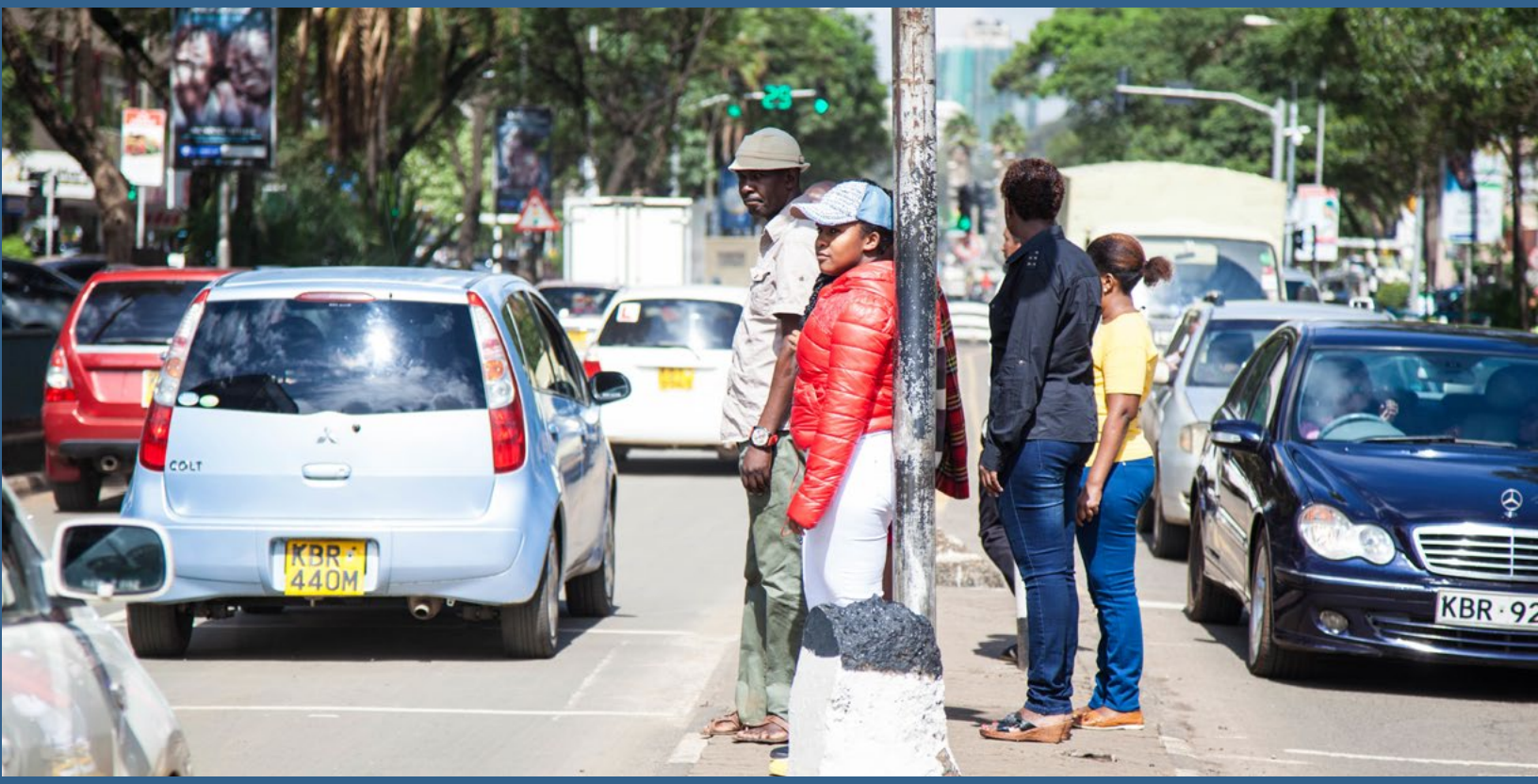
SSATP
Africa Transport Policy Program



ROAD SAFETY STRATEGIES FOR AFRICAN CITIES

A Guide to Development

Martin Small • Tawia Addo-Ashong

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December 2021

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SSATP is an international partnership to facilitate policy development and related capacity-building in the transport sector in Africa. Sound policies lead to safe, reliable, and cost-effective transport, freeing people to lift themselves out of poverty and helping countries to compete internationally. More publications are found on the SSATP website: *www.ssatp.org*.

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The preparation of the report was led by Tawia Addo-Ashong, Senior Transport Specialist at the World Bank and Road Safety Pillar Lead for the SSATP Third Development Plan, under the overall guidance of Mustapha Benmaamar, Program Manager of SSATP, and Ibou Diouf, Practice Manager at the World Bank. The team is grateful for the comments received from the colleagues in the World Bank: Georges Bianco Darido, Veronica Ines Raffo, and Fatima Arroyo Arroyo. The report draws on the experience of city administrations in Accra and Addis Ababa (particularly Mohammed Adjei Sowah, Desmond Appiah, Dr Solomon Kidane, and Jiregna Hirpa) and their Vital Strategies partners (particularly Osei Kufour and Daniel Chekol) supported by Bloomberg Philanthropies. Appreciation also to the road safety leaders across SSATP country membership who contributed to a wider understanding of city strategies, opportunities, and issues. We are grateful for all their insights and viewpoints.

The findings, interpretations, and conclusions expressed here are those of the author and do not necessarily reflect the views of the SSATP or its partners.

Attribution - Please cite the work as follows: Martin Small, and Tawia Addo-Ashong. 2021. Road Safety Strategies for African Cities: A Guide to Development. Washington, DC: SSATP.

ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
AMA	Accra Metropolitan Assembly
APRSO	Asia Pacific Road Safety Observatory
ARRB	Australian Road Research Board
AU	African Union
BIGRS	Bloomberg Initiative on Global Road Safety
BRT	Bus Rapid Transit
CETUD	Executive Council for Urban Transport (Senegal)
DALY	Disability-Adjusted Life Years
EASI	Enable, Avoid, Shift, Improve
EFAR	Emergency First Aid Responder
EMS	Emergency Medical Service
EU	European Union
FIA	Federation Internationale de l'Automobile
FRSC	Federal Road Safety Corps (Nigeria)
GDP	Gross Domestic Product
GRSF	Global Road Safety Facility
HIV	Human Immunodeficiency Virus
IRAP	International Road Assessment Programme
ITF	International Transport Forum
LAMATA	Lagos Metropolitan Area Transport Authority
NACTO	National Association of City Transportation Officials
NGO	Nongovernmental Organization
RECAP	Research for Community Access Partnership
RTMA	Road Traffic Management Agency
RURA	Rwanda Utilities Regulatory Authority
SDG	Sustainable Development Goal
SARSAI	School Area Road Safety Assessments and Improvement
SR4S	Star Rating for Schools
SSATP	Africa Transport Policy Program
UN	United Nations
UNECA	United Nations Economic Commission for Africa
WB	World Bank
WHO	World Health Organization
WRI	World Resources Institute

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SUMMARY

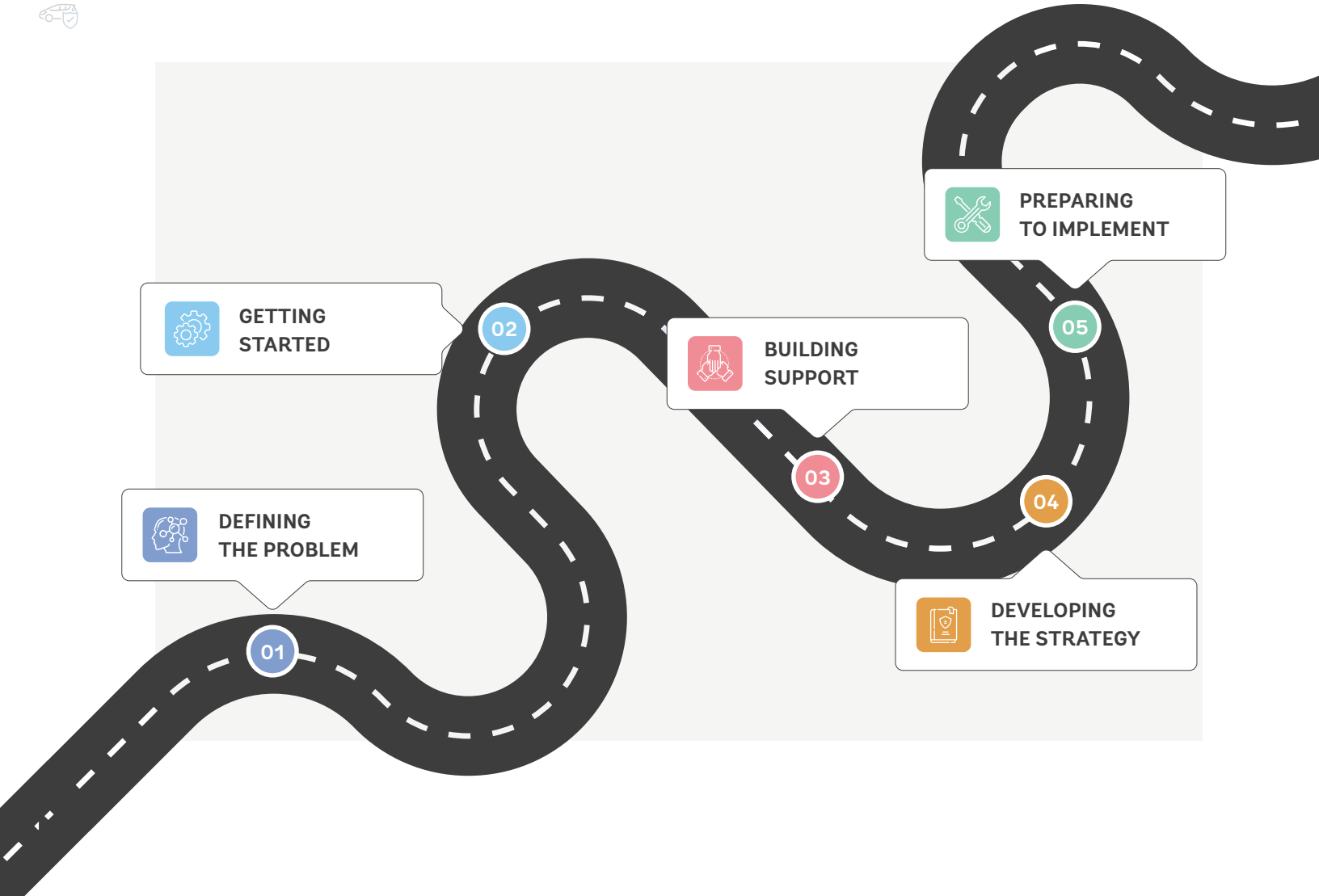
This guide supports you to prepare a city road safety strategy which is capable of significantly and sustainably improving road safety in your city, and of building commitment within stakeholders for its implementation. The focus is on preparing a credible strategy which will lead to action, not on preparing the perfect planning document or report which may or may not be implemented.

Strategic management and implementation are major issues in road safety across the world. In Africa, and in African city administrations, constraints in road safety management capacity mean even more attention must be given to implementation as the strategy is prepared.

This guide is organized along five strategy development phases, weighted towards preparation, ensuring that implementation arrangements are well specified.

This guidance puts forward five phases. However, successful strategy development is rarely a linear process towards a fixed outcome. Some phases may take longer than expected or need to be reworked for the strategy to be agreed and finalized. The strategy document itself is only of value once it is integrated into a wider set of management processes.

The intention is for you to use this guidance to undergo a development process, to a point where substantive action can be taken and progress can be made. The purpose of the strategy is to direct future efforts of all stakeholders and provide a mandate for them to achieve significant reform.



DEFINING THE PROBLEM

Over time, road traffic safety has become an urban mobility and a wider development problem for African cities. Define the problem you are addressing in a road safety strategy by considering road safety issues:

- In a systematic manner.
- As part of the wider mobility issues in your city.
- Within the wider development context of your city.

GETTING STARTED

Initiating strategically oriented action on road safety within your city requires you to familiarize yourself with:

- The political and legislative framework governing road safety.
- Institutional responsibilities for delivering road safety.
- The stakeholders who will be necessary to help drive a strategy forward.

BUILDING SUPPORT

Prepare a short document which identifies why a strategy is important, and share and discuss this with stakeholders as you build support:

- Gather ideas on how to establish a coalition of interests to support sustained action.
- Discuss the values that underpin the concerns of stakeholders.
- Investigate road safety data and existing knowledge about the problem.
- Prepare to make use of opportunities that may arise and innovate.

DEVELOPING THE STRATEGY

After initial engagement with stakeholders and familiarising yourself with any data issues, work collaboratively to:

- Prepare a vision for road safety in your city.
- Consider and adopt a number of vital targets to provide direction and track progress.
- Examine critical road safety issues and develop some strategic directions.
- Facilitate stakeholder discussion on vision, targets, and direction.

PREPARING TO IMPLEMENT

Implementation arrangements need to be a focus of discussion as the strategy is developed, and be clearly described in the final strategy document. Initiate deliberate action in three key areas:

- An ongoing governing body needs to established, supported by a dedicated work group.
- A concise action plan is needed to implement the strategy, with clear funding commitments.
- Attention is required to monitor and evaluate implementation, and to report on safety progress.

INTRODUCTION

472 million Africans live in urban areas, and this number is expected to double over the next 25 years.[1] Sub-Saharan Africa is one of the fastest urbanizing regions in the world. Globally, Africa's share of urban residents is estimated to grow from 11.3 per cent in 2010 to 20.2 per cent by 2050, adding a further 850 million people to Africa's cities, which are projected to double in size.[2] This growth is placing significant additional strain on local planning and development systems. The resulting capacity gap is more problematic still in smaller cities, particularly when it comes to mitigating human health and welfare risks.[3]

The management of urban environments in Africa involves a matrix of jurisdictional and institutional complexities. National, sub-national, and local governments have different levels of autonomy and influence. Agencies and stakeholders have different levels of capacity and resources. In the middle of it all are transport systems, which citizens use every day to engage in education, employment, social services, and interaction, and which form an essential backbone to the economy.

Essential mobility services are being delivered in Africa by a range of actors, from young motorcyclists to transport cooperatives and large logistics corporations - often illegally, inefficiently, and/or dangerously. Trucks, cars, buses, pedestrians, motorcyclists, cyclists, and animal carts work their way along a mix of urban highways and residential streets, through informal settlements and shopping districts, past government buildings and office towers. The roads are crowded and so are the footpaths, where shopkeepers expand their premises and pedestrians spill onto the road, mixing with street traders and motorized traffic.

Urban mobility systems are truly a test of how effective a city administration is. And the task is getting more difficult with rapid motorization throughout Africa, including massive surges in motorcycles in many countries. Increasing populations in expanding cities, where growth is not being matched by increases in sustainable transport services, mean exposure to road traffic injury is also increasing at a rapid rate in African cities.

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1. S Lall, A Venables, V Henderson (2017), *Africa's Cities: Opening Doors to the World*. World Bank, Washington DC.
2. J Saghir, J Santoro (2018) Urbanisation in Sub-Saharan Africa. Centre for Strategic and International Studies and P Collier (2016). *African Urbanisation: An Analytic Policy Guide*. International Growth Centre.
3. D Satterthwaite (2017) "The impact of urban development on risk in sub-Saharan Africa's cities with a focus on small and intermediate urban centres". *International Journal of Disaster Risk Reduction*, Volume 26, December 2017.

The World Health Organization (WHO) estimates that 1.35 million people are killed on the world's roads each year, and road traffic injury is the leading cause of death for children and young adults aged 5-29. Africa has the world's highest per capita rate of road fatalities and the highest proportion of pedestrian and cyclist deaths.[4]

Road traffic injury was estimated to be the fifth highest cause of death in Africa in 2017 and the seventh highest cause of disability.[5] Around two-thirds of road traffic fatalities and injuries on the continent occur amongst 15-64 year olds, who are the most economically productive part of society. Children are also highly vulnerable, particularly in North Africa, where road traffic injury is easily the highest cause of death and disability for 5-14 year olds. The estimated 300,000 fatalities and 4,500,000 serious injuries across Africa in 2016 has been projected to increase further over the next decade without significant intervention. At the same time, it has been projected that malaria and HIV/AIDS - other major causes of loss of life and health on the continent - will continue to decline.

The economic cost of road crashes in Africa was estimated at over US$150 billion in 2016 alone.[6] Existing data systems make an estimate of these losses in Africa's cities difficult, but there is little doubt that the proportion of these costs in Africa's cities is high. This is particularly the case in countries with relatively low levels of motorization, where motor vehicles are even more heavily concentrated within major centres.

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4. World Health Organization (2018). *Global Status Report on Road Safety*, Geneva.
5. Institute for Health Metrics and Evaluation (IHME). GBD Compare. Seattle, WA: IHME, University of Washington, 2018. Available from http://vizhub.healthdata.org/gbd-compare (Accessed June 2020)
6. World Bank (2019). Guide for Road Safety Opportunities and Challenges: Low- and Middle-Income Countries Country Profiles. Washington DC.

SSATP's contribution

Road traffic injury is a non-communicable disease of mobility, which disproportionately affects the youngest, poorest, and most vulnerable members of a community. It is a major transport and development issue for all member countries of the Africa Transport Policy Program (SSATP). In the second half of the United Nations Decade of Action, at the request of city administrations, SSATP worked alongside the Bloomberg Initiative on Global Road Safety (BIGRS) and its program partners, particularly Vital Strategies, to develop city road safety strategies for Addis Ababa and Accra.

A simple strategy development process was followed:

- Bilateral engagement with, and enrolment of, major stakeholders.
- Rapid knowledge transfer on critical issues for road safety in Africa.
- Collation and analysis of available data.
- Multi-sectoral engagement to identify an overall vision, quantitative targets, critical road safety issues in the city, and strategic directions for future action.
- Strategy drafting, stakeholder review, validation, and political endorsement.

A key element of this process was to encourage stronger institutional arrangements for implementing the strategy, including governance, monitoring and evaluation, and funding. Simple cross-agency governance systems were promoted, supported by dedicated work units, under direct political leadership of the city.

This work revealed the critical need to consider the local city and national context. For example, in Addis Ababa, many delivery processes are under the direct control of the city administration, which was able to move quickly on developing and implementing an action plan, in line with the strategy. By contrast, the Accra Metropolitan Authority is much more reliant on the delivery of services by national agencies, and a more negotiated approach to implementation was required.

