

Delivering Road Safety in India



Leadership Priorities and Initiatives to 2030

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Initiatives to 2030



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Acronyms

ABS	Anti-Lock Braking Systems
AITD	Asian Institute of Transport Development
ARAI	Automotive Research Association of India
CMVR	Central Motor Vehicle Rules
DRIVER	Data for Road Incident Visualization, Evaluation and Reporting
FICCI	Federation of Indian Chambers of Commerce and Industry
GDP	Gross Domestic Product
GNCAP	Global New Car Assessment Program
GoI	Government of India
GRSF	World Bank's Global Road Safety Facility
IAHE	Indian Academy of Highway Engineers
IRAD	Integrated Road Accident Database
iRAP	International Road Assessment Programme
IRC	Indian Road Congress
MHA	Ministry of Home Affairs
MoRTH	Ministry of Road Transport and Highways
MVAA	Motor Vehicles (Amendment) Act 2019
NHAI	National Highways Authority of India
NRSC	National Road Safety Council
RADMS	Road Accident Data Management Systems
RTO	Regional Transport Office
SDG	Sustainable Development Goals
UN	United Nations
UNECE	United Nations Economic Commission for Europe
WBG	World Bank Group
WHO	World Health Organization

Executive Summary

India has the world's highest reported number of annual road crash fatalities. According to the World Health Organization, road crash fatalities in India account for approximately 11 percent of the estimated 1.35 million global toll each year. Vulnerable road users, primarily pedestrians, cyclists, and two-wheelers, account for almost 54 percent of all fatalities and serious injuries. The young, working-age population is predominantly affected. Road users between the ages of 18 and 45 comprise 69 percent of all fatalities. This disproportionate impact of road crash mortality and morbidity on this economically productive segment of the population has a negative impact on productivity and is likely to significantly depress GDP growth rates.



A recent World Bank Group (WBG) study of road safety investment in South Asia revealed a crisis that has been exacerbated by the rapid growth in vehicle ownership and diversity of motorized and nonmotorized traffic of varying sizes and speeds, without adequate protection for the most vulnerable. This crisis is particularly acute in India where rapid motorization and the provision of high-speed road infrastructure have serious implications for the safety of vulnerable road users—pedestrians, bicyclists, and motorcyclists—in urban areas as well as on interurban roads. India faces challenges that differ from those of high-income countries largely due to a highly heterogeneous traffic mix; which has resulted in unique challenges that must be addressed over the next decade.

Road safety management at the national and subnational levels in India lack a comprehensive and inclusive approach. Governance challenges impede the mobilization of a systemic, targeted, and sustained road safety program. A stronger emphasis needs to be placed on institutional ownership of the problem, accountability for safety, safer infrastructure, a regulatory framework that demands greater vehicle safety for all road users, targeted enforcement of unsafe road user behaviors, and improved post-crash health services. The urgency of the road safety situation is being recognized at all levels of government—central, state, union territory, and district. However, agencies responsible for road safety in India are inadequately empowered and resourced to deal with the escalating danger on their roads. More effective, efficient, and scaled-up initiatives are needed.

Program initiatives will also require proper sequencing as institutional capacity must first be strengthened to ensure agencies can effectively deliver safety services. Robust vehicle and driver licensing systems will need to be well established and accessible by law enforcement agencies and regulatory authorities before the full power of safety compliance regimes can be exercised. Infrastructure safety design skills and tools will also require considerable strengthening. Initiatives taken must be systematic and at scale.

The Government of India (GoI) aims to tackle the road safety challenge through a multifaceted approach. The National Road Safety Strategy (2018 to 2030) will guide the road safety agenda and sets out India's proposed journey towards Vision Zero, which seeks to reduce road fatalities to zero. The recent enactment of the Motor Vehicles (Amendment) Act 2019 (MVAA) is an important step toward reducing the death toll on the nation's roads. The WBG provided technical guidance for the draft bill, shifting its primary focus from motor

Gol is currently preparing a **US\$2 billion** State Road Safety Incentives Programme to provide financial grants to the states to seek continuous improvements in their road safety performance.

India will require an estimated additional investment of **US\$109 billion** over the coming decade to achieve the **Sustainable Development Goal** target of a **50 percent reduction in national road crash** fatalities.



vehicle registration, road use, and penalties, to a more comprehensive legislative framework that covers all aspects of road safety, on par with international good practice. The MVAA proposes a National Road Safety Board to be constituted as the apex body to take policy decisions addressing identified strategic themes. Counterpart agencies at the state level are also proposed. India has a federal structure of government and a large proportion of road safety activities are implemented by the states and lower levels of government. To assist the passage of the MVAA, the Gol is currently preparing a US\$2 billion State Road Safety Incentives Program to provide financial grants to the states to seek continuous improvements in their road safety performance.

Improving road safety in India is vital to the nation's health, well-being, and economic growth. The economic losses associated with a failure to take action are substantial. As is evident from analytical work undertaken by the WBG with funding from Bloomberg Philanthropies, 50 percent reduction in road crash fatalities and injuries would result in an estimated 14 percent increase in GDP over the analysis timeframe of 24 years. Likewise, the estimated population welfare gains from achieving a 50 percent fatality reduction in India over this period will be equivalent to 16.3 percent of the GDP. Long-term commitment and vision from the Gol is critical to achieve this.

India will require an estimated additional investment of US\$109 billion over the coming decade to achieve the Sustainable Development Goal (SDG) target of a 50 percent reduction in national road crash fatalities. Investing in effective road crash fatality and injury prevention will contribute to the accumulation of human capital in India, which in turn will contribute to sustainable and inclusive economic growth and overall country wealth. Scaled-up road safety investment will also potentially produce the added benefits of contributing to the achievement of other sustainable mobility goals related to improved transport productivity, universal accessibility, climate change mitigation and adaptation, and reduced local air and noise pollution.

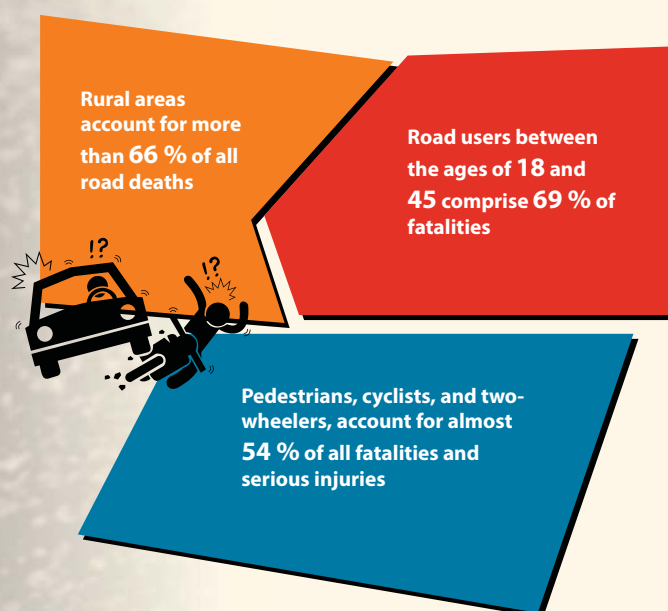
At the 3rd Global Ministerial Conference on Road Safety—"Achieving Global Goals"—to be held in Stockholm, Sweden, on February 19–20, 2020, participants will assess progress over the UN Decade of Action for Road Safety (2011–2020) and the global, regional, and country implications for greater road safety gains over the next decade. The conference is expected to set out an overarching platform and agenda for country and regional engagement with global partners over the coming decade, including the multilateral development banks, UN agencies, the donor community and the private sector. The WBG has been engaged in productive road safety partnerships in India since the 1980s and the recent Gol initiatives provide new and exciting opportunities for engagement moving forward. India faces formidable road safety challenges, but the benefits of overcoming them are rewarding and far outweigh the cost of the effort needed. Future success will be determined by the vitality of the national, regional, and global partnerships that can be created to meet these challenges.

Key priorities for the Gol are to implement the new National Road Safety Strategy and all directives of the MVAA, at national, state, district and town levels. To rapidly achieve this, it is important that formal agreements are reached and institutional arrangements are established for implementation of MVAA provisions with state governments; and that the State Road Safety Incentives Program is launched on a national mission mode to support the implementation process. Priority must also be given to complementary initiatives addressing safer roads and mobility, safer vehicles, safer road users and more effective post-crash response services.

1. Road Safety Challenges in India

1.1 The Magnitude of the Challenge

India has the world's highest reported number of annual road crash fatalities (WHO 2018). This has hindered the country's economic growth and caused significant social welfare losses among the poor. A recent World Bank Group (WBG) study of road safety investment in South Asia revealed a crisis that has been exacerbated by the rapid growth in vehicle ownership and diversity of motorized and nonmotorized traffic of varying sizes and speeds, without adequate protection for the most vulnerable. India faces challenges that differ from those faced by high-income countries; it has unique priorities that must be addressed over the next decade (WBG 2019a).



