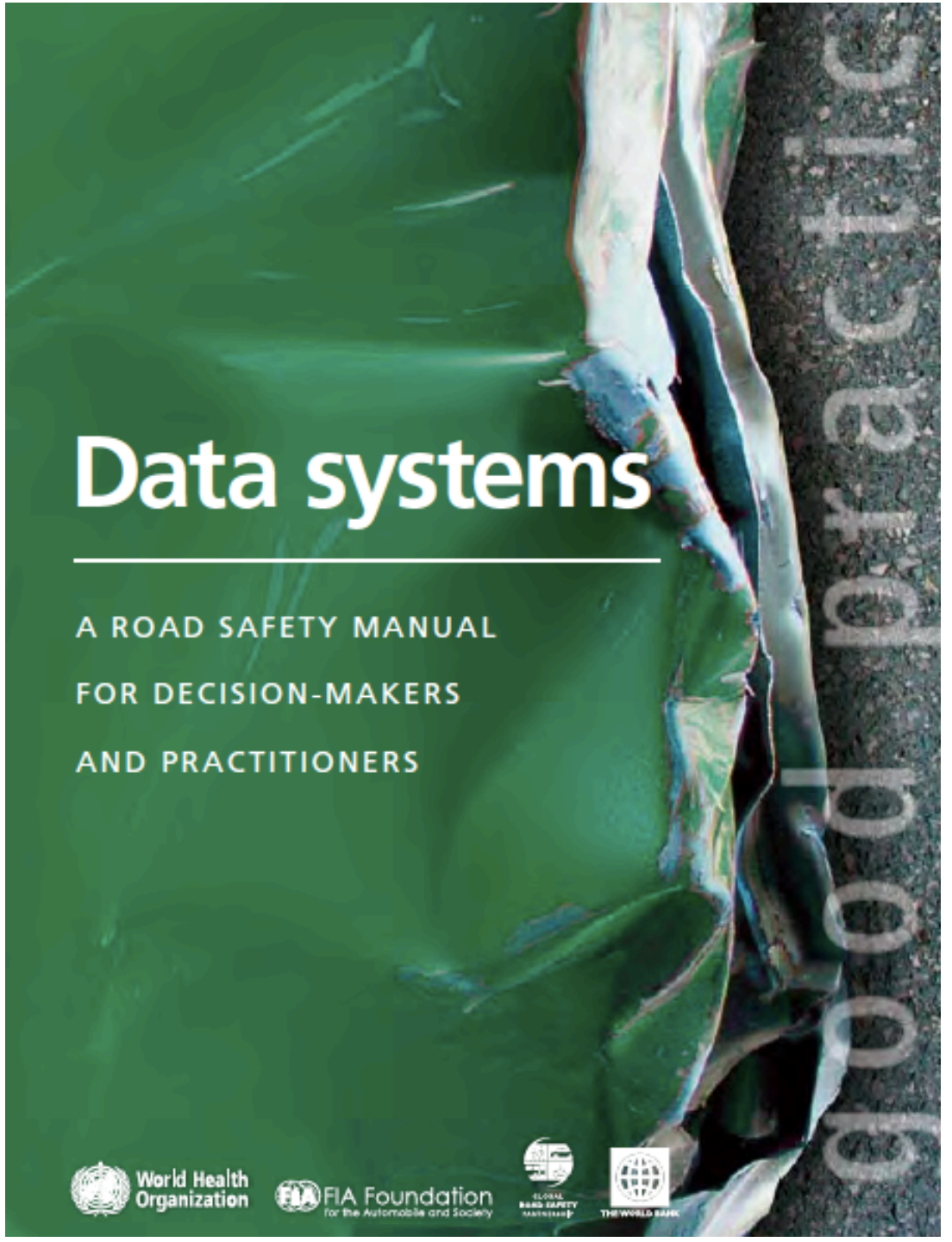
- Prepared by FIA Foundation, the Global Road Safety Partnership, the World Health Organization, and the World Bank