Two standout safety issues were also revealed. One is pedestrian safety. "Prioritizing pedestrians first, second, and third" is a defining direction for safety in Addis Ababa, recognizing the very high proportion of pedestrian trips, and that what is good for the safety of pedestrians is good for the safety of the city as a whole. Another is the wider urban mobility system. The safety of Africa's cities depends on the extent to which the urban mobility system can be reshaped towards the safe movement of people, and so the tro tro (or taxi) routes in Accra were identified as key roads on which to focus safety efforts.

Alongside road safety and regional integration, urban transport and mobility has been an SSATP program pillar, directly aligned with Sustainable Development Goal 11 "Making cities and human settlements inclusive, safe, resilient and sustainable". As well as developing an overall policy framework built around Enable-Avoid-Shift-Improve (EASI, see later), SSATP has undertaken substantial urban transport and mobility studies in Côte d'Ivoire, Ethiopia, Guinea, Ghana, Kenya, Nigeria, Rwanda, and Senegal. Recommendations made in each of these countries address six thematic priorities:

- Strengthening institutional frameworks.
- Creating dedicated sources of funding.
- Promoting the effective participation of civil society.
- Improving multi-modal planning and operation.
- Increasing the performance of public transport (particularly paratransit services).
- Providing support to secondary cities.

This guide has benefited from this urban transport and mobility work. It has also benefited from contributions made by road safety leaders within SSATP member countries, who completed a survey to assist the shaping of key messages in this guide.

Change leadership

A 2018 report published by the Overseas Development Institute[7] reviewed the challenges and opportunities associated with road safety, and how safety reforms happen, through case studies of three cities - Nairobi, Mumbai, and Bogotá. Four challenges were identified that ran deeper than whether or not particular technical solutions were being applied:

- Road safety is not a political priority.
- Road safety is seen as an issue of personal responsibility.
- There is little coordination between relevant government bodies.
- Data is lacking.

Six strategies were proposed to improve road safety:

- Bundle road safety with more prominent or popular issues.
- Reframe road safety in the public and political debate.
- Seek opportunities and build alliances at all levels of government.
- Take advantage of wider institutional and governance reform.
- Sequence actions, prioritizing an integrated approach.
- Do not wait for perfect data.

This set of change-oriented strategies reflects the road safety experience in SSATP member countries generally and should be at the forefront of thought and action within city administrations.

Many people are being killed and injured in Africa's urban mobility systems. Those systems need to be made safe and it will require a significant change leadership effort to achieve this.

There are always confounding issues that need to be recognized and adjusted to - the global COVID-19 pandemic is an extreme example of such an issue. There is, however, no "right time" or "better time" for tackling road safety issues. This guide provides direction for leading change in this persistent public health issue faced by all African cities.

7. A Bray Sharpin, D Harris, H Dempster, A Rocha Menocal (2018). *Securing Safe Roads: The Politics of Change*, Overseas Development Institute, London.

Elements of an effective strategy

An effective road safety strategy for a city is relatively simple and has four essential elements:

- **An ultimate vision,** which provides purpose, meaning, and a rallying point for all stakeholders to remind them of what is being sought. The most compelling vision in road safety that has grown throughout the world over the last two decades is to eliminate fatal and serious injury: Vision Zero.
- **A set of performance targets,** which go beyond headline injury numbers and establish a performance management framework, that all activity needs to be oriented towards. A set of road safety performance targets have been established through the United Nations (UN) which provide some common starting point for this.
- **Clearly defined strategic directions,** which evidence suggests have a strong likelihood of achieving the safety performance targets that have been set. A long schedule of options is available for consideration, which allows any institution or city to identify the way in which they want to achieve their targets.
- **Ongoing implementation arrangements,** including governance and coordination arrangements, planning and funding, and monitoring and evaluation activities. These are essential to drive change, and to ensure the targets are achieved and that demonstrable progress toward the vision is realized.

An effective city road safety strategy is genuinely strategic in outlook, has been developed in a collaborative multi-sectoral environment, and is supported by a separate action plan which specifies high-priority activities and accountable agencies.

However, there is a big difference between successfully preparing a strategy and successfully implementing a strategy. A successful strategy is developed in a way that maximizes its chances of successful implementation.

This guide to developing a city road safety strategy has been developed for use by responsible professionals and communities in Africa. It recognizes that each strategy needs to reflect the particular context of each city and provides a number of different ways of looking at that context.

Good road safety management practice follows a simple strategy-planning-implementation-review governance cycle. The focus of this guide is on how to go about the task of developing the strategy. This requires you to look at past performance and present conditions, and to develop planning and implementation frameworks that can achieve future desired results.

This guide is organized into five phases:

1. Defining the Problem - What problem will this strategy address?
2. Getting Started - What do I need to know and who will need to be involved?
3. Building Support - What is the compelling case for change?
4. Developing the Strategy - What is our vision and what needs to be done?
5. Preparing to Implement - What needs to happen now for future implementation?

The guide is weighted towards the preparation required to develop the strategy and put implementation arrangements in place. It refers to a well-established evidence base for interventions and some good examples of activity across the continent.

Five phases are put forward, but successful strategy development is rarely a linear process towards a fixed outcome. Some phases may take longer than expected or need to be reworked for the strategy to be agreed and finalised. The strategy document itself is only of value once it is integrated into a wider set of management processes. The purpose of the strategy is to direct the future efforts of all stakeholders and provide a mandate for them to achieve significant reform.

The purpose of this guide is to support city administrations in Africa to develop a strategy to tackle their road safety problems. It promotes a development process to a point where substantive action can be taken and progress can be made. By illustrating some good practice in Africa, it is hoped that other African cities can more easily develop effective strategies to address their road safety problems and be supported in doing so by national governments.

Figure 1:
Five phases for developing a city road safety strategy

Vision Zero in Cities

The Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS) put cities at the forefront of the global road safety agenda. Starting with 10 cities in 2015, the renewed programme through to 2025 focuses on four cities in Africa: Accra and Kumasi (Ghana), Addis Ababa (Ethopia), and Kampala[8] (Uganda). Globally, other cities are Bengaluru, Mumbai and New Delhi (India), Bogota (Colombia), Buenos Aires (Argentina), Guadalajara (Mexico), Hanoi and Ho Chi Minh City (Viet Nam), Sao Paulo, Salvador and Recife (Brazil).

Separately from this network of cities focusing on road safety across low- and middle-income countries, Safer City Streets is a global traffic safety network for liveable cities, organized under the auspices of the International Transport Forum (*www.itf-oecd.org/safer-city-streets*). It brings together cities wishing to improve their urban road safety performance by sharing data, experiences, and knowledge. There are nearly 50 member cities, including Accra in Africa, with some in low- and middle-income countries.

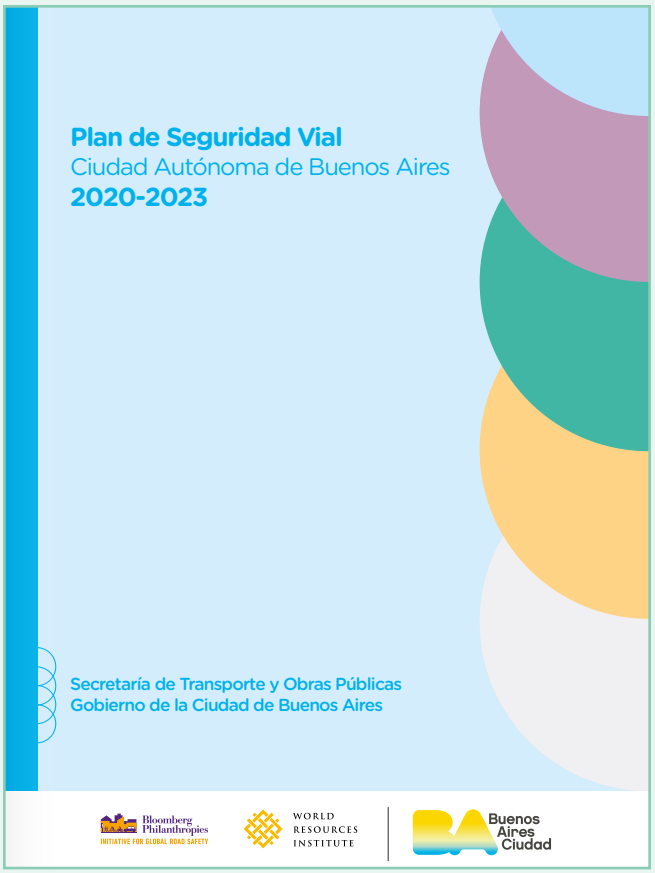
In the United States of America, a developed country with a relatively poor road safety record, a Vision Zero Network has developed, with 49 Vision Zero communities across the USA (*www.visionzeronetwork.org*). A Vision Zero community meets the following minimum criteria:

- A clear goal of eliminating traffic fatalities and severe injuries has been set.
- The mayor has publicly and officially committed to Vision Zero.
- A Vision Zero plan or strategy is in place, or the mayor has committed to doing so in a clear time frame.
- Key departments (including transportation, public health, and mayoral offices) are leading.

Working on road safety at a city level encourages local ownership, integration of safety within a wider development agenda, and demonstration of success within a defined area, ready for scaling up.

8. *https://www.kcca.go.ug/media/docs/Kampala%20Road%20Safety%20Strategy%202021-2030.pdf*


PLAN DISTRITAL DE
SEGURIDAD VIAL
2017-2026
VISIÓN CERO BOG
ALCALDÍA MAYOR DE BOGOTÁ D.C.
BOGOTÁ MEJOR PARA TODOS


Plan de Seguridad Vial
Ciudad Autónoma de Buenos Aires
2020-2023
Secretaría de Transporte y Obras Públicas
Gobierno de la Ciudad de Buenos Aires
Bloomberg Philanthropies
INITIATIVE FOR GLOBAL ROAD SAFETY
WORLD RESOURCES INSTITUTE
Buenos Aires Ciudad


Philanthropies
RG INITIATIVE FOR GLOBAL ROAD SAFETY
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SHIP
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PHASE 1:

DEFINING THE PROBLEM

Significant change has occurred in road safety over the last two decades, and it is important to consider how the safety problem is being defined. For decades, the perceived need in road transport planning and management was to facilitate more motor vehicles traveling faster, even if this left some collateral damage. More and more urban space was allocated in African cities to more and more motor vehicles.

Over time, road traffic safety has become an urban mobility and a wider development problem for African cities. Define the problem you are addressing in a road safety strategy by considering road safety issues:

- In a systematic manner;
- As part of the wider mobility issues in your city;
- Within the wider development context of your city.

The safety problem

Modern approaches to road safety across low-, middle- and high-income countries are based on what is referred to as the "safe system" approach.

This approach, broadly defined, provides the basis of advice for cities - to adopt a systems approach to the safety problem. It makes it easier to see road safety as part of a wider mobility problem and a still wider development problem.

The safe system approach looks well beyond individual behaviours on the road. It considers every major element of the road traffic system which affects the safety of all people using the road.[9] The safe system approach is focused on the ultimate goal of eliminating serious road trauma, largely by controlling the energy impact on the human body when a crash does occur.

Figure 2 illustrates elements of the approach - encompassing a vision or ultimate goal, which drives a series of intervention sets that are supported by management functions.

Another important way of understanding the safe system approach is to consider its underlying principles:

- People make mistakes that can lead to road crashes.
- Humans have a limited physical ability to tolerate crash forces before injury occurs.
- There is shared responsibility amongst those who design, build, manage, and use roads and vehicles, and who provide post-crash care to prevent serious injury or death.
- All parts of the system must be strengthened to multiply their effects and protect road users if one part fails.

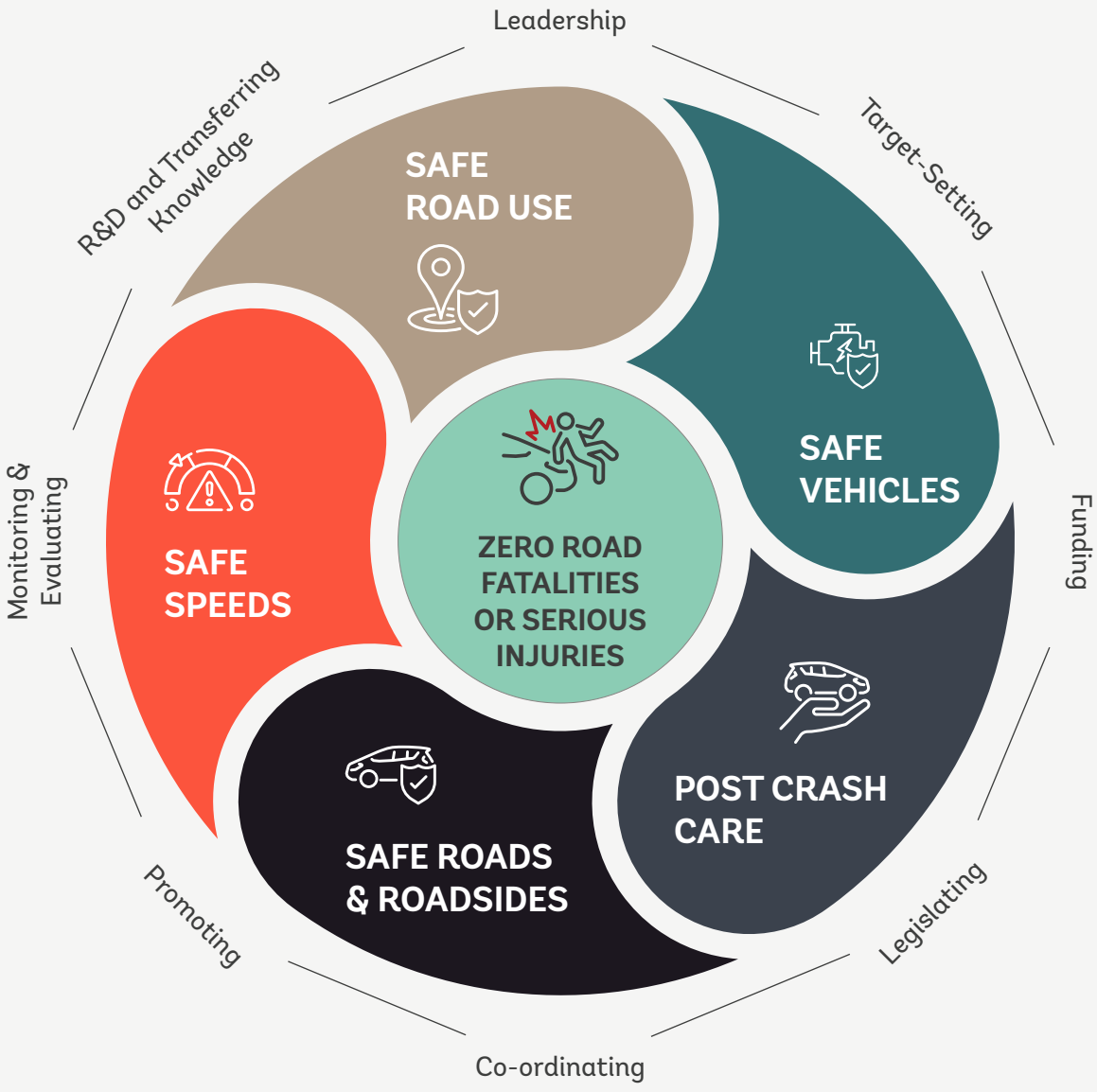
The safe system approach will need promotion for some time yet, in order to counter the ingrained response from professionals and policy-makers that the user is responsible for road trauma. This view was reinforced through decades of training and public policy, and it is still present. As we learn more, the safe system approach is evolving.

9. See International Transport Federation (2016), *Zero Road Deaths and Serious Injuries: Leading a Paradigm Shift to a Safe System*, OECD Publishing, Paris. The diagram is adapted from the Loughborough University Design School Safe System Course, 2017.

The safe system approach is relevant in all countries and is broadly consistent with safety principles and practices in other, much safer, modes of transport. It is particularly relevant for cities where every major safety issue and opportunity comes together in a relatively compact space. This makes the safety task more difficult, with every element of the road traffic system directly affecting the other. However, it also creates greater opportunity for systemic change and for safety initiatives to be much more cost effective.

By focusing on eliminating the problem, the safe system approach helps align road safety with other public health issues, such as malaria or clean water and sanitation. By adopting a systems perspective, the approach also helps align road safety with a wider sustainable mobility agenda, which is particularly important within cities.

Figure 2:
A Safe System illustration

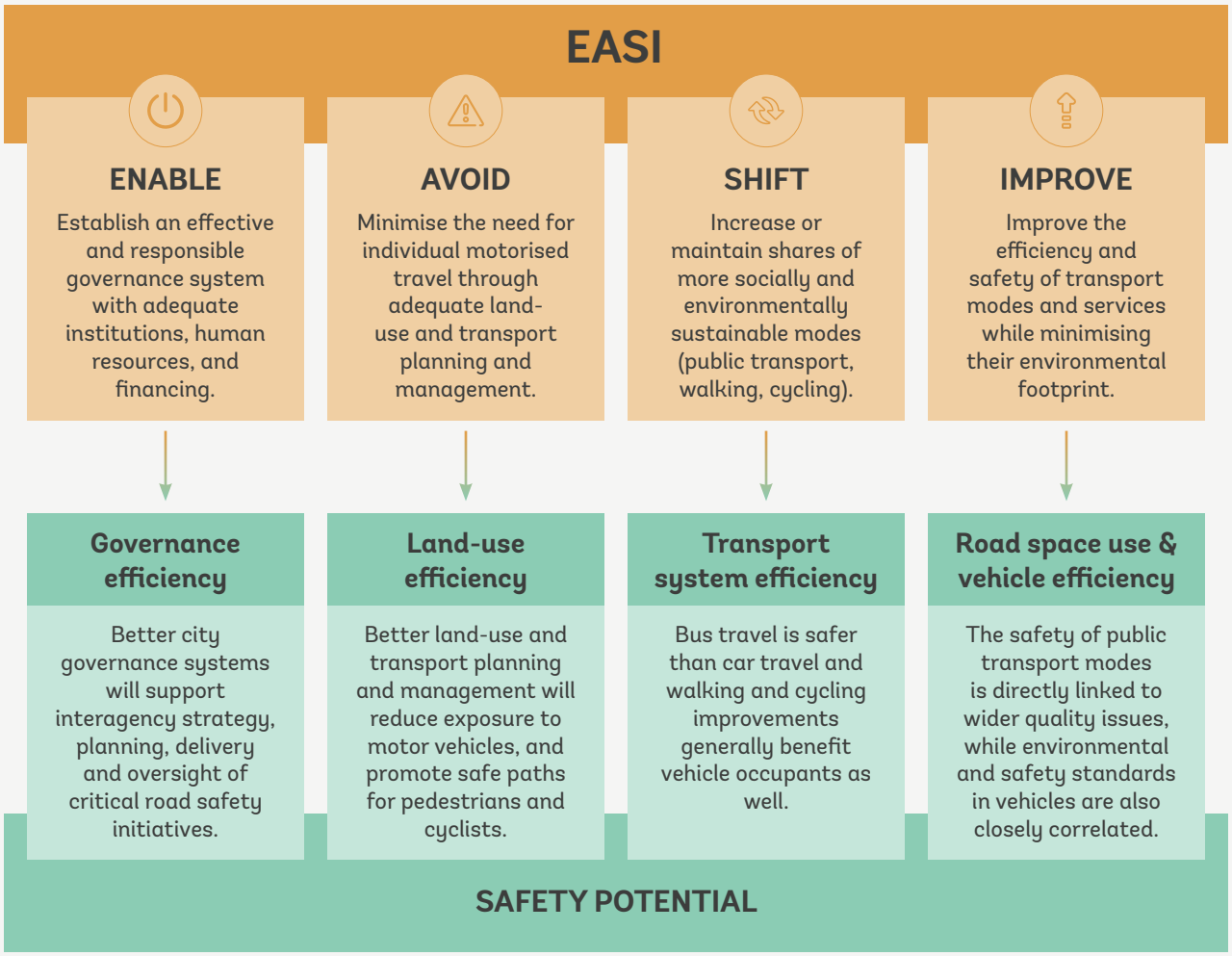


The mobility problem

Urban mobility is critical for the welfare of a city's residents. However, the current design and management of the mobility system in many cities is generating multiple negative effects. Excessive noise and air pollution, increasingly sedentary lifestyles, and significant exposure to injury are all having a significant negative impact on health outcomes. Road safety leaders in SSATP member countries recognize the importance of the link between safety, urban mobility, and the wider urban development and planning systems.