Road crash fatalities in India account for approximately 11 percent of the estimated 1.35 million global road crash deaths each year (WHO 2018). The challenge of addressing this crisis is exacerbated by India's rapid motorization and provision of high-speed road infrastructure. This has serious consequences for the safety of vulnerable road users—pedestrians, bicyclists, and motorcyclists—both in urban areas as well as on interurban roads. In India, more than 36 percent of all crash fatalities are two-wheeler riders (this includes motorcycles, scooters, and mopeds) and passengers. High-volume, high-speed roads are dangerous. While national highways make up just 1.94 percent of the road network in India, they account for 35.7 percent of the crash fatalities. Rural areas account for more

than 66 percent of all road deaths. Road users between the ages of 18 and 45 comprise 69 percent of the fatalities, which has an impact on the country's productivity. Vulnerable road users, primarily pedestrians, cyclists, and two-wheelers, account for almost 54 percent of all fatalities and serious injuries (Gol 2019).

Various factors contribute to this unacceptable situation. Current levels of investment in transportation have failed to provide safe public transport and safe infrastructure facilities for road users. This is particularly the case with high-speed roads which lack adequate provision of safe access and crossing facilities for vulnerable road users. Restricted right-of-way conditions often result in poor designs that contribute to unsafe operating conditions. Road safety management at the national and subnational levels lack a comprehensive approach. A stronger emphasis needs to be placed on institutional ownership of the problem, accountability for safety performance, safer infrastructure, a regulatory framework that demands greater vehicle safety for all road users, targeted enforcement of unsafe road user behaviors, and improved post-crash health services.

1.2 Addressing Road Safety Challenges in India

The Government of India (GoI) aims to tackle the road safety challenge through a multifaceted approach. The recent enactment of the Motor Vehicles (Amendment) Act 2019 (MVAA) is a laudable and timely step toward reducing the death toll on the roads in India. The WBG provided technical guidance for the draft bill, to help shift its primary focus from motor vehicle registration, motor vehicle use, and penalties, to a more comprehensive legislative framework that covers all aspects of road safety, on par with international good practice (see Box 1).

BOX 1: HIGHLIGHTS OF THE MOTOR VEHICLE (AMENDMENT) ACT 2019 (MVAA)

Road safety management

The Motor Vehicle (Amendment) Act 2019 (MVAA) recognizes road safety programs must be effectively managed and coordinated through an apex body. It includes a provision to establish an empowered and accountable National Road Safety Board (NRSB) and counterpart state agencies. Several states in India, including Kerala and Gujarat, have, with WBG support, already established independent and empowered state road safety authorities as counterparts to the proposed NRSB. Similar models in other states would help resolve difficult coordination issues between police, transport, health, and other stakeholder agencies, as well as streamline crash reporting processes and procedures at the state and national levels.

Safer roads and mobility

The MVAA uniquely holds road agencies, contractors, consultants, and concessionaires accountable for failure to comply with safety standards for road design, construction, operation, and maintenance. This aligns with the safe system approach which challenges the fatalistic view that road traffic injuries are the price to be paid for achieving mobility and economic development. It accentuates the shared responsibility of designers to provide safe infrastructure and for road users to comply with rules set for its safe use.

Safer vehicles

The MVAA strengthens existing vehicle safety regulations in India, which are already compliant with six of the eight international vehicle standards specified by the United Nations Economic Commission for Europe's World Forum for Harmonization of Vehicle Regulations. The MVAA, additionally, includes the power to recall vehicles or vehicle components to supplement the mandated and proposed suite of safety standards designed to make light vehicles safer for their occupants and for vulnerable road users who may be struck by these vehicles.

Safer road users

The MVAA addresses risk factors emanating from poor road user behavior and creates an enabling environment for enforcement activities. Legal provisions streamline processes for road users' compliance with licensing and registration services, and improve the regulatory framework for driver training schools. This will ease the administrative and human resource burden on public officials. The MVAA also underpins enforcement activities related to crash risk factors (e.g., wearing seat belts and helmets, obeying speed limits, and complying with vehicle occupancy limits). Provisions for electronic monitoring on highways and urban roads will ensure transparency and promote a deterrence-based enforcement culture.

Post-crash care

The MVAA strengthens the financial compensation coverage to crash victims. A proposed Motor Vehicle Accident Fund will cover all road users by providing cashless treatment of crash victims. It will also make compensation payments to victims' families and those who are seriously injured in hit-and-run incidents. This initiative is based on international best practice and should go a long way toward ensuring crash victims' care and rehabilitation, and preventing their potential slide into poverty.

In summary, the MVAA achieves an important milestone in India. If fully implemented and quickly operationalized, it will engender greater accountability for all stakeholders in the road system—engineers, enforcement agencies, vehicle manufacturers, post-crash response teams, and road users. The benefits of similar provisions have already been demonstrated in high-income countries. In India, the MVAA will catalyze the use of best practices by agencies across all five UN road safety pillars (see Section 4). This will greatly aid the government's endeavor of ensuring that a significant portion of the country's demographic dividend does not translate into a public health burden.

Source: Motor Vehicle (Amendment) Act 2019

The National Road Safety Strategy (2018 to 2030) will guide the road safety agenda in India. This strategy sets out India's proposed journey towards Vision Zero, which seeks to reduce road fatalities to zero. The strategy envisages coordination across all sectors—transport, enforcement, health, education, urban development, public works departments of government, and the private sector—to develop and implement road safety interventions. Ten pillars, or cornerstones, for action have been identified and targeted interventions planned over three phases.

As India has a federal structure of government, a large proportion of road safety activities are implemented by the states and lower levels of government. To assist the implementation of the MVAA, the GoI is currently preparing a US\$2 billion State Road Safety Incentives Programme to provide financial grants to the states to seek continuous improvements in their road safety performance. This landmark scheme will ensure that all states and union territories are funded, monitored, and evaluated under a common harmonized framework. Results achieved will be aligned with national targets set under the new strategy. Incentives under the program will provide an annual assured budget to the states, proportionate to the magnitude of their road safety burden, to carry out the delivery of prescribed safety practices, including state requirements under the MVAA. Additional funding support could also be accessed through the meeting of performance-based indicators linked to outcome-based metrics for reduced road deaths and serious injuries.

Successful implementation of this incentive-based support program will hinge on the effective establishment of strengthened institutional arrangements as envisioned under the MVAA, which proposes a National Road Safety Board to be constituted as the apex body to take policy decisions addressing identified strategic themes. All states and union territories have been requested to constitute state road safety authority counterparts and district road safety committees.

2. The Global Agenda

2.1 Achieving the Sustainable Development Goals

The 3rd Global Ministerial Conference on Road Safety—“Achieving Global Goals”—will be held in Stockholm, Sweden, on February 19–20, 2020. Participants will assess progress over the UN Decade of Action for Road Safety (2011–2020) and the global, regional, and country implications for greater road safety gains over the coming decade. A key focus of the conference will be on the integration of road safety with the Sustainable Development Goals (SDGs) to 2030 and the related agenda for action (UN 2015).

SDG Targets 3.6 and 11.2 call for a halving of global road deaths and universal access to safe transport in cities and settlements, respectively. It is clear that the SDG Target 3.6 date for halving global road deaths by 2020 will not be met. This is because insufficient resources and actions have been mobilized to achieve this target. In Stockholm, conference participants will consider extending the target date to 2030 as well as proposed regional fatality and serious injury targets. Recommended priorities for improved road safety over the coming decade will include:

- promoting a shift to more sustainable and safer modes of transport;
- improved reporting by businesses and enterprises of all sizes on sustainability outcomes;
- enhanced vehicle safety, safer transport for children;
- more stringent safety requirements for vehicles and transport services procurement;
- safe speed management in cities;
- infrastructure safety, and
- potential safety gains from new technologies (Government Offices of Sweden, WHO 2019).

2.2 Partnering with the Government of India

Decisions taken at and future directions provided by the 3rd Global Ministerial Conference on Road Safety will be of vital importance to countries in South Asia, including India. They are expected to set out an overarching platform and agenda for country and regional engagement with global partners over the next decade, including the multilateral development banks, UN agencies, the donor community and the private sector.

Since the 1980s, the WBG has been engaged in a productive road safety partnership with the Gol and its agencies. This partnership has helped strengthen managerial and technical expertise, and the targeted delivery of road safety measures at the national, state, and city levels (see Appendix B for a summary of recent projects and strategic initiatives). Over the past decade, an emphasis has been placed on strengthening institutional capacity, policy reviews, targeted road safety interventions, management structures, and monitoring and evaluation. A high priority has also been placed on improving infrastructure safety as well as the development of crash data management and analysis systems. Policing of unsafe road behavior is also becoming a priority. More needs to be done, however. Exciting and innovative developments in India will provide opportunities for new partnerships with the Gol in the future (see Section 5).

3. The Economic Cost of Inaction

3.1 The Economic Burden of Road Safety Losses

Improving road safety in India is vital to the nation's health, well-being, and economic growth. As evidenced in analytical work undertaken by the WBG with funding from Bloomberg Philanthropies, sharply reducing the number of crash fatalities and injuries over time would enable countries like India to achieve increases in economic growth and national income, while simultaneously achieving population welfare gains.