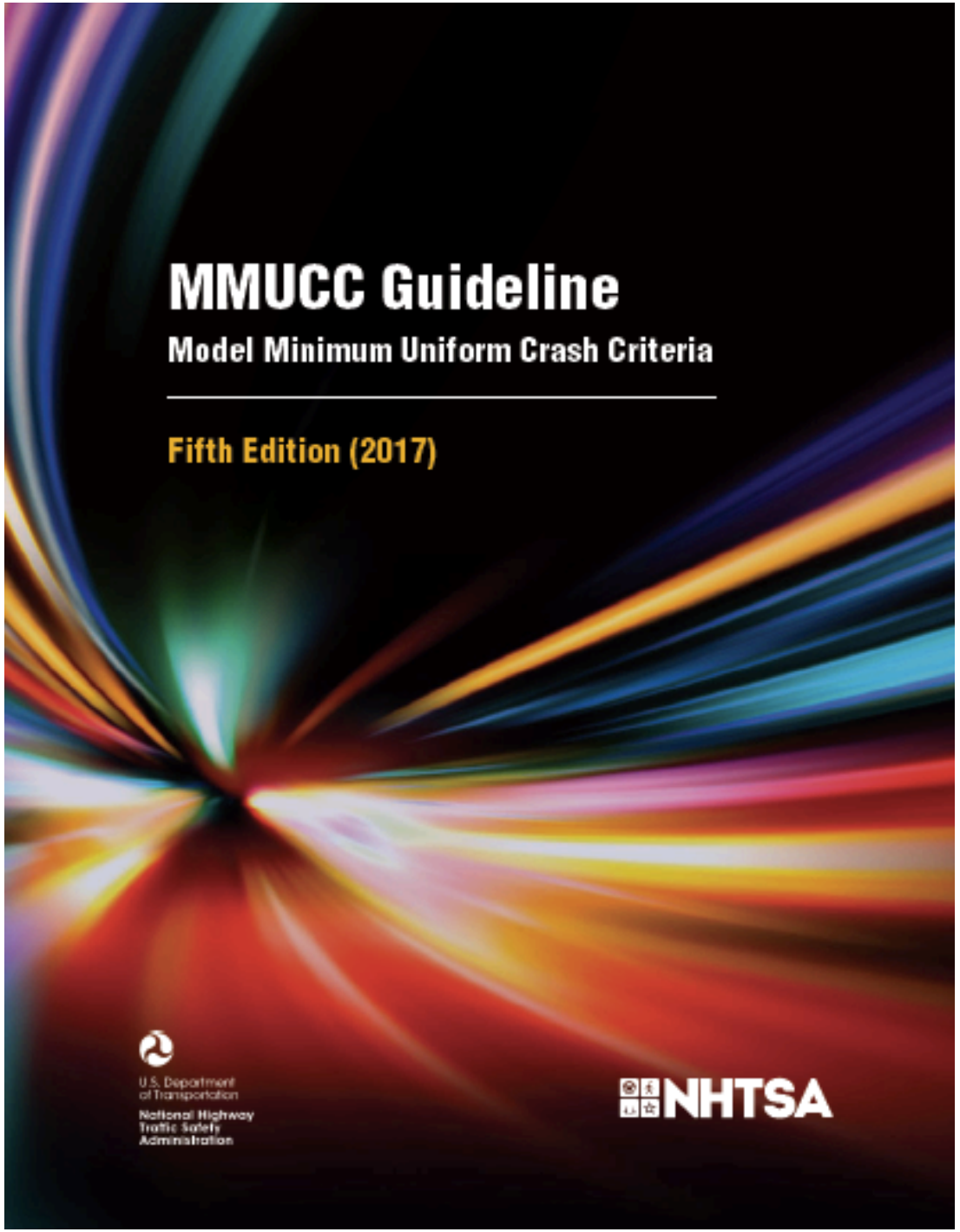
Crash related	Road related	Vehicle related	Person related
• Crash identifier (unique reference number assigned to the crash, usually by police) • Crash data • Crash time • Crash municipality/ place • Crash location • Crash type • Impact type • Weather conditions • Light conditions • Crash severity°	• Type of roadway* • Road functional class* • Speed limit* • Road obstacles • Road surface conditions* • Junction • Traffic control at junction* • Road curve* • Road segment grade*	• Vehicle number • Vehicle type† • Vehicle make† • Vehicle model† • Vehicle model year† • Engine size† • Vehicle special function† • Vehicle manoeuvre (what the vehicle was doing at the time of the crash)	• Person ID • Occupant's vehicle number • Pedestrian's linked vehicle number • Date of birth • Sex • Type of road user • Seating position • Injury severity • Safety equipment • Pedestrian manoeuvre • Alcohol use suspected • Alcohol test • Drug use • Driving licence issue date • Age°

° Derived or calculated from other data elements.