There are a number of ways in which improved urban mobility systems have been conceptualized and described, and they link directly with safety outcomes. An SSATP study of sustainable accessibility and mobility in urban Africa put forward a framework which extended the Avoid-Shift-Improve concept to add a vital "Enable" element to African transport systems.[10]

Figure 3:
EASI and the safety potential it promotes



10. Martin Stucki (2015) Policies for Sustainable Accessibility and Mobility in Urban Areas of Africa. SSATP Working Paper 106, Washington DC.

This Enable-Avoid-Shift-Improve (EASI) framework extended the focus beyond specific interventions within the transport system and towards the governance systems required to improve the effectiveness of those interventions. The framework is summarized below and adapted to add reference to the safety potential in each element, to support an integrated safe urban mobility approach.

EASI relates directly to key safety issues in African cities. Good governance is at the heart of any successful sustained road safety program; reduced motor vehicle use lessens the exposure of the city's population to a road traffic crash; safety improvements for non-motorized users are more likely to benefit motorized users than vice versa; and improved vehicle quality and passenger transport quality will improve safety.

Each of the three intervention sets are important, within a hierarchy of *avoid* measures first, *shift* measures second, and *improve* measures third.[11] A similar hierarchy philosophy is often applied when considering workplace safety. Workplace safety focuses firstly on either eliminating or reducing exposure to the hazard (motor vehicles), secondly on providing engineered protections (such as facilities for pedestrians, cyclists, and passenger transport), and only thirdly addressing the remaining hazards within the road environment through a series of administrative and behavioural measures.

A systematic way in which improved urban mobility has been facilitated is through a process called sustainable urban mobility planning.[12] This codified planning process tackles transport-related problems in urban areas more efficiently and in a more holistic manner. Sustainable urban mobility planning was developed in Europe, but its use is spreading in low- and middle-income countries. It is based on participatory planning principles and, with many of the interventions supporting the elimination or reduction in exposure of the population to motor vehicle traffic, is capable of generating important safety improvements.

City solutions must be found in different ways, reflecting different priorities. The management of motorized and non-motorized traffic on the road, as well as the management of pedestrian walkways, are critical to how a city functions. Safety needs to be directly provided for by significantly reducing motor vehicle speed in high pedestrian areas, for example, and indirectly provided for by supporting safe motor vehicle movements on high-volume corridors. Either way, the safety imperative needs to be considered within a much wider traffic management context.

The road safety problem in African cities is worsening rapidly. Where wider urban mobility systems are being developed, it is important that safety is identified and prioritized as a critical issue to be addressed. From a mobility perspective, it is important to recognize that the safety priorities in African cities are based on the needs of pedestrians, cyclists, and mass transit or public transport users. When these users are given priority in urban planning, they are safer, and when they are safer, so are other motorized users. From a safety perspective, it is important that measures are focused on supporting more efficient use of space and that the focus is on services and infrastructure. Compliance is critical but needs to be focused on key speed, alcohol, restraints, mobile phone rules for occupants, and safe services by commercial operators. Safety must enhance the overall sustainability of the transport system.

11. https://sutp.org/files/contents/documents/resources/E_Fact-Sheets-and-Policy-Briefs/SUTP_GIZ_FS_Avoid-Shift-Improve_EN.pdf

12. F Wefering, S Rupprecht, S Bührmann, S Böhler-Baedeker (2013). Developing and Implementing a Sustainable Urban Mobility Plan, European Union, Brussels.

The development problem

The UN recognizes that "sustainable transport achieves better integration of the economy, while respecting the environment, improving social equity, health (and) resilience of cities," but that only 18 per cent of urban residents in sub-Saharan Africa in 2018 had convenient access to public transport.[13]

Urban road trauma issues are often a by-product of a wider set of urban mobility issues, which are themselves part of a wider set of development issues. They generate a wide range of negative consequences well beyond the grief, pain, and suffering that death and disability cause family and acquaintances. Road traffic injury is a gateway to poverty within households, robbing communities of breadwinners and creating a burden of care on others. Figure 4 illustrates the significant effects which road traffic injury can have on families and communities.

One of these effects is the out-of-pocket expenses incurred by road traffic injury victims across Africa, sometimes at catastrophic levels.[14] These health expenses can significantly reduce living standards, and injuries can significantly reduce earning potential. This increases vulnerability to further poverty and ill-health, exposure to higher risks, and a systematic reduction in life chances.

Preventing road traffic injury is an important anti-poverty measure. This was formally recognized for the first time in the preparation of the UN Sustainable Development Goals (SDGs). The SDGs incorporate road safety into SDG 3 Good Health and Wellbeing, which includes national road safety targets.

More importantly for African cities, a sustainable transport framework is integrated within SDG 11 Sustainable Cities and Communities. SDG 11 includes the following target: By 2030, provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, people with disabilities, and older people.

On its own, SDG 11 provides a comprehensive case for an African city to develop and implement a road safety strategy. A safe transport system involves no fatal or serious injury, which is most likely achieved through a focus on urban mobility systems, and on non-motorized and public transport users who are the most vulnerable. SDG 11 encapsulates many essential aspects of a credible city road safety strategy in Africa.

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13. See https://sustainabledevelopment.un.org/sdg11

14. Catastrophic health expenditure has been defined as expenses requiring 10% or 25% of household expenditure. See A Wagstaff, G Flores, J Hsu, M-F Smitz, K Chepynoga, LR Buisman, K van Wilgenburg, P Eozenou (2018). "Progress on catastrophic health spending in 133 countries: a retrospective observational study", *The Lancet*, Volume 6, Issue 2.

Figure 4:
Road Traffic Injury and the Cycle of Poverty[15]

15. FIA Foundation (2016). Rights of Way: Child Poverty & Road Traffic Injury in the SDGS, London.


48
Monday - Friday
9:00 am - 5:00 pm
Saturday
9:00 am - 1:00 pm

Survey of SSATP Member Countries

A survey of road safety leaders across the SSATP membership provided important insight into the responsibilities for urban road safety across Africa. Results were based on responses from 29 countries.

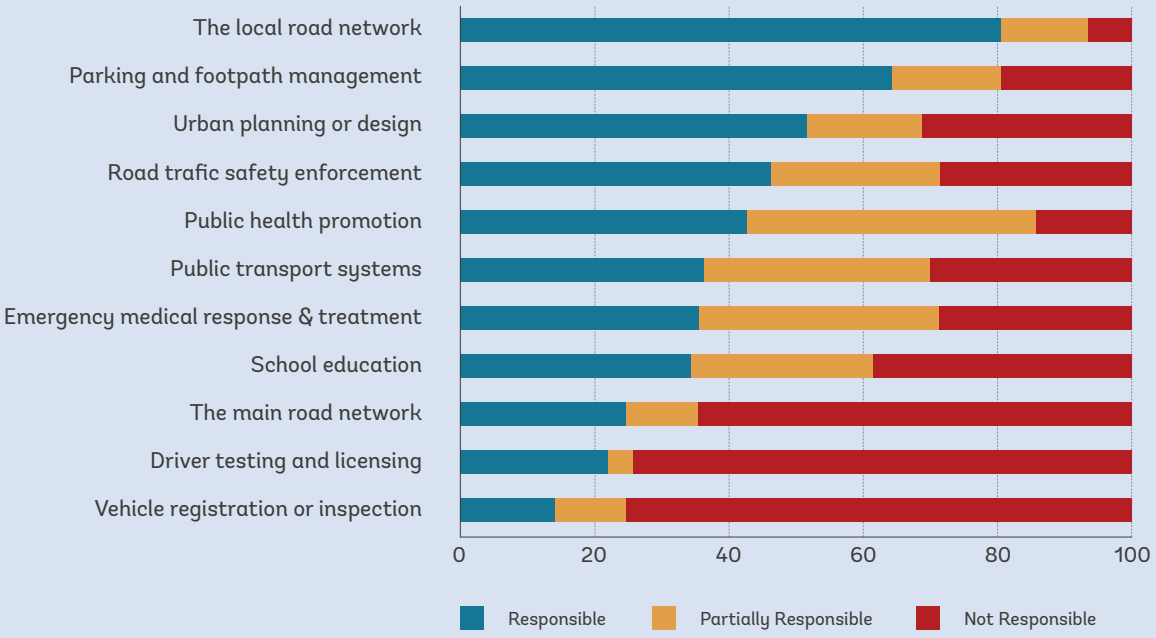
Where road safety national strategies or action plans were in place, SSATP road safety leaders identified that they usually referred to road safety in cities or towns and, less often, to urban mobility systems. In three countries, cities had developed city road safety strategies and, in nine countries, cities had developed urban mobility plans.

The survey also highlighted the different responsibilities that city administrations have for different urban road safety functions. As Figure 5 illustrates below, the highest level of city responsibility in African countries was for local roads, and the lowest was for vehicle regulation.

Cities in two thirds of the responding countries were responsible or at least partially responsible for: the local road network, urban planning or design; public transport systems, road traffic safety enforcement, parking & footpath management, public health promotion, and emergency medical response and treatment. This range of responsibilities would provide a city with a strong institutional platform to begin preparing a road safety strategy.

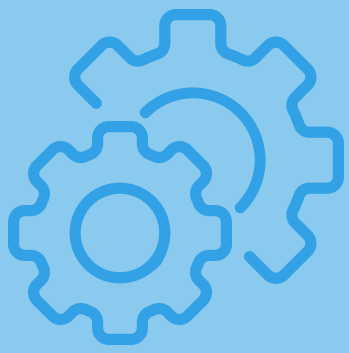
Respondents expressed very high concern about the following aspects of urban road safety: management; infrastructure; vehicles; users; speed; post-crash response; and public transport. Other issues they expressed concern about were: motorcycles; pedestrian safety (mainly inadquate planning and facilities); funding; data collection and analysis; inadequate urban planning; and poor traffic management.

Figure 5:
City responsibility for urban road safety functions in Africa



PHASE 2:

GETTING STARTED



It is important to understand the context in which road safety is managed within your country, and how this relates to a potential mandate within your city to develop and implement a city road safety strategy.

Initiating strategically oriented action on road safety within your city requires you to familiarize yourself with:

- The political and legislative framework governing road safety;
- Institutional responsibilities for delivering road safety;
- The stakeholders who will be necessary to help drive a strategy forward.

Political and legislative framework

An important starting point is to check the existence and status of a national road safety strategy or action plan. Many national road safety strategies in Africa provide at least reference to the specific safety issues in cities, and some also reference wider urban mobility systems which are relevant for road safety.

A city administration needs to clarify the legal and functional status it has in relation to road safety. This will depend upon the nature of the legal and functional relationship between local and central government. In some African countries, a city administration may have extensive powers which relate to road safety - for example, Addis Ababa, which is a chartered city within the Ethiopian federation that holds similar powers to the nine regional states.

The precise nature of the local/central government relationship is less important than recognizing what this relationship is, and how this will impact upon the development and implementation of the strategy.

It is important to consider the overall policy framework in place which relates to road safety, and how this relates to the city. In national policy and planning terms, road safety is usually regarded as an issue for the transport sector, but it is relevant in many other sectors, such as health, law enforcement, planning, or education.

It is also important to consider how a road safety strategy would be positioned within the local planning framework applying to the city. For example, is there a municipal development plan or an urban mobility plan that you need to take account of? Do these plans place any meaningful priority on the safety of road users, or is it just mentioned? You may be able to gain significant support for a road safety strategy from any of these broader planning frameworks. You may also need to be able to explain or promote road safety if these planning frameworks do not provide any support.

Finally, within the transport sector, you need to consider how road safety is treated - either as a separate issue on its own or associated with a variety of different transport functions. These could include road network design and management, motor vehicle regulation, driver licensing, passenger transport, and freight transport. It can also be considered part of a wider set of sustainable transport functions.

Responsibilities

The city strategy has to be grounded in reality about what each of the city and national stakeholders can commit to and deliver.

A useful way of assessing what can be achieved and who needs to be involved is to consider:

- Which road safety functions your city is responsible for; and
- How these functions relate to national government agencies and city administrations.

Understanding some detail around where these responsibilities lie will assist in working out how to involve relevant stakeholders. Where responsibility for most functions lie within the city itself, there may be greater opportunity in gaining buy-in and leverage from the city's political representatives. Where functional responsibility is held by others, a much more negotiated response may be needed to local representatives of national government agencies.

Stakeholders

Given the various governance bodies for municipalities or urban areas, it is important to identify which specific administrative body will be responsible for the strategy. This could be an administrative body that is responsible for a large urban metropolis, or it could be for a smaller "city" administration within that metropolis. Some judgement needs to be exercised. Ideally, a bigger metropolitan unit tackles the issue because this will more likely allow for a coherent response, possibly leveraging off existing city transport authorities. However, it may be that a smaller metropolitan unit, within a greater urban environment, will allow for quicker and more flexible responses, acting as a catalyst for the bigger metropolitan unit.

It is important to scope the stakeholder groups that you need to engage with. Sometimes these may be obvious - formal groups may already be established which you know are concerned about safety. They may be companies or cooperatives within the passenger transport industry, or consumer groups that have a focus on passenger rights. Some may be less obvious, but just as important, such as non-government organizations who are engaged in public health or environment issues but interested in safe urban mobility. Some stakeholders will be much more influential. Consider how you may need to approach these groups.

Political leadership is essential. Much more is needed for a successful strategy than political endorsement, but a road safety strategy needs political endorsement to succeed. You will need to answer a simple question: Who has decision or approval rights in the strategy, and what needs to be done to achieve approval? Answering this question is vital to designing an effective strategy development process. For example, the support of the mayor is crucial for any city strategy. Ideally, this support also reflects:

- A political commitment from councillors elected by residents.
- A professional commitment within the city administration and from road, transport, policing, and health authorities to safe urban mobility.

It is possible that there will be variation in the level and nature of the leadership that is demonstrated within this group of highly influential people in a city. Some political and administrative leaders find it relatively easy to express their support for road safety, but then much harder to make the necessary decisions required to deliver improved road safety. Identifying an effective local political figure, who is prepared to champion road safety, is a high priority.

Functional responsibilities for road safety in your city

Analyzing functional responsibilities for road safety in your city is important because it will guide you as to who the major government stakeholders are, what they may be able to contribute, and what they may not be able to contribute. It will assist you to make best use of your resources, time, and effort.

Table 1:
Functional responsibilities for road safety in cities

Function	Responsibility	Insights
The national road network	Though it is uncommon, some city administrations have control over the entire road network within its city, including roads connecting with rural highways that radiate out from the city boundary. Typically in Africa, a national agency has responsibility for the major routes which run through the city, often at high speed.	It is critical to ensure that the national highway agency is engaged at the very beginning. They may hold some safety expertise already, and those roads are likely to carry a disproportionate amount of trauma due to traffic volume and motor vehicle speed.
The local road network	A city administration almost always has responsibility for the local road network, and usually the greatest portion of the network by length. It includes important routes connecting different parts of the city. It is important to recognize any responsibility that a national agency may have for road network standards which the city must comply with.	The local road network is typically very diverse, from major urban arterials through to small access streets and lanes, and many different types of users need to be accommodated. Not all roads are as critical to safety results as others - 50 per cent of the trauma may occur on as little as 10 per cent of the network, so prioritization of safety improvements is critical.
Urban planning or design	African cities are likely to have responsibility for most urban planning or design functions, but are also likely to have to work within a policy framework which is set by national government. Safe mobility needs to be incorporated into urban planning and design rules. For example, regarding appropriate land use planning and roadside development.	It may be that a city administration seeks to improve urban planning and design policy but, for the purposes of developing and implementing an effective road safety strategy, it is important to recognize what those constraints are.