The finding that crash fatalities and injuries have macroeconomic ripple effects is evident from the fact that young people and the working-age population more broadly are predominantly the victims of crashes. This disproportionate impact of road crash mortality and morbidity on the economically productive segment of the population is likely to depress GDP growth rates. Achieving a 50 percent fatality reduction target in India would result in an estimated 14 percent increase in GDP over the analysis timeframe of 24 years.



Furthermore, the impact on national income is just one part of the story. The estimated population welfare gains from achieving a 50 percent fatality reduction in India over this period is equivalent to 16.3 percent of the GDP. These statistics underscore the economic losses associated with inaction for countries that fail to move beyond the status quo (World Bank 2017). WBG research indicates that human capital accounts for around two-thirds of a country's total wealth, far more than natural or produced capital (World Bank 2017). Investing in effective road crash fatality and injury prevention will contribute to the accumulation of human capital in India, which in turn will contribute to sustainable and inclusive economic growth and overall country wealth.

3.2 Linkages with Other Sustainable Mobility Goals

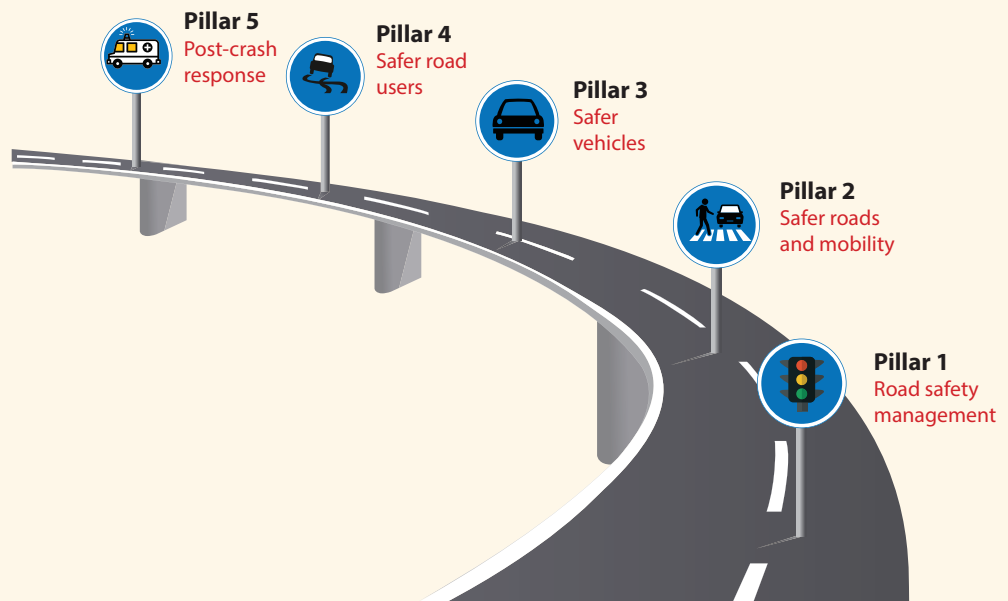
Scaled-up road safety investment in India will also contribute to the achievement of other sustainable mobility goals related to improved transport productivity, universal accessibility, climate change mitigation and adaptation, and reduced local air and noise pollution (Sustainability Mobility for All 2017). These sustainable mobility goals are inextricably linked with each other. Securing network productivity, accessibility, decarbonization, and public health co-benefits of road safety investment is high on the agenda for cities and national transport corridors. It is also key to achieving regional and global trade facilitation and connectivity objectives. Well-targeted safety investments must negotiate a complex strategic space that delivers on all of these goals within an integrated policy framework (WBG 2019a).

4. Country Progress Across UN Global Plan Pillars

Good practice road safety programs in high-income countries over the past five decades have convincingly demonstrated that road crash fatalities and injuries can be prevented and their burden substantially avoided. These are compelling reasons for action on this urgent and achievable sustainable development priority.

India has considerable potential to improve its road safety performance over the coming decade. Road safety performance in India can be reviewed in terms of progress being made across the five pillars for action specified in the current United Nations Global Plan for the Decade of Action for Road Safety 2011–2020 (see Box 1 and Appendix A, Table A.3):

- **Pillar 1:** Road safety management
- **Pillar 2:** Safer roads and mobility
- **Pillar 3:** Safer vehicles
- **Pillar 4:** Safer road users
- **Pillar 5:** Post-crash response



The UN Global Plan aims to eliminate crash fatalities and serious injuries with an integrated response across the abovementioned five safety pillars (WHO 2011). Speed management underpins pillars 2, 3, and 4. It is now well recognized as good practice that key solutions for managing speed are: building or modifying road infrastructure to calm traffic, requiring car makers to install new technologies to help drivers and vehicles keep to speed limits, and establishing and systematically enforcing speed limit laws (WHO 2017). Speed management is a vital road safety priority in India that permeates all policy considerations addressing infrastructure, vehicle, and road user safety issues.

Speed is a factor in all road deaths and injuries. Limiting speed can significantly reduce crash fatalities and injuries. Scientific evidence on the relationship between vehicle speeds



and crash risks is robust. This was confirmed by a recent review of speed limit changes and the wide-scale deployment of automated speed enforcement in 10 countries. In the countries that were part of this review, increases in mean speeds resulted in a higher number of crashes and fatalities and injuries, and vice versa (International Transport Forum 2018). This evidence applies equally well to roads in India, but it is not necessarily the case that increased speeds always come at the cost of road safety. On the contrary, adherence to safe road network design principles can both improve safety outcomes and contribute to the achievement of other important sustainable mobility goals related to vehicle productivity and environmental performance. Good practice speed management is central to delivering effectively and efficiently on this wider ambition of reducing crash fatalities and injuries.

4.1 Road Safety Management



Pillar 1 encourages the creation of multisectoral partnerships and the designation of a lead agency with the capacity to develop and direct the delivery of national road safety strategies, plans, and targets. It places an emphasis on ensuring that there is sufficient funding for sustainable implementation, and the development of crash data and performance measurement systems to guide the national effort. It also calls for adherence to UN legal instruments and encourages their development at a regional level.

Leadership arrangements

The National Road Safety Council (NRSC), established under Section 215 of Motor Vehicles Act, 1988, is currently the designated apex body for road safety in India. It is

chaired by the minister for road transport and highways and comprises ministers in charge of road transport in states and union territories, director generals of police from all states, and official members from a wide range of government agencies, including Home Affairs, Human Resource Development, Railways, Industry, Petroleum and Natural Gas, Environment and Forests, and Health and Family Welfare. However, the NRSC lacks adequate statutory backing, technical capacity, budgetary resources, and the mandate to effectively execute road safety plans. A road safety committee appointed by India's Supreme Court is monitoring the implementation of road safety laws. It has motivated some states to set up road safety authorities backed by legislation.

Nearly all state governments have constituted State Road Safety Councils along similar lines to the NRSC. Some districts have also established District Road Safety Committees. However, decision-making at the district level has been hindered by the absence of well-formulated plans to target major risk factors. This situation is changing with the implementation of the MVAA, which has provisions for the establishment of a dedicated lead agency, the National Road Safety Board, to take institutional ownership and serve as the coordinating secretariat among all relevant ministries. Similar state road safety agencies are expected to be established under the MVAA framework (see Box 1).

Funding

India currently has no dedicated road safety fund at the central government level. The proposed State Road Safety Incentives Programme grant fund will address this gap. Several states, such as Bihar, Haryana, Himachal Pradesh, Maharashtra, Orissa, Punjab, West Bengal, Nagaland, Manipur, Jharkhand, Uttarakhand, Rajasthan, and Tamil Nadu, have already set up funds for activities related to road safety. Such activities have also been included in the Companies Act, 2013 to enable companies to undertake them as corporate social responsibility initiatives. As a consequence, the Federation of Indian Chambers of Commerce and Industry (FICCI) has become active in promoting innovative private sector interventions in road safety through its core business activities. FICCI has organized conferences on the role of corporations in road safety. At these events, the winners of FICCI's corporate awards for road safety are invited to make presentations of their approaches and solutions (FICCI 2018).

Crash data recording and management

Road crash data in India are recorded by police departments in all states and "million plus" cities, working through designated nodal officers. However, these data have primarily been maintained manually, making further processing and presentation difficult and time-consuming. Further, there is no nodal agency with enhanced capacity to analyze the crash data to identify priority risk factors in a scientific manner, though research teams in academic and research institutes have provided expertise to relevant government agencies.

Since 2017, all states and union territories in India have adopted a uniform traffic crash recording format—developed by the Ministry of Road Transport and Highways (MoRTH)—and they are making progress on revamping their crash data collection and management systems. This initiative has also been integrated with the Ministry of Home Affairs' (MHA) Inter-Operable Criminal Justice System, which incorporates all 55 fields of the new road crash recording format. A large-scale, coordinated initiative is now required to add further value to this nationwide crash data collection effort. The MHA has already developed software that will provide data access to all police stations.