* Depending on the quality and detail of road inventory and hardware data available, it may be possible to obtain this data element through linkage to other databases.

† Depending on the existence, quality and detail of a motor vehicle registration database, it may be possible to obtain this data element through linkage to motor vehicle registration files.





- Updated in 2017
- Prepared by US Department of Transportation and National Highway Traffic Safety Administration

European Commission

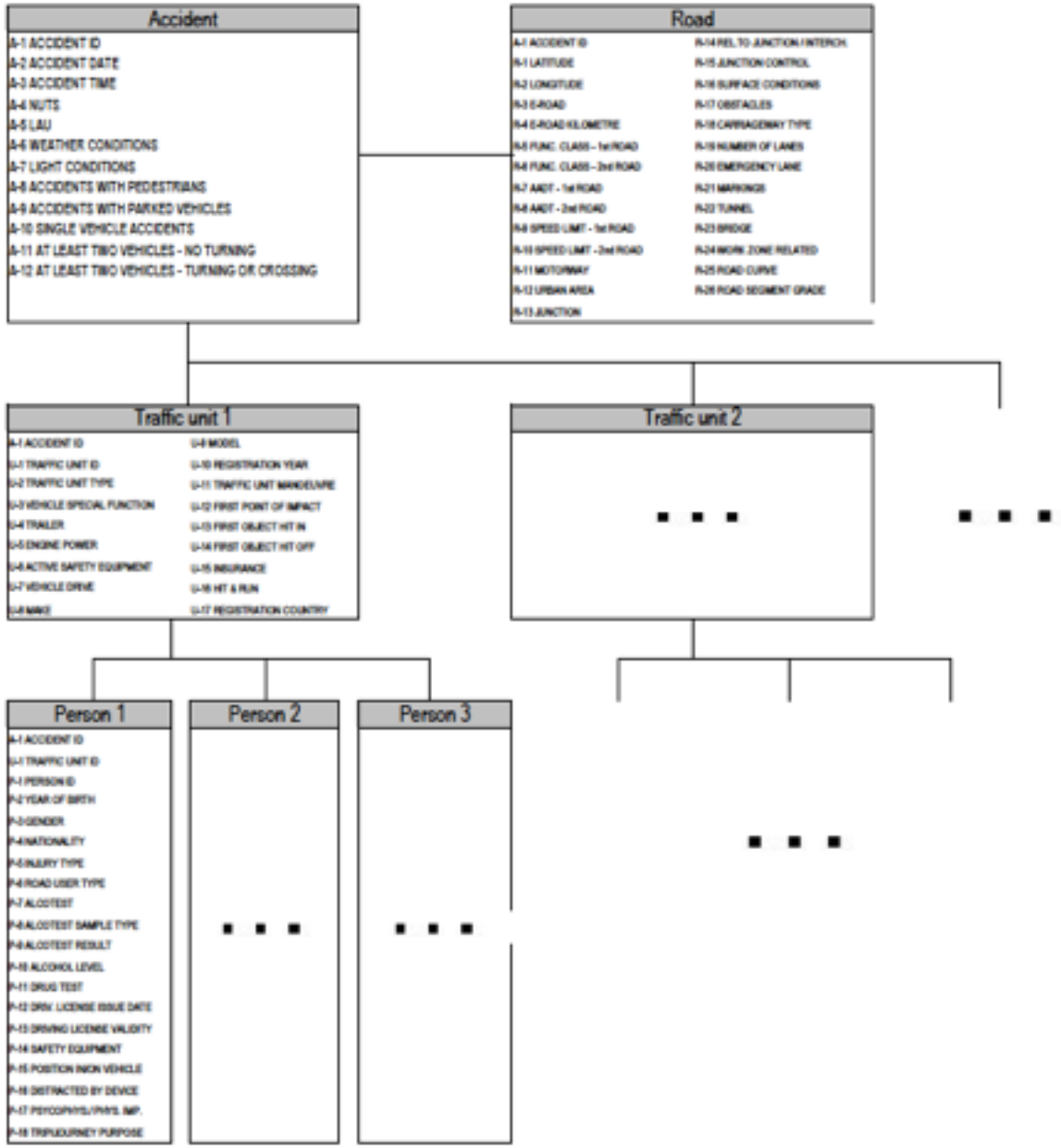
Directorate-General for Mobility and Transport