Public transport systems	Cities may have some responsibilities in delivering or overseeing public passenger transport operations within the city. National government agencies may also hold these responsibilities, most commonly the registration of the vehicle or the licensing of the driver. However, the safety of these services goes well beyond this, to include routes, timetables, and the safety of the operation as a whole.	Public transport systems play a vital role in urban mobility systems. They invariably need investment and promotion in their own right, which should improve safety by reducing the number of motor vehicles or shifting travel away from more dangerous modes, such as motorcycles.
Road traffic safety enforcement	Some city administrations have their own police force, in which case it is important that road traffic enforcement is addressed as a major policing issue. In most countries, the primary road traffic enforcement activity is undertaken by a national police force, ideally within a dedicated traffic operation. Therefore, the local commanders are a critical influence on results.	As with the national highway agency, it is critical to engage the police at an early stage. They are likely to have an operating unit which broadly matches or includes the city boundaries.
Parking & footpath management	Invariably, parking and footpath management is the responsibility of local government in Africa. This activity is related to urban planning and design policies, which may be set nationally.	This aspect is critical because so many safety issues in African cities are associated with the lack of pedestrian facilities and the commercial encroachment on those facilities.
Driver testing & licensing	It is very rare that a city administration would have responsibility for driver testing and licensing. This necessarily limits the extent to which a city road safety strategy can address the critical issues of driver knowledge, competence, and certification. A national agency is invariably responsible for this critical part of safety within the city.	It is possible for stronger local operations to be implemented by the national regulator, but they will inevitably consider the impact on delivery within the country as a whole before doing so. Furthermore, major safety improvements are likely to be confined to major regulatory changes made by the national government.
Vehicle safety	It is very rare that a city administration would have responsibility for vehicle registration and inspection. This necessarily limits the extent to which a city road safety strategy can address the critical issue of accelerating vehicle safety technology into the national fleet. A national agency is invariably responsible for this critical part of a safety response within the city.	The major issue for vehicle safety is national control of the importation of motor vehicles with low safety standards. However, local compliance operations regarding vehicle fitness could be strengthened, focusing on commercial vehicles and operators, as well as essential safety issues of seatbelts, brakes, tyres, steering, lights, and loading.
Public health promotion	Many African cities hold some public health promotion function - even if this is limited to its water and sanitation responsibilities. These may be supported through a national program or rely purely on local resources, and consideration is required as to the capability of public health systems to take on the road traffic injury issue.	Where they exist, public health promotion units in city administrations can be critical in re-defining the road traffic injury problem by addressing specific local environments and conditions, or applying behaviour change expertise to back up new enforcement or infrastructure initiatives.
Emergency medical response and treatment	The emergency response and treatment parts of the health sector are often (but not exclusively) led by national institutions and programs. Some cities may hold responsibility for secondary health facilities, rather than for hospitals or localized ambulance services.	The health sector is often well aware of the burden which road traffic injury places on its system, and includes capable and motivated professionals who are able to provide important support in the preparation of a city road safety strategy.

Road Safety in a Political Capital

The Addis Ababa Road Safety Strategy was approved by the City Cabinet and launched in March 2017. The strategy adopts safe system principles and is well aligned with the SDGs. It envisions the city of Addis Ababa free from road trauma by 2030, and sets two targets: To halve the number of deaths and severe injuries from road traffic crashes by 2023; and to provide access to safe, affordable, accessible, and sustainable transport systems for all by 2030.

The strategy establishes seven strategic directions:

1. Developing a road safety management system.
2. Focusing on main roads, where trauma is most concentrated.
3. Prioritizing pedestrians first, second, and third.
4. Enforcing key safety laws, supported by awareness creation.
5. Improving crash and injury data management.
6. Improving post-crash trauma response.
7. Demonstrating and scaling up investment.

The city established an Addis Ababa Road Safety Council, chaired by the Deputy Mayor, and nominated its Road Traffic Management Agency (RTMA) as the lead agency for the strategy. An implementation plan was prepared and the RTMA reports against this every quarter. This highly-structured approach reflects the constitutional status of Addis Ababa, as a chartered city with similar powers to the nine states and the agency-based organization of transport within the city. This institutional and strategic foundation has helped facilitate a series of initiatives with the support of international partners.

Investment in observational studies, enforcement training, and equipment has seen enforcement increase significantly over three years, with 138,690 speeding checks and 71,347 drink driving checks undertaken in 2018, supported by communications campaigns. Speeding has reduced from 49 per cent (vehicles over the limit) to 39 per cent, and drink driving has reduced from 9.7 per cent (of motor vehicle drivers over the limit) to 2.3 per cent. With the support of road network inputs from partners, the focus is on delivering proven safety solutions. Over 250 speed humps have been constructed at high risk locations, more than 60 kilometres of pedestrian walkways have been rehabilitated/constructed, and more than 40 intersections have been signalized, with 30 intersections having received safe intersection design treatments.

A revised crash data form supports improved reporting. Slowing the increase in fatalities is a critical first step. Despite motor vehicle registrations increasing by an average of 9 per cent each year, Addis Ababa has had approximately half the rate of increase in fatalities as for Ethiopia as a whole over a six year period (to September 2018). There were 639 additional fatalities in Ethiopia in the last full reported year, compared to just two additional fatalities in Addis Ababa, and seven fewer fatal crashes.

Reflecting on the progress made, Director General of the Road Traffic Management Agency Jiregna Hirpa says the strategy was important in illustrating the critical road traffic safety factors to the city administration, identifying the first points of focus and setting out how implementation by stakeholders would be managed. Hirpa says a city strategy needs to be based on a good knowledge of local issues and international best practices, and is convinced of the need for a lead agency.

“The lead agency has a direct accountability for the improvement of road safety, following up on implementation of the strategy, and making others accountable through the administrative platform established,” says Hirpa. “Having both a lead agency and a strategy, Addis Ababa has shown good progress in tackling the road traffic injury problem.”

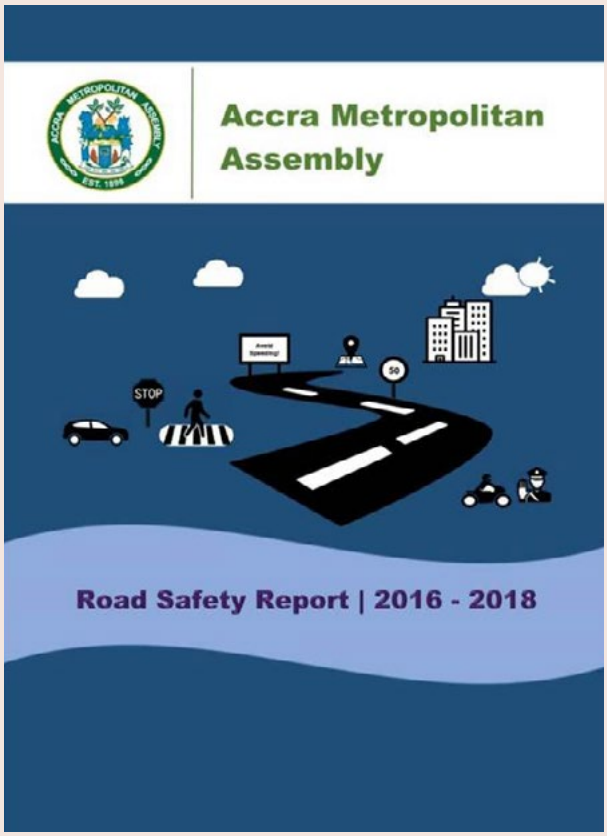
Tackling the big issues in Accra

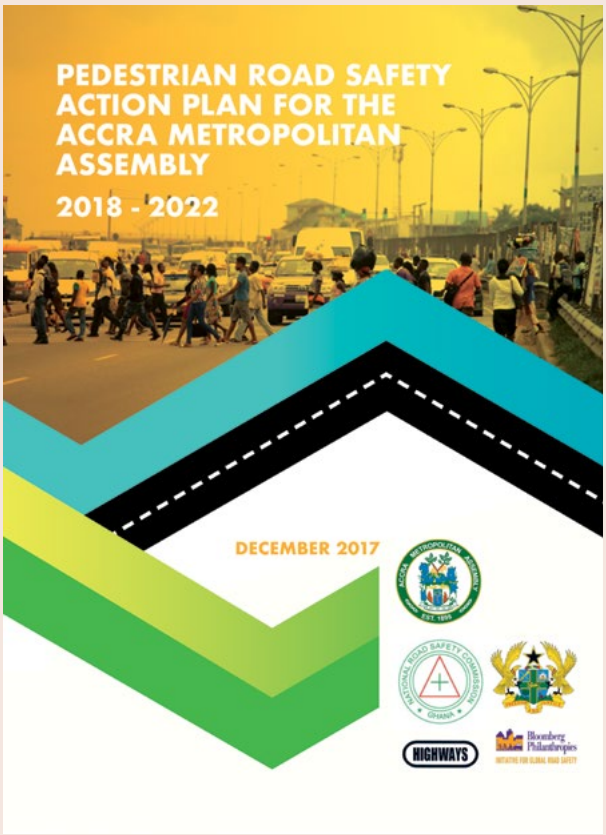
The development of the road safety strategy for the Accra Metropolitan Assembly (AMA) benefited from important work which had already been initiated by the city administration with the Bloomberg Initiative on Global Road Safety. This included preparation of a pedestrian safety action plan and a road safety report, which compiled all available relevant data, firstly between 2011-2015 and then again between 2016-2018.

The local team had been tackling one of the major infrastructure safety issues caused by the George Bush Highway development project. They focused on the Lapaz intersection, which provides a compelling example of why the design and management of major roads in African cities must change. The Ghana Highways Authority has supported progress being made here, but an 80 kilometres per hour speed limit through a dense residential and commercial centre, with a couple of isolated pedestrian overpasses, is a recipe for an urban safety disaster anywhere.

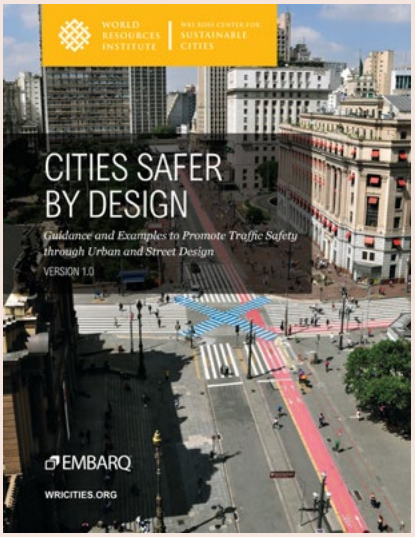
The team had several other projects underway. This included training 550 enforcement personnel on the key safety risks and how to enforce them, which led to significant new numbers of speed, alcohol, and seatbelt checkpoints being conducted, and violations issued. This has been backed up by local mass communication activities developed to reinforce behaviour change towards safety. A speed management action plan has also been developed.

The Mayor of Accra chairs the AMA Road Safety Council and is committed to a strong sustainability agenda, which was reflected in one of five principles underpinning the strategy: "Safety should never be compromised by any element of the mobility system, and should be promoted as a critical component of the sustainability and health agenda of the city." This sustainability agenda was incorporated in one of seven strategic directions which emphasised the tro tro network as the guide to where infrastructure safety improvements would be initiated, to support safe walking, cycling, and use of public transport.





Safe City Planning and Design Guidance



https://www.wri.org/publication/cities-safer-design

Cities often have substantial responsibilities for urban planning and design, as well as the road network. From a safety perspective, the International Road Assessment Programme (iRAP) provides a complete set of tools to analyze a city's primary infrastructure safety problem, develop a highly cost-effective investment program, design critical safety improvements, and evaluate progress. Their safety star rating system is the basis upon which the UN has established voluntary road safety performance targets to 2030. See www.irap.org for applying these essential safety disciplines within your city.

Other resources to inform safe planning and design of your city's road network are described here.

The World Resources Institute's (WRI) "Cities Safer by Design" is a guide to help cities reduce road traffic injury through improved street design and smart urban development, using design strate-gies and principles such as:

- Reducing urban sprawl and alleviating the need for vehicle travel.
- Reducing risk by reducing road traffic speeds.
- Dedicated personal motor vehicle, mass transit, bicycle, and pedestrian zones.
- Cycle networks connected with work, home, education, and mass transport facilities.
- Access to high-quality public transport.
- Use of data to identify problem areas where solutions can be adapted and integrated.

The tools included in the guide have been successfully adapted and implemented by policy-makers in cities across the world, including Istanbul, Izmir, Mexico City, Ahmedabad, Gurgaon, Sao Paulo, and Bogota, as well as Addis Ababa and Accra.

https://globaldesigningcities.org/publication/global-street-design-guide/

The Global Designing Cities Initiative addresses street design more generally in the "Global Street Design Guide." This comprehensive guide, which seeks to inspire, guide, measure, and communicate change, is based on the principle that streets are public spaces for people, moving well beyond traditional ideas about streets' value in motor vehicle movement and access.

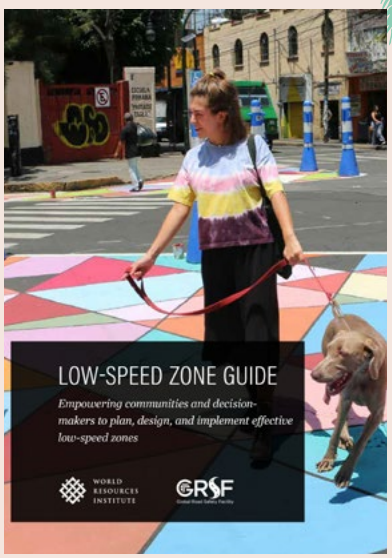
The guide embraces an approach based on local context (the built, natural, social, cultural, and economic context of a street defines the physical scale and character of the space) and the needs of multiple users (when and how they currently use the street, and what the desired mix of users and activities is). By focusing on these ideas of place and people, the guide seeks to assist a multitude of desired outcomes within the city, through which the elimination of serious road trauma is a key element affecting the following:

- Public health and safety
- Quality of life
- Environmental sustainability
- Economic sustainability
- Social equity

UN-Habitat and the Institute for Transportation and Development Policy have prepared "Streets for walking & cycling: Designing for safety, accessibility, and comfort in African cities."

This quick reference guide, on the design of street elements that can help create a safe, usable, and accessible environment for pedestrians and cyclists, is based on project experience in Addis Ababa, Kampala, and Nairobi, as well as in Ruiru, Kenya, during the preparation of a sustainable urban mobility plan. The focus is on relatively simple and low-cost measures, such as reducing vehicle speeds through better design of roads, provision of safe and more convenient pedestrian crossings, and how separation between high-speed vehicles and people can make walking and cycling safer.

https://www.itdp.org/wp-content/uploads/2018/07/Streets-for-walking-and-cycling.pdf



The "Low-Speed Zone Guide" prepared by WRI and the Global Road Safety Facility provides guidance on how to plan, design, and build streets where motorists are encouraged to operate at safer speeds through environmental design measures. It includes background on the history and benefits of low-speed zones, and case studies illustrating low-speed zone implementation across the globe.

The critical role of speed management in road safety means this is vital input for African cities. It takes a comprehensive approach to designing and implementing low-speed zones within complex urban environments, with case studies from around the world.

https://www.roadsafetyfacility.org/publications/low-speed-zone-guide

There are many different ways of looking at urban design and safety, which means you need to look for and build on the similarities.

The "Global Street Design Guide" prioritizes people in street designs in a simple manner, consistent with this strategy guide:

1. Pedestrians
2. Cyclists and transit riders
3. People doing business and providing city services
4. People in personal motorized vehicles

The "Low Speed-Zone Guide" provides a more nuanced hierarchy of vulnerable road users (pedestrians, cyclists, and motorcyclists), and more directly recognizes different passenger transport and motorcycling realities in Africa.

The underlying ideas are the key. Your city road safety strategy is best considered within a wider sustainable mobility perspective, which gives highest priority to the safe movement of pedestrians and gives lowest priority to single occupancy private vehicles.

Safe Motor Vehicle Speed

The speed being travelled by a motor vehicle has a direct bearing on the risk of a fatality or serious injury occurring, whether the crash was caused by speeding or not.

The fatality risk curve shown here illustrates the fragility of the human body, which can suffer fatal injury at very low speed. Walking is the dominant transport mode in Africa and it is critical for every road safety strategy to recognize and respond to the research, which demonstrates that the risk of a fatality for a pedestrian involved in a motor vehicle crash sharply escalates beyond an impact speed of approximately 30 kilometers per hour.

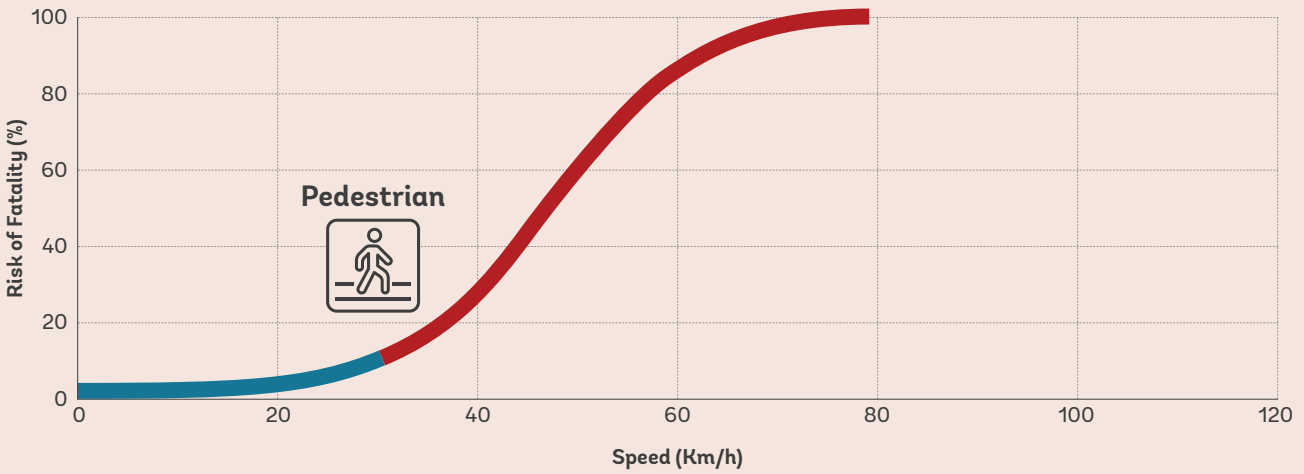
The 2020 Stockholm Declaration, passed by the 3rd Global Ministerial Conference on Road Safety and endorsed by the UN General Assembly, calls for a focus on speed management, including enforcement and a maximum speed of 30 kilometers per hour in areas where vulnerable road users and vehicles mix. This will not only significantly reduce road traffic injury, but support air quality and climate change objectives.

Speed management is vital to the safety of any city, and particularly so for African cities where safety is such a dominant issue. Speed limits need to be set which match the safety protection provided by the road design. The limits need to be reinforced by infrastructure treatments, which control motor vehicles to a safe speed, and enforced by police.

Determining a safe travelling speed for any road environment depends on the function, design, and use of the road. The table below shows the safe speeds for a number of road types and potential conflicts - "safe" meaning a speed at which around 90 per cent of the crashes that take place will cause no serious injuries.[16]

A fundamental change is needed to how we view mobility and safety in our cities. Speed limits in high pedestrian areas, particularly around public transport stops, need to be reduced. The speed of motor vehicles in these areas needs to be physically reduced to around 30 kilometers per hour.