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The states of Tamil Nadu and Himachal Pradesh have implemented their own comprehensive Road Accident Data Management Systems (RADMS) developed and operationalized through WBG-funded state highway projects. Other states are following suit. Under the WBG-funded Uttar Pradesh Core Road Network Development Project, there is also a proposal to support the development and statewide implementation of a web-enabled Uttar Pradesh Crash Database and Analysis System that will meet the specific requirements of all road safety partners and stakeholders in Uttar Pradesh, including the police, transport, health, and public works departments. Under the Bloomberg Initiative for Global Road Safety, the WBG is establishing a Data for Road Incident Visualization, Evaluation, and Reporting (DRIVER) system in the city of Mumbai. DRIVER is a web-based and open-source system originally developed for geospatially recording and analyzing road crashes in the Philippines.

At the national level, the MoRTH is developing an Integrated Road Accident Database (IRAD) through the WBG-funded National Highways Interconnectivity Improvement Project. IRAD will cover the entire country, all categories of roads, including rural roads, and will have integrated data and analytical capabilities that are required by different stakeholders (health, police, transport, highways). This initiative will include a six-month pilot phase in six selected states followed by a rollout over two years to all states and union territories in India. The system will be used to benchmark the road safety management performance of states and the allocation of grants under the State Road Safety Incentives Programme.

A proposed Asia-Pacific Road Safety Observatory will provide expert assistance to countries in Asia and the Pacific by facilitating shared crash data collection and analysis practices and promoting the design of effective fatality and injury reduction measures. The WHO, the Global Road Safety Facility, the FIA Foundation, and the Government of Japan are providing financial support for this initiative. A high-level regional workshop was held in Singapore in March 2019 to launch this initiative. The World Bank Group, the Federation Internationale de l'Automobile, the Asian Development Bank, the International Transport Forum, and government officials from 15 countries in the region participated in this workshop (WBG et al. 2019a). A second workshop was held in Bangkok in December 2019 to seek continued country support and endorsements for the proposal, with India being represented in this meeting (WBG et al. 2019b). This initiative has the potential to assist the development of crash data recording and management systems in India through regional and global knowledge sharing and transfer of good practice procedures and technologies.

Research

Several organizations are engaged in high quality road safety research in India. However, pertinent research that encompasses the diversity of vehicles, road types, road users, and traffic and speed environments is limited (WHO 2015a). While funding for research is inadequate, there are government plans to identify research priorities and establish centers of excellence in research and academic institutions (Gol 2018).

International agreements

In the international context, the Gol has addressed road safety management priorities related to UN road safety conventions in the area of inland transport, which are administered by the United Nations Economic Commission for Europe (UNECE). India has acceded to two of the seven key UN transport-related conventions and agreements—the 1968 Convention on Road Signs and Signals and the 1998 Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts—that are seen as providing the foundation for a harmonized and effective road safety regulatory framework (see Box 2) (UNECE n.d.).

BOX 2: SEVEN KEY UN TRANSPORT CONVENTIONS

- **1968** Vienna Convention on Road Traffic
- **1968** Convention on Road Signs and Signals
- **1958** Agreement concerning the Adoption of Harmonized Technical United Nations Regulations for Wheeled Vehicles, Equipment and Parts which can be Fitted and/or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the Basis of these United Nations Regulations
- **1997** Agreement concerning the Adoption of Uniform Conditions for Periodical Technical Inspections of Wheeled Vehicles
- **1998** Agreement concerning the Establishing of Global Technical Regulations for Wheeled Vehicles, Equipment and Parts
- **1957** Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)
- **1970** European Agreement concerning the Work of Crews of Vehicles Engaging in International Road Transport (AETR)

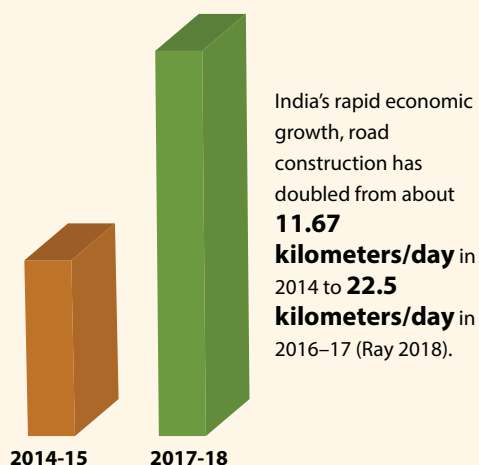
4.2 Safer Roads and Mobility



Pillar 2 promotes raising the inherent safety and protective quality of road networks for the benefit of all users, especially the most vulnerable: pedestrians, cyclists, and motorcyclists. It places an emphasis on greater operator and designer accountability for safety performance, enhanced land use, transport system integration, improved infrastructure safety rating and assessment tools, and related capacity building and knowledge transfer.

Safety design issues

Many crash fatalities and injuries in India occur at uncontrolled road junctions on main highways and in urban areas. Besides design and operational issues at junctions, which fail to safely direct traffic merging from conflicting directions, restricted safe sight distance is also an issue due to the encroachment by illegal roadside businesses and vendors. A lack of footpaths, cycle tracks, crossing facilities, and traffic calming measures to reduce speed where nonmotorized modes blend with motorized traffic have all resulted in road fatalities and injuries. The absence of crash barriers in hilly terrain remains a safety challenge on highways. This is also the case for flat and rolling terrain, and in transition zones with bridges and



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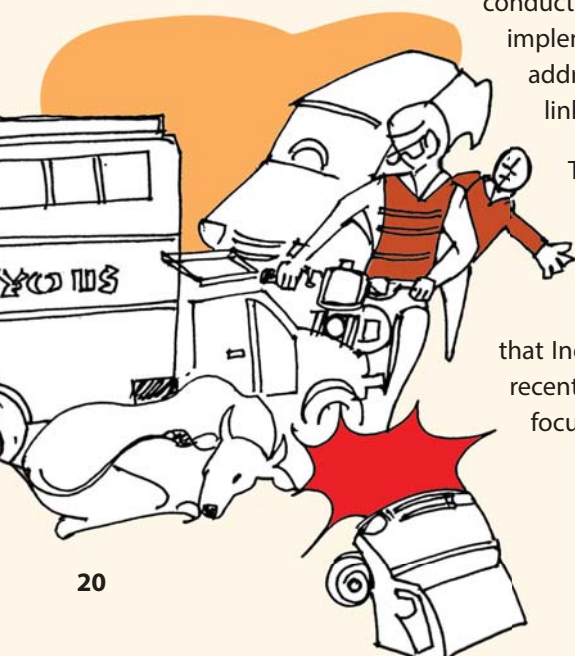
culverts. In line with India's rapid economic growth, road construction has doubled from about 11.67 kilometers/day in 2014 to 22.5 kilometers/day in 2016–17 (Ray 2018). This emphasis on accelerated construction has inhibited efforts to provide infrastructure that caters to the safety of all road users. Growing traffic volumes and faster speeds have also elevated the risks faced by users. Furthermore, the decision by the GoI to increase legal speed limits for all vehicle types in urban areas will most likely increase road fatalities and injuries, unless safer infrastructure design solutions are implemented (Dash 2018a). These design solutions will need to address safe speed thresholds for all road users and ensure appropriate protective measures are taken to ensure the physical separation of moving vehicles with large speed and mass differences. Ensuring the safety of motorized two- and three-wheelers, cyclists, and pedestrians is of paramount concern. A new design focus is required that more specifically addresses the link and place functions of roads to accommodate not just the demands of their through-traffic priorities, but also those of the places being served by roads. Prevalent community activities in the road environment, as well as traffic flows, must be accounted for with a safe system approach. A human-centered, rather than purely a vehicle-centered focus is required, with a rebalancing of "right-of-place" and "right-of-way" concerns (WBG 2019b).

The Indian Road Congress (IRC) is the premier body responsible for evolving standards, specifications, codes, and manuals that cover the planning, design, construction, operation, and management of all categories of roads, including their safety. The IRC comprises highway engineering professionals and practicing engineers from central and state governments, academia, research organizations, and private industry (contractors, consultants, and suppliers and manufacturers of instruments, construction equipment, and materials). A specific IRC committee deals with road safety and design. Current IRC road safety standards are in urgent need of review and updating in light of the strategic reorientation of road safety in India and the government's ambitious long-term vision. This includes design speeds, geometric elements, intersection layout and drawings, and related codes and manuals. Issues requiring special attention include speed control and promotion of safe behavior through infrastructure design, safer cross sections to protect vulnerable road users at the urban interfaces of national and state highways, and safe provision for tractors, bicycles, and other nonmotorized transport.

Safety assessment tools

While formal safety audits are required for new road construction projects in India, very little of the existing road infrastructure is regularly inspected to assess its safety performance (see Appendix A, Table A.3). Detailed road safety audit guidelines for National Highways have been prepared and are mandatory for new projects. Safety inspections have also been conducted on higher-risk sections of the National Highway network. However, the implementation of safety audit findings remains an issue. This may be effectively addressed through changes in policies related to contract agreements clearly linking payments with the completion of safety works.