CARE DATABASE

CaDaS

Common Accident Data Set

CADaS COMMON ACCIDENT DATA SET



RECOMMENDATIONS FOR A COMMON DATA COLLECTION SYSTEM AND DEFINITIONS

Accident related variables		Road related variables		Vehicle related variables		Person related variables	
1st priority	2nd priority	1st priority	2nd priority	1st priority	2nd priority	1st priority	2nd priority
Accident ID	Impact type	Type of roadway	Speed limit	Vehicle number	Engine size	Date of birth	Person ID
Accident date		Road functional class	Road obstacles	Vehicle type	Vehicle special function	Gender	Occupant's vehicle number
Accident time		Junction	Road surface conditions	Vehicle make		Type of road user	Pedestrian's linked vehicle number
Accident region - municipality			Traffic control at junction	Vehicle model		Seating position	Safety equipment
Accident location			Road curve	Vehicle model year		Injury severity	Pedestrian manoeuvre
Accident type			Road segment grade	Vehicle manoeuvre		Driving licence issue date	Alcohol use suspected
Weather conditions						Age	Alcohol test
Light conditions							Drug use
Accident severity							

Crash Data Elements	WHO	MMUCC	CADAS	African Road Safety Observatory	APRSO Task Force
Crash identifier (unique reference)					
Crash Classification					
Reporting Unit					
Unit Receiving the Report					
Crash date					
Crash time					
Time of Roadway Clearance					
Day of Week					
Nomenclature of territorial units for statistics					
Crash County					
Crash municipality/place					
Crash location					
European road network					
E-road kilometer					
Street Name					
KM (House Number)					
First Harmful Event					
Location of First Harmful Event Relative to the Trafficway					
Source of Information					
Number of Deaths					
Number of Injuries					
Number of Vehicles Damaged					
Number of Motor Vehicles Involved					

Conclusions from Review

- With the exception of MMUCC, minimum indicators are categorized by crash, road, vehicle, and person-related variables.
- Data elements are further subdivided into high importance and low importance
- Emphasis on flexibility, customization and contextualization based on capacity and needs
- Need for collaboration among government ministries and integration of different datasets and database systems
- Data collection primarily includes fatal and injury crashes and not property damage only crashes.

Recommendations on Crash Data Elements

- Gradual Approach
- Data Improvement divided into Core, Expanded, and Integration with Other Database Systems
- Recommended fields with their definitions, format, and method of collection

Core	Expanded	Integration
• Crash identifier (unique reference) • Crash date • Crash time • Crash location • Weather conditions • Light conditions • Crash severity • Vehicle type • Sex • Date of birth • Age • Type of road user (e.g. Driver, Passenger, Pedestrian) • Injury severity	• Movement Code* • Hit and Run • Road functional class (e.g. national road, local road, among others) • Speed limit • Road obstacles • Road surface conditions (e.g. dry, wet, among others) • Junction type • Vehicle Number • Person Number • Occupant's linked vehicle number • Pedestrian's linked vehicle number • Safety Equipment • Nationality • Alcohol use suspected • Alcohol test • Drug use • Seating position	• Traffic control at junction (e.g. traffic police, traffic light, among others) • Road curve (e.g. tight curve, open curve, among others) • Road segment grade (e.g. steep gradient or not) • Vehicle identification number/license plate • Vehicle make • Vehicle model • Vehicle registration number • Vehicle country of registration • Vehicle steering wheel position • Engine size • Vehicle model year of manufacture • Vehicle special function • Person ID • Driving license issue date • Licensed vehicle category

Next steps

Task	Timeline
1) Reviewing Crash Data Elements Collected by Select Asian and Pacific Countries	November 2020
2) Developing data elements specific to Regional Road Safety Contexts e.g. Motorcycle-specific crash data elements	
3) Literature review on Road Safety Indicators, e.g. indicators involving the six pillars of road safety	
4) APRSO Reporting requirements, standards, and process	
5) Crash Data and Road Safety Indicators Workshop	December 2020
6) Studies on APRSO Governance	2021
7) Studies on Asia-specific road safety issues	