Road and section types combined with road users	Safe speed
Roads and sections used by cars and vulnerable users	30 km/h
Intersections with possible side-on conflicts between cars	50 km/h
Roads with possible frontal conflicts between cars	70 km/h



16. Wegman, F.C.M. & Aarts, L.T. (2006). *Advancing Sustainable Safety; National Road Safety Outlook for 2005-2020.* SWOV Institute for Road Safety Research, Leidschendam.


JESUS
SAVES

PHASE 3:

BUILDING SUPPORT

It is important that you build support for developing and implementing a strategy at an early stage. Prepare a short document, even just two pages which identifies why a strategy is important, the benefits that can result, and the development process you envisage following.

Be prepared to share and discuss this with a wide range of stakeholders as you build support:

- Gather ideas on how to establish a coalition of interests to support sustained action;
- Discuss the values that underpin the concerns of stakeholders;
- Investigate road safety data and existing knowledge about the problem;
- Prepare to make use of opportunities that may arise and innovate.

Stakeholders

Judgement is required about how to start formally bringing stakeholders together. You will need some formal political mandate for the strategy, as well as a governing body to oversee implementation (see phase 5). However, the work to develop the strategy can happen at a professional level, given the right mandate.

You will need to build a coalition of partners, who will implement a joint strategy to tackle the road safety problem in your city.

Three broad elements will be vital to the process you develop:

1. You will need to establish a multisectoral group to develop the strategy, involving the city administration, road network managers, police, community health and education workers, emergency services, transport industry, consumer groups, and so on. This is a vital early role and the ongoing leadership requirements are addressed in phase 5.
2. You will need to cooperatively develop a common understanding of the critical road safety issues facing the city. This is the focus of phase 4, which addresses vision, targets, key safety issues, and future directions and actions. It is important that the key ideas are discussed and agreed, which may take some time.
3. You will need to finish the task by ensuring that the decision-makers are engaged in the process and will sign off actions and resources. They will need to publish the strategy, oversee implementation arrangements, and begin implementation of the strategy through policy and funding decisions.

You are looking to connect with and bring together many different people and groups in a collaborative exercise, requiring many different contributions. This will require you to articulate some common values.

Values

Many people in society have been affected by deaths or serious injuries affecting family members, friends, work colleagues, and others. Political and administrative leaders have often risen to these positions because they are motivated by and communicate values which resonate within the community. The protection of human life and health is a strong value in all African societies, and everyone has an intuitive understanding of the negative aspects of being involved or associated with a road crash.

For some leaders, it is enough to simply be reminded that this is an issue which affects everyone in the city, and that no individual is safe from road traffic crashes. They can quickly understand and articulate the value associated with using their position to advance this issue and improve the safety of the community. They may simply need assistance and support to do so.

For some leaders, this may not be enough. There are many ways in which the issue may be deflected. They may refer to many other pressing issues that they are dealing with, to the difficulty in actually achieving progress, or to old ideas about people simply needing to follow road rules. Tapping into safety values is important, but this should not be a centrepiece of your case for change. More will be needed to build support for developing and implementing a road safety strategy within the city.

Data and knowledge

You will inevitably need to provide some facts and data to at least start the strategy development process. This will be challenging, as road safety data systems vary widely across Africa and less than half of all African countries have operational national crash database systems. The African Union and its member countries are engaged in a systematic process to improve them through the establishment of the African Road Safety Observatory. The World Bank has been piloting an open-source crash data system called DRIVER in 11 low- and middle-income countries, including Cote d'Ivoire and Malawi.[17]

The Asia Pacific Road Safety Observatory provides links to guidance documents regarding the collection of road safety data (*https://www.aprso.org/data-knowledge*). This includes:

- Relatively simple collection of performance data on:
  - » Riders of powered two-wheelers wearing a protective helmet.
  - » Vehicle occupants using the safety belt.
- Requiring technology, more complex collection of performance data on:
  - » Vehicles travelling within the speed limit.
  - » Drivers driving within the legal limit for blood alcohol concentration.
  - » Time between an emergency call following a road traffic injury and the arrival at the scene of the emergency services.
- The WHO's comprehensive guide to data systems, which focuses on crash data.[18]

You will need to become familiar with what data is available regarding road safety in your country and your city. Police crash reports and hospital admission data are likely to be the best means of identifying the scale of the problem. Speak directly to police and to hospital authorities to understand the local data and related issues as best as possible. Improving road safety data within your city will inevitably be one of the tasks for the new strategy. However, you will need to spend some time identifying what data is or is not available. Try to understand what the local problems may be in collecting road safety data.

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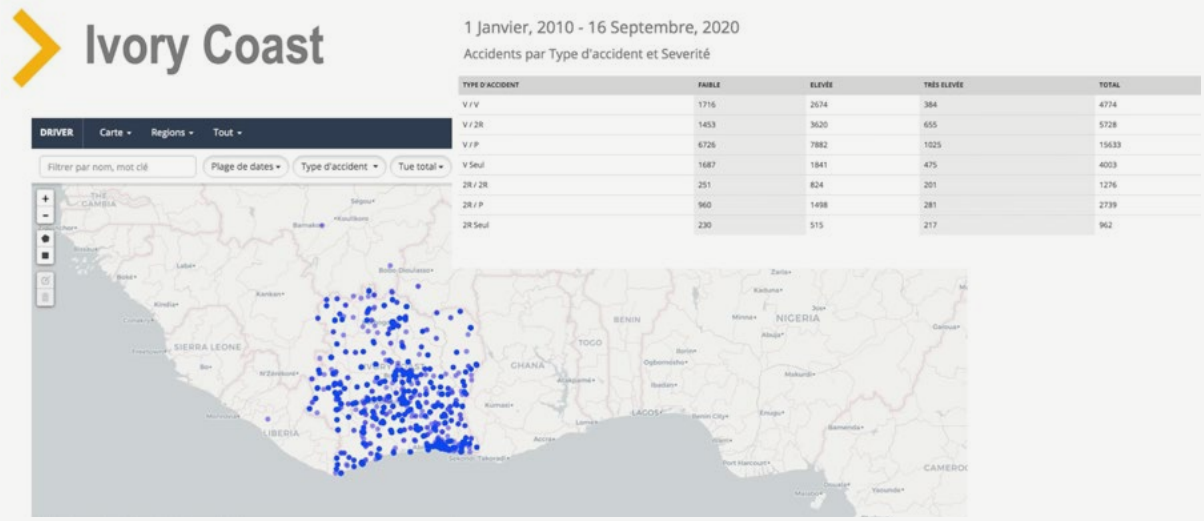
17. See *https://www.roadsafetyfacility.org/programs/DRIVER#overview*
18. See *https://apps.who.int/iris/handle/10665/44256* which is published in English, French and Portuguese.

Figure 6:
Mapping crashes in Cote d'Ivoire using DRIVER



TYPE D'ACCIDENT	FAIBLE	ELEVÉE	TRÈS ELEVÉE	TOTAL
V / V	1716	2674	384	4774
V / 2R	1453	3620	655	5728
V / P	6726	7882	1025	15633
V Seul	1687	1841	475	4003
2R / 2R	251	824	201	1276
2R / P	960	1498	281	2739
2R Seul	230	515	217	962

As you explore ideas, collect data, and consider values, you are likely to be engaging with people. Each of these conversations are important in building support, whether they are held in person, by phone, by email, or through messaging. Prepare yourself for the conversation and be ready to make a request for further support. If several people express interest in tackling road safety, you could encourage them to take part in a joint discussion about how safety in the city could be improved and ask them to explain the road safety issues from their perspective.

Fatal and serious road traffic injury is significantly under-reported across the continent. To augment any local data, you should become familiar with the authoritative country road safety profiles prepared by the WHO, the World Bank, and iRAP. These do not address city issues, but they will assist in explaining and highlighting the reality of the road safety problems faced in your city. You should also try to identify any existing reports which may be available through national agencies, as they may include some data on cities within the country. These may include reports prepared in association with the African Development Bank, the World Bank, or other multilateral or non-government organisations.

There are at least two data-driven ways of reinforcing the significance of road traffic injury as a development issue in your city. One of these is to identify how highly ranked road traffic injury is as a cause of death or disability in your country (see Annex 1). Another is to undertake an estimate of the socio-economic cost of road traffic injury in your city (see Annex 2). Some caution should be exercised in making these assessments and you should inform yourself of some basic issues regarding such assessments. However, you do not need to be a trained epidemiologist or economist. The social and economic impact of road traffic injury is poorly understood - simple data and evidence-based explanations can make a big impact when explained.

The road safety data issues confronted in preparing the strategy should not be a barrier to making progress through the strategy. Use this guide (and the references it includes) to assist in determining priority issues, rather than relying solely on existing data. Collect data as you can while developing the strategy and, critically, ensure the strategy gives priority for improving local data collection and analysis. All implementation projects should include significant data components that will assist evaluation.

Opportunity and innovation

It is important to recognize and take opportunities to build support.

It is impossible to predict how opportunities may arise. While the issue may not have been on the radar previously, a civic leader may, for example:

- Return from a national meeting where the issue is raised and simply ask what is being done about road safety in the city;
- Ask what can be done about a particular crash or series of crashes that has raised the profile of the problem in the city.

The key is to have done sufficient groundwork in advance, with at least some initial documentation recording the situation, so that action can be taken quickly if the opportunity arises.

It is important that consideration is given to how modern safety ideas can be applied within the city and to communicate the value of an improved response to the safety problem. The purpose of this is not to establish a list of interventions that must be enacted, but to illustrate that a new approach is needed to address this seemingly intractable problem.

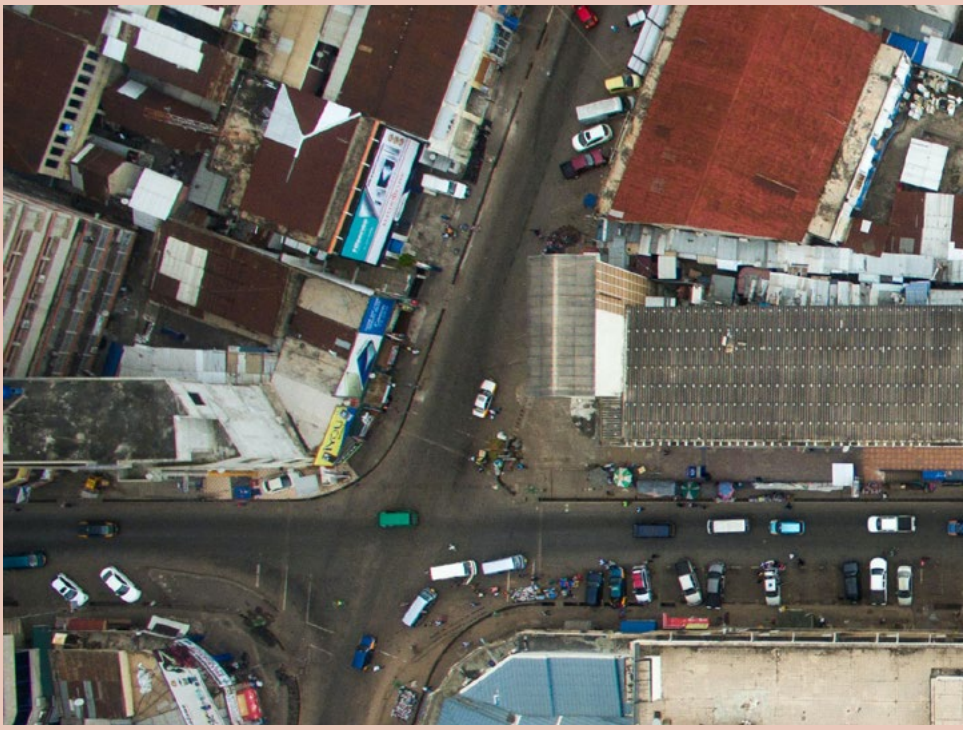
Taking a systems approach to the safety problem, or promoting safety within an overall mobility problem, are two ideas from which many different innovations are possible. What you are trying to do is expand the field of vision. Examples of this may be to promote the safety of vulnerable road users, or the quality and safety of the passenger transport system. You could sketch out what a safe system type response may be to very location-specific road traffic issues, such as motorcycles.

You are not trying to solve the problem. You are trying to articulate the various ideas which could be explored and tested in a road safety strategy for the city. The next section details several different proven treatments to tackle the road safety problem in your city. There are many opportunities available to promote a wide-ranging innovation agenda within the city.

Country Road Safety Profiles

The focus of your strategy is your city, but there is a growing body of information available regarding safety standards in African countries which you can use in building support for road safety action in your city.

These reports provide a snapshot of the national issues, and they may help to gain attention and build commitment to the development and implementation of a city road safety strategy.



WHO Global Status Reports on Road Safety

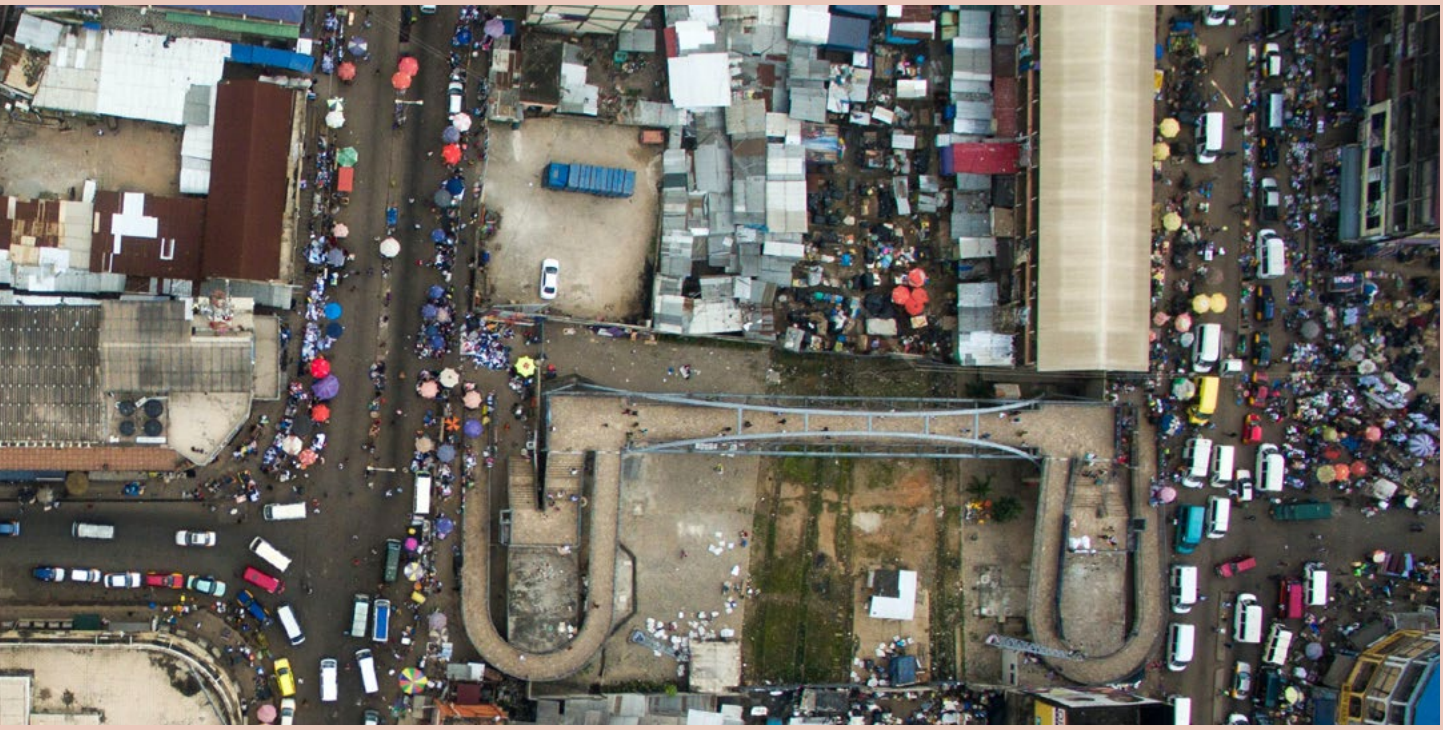
www.who.int/violence_injury_prevention/road_safety_status/report/

A common factor across all reports is their use of a WHO survey of Member States, typically through the health ministry, which is responsible for completing the survey through a collaborative government process.

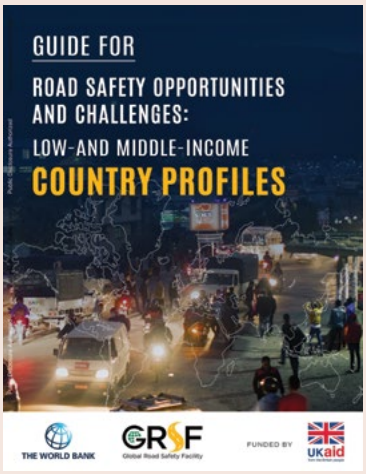
The WHO has produced four global status reports on road safety. The most recent, published in 2018, reports on 2016 data. The full report is available at *www.who.int/violence_injury_prevention/road_safety_status/report/*. You can look back over time at the WHO reports to identify changes in your country, or look at similar countries in your region to see where there may be major differences.

Information is provided about the country's nominated lead agency, whether there is a national strategy, policies related to safer roads and mobility, the existence of post-crash care services, and the legal framework applying to major user safety issues (speed limits, drink driving limits, and requirements for use of helmets, restraints, and mobile phones). Information is also provided about good practice in each of these areas, so that you can relatively quickly identify the major legislative gaps that may exist in your country.

Major quantitative data inputs are a simple breakdown of registered motor vehicles, deaths by road user type, reported fatalities, the trend in reported fatalities, and estimated fatalities. The estimated fatalities data is drawn from a global estimate undertaken by the WHO, using a methodology which is outlined in the report. There is typically a significant gap between the national reported fatalities in Africa and the WHO estimated fatalities, which reinforces the need to strengthen the national road safety data systems.



World Bank Low and Middle Income Country Profiles



This 2020 report amplifies various aspects of the WHO country profiles, while adding data and analysis from other authoritative sources, such as the Global Burden of Disease study and iRAP. Profiles are provided for both individual countries and world regions, and more direct analysis and guidance is provided across road safety management, safe roads and mobility, safe speeds, safe vehicles, safe users, and post-crash response.

http://documents.worldbank.org/curated/en/447031581489115544/pdf/Guide-for-Road-Safety-Opportunities-and-Challenges-Low-and-Middle-Income-Country-Profiles.pdf

iRAP Vaccines for Roads

iRAP's fifth edition *https://www.vaccinesforroads.org* of this report is a web publication which provides very large amounts of accessible data which can be explored at a country level. It provides access to country information on safety star ratings, an analysis of the different injury types estimated to be suffered at a country level, and provides a headline business case for investment in safe road infrastructure and speed treatments, to meet UN voluntary road safety targets for infrastructure.