The Indian Academy of Highway Engineers (IAHE) has started a certification course for road safety audit with the support of the International Roads Federation (IRF) and a subsidy from the MoRTH. Only a small number of safety engineers have been certified as auditors so far and many more will be needed. Compared on a per capita basis to Australia, it is estimated that India needs around 20,000 certified road safety engineers (Jordan 2015). A recent training initiative by the Asian Institute of Transport Development (AITD) focused on strengthening scientific knowledge of road safety engineering



and building related capacity in relevant highway agencies. AITD, with sponsorship from Federal Express, is also hosting IndiaRAP. Launched in 2017, IndiaRAP is led by local experts, using local research and local resources, supported by a global network of experts across more than 80 countries from the International Road Assessment Programme (iRAP) (iRAP 2017). Its establishment builds on a series of road assessment projects that have been implemented since 2010 when the GRSF invited iRAP to work with the MoRTH, public works departments, research institutes, local engineering firms, and automobile associations to assess the safety of Indian roads. iRAP assessments were undertaken on 12,000 kilometers of World Bank, National Highways Authority of India, and state government-supported projects across 11 states (Andhra Pradesh, Kerala, Assam, Punjab, Gujarat, Rajasthan, Telangana, Tamil Nadu, Karnataka, Uttar Pradesh, and Haryana). These assessments also covered 5,000 kilometers of the strategic Golden Quadrilateral network, which links the major cities of Delhi, Mumbai, Bangalore, and Chennai. The risk assessment pointed out a low overall safety rating for large part of the road network, with particular vulnerability for pedestrians and motorcyclists; locational vulnerability in high speed zones, roadside habitations and unsignalized intersections. Several iRAP recommendations for improving infrastructure safety are being implemented in the National and State Highways. IndiaRAP brings together all the associated partners to create a single focus on improving road infrastructure safety across India and support initiatives in new states.

4.3 Safer Vehicles



Pillar 3 encourages the universal deployment of improved passive and active vehicle safety technologies. It places an emphasis on the adoption of harmonized UN global standards, implementation of consumer-focused new car assessment programs in all regions of the world, and the use of fiscal and other incentives to accelerate consumer and major public and private fleet operator uptake of motor vehicles that offer high levels of road user protection.

Vehicle standards and certification

In India, the central government determines and notifies the safety standards for vehicles in the official gazette. It also specifies the date from which compliance is to be achieved by every manufacturer. Standards for safety components are notified under specific provisions of the Central Motor Vehicle Rules (CMVR). Component approvals are made by testing agencies such as the Automotive Research Association of India (ARAI), a research institute of the automotive industry. Currently, no formal safety standards exist in India for vehicle child restraints or electronic stability control systems (see Appendix A, Table A.3). However, important actions have been taken. The Global New Car Assessment Program (GNCAP) highlighted the poor crash-worthiness of vehicles produced for the Indian market (Shah n.d.). Govt has recently mandated the new safety standards for cars. All new cars sold in India will have to be equipped with safety features like airbags, anti-lock braking systems (ABS), and seat belt reminders. They will have to undertake mandatory crash testing and comply with star ratings. The new rules also mandate that vehicle fronts be designed in such a way that injury to pedestrians is minimized. The government has already made daylight running lights and ABS mandatory on motorcycles and scooters above 125 cc to improve visibility of riders and to prevent skidding of vehicles.

Progress is being made and it is noteworthy that in late 2018 India achieved its first GNCAP 5-star rating for a locally produced vehicle (*India Today* 2018). In early 2020 another locally produced vehicle achieved a GNCAP 5-star rating for adult occupant protection and a 3-star rating for child occupant protection (GNCAP 2020a). This was followed soon after by a locally produced vehicle that achieved a GNCAP 5-star rating for adult occupant protection and a 4-star rating for child occupant protection (GNCAP 2020b).

The following new safety standards have been introduced or proposed:

- Anti-lock braking systems (ABS) for two-wheelers, cars, and minibuses (April 2018, new models; April 2019, existing models)
- Full-frontal head-on/lateral and offset frontal collision for cars (October 2017, new models; October 2019, existing models)
- Protection of pedestrians and vulnerable road users for cars (October 2018, new models; October 2020, existing models)
- Seat belt and speeding alert/airbag, reverse parking sensor for cars (July 2019, all models)
- Seat belt for driver, side door in three-wheelers (December 2020)
- Electronic stability control and automatic braking for cars (April 2023)

Other initiatives include proposals to upgrade bus standards to meet global best practice and standards addressing advanced driver assistance systems.

Vehicle-based speed management initiatives are also evident. For example, the GoI required all new commercial vehicles to have speed governors installed by late 2015 and for all older vehicles by mid-2016. However, very few states have complied so far.

Vehicle fitness

The CMVR requires multiple parameters to be checked in vehicles. However, in India most states have realized that testing is not conducted as per procedure and consideration is being given to the introduction of computerized systems to efficiently manage this task. Faced with large numbers of vehicles being checked per day and resource constraints, inspectors tend to be selective in their evaluations. A computerized system, as opposed to visual inspection, is expected to objectively assess vehicle fitness. The vehicle owner is required to address any mechanical defects identified during this test. The vehicle can be re-examined after seven days. It is envisaged that about 20 tests, including that of tires, headlights, steering, brakes, and suspensions, would be carried out by the computerized system in 10 stages. It is estimated that an inspection center could test about 30 vehicles per hour, with each test taking about 15 to 20 minutes.

A scheme to establish at least one model inspection and certification center in each state and union territory is being implemented with central government assistance through the MoRTH. Typically, the state government makes land available for these centers. The central government bears the cost of construction and facilities. This initiative is also amenable to public-private partnerships, where typically the land is made available by the government, and the cost of construction and facilities is borne by the private developer, in return for a portion of the user fees paid over an agreed period (*Navhind Times* 2019).

Vehicle fitness issues in India also arise with trucks being purchased from the original manufacturer in chassis form only and the body work being completed by unregulated local operators. State authorities lack the appropriate mechanisms and expertise to approve

the safety of such vehicles and different norms are evident throughout India. This creates truck safety issues resulting from over-dimensioned vehicles and modified suspensions to provide extra strength for overloading, with relevant laws not being enforced effectively (AITD and CIRT 2002). Likewise, improvised and uncertified vehicles (known as jugaad vehicles) are used for low-cost public transportation in villages. These are often overloaded and are extremely dangerous when used on high-speed roads.

4.4 Safer Road Users



Pillar 4 calls for the development of comprehensive enforcement programs combined with social marketing campaigns to improve road user behavior. It places an emphasis on setting and seeking compliance with evidence-based standards and rules aimed at reducing speeding and drink-driving and increased use of seat belts and helmets. It also promotes enhanced occupational health and safety laws for the safe operation of commercial freight and passenger services and the establishment of graduated driver licensing systems for novice drivers.

Driver behavior and compliance with safety regulations

Speeding is a serious issue in India. In 2018, 67 percent of crashes, 64 percent of fatalities, and 67 percent of serious injuries were attributed to overspeeding (Gol 2019). More fundamentally, speed is a crucial contributor to all crash deaths and injuries. Speeding contributes to the likelihood of a crash occurring in the first place, either in terms of not being able to stop a vehicle quickly enough when a dangerous situation arises, or by losing vehicle control (WBG 2019b). A national speed limit law has been passed and under the current Motor Vehicles Act state governments in India are authorized to create different speed limits at local levels. Maximum limits for urban roads, National Highways, and expressways have been established, but often limits posted lack scientific justification and enforcement is weak. There are no dedicated good practice national or state highway police patrol services; the state of Uttar Pradesh is currently establishing one. Consequently, enforcement of unsafe road user behavior is almost nonexistent on the national and state highways. It is noteworthy that 35.7 percent of India's road crash fatalities in 2018 resulted from crashes on National Highways, which comprise just 1.94 percent of the total road network (Gol 2019). National Highway enforcement operations, combined

with media and marketing campaigns highlighting this high concentration of fatalities, could save a significant number of lives. A National Highway Safety Services (NHSS) is being developed to enforce unsafe behaviors, manage crash incidents, and provide post-crash support. IT-based tools and systems are increasingly being used by states and cities in India. In Hyderabad, speeding on the city's outer ring road reduced dramatically after speed cameras were installed at random locations. Offence notices are automatically generated and sent to registered owners of the vehicles and can be paid online.

Road user compliance with motorcycle helmet and seat belt laws in India is reportedly very low. In one survey, almost 50 percent of all two-wheeler drivers and 75 percent of all



million riders reported that they did not wear helmets (Dash 2018b). In another survey, the reported rate of seat belt use among both drivers and other vehicle occupants was only 25 percent and as low as 4 percent for rear seats (Sengupta 2017). Enforcement of seat belt use in the rear seat is rare.

Drink-driving is a concern in India. Comprehensive laws that address alcohol limits for the general driving population, young or novice drivers, and professional and commercial drivers are in place (see Appendix A, Table A.3). A variety of related initiatives are also evident. For example, in 2016, the Supreme Court of India banned all liquor shops within 500 meters of national and state highways across the country. Signage and advertisements promoting the availability of liquor were also prohibited and existing ones removed. All states were directed to comply with and monitor implementation of the ban on strict terms. Overloading of heavy vehicles is also a safety concern in India. Overloaded vehicles accounted for 10 percent of all reported crashes and 12 percent of all reported fatalities in 2018 (Gol 2019). Truck driving in India is challenging for drivers given unpredictable schedules, extended periods away from home, and long driving hours, with most drivers being behind the wheel for about 15 hours daily (Senthilkumar and Rajkumar 2015). Combined with vehicle overloading, driver fatigue exacerbates safety risks.

Driver licensing and training

Transport departments in each state of India are responsible for issuing driver's licenses through their Regional Transport Offices (RTOs). Rapid motorization has resulted in most RTOs being ill-equipped in terms of staff and testing facilities to deal effectively and efficiently with the growing number of applications for driver's licenses. Reportedly, about a third of all driver's licenses in the country are fake (*Times of India* 2017). Given staff shortages and the aim to make testing and issuing of licenses more objective, almost every state in India is now setting up automated driver testing tracks (Hariprakash 2010). However, the licensing procedure is not uniform. Some states such as Gujarat use only the test track assessment to issue a license, while others like Andhra Pradesh use the test track assessment plus other criteria. For non-transport service vehicles, a license is valid for 20 years from its date of issue, or until the holder turns 50, whichever is earlier. After that, it has to be renewed every five years. For transport service vehicles, a license is valid for three years, and has to be renewed every three years thereafter.

There are many private driving schools in India that impart driver training for light motor vehicles; for instance, in the state of Telangana alone there are about 800 registered driving schools. Registration for a driving school is given for a period of five years. There are detailed guidelines on the number of candidates that can be trained per month for both transport service and non-transport service vehicles, and on requirements concerning trainer qualifications, training premises, and training processes. However, many schools do not follow these rules. Registers on the number of people trained are not maintained. Theory classes are not conducted and driving classes are rarely held at night. Many cars used for training lack seat belts and headlights. Some schools use a single license to operate several schools. As such there are many driving schools that are operating illegally (*Hans India* 2018).

The Gol has also set up 16 Institutes of Driver Training and Research at several locations throughout the country—in Delhi, Haryana, Uttarakhand, Gujarat, Bihar, Maharashtra, Tamil Nadu, Telangana, and Kerala, with a further 12 being planned or under construction (Gol 2018). In addition, there are plans to establish two regional driver training centers. The MoRTH has also launched a scheme to establish driving training centers to train commercial vehicle drivers.

4.5 Post-Crash Care



Pillar 5 calls for an increased responsiveness to post-crash emergencies and improved delivery of emergency treatment and rehabilitation services for crash victims. It places an emphasis on enhanced hospital trauma care and timely rehabilitation, improved road user insurance schemes to finance rehabilitation services thorough crash investigation and victim compensation processes, and encouragement and incentives for the employment of disabled crash victims.

Emergency services

In India, people injured in road accidents are transported by a variety of transportation modes ranging from ambulances to animal-drawn carts. The proportion transported in an ambulance varies from as low as 7.5 percent to as high as 46.5 percent, though ambulances are more commonly used for inter-hospital transfers. While there are several private ambulance services, the GVK EMRI 108 service is the most frequently used in India. People are familiar with its call number (108) and, importantly, it is free of charge. The service operates as a public-private partnership and is the largest professional emergency service provider in India. A call to 108 leads to prompt communication and activation of a response that includes assessment of the emergency and dispatch of the ambulance with a well-trained emergency medical technician to render quality pre-hospital care and transport the patient to the appropriate health care facility. GVK EMRI is currently operational in 15 states and two union territories across India. It has nearly 11,000 ambulances serving around 27,000 emergencies per day and 15 to 20 percent of its case load is due to vehicular and non-vehicular trauma. The average call response time is 12 minutes in urban areas and approximately 20 minutes in rural areas (Gururaj and Gautham 2017). A few states such as Karnataka (*Economic Times* 2015) and Kerala (NDTV 2016) have also introduced motorcycle ambulances to negotiate narrow streets and heavy traffic in large urban areas and reach patients faster. Each motorbike is fitted as per medical standards, with the rider being a paramedic trained to handle emergencies.

In 2016, the Supreme Court of India endorsed the guidelines issued by the MoRTH to ensure the legal immunity of bystanders (“Good Samaritans”) offering support to crash victims at the roadside and their transportation to emergency care. Karnataka was the first state in India to introduce related legislation. However, in practice, these guidelines are yet to be followed.

Trauma care

Integrated national trauma systems offer great potential to save lives and reduce the severity of crash victims’ injuries. Significant steps are being taken in India to create a national trauma registry. In 2017, the Gol established a National Injury Surveillance Trauma Registry and Capacity Building Centre for collection, compilation, analysis, and dissemination of injury related data to the general community, stakeholders, and policy makers, with the goal of reducing deaths and disabilities from injuries (Gol n.d.). An injury surveillance system was also established at the All India Institute of Medical Sciences (AIIMS), which connects with three other hospitals in New Delhi. A mobile app has been developed for pre-hospital notification by ambulance staff to a receiving hospital while the injured person is being transported (Sharma 2017). In 2018, the Gol launched a toll-free

emergency highway helpline number, 1033, along with a mobile app that would allow road users to report crashes (Paul 2018). The Ministry of Health and Family Welfare has initiated National Highways Trauma Care Project and National Highways Accident Relief Services Scheme under which state governments are provided cranes and ambulances. National Highways Authority of India (NHAI) also provides ambulances for every 50 kilometers of the National Highway network.

Road user insurance

Owners of commercial vehicles in India must take out an insurance policy to cover the cost to third parties arising from accidental death, injury, or damage to property in crashes. Third-party liability insurance is available from private and government-owned insurers and its price is regulated to ensure affordability. However, a significant proportion of service operators are not covered by insurance. This results in many crash victims receiving little or no compensation. Even where insurance requirements are met there are lengthy delays in settling claims and public hospitals do not fully recover costs incurred (Fronsko 2014). In an effort to reduce the number of uninsured vehicles plying on the roads, the Supreme Court of India recently ruled that uninsured owners should pay crash compensation or their vehicle would be auctioned (Dhawan 2018).

Many crash victims in India are poor. The growing cost of trauma care has spurred the GoI to pilot cashless insurance schemes in an effort to facilitate easier and more timely access to post-crash services (Dash 2013). States like Karnataka (Business Line 2016), Tamil Nadu, Gujarat (Sarkari Yojna 2018), and Kerala (*Hindu* 2017) and the city of Mumbai (*Hindu* 2018) have also introduced somewhat similar schemes.



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5. The Way Forward in India

5.1 Challenges Being Faced and Government Action

A review of India's road safety performance in terms of progress being made across the five pillars for action specified in the current UN Global Plan highlights many lines of action being taken across the country (see Sections 4.1 to 4.5). The urgency of the situation is being recognized at all levels of government—central, state, union territory, and district. However, governance challenges impede the mobilization of a systemic, targeted, and sustained road safety program. Agencies responsible for road safety in India are inadequately empowered and resourced to deal with escalating danger on their roads. Crash data and network safety performance data weaknesses undermine the capacity to develop a results-focused strategy and ensure its adequate coordination, legislative support, funding and resource allocation, promotion, monitoring and evaluation, and related research and development and knowledge transfer. More effective, efficient, and scaled-up initiatives are required to emulate the performance trajectories of high-income countries that define good road safety practice and provide a blueprint for action.

Positive signs of government action are emerging with the recent enactment of the MVAA and the initiatives being taken to create the State Road Safety Incentives Program to provide financial grants to the states and union territories. If delivered with urgency and strong government leadership, these proposed reforms will pave the way for sustained road safety success in India.

5.2 Indicative Estimate of Investment Requirements

Poor road safety performance in India signals a prevailing level of underinvestment in targeted initiatives, with only partial investment in its road safety strategy being reported (see Appendix A, Table A.3). Investment needs are substantial. India will require an estimated additional investment of US\$109 billion over the coming decade to achieve the Sustainable Development Goal target of a 50 percent reduction in national road crash fatalities (see Box 3).

BOX 3: ESTIMATION OF INDIA'S ROAD SAFETY INVESTMENT NEEDS

The scale of the additional safety investment required to achieve a 50 percent reduction in crash fatalities in India over the coming decade was estimated using analyses undertaken for the UN Road Safety Trust Fund (Bliss 2016; UNECE 2018). These analyses derived from findings of a previous study conducted by the World Bank Global Road Safety Facility (GRSF) (Guria 2008; Guria 2009). The GRSF study assessed the additional investment required to meet the Decade of Action for Road Safety 2011–2020 goal of stabilizing and reducing road crash fatalities by 2020. To prepare business-as-usual projections of country fatalities over a 10-year time frame, the GRSF study used previous World Bank study findings that estimated the relationship between traffic fatalities and economic growth over the latter half of the twentieth century for 156 countries across WBG regions and high-income OECD countries (Kopits and Cropper 2003). Projected traffic fatalities and injuries for each country were then expressed in terms of social costs using estimated values of statistical life and serious injuries (Dahdah and McMahon 2008). Dividing these social costs by good practice benefit-cost ratios for safety engineering and enforcement programs provided estimates of the level of additional investment required to achieve a 50 percent fatality reduction. This was expressed as a percentage of country GDP and provided the foundation for the updated estimate of India's additional road safety investment needs presented in this report (WBG 2019c).