Vaccines for Roads V

iRAP

Engaging with public transport stakeholders

Sustainable urban mobility is a major issue across Africa, with many primary cities facing rapid motorization, and with insufficient consideration being given to non-motorised or public transport trips. It is important that a safety strategy both fits within an overall approach to urban mobility, and retains a clear focus on safety within the decisions made and actions taken.

There is a growing list of examples across Africa of public transport institutions and these are likely to be important contributors to systematically tackling safety issues within the city. An example is the Executive Council for Urban Transport (CETUD) in Senegal. CETUD is a national agency within the transport ministry, which brings together central and local government and the private sector. It is currently engaged in major bus rapid transit (BRT) and urban rail projects.

The Lagos Metropolitan Area Transport Authority (LAMATA) in Nigeria is an example of a local agency. Lagos successfully developed Africa's first BRT corridor in 2008. Regarded as "BRT-Lite", with a focus on adapting the concept to the rather chaotic local environment as opposed to high end infrastructure, the program was a success and was quickly followed by a 13-kilometer extension of the BRT corridor. LAMATA has a 10-year contract with a private operator which carries all the commercial and operational risks. Journey times have reduced by around one-third, as has public transport expenditure by poor households along the route. Overall traffic on the routes has increased, but crashes and emissions have reduced significantly.[19]

LAMATA has gone on to develop a long-term vision for urban transport in Lagos, and is considering a more comprehensive reform initiative involving the informal sector.

Not only can these major institutions reduce the city's exposure to motor vehicle hazards, there is almost certainly scope for them to lead the way in significantly improving the safety of their operations, through safety management systems, for example. Transport cooperatives and driver unions are also important stakeholders. Engagement with all public transport operators needs to recognize both the importance of their mobility role and their special responsibilities for protecting the safety of their customers, as well as other users on the road.

19. See https://blogs.worldbank.org/transport/urban-transport-lagos-shows-africa-way-forward-again and B Otunola, S Kriticos and O Harman (2019) *The BRT and the danfo: A case study of Lagos' transport reforms from 1999-2019.* IGC Cities that Work Case Study.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PHASE 4:

DEVELOPING THE STRATEGY

This phase addresses vision, targets, and direction as the three key elements to a successful strategy, and the next phase addresses implementation. After initial engagement with stakeholders and familiarizing yourself with any data issues, it is important to move into a development process that will encourage commitment and action from key stakeholders.

This requires you to work collaboratively to:

- Prepare a vision for road safety in your city;
- Consider and adopt a vital few targets to provide direction and track progress;
- Examine critical road safety issues and develop some strategic directions;
- Facilitate stakeholder discussion on vision, targets and direction.

Vision

Targets, direction, and implementation are all elements that interact with each other, but it is the vision that brings all of them together. The vision should set the level of ambition for the targets and inform the directions set out in the strategy.

This guidance promotes a road safety vision where there is no fatal or serious injury on the road. While progress can be made in tackling road safety issues in a city by starting at a different vision, this vision is considered to be the most appropriate vision for the public health crisis which is sweeping through Africa's cities.

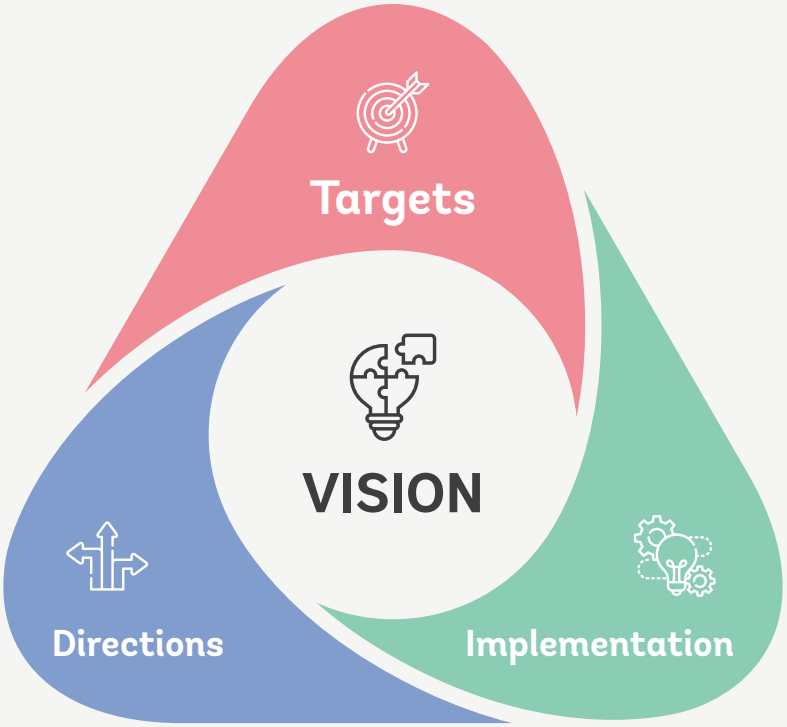
Many public health issues, such as water and sanitation, malaria, or HIV/AIDS, share an "elimination" or "zero" vision. HIV-AIDS remains a major issue in Africa, but progress has been made over the last decade, driven by national goals such as "zero new HIV infections and zero AIDS-related deaths" and backed up by large investment programs.

An elimination vision is necessary in road traffic safety not simply as an ultimate goal. It is important to drive the changes in professional and institutional practices which are necessary to achieve significant new and sustained reductions in road trauma.

The safe system approach to road safety is a response to the previous acceptance by society of road traffic injury as a price to pay for "progress", or "modernity", and is focused on systemic change that progressively eliminates road trauma. In this context, "safe" is the absence of fatal or serious injury.

As well as setting out a vision for road traffic safety, it is useful to articulate principles that your city will apply in the implementation of the strategy, similar to those described earlier for the safe system approach.

Figure 7:
Connecting Vision with Targets, Direction and Implementation



Targets

It is not possible to immediately realize a vision of zero road traffic fatalities or serious injuries. Interim targets are needed to drive change and track progress towards the vision.

There has been considerable work on this through the UN. Given the scale of the problem, it is considered appropriate to set aspirational targets, starting from a 50 percent reduction in fatal and serious injuries by 2030. The UN has backed this up by producing voluntary road safety performance targets[20] and identifying a number of targets to directly support achievement of this 50 per cent reduction. Six of these targets have been identified for use in city road safety strategies and are set out in Table 2 below.

Table 2:
Safety Performance Targets

Safety Performance Factor		2030 Target
	Vehicles exceeding the posted speed limit	- **50%**
	Drivers testing above the legal alcohol limit	- **50%**
	Adult motor vehicle occupants correctly using seatbelts	**100%**
	Motorcycle riders correctly using helmets	**100%**
	Travel on main roads that meet a three-star safety ratings or better	> **75%**
	Time between crash and first professional emergency care	> **60 minutes**

20. https://www.who.int/violence_injury_prevention/road_traffic/road-safety-targets/en/ Retrieved December 2018.

Three levels of targets are recommended:

1. Safety Outcome Targets - Safety outcome targets are the highest-level results being sought, focusing on a reduction in fatalities and serious injuries. A specific target should also be set for pedestrian fatality in African cities.
2. Safety Performance Targets - Safety performance targets are needed to focus resources and monitor progress on safety critical issues. Six targets relevant for all African cities have been selected from the targets developed within the UN (see Table 2). Research evidence suggests that if these indicators improve, safety has improved.
3. Delivery Targets - A number of significant interventions will need to be delivered to achieve safety performance and safety outcome targets by 2030. These should be set out in a separate action plan.

While each type of target is important, safety performance targets provide the focus for the whole strategy.

Any additional safety performance targets identified in your strategy need to meet the following tests (as do the above safety performance targets):

- The target meets the essential SMART framework (Specific, Measurable, Achievable, Relevant, and Timebound).
- If achieved, or demonstrable progress against the target is made, there is clear research evidence that progress will have been made towards achieving the safety outcome targets.
- The target is capable of achieving significant safety improvement across the road traffic system.
- There is at least one which can deliver sufficient actions at the sufficient quality necessary to achieve the target.

Resist the temptation to set a lot of safety performance targets. The key to developing a good road safety strategy is to identify the "vital few" targets, those aspects of road safety in your city which can be significantly improved.

Safety performance targets need to support the achievement of safety outcome targets and drive the delivery targets which will be set for strategy stakeholders. Table 3 shows how this "intervention logic" is well illustrated on the issue of speed. Similar intervention logics can be established for all safety performance targets, in order to help direct implementation of the strategy, and to monitor and evaluate its effectiveness.

Table 3:
Intervention Logic for City Speed Management

Safety Outcome Factor	**Fatalities and Serious Injuries** Travel speed has a direct impact on fatalities and serious injuries in a city, and is particularly important for vulnerable road users. Generally, lower mean free speeds by motor vehicles equal less trauma and higher speeds equal more trauma.		
Safety Performance Factor	**Reduced Mean Free Speeds by Motor Vehicles** There are three main ways to reduce mean free speeds.		
	1. Traffic calming Speeds will reduce if the vehicle is forced through vertical or over horizontal deflections (eg chicanes or platforms)	**2. Speed limits** Speeds will reduce in a city if speed limits are reduced, and the speed limits are widely known, through signs and markings and public information	**3. Enforcement** Speeds will reduce if police enforce speed limits, particularly following general deterrence principles
Delivery Factors	There are many effective ways of delivering these, and they need to focus on the following simple measures of delivery.		
	1. Traffic calming **a.** The number of locations which receive traffic calming treatments **b.** The number of kilometres treated with traffic calming **c.** The safety treatments that were deployed	**2. Speed limits** **a.** The number of road sections where lower speed limits have been applied **b.** The number of kilometres treated with lower limits, and the locations they were lowered	**3. Enforcement** **a.** Police enforcement activity data, showing the number of tickets issued by Police, and the locations they are issued **b.** Enforcement promotion data - how, what and when promotion of enforcement took place **c.** Motor vehicle drivers perceived risk of detection from speeding

Direction

A set of strategic directions need to be developed and agreed across the partnership which, if followed, will provide lasting road safety improvements over the lifetime of the strategy.

These direction statements can take many forms, such as a "headline" with a descriptive sentence and explanatory text. Together, these statements should describe as simply as possible the strategic road safety approach that will be taken and expressed in simple action-oriented terms. They should provide the essential link between the vision and the targets (particularly safety performance targets), and lay the groundwork for a separate road safety action plan. If there are major initiatives which are already agreed, these should be highlighted in the strategy document.

This section looks at the task in terms of your analysis of the situation, the big issues you should consider, and community/stakeholder engagement.

Analyzing the Situation

You will need to develop a critical understanding of the road safety situation in your city. You should consider this issue broadly - for example, possible management or leadership issues within the city administration - and not simply list a series of defects with the roads or vehicles, and so on.

You are seeking to describe, as simply as possible, the critical road safety issues which are facing your city now and which are expected to be faced over the life of the strategy. There are two complementary and essential ways of identifying the critical road safety issues.

The first way is to focus on data collection, recognizing the limitations of the data that are likely to be available. It is important here to look for data that relates to performance and delivery. Ask a simple question - is this a critical piece of information which will help to decide on the safety performance targets to set or which activity to deliver?

Avoid large volumes of descriptive data that do not direct activity in the strategy. For example, whether victims are predominantly male or female is not necessarily critical. This may eventually be important if traffic police have developed a strong drink driving enforcement component in the strategy, and you now need to design a promotional campaign informing people that there will be a lot of breath testing - of which young men are likely to be a target audience. However, your strategy needs to focus firstly on making sure that there is a strong police commitment to enforcing drink driving law, that they are well-resourced with the equipment to do this, and that they are taking a general deterrence enforcement approach affecting the entire population of drivers.

You should collect, analyze, and use as much data as possible. In doing so, you need to recognize that the purpose of the exercise is not to analyze, but to strategize. You need sufficient data to make a compelling case for action on road safety, some supporting data or relevant information concerning the big issues you will tackle, and then commitment to deliver policy and resources to address those big issues. It may be that you need to undertake an exhaustive data analysis in order to remove a barrier to action within the city administration or other stakeholder, but the road safety problem in African cities means you need to move as quickly and efficiently as possible. A good road safety strategy in Africa includes collecting better data as the strategy is implemented, learning the lessons of implementation in your city, and further improving the quality and scale of interventions.

Big issues to consider

The other way of identifying critical issues is to step back, look at the bigger picture, and then see what data is available in these areas.

A good road safety strategy does not try to deal with every single thing that is wrong. It addresses the big issues, the "vital few", using evidence-based approaches to achieve significant reductions in fatal and serious injury.

A small number of big issues which you and your stakeholders should consider as you develop your city road safety strategy are addressed in this section:

- Pedestrians
- Motorcyclists
- Public transport
- Vehicles
- Roads
- Speed
- Alcohol
- Seatbelts
- Post-crash response

They may not all have the same priority in your city, but they all need to be considered as the strategy is developed. Some direction is provided on what can be done at a city level.

Engagement

A successful city road safety strategy is likely to have gone through a considered stakeholder engagement process. The better the participation in developing the strategy, the better the commitment to implementing the strategy.

Nothing beats getting road safety stakeholders together to crystallise the issues and develop the ideas. Provide them with some essential information and analysis beforehand and ask some simple questions about:

- *Critical safety issues*
- *A vision for road safety*
- *The direction to realise the vision*
- *Targets and key actions*
- *Implementation arrangements*

Do not expect all the answers, but do respect everyone's contribution.

Always prioritise a small number of big issues. This will assist you to communicate, implement, and evaluate the strategy, and drive future improvements.

Don't be afraid to innovate. As you do, make sure you apply evidence based design principles, and that you have one or two strong programmes which you can be confident will make an impact.

Martin Small

Participation can be supported early on by preparing a simple document of easily available information and data to make the case for developing a road safety strategy, and by opening this up for discussion amongst stakeholders.

Discussion can be managed through workshops or meetings, which are used to help develop the strategy. Prepare some simple questions to promote discussion, such as:

- What are the critical road safety issues facing our city?
- What are the key road safety changes that our city should initiate?
- What should be our city's vision for road safety?
- What performance targets should be set for our city over the next decade?
- What management arrangements are required to implement the strategy?

It is likely that stakeholders will propose ideas which have:

- No supporting evidence to suggest the proposal will improve safety;
- Evidence that suggests the proposal may have negative safety consequences;
- Evidence that the possible safety improvements are negligible.

Informed people therefore need to be available to ensure the engagement process allows all views to be heard, without inadvertently promoting unsubstantiated elements within the strategy.

There are many options for you to consider when deciding how best to engage stakeholders in your city. Some examples of options successfully used in a road safety strategy setting are:

- Workshops and meetings in different communities within the city, which seek input on consultation questions, and help build support for a new approach to road safety;
- Scientifically developed surveys of the population to test acceptance of key ideas, such as a city vision or particular interventions which are being considered;
- Publishing analytical material with questions to encourage stakeholders to lodge submissions during the strategy development period.

A draft strategy should draw upon the analytical inputs, the discussion, and submissions from stakeholders during the engagement phase. The draft strategy needs to be reviewed at both a professional and a political level, ahead of being released in final draft form to stakeholders. Depending upon the level of stakeholder engagement, this can be considered within a validation workshop. This has the benefit of ensuring that there is a common understanding amongst stakeholders of:

- The key analytical issues addressed, particularly regarding vision and targets;
- The implications of the various strategic directions that are being put forward;
- Reinforcing stakeholder commitment to implementing the strategy;
- Developing a short list of actions to begin implementing the strategy.

Publication of a final approved document should be accompanied by consistent messages on:

- The vision, targets, and directions of the new strategy;
- Implementation arrangements for delivery of the strategy;
- Any major initiatives which will help launch the strategy.

Pedestrians

Africa walks, yet a disproportionate amount of space is allocated in cities to the movement of motor vehicles, rather than people. As currently designed and managed, the road networks do not protect non-motorized users from dangerous impacts with motor vehicles.

Comprehensive and safe networks for pedestrians require:

- Motor vehicle traffic speed to be significantly reduced through traffic calming, lower speed limits, and strict enforcement.
- Safe, accessible, and continuous footpaths.
- Frequently spaced at-grade pedestrian crossings where people want to walk.
- Refuge spaces for people to wait when crossing multiple motor vehicle lanes.

Safe design for non-motorized users (through lower motor vehicle speeds and better separation from motor vehicles) will improve the safety of all users. It is a major priority across Africa, where 40 per cent of fatalities are pedestrians (the highest proportion in the world), and another 4 per cent are cyclists. The safety of pedestrians needs to lie at the center of every road safety strategy in African cities.

Africa walks to school, work, and play, and pedestrians need to be prioritised first, second and third in any city safety strategy. City streets should prioritise pedestrians and mass transit, busy roads need to set aside footpath space for pedestrians, and include refuges and medians to allow pedestrians to easily and safely cross the road.

Martin Small, Vital Strategies

Motorcyclists

Africa has historically had the lowest proportion of motorcycle deaths in the world, but this is changing rapidly - for example, in Uganda, where reported motorcycle fatalities increased from 17 per cent in 2010 to 46 per cent in 2016. The situation often differs from country to country, partly in response to local regulation of motorcycle taxis (such as Okada, Boda-boda, Zémidjan) and partly in response to poor urban mobility systems.

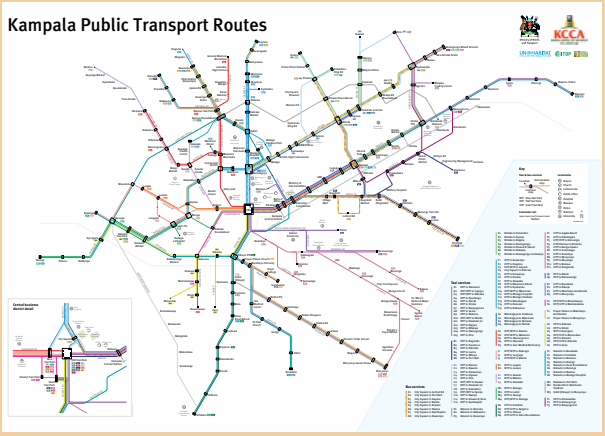
Cities cannot be expected to address national issues (such as the poor safety standards of motorcycles or motorcycle helmets), but are in a position to promote localized solutions such as:

- Strict regulation of the local commercial mobility market.
- Sustained enforcement of motorcycle licensing and helmet regulations.