This estimate is indicative only and assumes that baseline road safety funding in India follows a comparable investment path to that historically taken by high-income countries, with similar benefits being accrued. It also assumes that the additional investment made to improve infrastructure safety and road user safety behaviors will perform as well as the high-income country investments on which they are modelled.

5.3 Sequencing Initiatives and Ensuring Inclusion

Improving road safety performance in India on a sustainable basis will require a long-term commitment and sustained vision. Program initiatives will require proper sequencing as institutional capacity must first be strengthened to ensure agencies can effectively deliver safety services. For example, effective general deterrence-based road policing services will require strong leadership and accountability from the police high command and operational staff. Robust vehicle and driver licensing systems will need to be well established and accessible by law enforcement agencies and regulatory authorities before the full power of safety compliance regimes can be exercised. Similarly, infrastructure safety design skills and tools will first require strengthening before improved network safety can be achieved. Initiatives taken must be sustained and well-resourced. As with other transport modes, such as aviation, strong government leadership and commitment are needed to ensure that a systematic approach is in place to manage road safety performance (UNRSTF 2018).

Road safety initiatives must be inclusive of all road users and roadside communities, especially for those users that are most vulnerable and least protected in their road environments. Many road deaths and injuries in India have a severe impact on the poor, including pedestrians, cyclists, and motorcyclists. Children are particularly at risk. Inclusive road user policies and integrated land use/transport planning and place-making are necessary to ensure urban and rural roads are safe and accessible for everyone.

5.4 Integrated Sustainable Mobility Priorities

Road safety initiatives in India must be integrated with other sustainable mobility priorities, as will be highlighted at the 3rd Global Ministerial Conference on Road Safety. Securing network productivity, accessibility, decarbonization, and public health co-benefits of road safety investment is vital. Road safety cannot be addressed in isolation from these other desired outcomes without potentially being displaced by them.

5.5 Addressing Interurban and Urban Dimensions

In addressing the recommended road safety priorities for India, consideration must be given to the interurban and urban dimensions of road safety delivery priorities. A significant proportion of national road crash deaths and injuries are incurred on higher-speed interurban roads, but cities and towns also take a heavy toll. In 2018, urban areas accounted for about 41 percent of all crashes and more than a third (34 percent) of all road fatalities in the country; of this, the 50 urban agglomerations (million plus cities) accounted for more than 18 percent of all crashes, and 28 percent of the road fatalities and serious injuries (Gol 2019). SDG Target 11.2 puts the focus on universal access to safe transport in cities. Ensuring the provision of safe facilities for pedestrians, cyclists, and other nonmotorized modes in cities will enable significant growth in active transport modes and the achievement of related environmental and public health goals.



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5.6 Investment Time Frames

When addressing the identified priorities for India, it is important to recognize the time frames required to achieve the anticipated benefits of different initiatives. Road safety investments mature over the short to long term. Post-crash emergency and trauma services can bring benefits in the short term by enhancing survivability, and in the medium to long term with effective rehabilitation measures. Crash data and analysis systems can be established in the short to medium term and provide an essential key to the targeting, monitoring, and evaluation of safety programs to maximize their effectiveness and efficiency gains. Safety enforcement programs produce immediate and significant benefits in the short term and require ongoing investment to be sustained. Infrastructure safety programs take several years to plan and deliver, but then sustain medium to long term benefits; the benefits of improved vehicle safety standards are realized in the longer term on a sustainable basis, once they are prevalent in the national vehicle fleet.

5.7 Potential for Shared Regional Initiatives

While the focus of road safety initiatives is at the country level, the importance of regional contexts and country relationships within regions is generally well acknowledged. This is most apparent in transport infrastructure investment programs and regulatory considerations arising within integrated regional trade blocs and related regional and global logistics chains. There is also an increasing recognition that policy initiatives at

the regional level, in vehicle and infrastructure safety for instance, can complement and strengthen country road safety strategies and programs.

Eight potential shared regional initiatives aligned with the five pillars of the UN Global Plan have been proposed for the South Asia region (WBG 2019b). For example, the proposed regional road safety observatory could assist the development of a crash data recording and management system in India through regional and global knowledge sharing and transfer of good practice procedures and technologies.

5.8 Partnership Opportunities

The WBG and its UN partners remain engaged in a productive dialogue with the GoI and its agencies to explore opportunities for future initiatives that can enhance road safety performance throughout India. Decisions taken and directions provided by the 3rd Global Ministerial Conference on Road Safety will further guide this dialogue and support the mobilization of resources required to achieve sustainable success. In particular, there will be important opportunities for the multilateral development banks and the global and regional donor community to contribute to the financing and specialist support required for initiatives addressing the five pillars of the UN Global Plan. India faces future road safety challenges, but the benefits of overcoming them are rewarding and far outweigh the cost of the effort needed. Future success will in part be determined by the vitality of the national, regional, and global partnerships that can be created to meet these challenges.

5.9 Recommended Actions

While there have been major initiatives to improve India's crash data collection format and maintenance system, only a few states have been able to modernize their systems. Most states still have incomplete and poor quality aggregate data on crash events and related fatalities and injuries. Given these data deficiencies and limited capacity in government agencies to analyze India's unique road safety challenges, safety solutions must still primarily be guided by global good practice. However, in certain instances recommended measures for India derive from key insights obtained through data-driven road safety research undertaken by Indian academia. Recommended actions for India in the immediate/short, medium, and long terms at different tiers of government are presented in Table 1. In India, road safety is a federal subject managed through a combination of bottom-up and top-down initiatives at the district/town, state, and national levels. Some districts have already established District Road Safety Committees. All state governments have constituted State Road Safety Councils. Central government policy direction complements these district and state initiatives. The MVAA emphasizes the crucial role of the states in implementing the national road safety strategy, placed as they are at the confluence of the bottom-up and top-down initiatives.

Table 1: Recommended Actions and Tiers of Government
Global Plan Pillars and Road Safety Actions at Different Tiers of Government Time Frame
PILLAR 1: ROAD SAFETY MANAGEMENT

Immediate to Short Term (2020–2022)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Establish fully empowered and accountable National Road Safety Board (NRSB) as the national lead agency. 	<ul style="list-style-type: none"> Constitute fully empowered, staffed, and accountable road safety counterpart to NRSB as the state lead agency. 	<ul style="list-style-type: none"> Form and empower District Road Safety Committees to support state lead agency and coordinating secretariat.
	<ul style="list-style-type: none"> Launch the Vision Zero 2030 National Road Safety Program, anchored in the lead agency, and adopt policy on collection and sharing of harmonized crash data information and management. 	<ul style="list-style-type: none"> Constitute a secretariat to the state lead agency with Vision Zero 2030 coordinating functions and establish a dedicated road safety fund in selected states that contribute to 80% of total national fatalities. 	<ul style="list-style-type: none"> Support delivery of Vision Zero 2030 action plans and related multisectoral road safety projects.
	<ul style="list-style-type: none"> Support formulation of national road safety action plans to implement Vision Zero 2030 with ambitious goals and targeted safety outcomes. 	<ul style="list-style-type: none"> Support formulation of state road safety action plans to implement Vision Zero 2030 with ambitious goals and targeted safety outcomes. 	<ul style="list-style-type: none"> Support road safety management training initiatives for officials and specialists.
	<ul style="list-style-type: none"> Strengthen crash data collection, maintenance, and analysis capacity in the Ministry of Roads, Transport and Highways with the development and implementation of the Integrated Road Accident Database (IRAD). 	<ul style="list-style-type: none"> Develop and operationalize state-level crash data systems with geotagged crash information, provision for data sharing, and minimum fields prescribed by IRAD. 	<ul style="list-style-type: none"> Issue directive for investigation of fatal crashes by divisional engineer, superintendent of police, and the local regional transport offices.
	<ul style="list-style-type: none"> Earmark a portion of national road construction budget for road safety measures and incident management. 	<ul style="list-style-type: none"> Earmark a portion of state road construction budget for road safety measures and incident management. 	
	<ul style="list-style-type: none"> Establish a uniform benchmarking framework for the evaluation and comparison of road safety performance at the state level, as the basis of the state-support program. 	<ul style="list-style-type: none"> Develop road safety investment plans with approved budgetary allocations. 	
	<ul style="list-style-type: none"> Mandate periodic training in road safety management. 	<ul style="list-style-type: none"> Roll out comprehensive multisectoral road safety projects in high-risk demonstration corridors and urban areas. 	
	<ul style="list-style-type: none"> Identify and develop partnership opportunities for enhanced Vision 2030 private sector engagement. 	<ul style="list-style-type: none"> Support road safety management training initiatives for officials and specialists. 	
	<ul style="list-style-type: none"> Identify mechanisms for sharing of safety-related “Big Data” by corporates with government. 		