Motorcycles generate injury risks many times greater than other motor vehicles, due to lower levels of stability and lack of occupant protection. They have become a major traffic management issue in many African cities, and a city road safety strategy in Africa needs to address this current or potentially future problem.

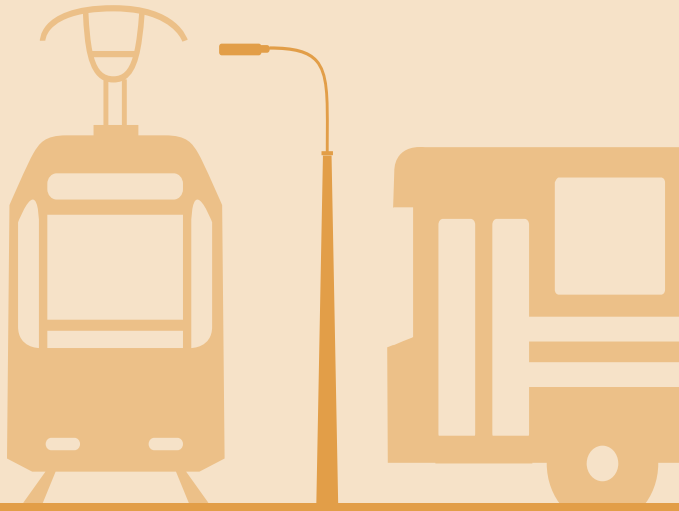
Motorcycles are the cheapest and least safe form of motorised transport, and their rapid increase across Africa is a symptom of bigger mobility issues. Nevertheless, proper use of quality helmets is essential, is easily enforced at city intersections, and can be directly addressed in any city safety strategy.

UNECA/UNECE, Edouard Tamba on Unsplash, Ajay Kumar



Public transport and paratransit is playing a critical role across the continent, and a city safety strategy has to be relevant to the wider mobility needs that they serve. Better investment (linked with pedestrian movement), and better regulation (strengthening services and improving safety), can lock in significant safety improvements over the life of the strategy and beyond.

Kampala Capital City Authority and World Bank



Public transport

The primary safety focus of cities in Africa is the safe movement of pedestrians, and this must be considered in the context of the much wider urban mobility system. This requires cities to consider how the safety of the minibus sector (poda-poda, trotros, danfo, foula foula, dala dala, or simply taxi) and the use of public transport can be significantly increased. Some cities are investing in bus rapid transit or improving other bus or rail services.

There needs to be:

- Much safer pedestrian access on, off, and around public transport;
- Better construction standards for public transport vehicles, addressing issues such as poor seat and seatbelt quality, which can endanger passengers in a crash;
- Much safer operations, to reduce risk imposed on both passengers and other users.

A stronger public transport system is good for the safety of Africa's cities, because it can limit exposure to injury from motor vehicles and help limit the use of much more dangerous motor vehicles, like motorcycles.

Vehicles

The biggest safety improvements possible through vehicles require determined regulatory action by African governments, most notably by applying WHO-recommended UN safety regulations as new and used vehicles enter the national fleet. Depending upon the institutional responsibilities, a city road safety strategy can provide important complementary activities, focused on vehicle inspections. Vehicle inspections should be targeted to address the critical issues, such as:

- Avoiding a crash (requiring good brakes, steering, tires, lights).
- Reducing the severity of a crash by either protecting occupants (requiring seatbelts) or promoting safe loading practices.

Vehicle inspections ideally use technology at testing stations, but can also be delivered by mobile patrols. They provide an important means of regulating the safety of commercial transport operators, and can also be used to ensure that road or vehicle fees and charges are up to date.

Thousands of used light vehicles enter Africa each month from North America, Japan and Europe. National regulation needs to be significantly strengthened, but testing equipment and centres are needed in all cities, along with trained mechanics to maintain safety features, such as brakes, steering, lights and seatbelts.

Fratmat, UNEP, Aujourd'hui le Maroc

Roads

Shifting road network planning, design, and management within the city to a safe system approach must be a critical part of any city road safety strategy. This includes designing in favour of non-motorized and public transport users, reducing speed limits to safe thresholds, and retrofitting essential safety treatments, such as roundabouts, intersection platforms, footpaths, and pedestrian crossings.

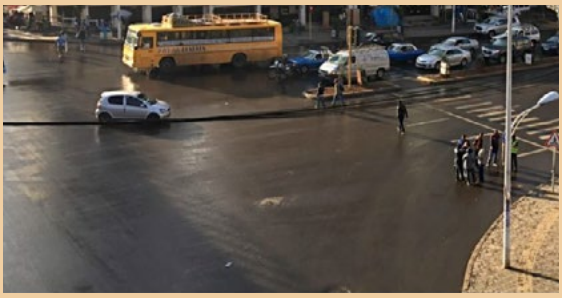
iRAP provides a series of tools and procedures for identifying and treating problem roads, which have been tested and applied across Africa. iRAP has estimated that the required investment in infrastructure and speed treatments to achieve three-star safety ratings on roads in sub-Saharan Africa amounts to US$55 billion.[21]

A city strategy should map out the path towards achievement of three-star safety ratings on the main roads at a minimum, and could focus on:

- Traffic calming measures set out in the speed management section.
- Safe travel to and from school using the "Star Ratings 4 Schools" program developed by iRAP.
- Commercial encroachment into the road corridor, which is putting non-motorized users at even greater risk.

At the very least, the strategy should specify the essential safety treatments that the city will begin to adopt to shift traffic management towards a focus on safety.

An iRAP assessment will provide city administrations with hard data, a list of priorities, and an inbuilt evaluation process to track progress towards 3 star safety ratings. Other design tools are available to improve safety by prioritising pedestrians, cyclists and public transport users and slowing speeds to survivable levels. Re-allocating space to pedestrians is a critical safety measure for Africa.



iRAP, NACTO

21. See www.vaccinesforroads.org

Speed management

Controlling speed addresses both the risk of a crash and the severity of the injury. Reducing speed on your city's roads will quickly reduce fatalities and serious injuries. The most important speed management measures for cities in Africa are:[22]

Traffic calming:

- Narrowing - for example, extending sidewalks, curb extensions, pedestrian refuges
- Vertical deflection - for example, speed humps or platforms, raised pedestrian crossings
- Horizontal deflection - for example, chicanes, pedestrian refuges, chokers
- Block or restrict access - median strips, pedestrian zones, cul-de-sacs

Setting safe speed limits: A default 30 kilometers per hour limit on urban roads in Africa would reflect significant pedestrian risks. Some major roads could be set at 50 kilometers per hour if there is adequate separation between motorized and non-motorized users, with traffic calming at locations where motor vehicles and pedestrians mix.

Enforcing speed limits: Speed enforcement equipment is widely available and easily deployed after training, and is probably the most important traffic policing equipment in Africa's cities. Some countries may have sufficient legal and technology systems to implement automatic speed enforcement in cities. A guide is available to support good decision-making regarding automatic speed enforcement.[23]

The long term speed management solution is to build a safe city environment, and there are plenty of options for this. While the network is being improved, speed limits need to be lowered to safe levels, and enforced.

WHO, GRSF, MacTraffic

22. See http://documents.worldbank.org/curated/en/447031581489115544/pdf/Guide-for-Road-Safety-Opportunities-and-Challenges-Low-and-Middle-Income-Country-Profiles.pdf

23. S Job, D Cliff, J Fleiter, M Flieger & B Harman (2020), *Guide for Determining Readiness for Speed Cameras and Other Automated Enforcement.* Global Road Safety Facility and the Global Road Safety Partnership, Geneva, Switzerland http://documents.worldbank.org/curated/en/794451581062198463/pdf/Guide-for-Determining-Readiness-for-Speed-Cameras-and-other- Automated-Enforcement.pdf

Alcohol

Alcohol tends to create a road safety problem wherever it is consumed. Consumption rates are significantly lower in northern Africa than sub-Saharan Africa, and per capita alcohol consumption across Africa remained static between 2010 and 2016.

Still, drink driving is a major problem. The WHO estimates that around 30 per cent of road traffic deaths in South Africa and Tanzania, and around 35 per cent in Nigeria, are attributed to alcohol.[24] National legislation setting legal limits and effective enforcement is essential, but a city strategy would have a vital role to play in tackling the issue.

City strategies may usefully mandate and promote:

- Stricter control of alcohol advertising and sales.
- Stronger enforcement of drink driving laws that do exist.
- Community-based programs to change behaviour.

Enforcement needs to be based on general deterrence principles, screening of the whole driving population, and backed up by communications support, so that all drivers have a greater perceived risk of detection anywhere, anytime. Alcohol screening and testing equipment is required, along with training in its use and ongoing calibration, but the potential benefits can be substantial in a society where alcohol is widely consumed.

Alcohol is a major risk factor for non-communicable diseases generally, and is lethal in the road traffic system. City road safety strategies can usefully connect to campaigns targeting alcohol distribution and consumption, and have a major role to play in strong behavioural campaigns which support credible alcohol enforcement operations by traffic police.

WHO, Vital Strategies

24. See https://www.who.int/substance_abuse/publications/global_alcohol_report/en/

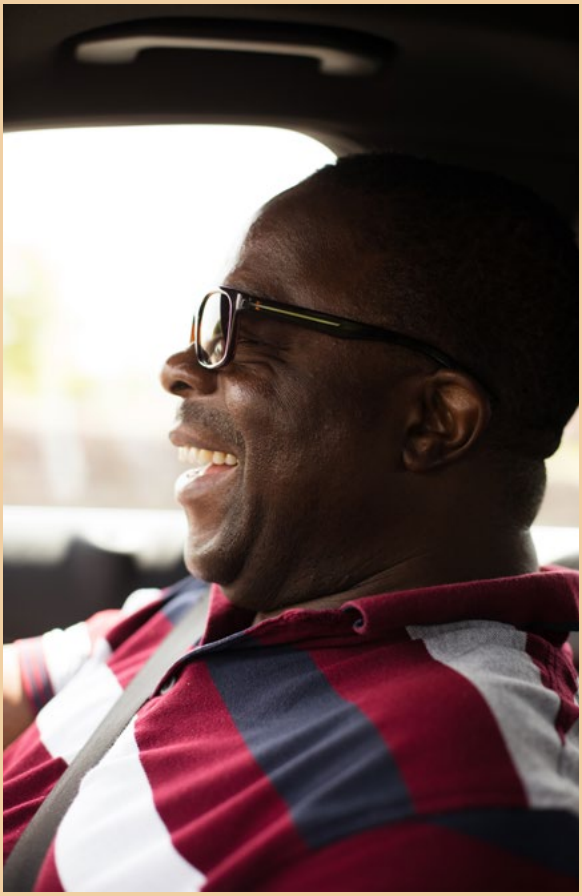
Seatbelts

Motor vehicle occupants not wearing seatbelts are at significantly greater risk of serious injury or fatality in a crash, whether in the front or back seats. Most African countries still need to strengthen their national legislation to require seatbelts in all seats, not only front seats, and cities may wish to advocate for change in this. However, the focus of a city strategy must be on compliance with existing law.

The use of seatbelts is relatively easy for police to enforce, even for police forces whose resources only allow for static traffic patrols. The law is very easily communicated, and it is relatively easy to monitor progress through observational surveys on the roadside.

Similar general deterrence principles would apply for the enforcement of helmets - helmet wearing is very easily observed, enforced, and monitored.

Seatbelts provide critical protection for all vehicle occupants. The need to use seatbelts can be very easily communicated, and their use can be easily enforced on city streets by Traffic Police in static operations.



Freepik.com, Humphrey Muleba on Unsplash

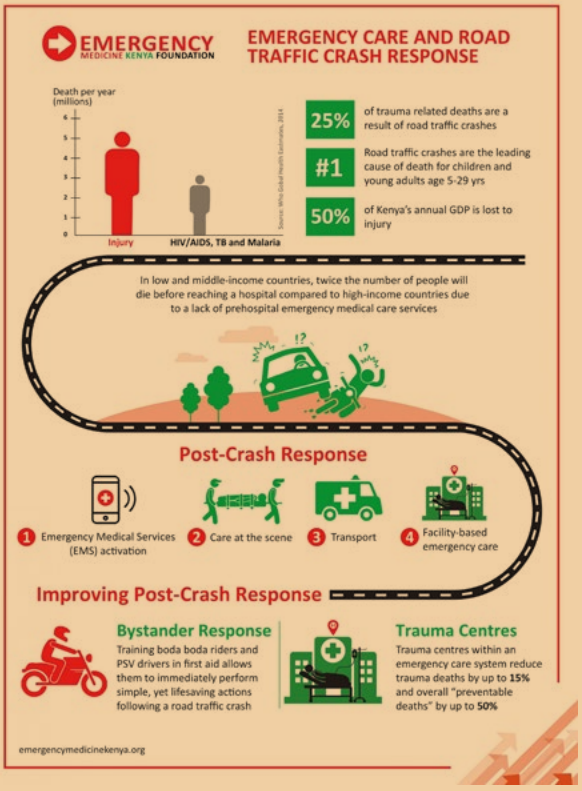
Post-crash response

Significant improvements in the severity and ongoing impact of road traffic injuries can be achieved across Africa through stronger post-crash response systems.

A large measure of the resources may lie at a national level, such as those necessary to establish and operate hospitals and health clinics, or even specialist trauma units.

However, there are likely to be several opportunities for local initiatives that can improve local safety results. For example, community or volunteer-oriented first aid responder programs can be effective for an immediate response, and it is important to reduce the time taken between the crash and the crash victim being received at a healthcare facility. Engagement with the local medical community is an important way of identifying what the best opportunities may be.

The effectiveness of the emergency health response is an important road safety success factor. Encouraging community responses, reducing response times, and investing in appropriate facilities, training and equipment will support other health needs and help build support for the city's road safety strategy.



Emergency Medicine Kenya Foundation, RODNAE Productions on pexels.com

A Safe Walk To and From School

Road traffic injury is the third highest cause of death for children aged 5-14 in Africa, and the sixth highest cause of disability. African children are at their most vulnerable on the walk to and from school, and there are relatively simple ways to address this.

AMEND, a well-established African road safety nongovernmental organization (NGO), has been developing a School Area Road Safety Assessments and Improvement (SARSAI) program for some years now. A 2019 study, conducted with the United States Centers for Disease Control and Prevention, found that the SARSAI program reduced injury rates by 26 per cent and reduced traffic speeds by up to 60 per cent around the schools where it has been implemented.[25]

SARSAI involves the systematic assessment of areas around schools, and implementing measures such as speed humps, bollards, crossings, and footpaths, as well as patrols and instruction on safe walking along and across roads. In Dar es Salaam, 38,000 children have benefited from the program and, in total, it has been deployed across more than 50 school areas in nine sub-Saharan countries. This program is a good example of working at a local scale to target key risk groups and locations, and of implementing simple highly effective treatments on the road.

School trips have also been a particular focus for iRAP which, after some years of development, launched Star Rating for Schools (SR4S) in 2020, as part of the FIA Foundation's Child Health Initiative (*www.starratingforschools.org*). SR4S was developed to easily identify, analyze, and mitigate safety risks around schools. The focus is on reducing risks to children walking along and across roads to get to and from school every day.

The program uses a mobile application (powered by iRAP's Pedestrian Star Rating) with a simplified risk assessment process, which makes it easy to apply for any community. After the assessment and initial star rating is given, the impact of treatments such as road features and speed management actions on the existing risks can be explored. The success of the treatments can be tracked, the students and broader school and local community can be educated, and the star rating of the school can be upgraded.

The major partners for SR4S are NGOs, which can facilitate delivery and oversight of the program for any school, community, or organization wishing to undertake the program.

As part of its work, AMEND delivered a project at a school in Lusaka, Zambia that was assessed as having shifted the safety of access roads around the school gate from a dangerous one- and two-star rating to an excellent five-star safety rating.

25. A Poswayo, S Kalolo, K Rabonovitz, J Witte, A Guerrero (2019). School Area Road Safety Assessment and Improvements (SARSAI) programme reduces road traffic injuries among children in Tanzania. *Injury Prevention* 2019:25.

Attachez Votre Ceinture, Attachez Vous à la Vie, Tunis

Use of seatbelts is essential to significantly reduce the risk of serious injury or death in a motor vehicle. *Attachez Votre Ceinture, Attachez Vous à la Vie (Fasten Your Seatbelt, Attach Yourself to Life)* was a Tunisian behaviour change campaign focused on enforcement of a mandatory seatbelt law, which had not previously been enforced in urban areas.[26]

Since 1986, there had been a law in Tunisia requiring vehicle occupants to wear seatbelts on highways and rural areas. A new law in 2002 required all drivers and front seat passengers to wear seatbelts on all roads (including urban areas). However, this law was never properly enforced, and fines were very low.

The introduction of the new law was championed by a victim of road trauma who subsequently founded Les Ambassadeurs de la Sécurité Routière, to focus on improving seat belt laws, speed reduction, and road safety education in Tunisia, by involving and empowering road users.

After some determined advocacy with the Tunisian government, enforcement of the law finally began in April 2017, focusing on drivers and front seat passengers in the Tunis area. A publicity campaign backed up police seatbelt checkpoints. One year after enforcement began, there was a 8.8 per cent reduction in fatalities and a 9.5 per cent reduction in serious injuries, compared with the year before. Furthermore, 89 per cent of cars stopped at checkpoints were observed to have drivers and front seat passengers wearing a seatbelt (this figure may have been higher than normal because the cars were being stopped). The law has subsequently been extended to cover back seat passengers.

This campaign is a good example of how to focus attention on one of the major behaviour issues, enrol support from government and police, and provide promotional support to enforcement efforts. It was delivered by an NGO, but is appropriate for any community services function within a city administration.

26. J Cardoso, E Meta, C Quigley, R Welsh, R Talbot (2019): Analysis of good practices in Europe and Africa. www.africanroadsafetyobservatory.org/road-safety-knowledge/good-practices-2/good-practices

Emergency First Aid Responder (EFAR) System, Cape Town

Road traffic injury is a major emergency medical demand across Africa. The speed and care with which a road crash victim is treated can make a significant contribution to the eventual severity of a road traffic injury, and first responders can be effective in this.

In Cape Town, South Africa, a community-based emergency first aid responder (EFAR) system was established in 2011 in the community of Manenberg to complement the existing emergency medical service (EMS) system.

Members of the community, who were engaged in programs such as neighborhood watch and HIV/AIDS awareness, were involved in a process to assess the most frequent and severe categories of medical and traumatic emergencies in the community, and how an EFAR system could be efficiently delivered. The EFAR service was structured as a two-tier service - basic and advanced. Volunteers came from road user and other groups within the community, and were trained in basic emergency first aid skills, managing emergency scenes, and supporting victims. Competency increased from 28 per cent before training to 78 per cent after training, and this was maintained at 71 per cent after four months.

EFARs may volunteer to assist victims at the scene of an accident, may be called upon by bystanders during an emergency, or can be dispatched via phone messaging from an EFAR communications center. After training, EFAR participants were more confident in volunteering to help accident victims and providing first-aid, prior to arrival of formal pre-hospital care or transport to hospital. They reported using almost all the skills they had been taught, and their competency in doing so was demonstrated.

The community-focused EFAR system is a practical demonstration of how communities can be supported to tackle the immediate after-effects of a road traffic crash, with potential for 'train the trainer' models to increase community participation.[27] The EFAR system is considered capable of laying the foundation for an EMS or supporting a new EMS to maturity. It has grown substantially and is now led by the African Federation for Emergency Medicine. See *www.efarsystem.com*.

27. JH Sun, LA Wallis (2012). The emergency first aid responder system model: using community members to assist life-threatening emergencies in violent, developing areas of need. Emergency Medicine Journal, Vol 29(8). WL Soro, D Wayoro (2017). A Bayesian analysis of the impact of post-crash care on road mortality in Sub-Saharan African countries. IATSS Research 41.

Motorcycle taxi management in Kigali

Motorcycles are the least safe mode of transport and motorcycle taxis are a major safety problem in many African cities. The explosion of motorcycle taxis may reflect a breakdown in the public transport system as a whole, making the problem more complex.

Moto-taxis have been operating for over 15 years in Rwanda. There are around 34,000 motorcycle taxis, including 20,000 operating in the city of Kigali alone. Management of motorcycle taxis in Kigali involves a number of stakeholders with defined roles:

- Ministry of Infrastructure - The Ministry develops policies and laws related to motorcycle transport.
- Local Government - The City of Kigali registers all motorcycle cooperatives operating within Kigali and provides parking lots to support their operations.
- Rwanda Utilities Regulatory Authority (RURA) - Upon registration, a motorcycle cooperative must acquire a license from RURA before starting public transport operations. RURA administers motorcycle taxi regulations, including licensee obligations for safety and security, and employs compliance inspectors in the field. RURA may revoke the licence of a cooperative which fails to comply, meaning they can no longer operate.
- Motorcycle cooperatives- Each cooperative has its internal rules and regulations and committees. They have a safety and security committee, as well as officers who carry out a daily inspection to check compliance with security and safety regulations.
- Rwanda Cooperative Agency - This national agency provides technical support to motorcycle cooperatives, monitors their daily operations for efficiency, and has prepared security and safety guidelines for motorcycle cooperatives.
- Rwanda National Police - Police are responsible for road traffic law enforcement and have a specific unit in charge of motorcycle taxis.

Cooperatives must have at least 100 motorcycles in operation. Each motorcycle rider must have a helmet for both themselves and another for the passenger, always wear a reflection gilet, and not carry oversized luggage.

A recent Research for Community Access Partnership (ReCAP) study of motorcycle training and regulatory frameworks in Ghana, Kenya, Tanzania, and Uganda (focused on rural areas but relevant for cities)[28] found that riders in the regulated Kenyan market who have been trained are more likely to wear a helmet. In contrast, a straight ban on motorcycle taxis in Ghana has not been enforced and is leaving the highest risk form of public transport unregulated. The study reinforces the vital role local government has to play in regulating the motorcycle taxi sector, in collaboration with relevant national agencies. This includes improving training, testing and licensing, and promoting associations as a means of supporting compliance with safety standards.

28. T Bishop, C Barber, J Adu, F Afukaar, G Muhia, H Mwaipopo, E Kiracho, N Rettie, A Krasnolucka-Hickman, D Divall, G Porter, (2018). *Enhancing understanding on safe motorcycle and three- wheeler use for rural transport, Final Report*. London: ReCAP for DFID.

PHASE 5:

PREPARING TO IMPLEMENT

This guide supports you to prepare a city road safety strategy that is capable of significantly and sustainably improving road safety in a city, and to build commitment within stakeholders for its implementation. The focus is on preparing a credible strategy which will lead to action, not on preparing the perfect planning document or report which may or may not be implemented.

Strategic management and implementation are major issues in road safety across the world. In Africa, and in African city administrations, constraints in road safety management capacity means even more attention must be given to implementation as the strategy is prepared. A management framework for road safety lead agencies in Africa has been developed as guidance at a national level.[29] It addresses a whole range of institutional road safety management functions, which are equally relevant for implementing a city road safety strategy.

Implementation arrangements need to be a focus of discussion as the strategy is developed and be clearly described in the final strategy document. It is important that deliberate consideration and action is given in three key areas:

- **Establishing an ongoing governing body, supported by a dedicated work group;**
- **Preparing a concise action plan to implement the strategy, with funding commitments;**
- **Monitoring and evaluating implementation, and reporting on safety progress.**

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29. M Small, and J Runji (2014), *Managing road safety in Africa: A framework for national leading agencies*. Working Paper 101, SSATP Africa Transport Policy Programme, Washington DC.

Governance & Coordination

Good road safety performance requires effective governance, management, and coordination across many arms of government. Institutionally, two interrelated sets of arrangements are needed - a governing body which has oversight of and responsibility for the strategy, and a work group nominated within the city administration that is mandated to coordinate implementation of the strategy (the "lead agency").

The governing body, such as a "Road Safety Council", should bring together the heads of key functional areas to provide a single line of advice to the city's mayor, or possibly the deputy mayor. In a city, this would likely include the head of traffic police within the city, the regional head of national road networks, the head of the city's road network, and the head of local functions relating to public transport, public health, emergency response, and so on.

There are no set rules or organizational form for the governing body for road safety, or the dedicated work group or lead agency. These should be created in accordance with the city's established processes for managing activities that require involvement of different agencies. Ideally, these entities are established before the strategy is developed, so that they can lead the development of the strategy and build the commitment and capacity amongst stakeholders to deliver it.

Political and administrative leadership through the governing bod is an essential ongoing task, and that body should meet at least once every three months to review progress. A working group or technical group will be required to support this body, and a work unit within the city administration (the "lead agency") needs to provide ongoing secretariat and technical support.

Figure 8:
Addis Ababa Road Safety Council

Ideally, this work unit has at least one professional staff member dedicated to the day-to-day task of coordinating road safety strategy development and implementation across all stakeholders in the city. This person needs to have a strong mandate from the governing body. If they do not have a background in road safety, they will need to develop some technical understanding over time and be capable of working effectively across organizational boundaries.

The Addis Ababa Road Safety Council provides a good illustration of a multisectoral governance system for road safety in the city.

The Addis Ababa Road Safety Council was developed as part of the city's road safety strategy process, and brings together some essential elements of good road safety governance and leadership in any jurisdiction.

The Council:

- Has a clear link to political leadership, as it is chaired by the Deputy Mayor.
- Requires heads of agencies to provide a single line of advice, based on their various responsibilities.
- Is supported by a professional dedicated lead agency, the Road Safety Division within the Traffic Management Agency.
- Has a mechanism for involving non-government stakeholders through a Road Safety Forum.

This governance structure was developed within Ethiopia's federal government system, which assigns significant decision rights to the City of Addis Ababa. Governance structures for road safety in other cities may need to incorporate local representatives of national government agencies who will work with the city's political and administrative leadership.

Planning & Funding

As the strategy is being developed, and initiatives are being identified and prioritized, attention needs to turn to developing an implementation or action plan. An effective action plan identifies the top priorities for implementation and is used to help ensure the strategy is implemented.

These priorities should be expressed in an active manner and reflect a change in activity from the status quo. Key design features are:

- Actions are well aligned to major safety issues and research evidence that action will significantly improve safety.
- Specific activity or policy goals are documented, such as increasing investment in safety engineering treatments by a certain percentage or passing new by-laws regarding the use of motorcycle taxis.
- Specific institutional accountability and timeframe for delivery.
- Agreed funding and evaluation mechanisms for each action.

A simple template can be developed to work through each element of each action, as set out in Table 4.

Table 4:
Action Plan Template

Action	Evidential support	Responsible Agency	Timeframe	Funding	Evaluation

Each stakeholder should identify potential actions, and those actions should be reviewed by all stakeholders. Each action should be specifically described and associated with some evidence that this action will have a substantial effect. A responsible agency should be identified, along with any critical support required from other agencies. The funding source should be identified and a timeframe provided. The measure of success for the action should also be set.

The length of action items should reflect a realistic view of what can actually be achieved. Too many actions will make it more difficult to monitor and reduce accountability for implementation. The focus should be on new projects or activities which are required to implement the strategy. A simple prioritization process is recommended, based for example on a ranking of deliverability and safety impact, against available funding. Unless the city already has a number of road safety systems and capabilities in place, look for no more than 20 or 30 specific actions that will be delivered over a two- or three-year period.

Many implementation hurdles for a road safety strategy can be addressed through better governance, leadership, and coordination, but funding is a fundamental issue which will need to be addressed in the strategy. Funding issues affect many different elements of implementing a strategy, such as human resources, capacity building activities, or third party expenditures on enforcement equipment or engineering works, and so on.

Some ways to generate discussion on this issue are:

- Asking agencies to consider, given the strategy that is being prepared, how they can make better use of existing resources - for example, focusing traffic police on easily enforced behaviours such as use of seatbelts or helmets, or focusing minor engineering works on traffic calming.
- Considering options for raising road safety-related revenues within the city - for example, it may be possible to apply increased traffic fine enforcement to safety projects or there may be relevant regulatory charges within the city which can be increased.
- Ideally, a budget line for road safety should be established within the city, or a small road safety fund established to implement high-priority projects.
- Discussion should be initiated with national agencies to identify options to fund safety works or projects which are in line with the strategy and part of the action plan.

Without establishing either a budget or simply setting out the approach to raising implementation funds, implementation of the strategy will be severely compromised.

Monitoring & Evaluation

An ongoing monitoring and evaluation program is important to support implementation. This can be usefully considered in three ways.

1. Strategy evaluation - It is important to establish points during the life of the strategy when progress against the strategy is evaluated. The first strategy evaluation may be after two or perhaps three years, and it may be focused on implementation. What has been done? What lessons can be learnt from the first implementation phase? What improvements to implementation are needed? The second strategy evaluation may be at the midway point and focused on what has been achieved. Has there been some systematic change in what is being delivered, as well as the quantity and quality of what is being delivered? Has there been some progress on the safety performance targets which were set?
2. Performance evaluation - It is important to identify how each of the safety performance targets will be evaluated, to prioritize these evaluations based on the immediate actions that will be taken, and to publish the results of these evaluations. These become an important means of assessing long-term progress in the areas where significant improvements in safety are required. This may be the most important part of a monitoring and evaluation program, because it provides all stakeholders with objective assessment of progress on the strategy.
3. Delivery evaluation - Once the action plan has been set, there needs to be ongoing reporting by each responsible agency against each action. This reporting task can highlight early implementation issues and allow the governing body to make decisions or provide direction regarding agency priorities. A quarterly report is recommended, and at least an annual report is essential.

Each of these monitoring and evaluation elements need to be identified as part of the action plan and overseen by the city's road safety governance structure. This includes the strengthening of crash data systems - as noted in the "Building Support" section, this will be a key part of the strategy, and the work to do this needs to be specified in the action plan.

Death and disability in your city

A powerful way of demonstrating the scale of the road traffic injury problem is to access the authoritative Global Burden of Disease Study at *http://vizhub.healthdata.org/gbd-compare/*. This online data tool allows you to compare estimates on the burden of road traffic injury in countries and regions around the world.

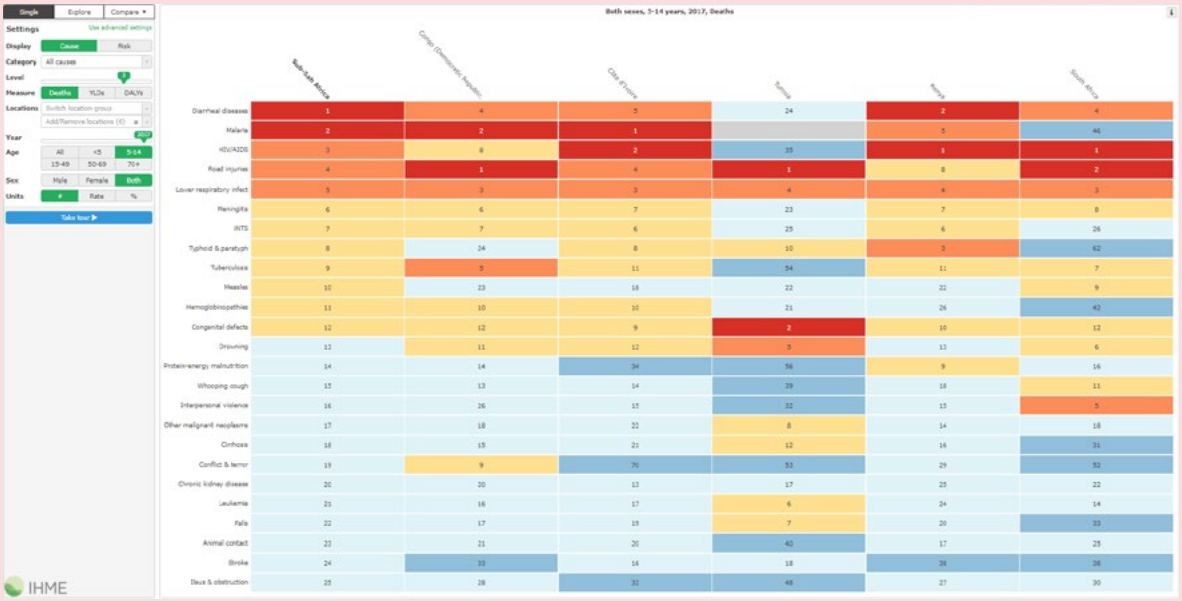
The tool is particularly useful for highlighting the relative size of road traffic injury as an issue in your city. Select the "Heat Map" function on the sidebar of the data tool. Then select "Cause", "Level 3", the countries or regions you want to look at, and examine the different data by year, age, and gender. Use disability-adjusted life years (DALYs) as the measure to assess road traffic injury as a cause of disability.

While there is a lot of data available, keep your messages simple. The simplest message may be to report on road traffic injury as an estimated cause of death, and of disability, for all the population, and for children aged 5-14 (the most vulnerable population) and for adults aged 15-49 (the most productive population). The example below looks at where road traffic injury ranks as the cause of death for children aged 5-14 in Africa, and in five different African countries - South Africa, Kenya, Democratic Republic of Congo, Cote d'Ivoire, and Tunisia. Of all the different causes of death, we can say that road traffic injury is the third most common cause of death for children in Africa, the second most common cause of death in South Africa, and the leading cause of death for children in Tunisia.

By hovering the cursor over the results, you will be able to read estimates of actual numbers of fatalities and serious injuries. These estimates are likely to be different to the WHO estimates. Do not be concerned about this - it just reflects a difference in methodology between the studies. This study is best used to compare the cause of death or disability within a country, and in comparison with other countries or regions.

Also, carefully consider use of any gender-related data. It will tend to suggest that there is male user problem, but the high representation of males is likely to reflect exposure to road traffic injury, rather than a need to focus on males. Men and boys are more likely to be exposed to injury, and women and girls are more likely to be exposed to the negative economic impact which that injury has on households and communities.

Figure 9:
Screenshot of the Global Burden of Disease (GBD) Visualization Hub



The cost of crashes in your city

The case for change can be significantly strengthened by estimating the economic losses associated with road traffic injury. South Africa has a fully developed analysis of these costs.[30] For most African countries, it is credible to use a rapid estimation methodology, which was developed for use in low- and middle-income countries throughout the world.[31] A recent study that used this methodology estimated the cost of each fatality at 70 times national Gross Domestic Product (GDP) per capita and serious injury at 17.5 times GDP per capita. The study used the WHO country estimates as the fatality number and assumed that there are 15 times more serious injuries than fatalities.[32]

Follow these steps to provide a reasoned estimate of the economic costs:

1. Using the Global Status Report data for your country, establish the WHO fatality estimate and the official fatality number.
2. Identify the proportionate difference between the WHO estimates and national data.
3. Identify the proportion of the country human population that is resident in the city, and also of registered motor vehicles if that data is available.
4. Either:
   - Use the reported city fatalities, and factor this up to achieve an estimate consistent with the WHO estimates and identify the estimated fatality number in the city, or;
   - Use the WHO country fatality estimates, and factor this down to reflect the city population and identify the estimated fatality number in the city.
5. Identify the GDP per capita for your country. This can be found by searching for the term online, along with the name of your country. There is authoritative World Bank data available,[33] as well as other reputable sources.

Take the example of Nairobi, the capital city of Kenya. The National Transport and Safety Authority reports 414 fatalities in Nairobi County in 2017, using police crash data. The WHO fatality estimates for Kenya are four times the reported fatalities. In the case of Kenya, this level of under-reporting has been verified by the health sector, which is responsible for registering all deaths in the country. The number of fatalities in Nairobi County in 2017 is therefore estimated at 1,664. We multiply this figure by 15 times to establish a serious injury estimate in 2017 of 24,960. GDP per capita for Kenya in 2017 was US$1,508.

Table 5:
Estimated cost of road trauma in Nairobi 2017

Est. cost of a fatality (70 X GDP per capita, $1508)	$105,560
Est. fatalities	1664
Est. fatalities cost	$175,651,840
Est. cost of a serious injury (17.5 X GDP per capita, $1508)	$26,390
Est. serious injuries (15 X fatalities)	24,960
Est. serious injuries cost	$658,694,400
Total	**$834,346,240**

30. Labuschagne FJJ, et al (2016), *Costs of Crashes in South Africa*. Road Traffic Management Corporation, Pretoria.
31. Dahdah, S & McMahon, K (2008), *The True Cost of Road Crashes: Valuing life and the cost of serious injury*. International Road Assessment Programme, Basingstoke.
32. World Bank (2019), Guide for Road Safety Opportunities and Challenges: Low and Middle-Income Countries Country Profiles. Washington DC.
33. See https://data.worldbank.org/indicator/NY.GDP.PCAP.CD Retrieved January 2020.

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