PILLAR 1: ROAD SAFETY MANAGEMENT

Medium Term (2023–26)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Establish fully functioning secretariat for the National Road Safety Board and ensure sustainable funding mechanism for management of the national program. 	<ul style="list-style-type: none"> Constitute a secretariat to the state lead agency with Vision Zero 2030 coordinating functions and establish a dedicated road safety fund in remainder of states. 	<ul style="list-style-type: none"> Support ongoing delivery of Vision 2030 action plans and related multisectoral road safety projects, and road safety management training initiatives for officials and specialists.

Medium Term (2023–26)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Establish national/regional centers of excellence on road safety to support government agencies in developing road safety projects, conducting relevant research, monitoring and evaluation of the projects, and training and capacity building. Use the Integrated Road Accident Database (IRAD) as the platform to help formulate safety intervention strategies and programs in selected states cumulatively contributing to 80% of total national fatalities. 	<ul style="list-style-type: none"> Enter into a memorandum of understanding with at least one independent research/academic institute to provide technical advisory and monitoring support to state government agencies in selected states cumulatively contributing to 80% of total national fatalities. Support ongoing rollout of comprehensive multisectoral road safety projects in high-risk demonstration corridors and urban areas, and road safety management training initiatives for officials and specialists. 	

PILLAR 1: ROAD SAFETY MANAGEMENT

Long Term (2027–30)	National Level	State Level	District and Town Level
	Ensure Vision Zero 2030 targets are achieved.	Use the Integrated Road Accident Database (IRAD) as the platform to help formulate safety intervention strategies and programs in all states.	Support ongoing delivery of Vision 2030 action plans and related multisectoral road safety projects, and road safety management training initiatives for officials and specialists.

Global Plan Pillars and Time Frame **Road Safety Actions at Different Tiers of Government**

PILLAR 2: SAFER ROADS AND MOBILITY

Immediate to Short Term (2020–22)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Review and update national road infrastructure codes and standards to incorporate road safety requirements. Issue directive on required compliance with safety design, construction, and maintenance standards which holds designated authority, contractor, or concessionaire accountable. Adopt policy on mandatory inclusion of road safety audits at all stages of road planning, design, construction, and maintenance for all National Highways. Launch national accreditation program for road safety auditors. Launch national capacity building program for the safe design, construction, and management of roads. Review and recategorize national road types in terms of link and place functions and set safe speed limits in line with these functions. 	<ul style="list-style-type: none"> Adopt uniform safety performance metrics and policies on all new construction and major rehabilitation projects. Review and update state road infrastructure codes and standards to incorporate safety requirements. Review and recategorize state road types in terms of link and place functions and set safe speed limits in line with these functions. 	<ul style="list-style-type: none"> Review and update district road infrastructure codes and standards to incorporate safety requirements. Review and recategorize district road types in terms of link and place functions and set safe speed limits in line with these functions.

PILLAR 2: SAFER ROADS AND MOBILITY

Medium Term (2022–26)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Implement on a priority basis all low-cost, high-return recommendations from road safety audits and inspections conducted on National Highways. 	<ul style="list-style-type: none"> All states adopt policy on mandatory inclusion of road safety audits at all stages of road planning, design, construction and maintenance for all state highways. 	<ul style="list-style-type: none"> All districts adopt policy on mandatory inclusion of road safety audits at all stages of road planning, design, construction, and maintenance for all major district roads.

Medium Term (2022–26)	National Level	State Level	District and Town Level
		<ul style="list-style-type: none"> Implement on a priority basis all low-cost, high-return recommendations from road safety audits and inspections conducted on state highways. 	<ul style="list-style-type: none"> Implement on a priority basis all low-cost, high-return recommendations from road safety audits and inspections conducted on major district roads.

PILLAR 2: SAFER ROADS AND MOBILITY

Long Term (2027–30)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Ensure 100% coverage of national capacity building program for the safe design, construction, and management of roads. Ensure safe speed limits set in line with national road link and place functions. 	<ul style="list-style-type: none"> Ensure safe speed limits set in line with state road link and place functions. 	<ul style="list-style-type: none"> Ensure safe speed limits set in line with state road link and place functions.

Global Plan Pillars and Time Frame

Road Safety Actions at Different Tiers of Government

PILLAR 3: SAFER VEHICLES

Immediate to Short Term (2020–22)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Implement policy announcements on mandatory inclusion of advanced safety technology in new vehicles, including motorcycles. Implement policy on recall of motor vehicles with manufacturing defects. Adopt standardized policy on the periodic inspection of all registered passenger vehicles and heavy vehicles. Adopt policy on overloading and offloading of overloaded vehicles. Foster use of onboard devices by the transport industry to monitor speeding and driver hours. Establish safety accreditation mechanisms for members of the commercial vehicle body building industry. Foster safe fleet purchase practices by government agencies and the corporate sector. Review opportunities for regional harmonization of heavy vehicle size and weight regulations. 	<ul style="list-style-type: none"> Establish at least one modern automated vehicle inspection center in every state and union territory. Provide heavy vehicle weigh stations and weigh-in-motion systems for the enforcement of vehicle load limits. Foster safe fleet purchase practices by government agencies and the corporate sector. 	<ul style="list-style-type: none"> Foster safe fleet purchase practices by government agencies and the corporate sector.

PILLAR 3: SAFER VEHICLES

Medium Term (2023–26)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Ensure 100% of commercial vehicles are brought under annual automated vehicle inspection regime. Launch official program on new car safety features to promote awareness, and purchase vehicles with high safety ratings and the upkeep of periodic safety inspections. 	<ul style="list-style-type: none"> Establish at least three modern automated vehicle inspection centers in selected states cumulatively contributing to 80% of total national fatalities. Support promotion of program on new car safety features and upkeep of periodic safety inspections. 	<ul style="list-style-type: none"> Support promotion of program on new car safety features and upkeep of periodic safety inspection.

PILLAR 3: SAFER VEHICLES

Long Term (2027–30)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Implement harmonized regional heavy vehicle size and weight regulations. Fully roll out program on new car safety features. 	<ul style="list-style-type: none"> Support promotion of program on new car safety features. 	<ul style="list-style-type: none"> Support promotion of program on new car safety features.

Global Plan Pillars and Time Frame

Road Safety Actions at Different Tiers of Government

PILLAR 4: SAFER ROAD USERS

Immediate to Short Term (2020–22)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Roll out National Highway Safety Services (NHSS) enforcement and traffic management program comprising general deterrence enforcement of unsafe behaviors, incident management, post-crash support and education, and counselling services in five high-risk National Highway corridors. Support NHSS enforcement and traffic management program with intensive media and marketing behavior change campaigns. Include road safety course curricula at different education levels, with an emphasis on the primary education system. 	<ul style="list-style-type: none"> Implement proactive road policing programs targeting speeding, drink-driving, and non-wearing of seat belts and helmets, supported by intensive media and marketing behavior change campaigns. Implement targeted speed management measures in urban areas and highways experiencing high levels of light and heavy vehicle interaction with vulnerable road users. Support delivery of road safety course curricula in state education system. Adopt policy on use of automated enforcement technologies on state and National Highways. Adopt policy on establishing speed limits on interurban and urban roads. Adopt policy on in-depth investigation of sampled crashes, with results published by academic/research institutes Develop e-challan systems for on-road management of driver offence penalties. Establish at least one automated driver training center in all states and union territories. 	<ul style="list-style-type: none"> Build community partnerships to support proactive road policing programs, enforcing unsafe behaviors and speed management measures targeting vulnerable road user risk exposure to light and heavy vehicles.

PILLAR 4: SAFER ROAD USERS

Medium Term (2023–26)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Roll out NHSS enforcement and traffic management program to 20% of National Highway corridors. 	<ul style="list-style-type: none"> Implement speed management measures in all cities and towns with a population of one million or more, with a focus on ensuring the safety of vulnerable road users. Establish at least three automated driver training centers in all states and union territories. 	<ul style="list-style-type: none"> Build community partnerships to support speed management initiatives in cities and towns.

PILLAR 4: SAFER ROAD USERS

Long Term (2027–30)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Roll out NHSS enforcement and traffic management program to entire National Highway network. 	<ul style="list-style-type: none"> Establish safe system speed limits on all urban and interurban roads and highways. 	<ul style="list-style-type: none"> Establish safe system speed limits on all district roads.

Global Plan Pillars and Timeframe
Road Safety Actions at Different Tiers of Government
PILLAR 5: POST-CRASH RESPONSE

Immediate to Short Term (2020–22)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Operationalize National Accident Compensation Fund as envisaged in the Motor Vehicle (Amendment) Act 2019. 	<ul style="list-style-type: none"> Facilitate the implementation of the Good Samaritan law in all states and union territories. 	<ul style="list-style-type: none"> Provide accredited training for first responders at the community level, including taxi drivers, roadside business owners, and local traffic police.
	<ul style="list-style-type: none"> Roll out national scheme for the cashless treatment of crash victims and designated fund to support this. 	<ul style="list-style-type: none"> Provide accredited training for first responders and paramedics in prehospital care and nurses in basic and advanced trauma life support systems. 	
	<ul style="list-style-type: none"> Enhance post-crash services to improve the efficiency of emergency notification, fast response of medical personnel, stabilization of the patient, prompt transport to the point of treatment, and extensive rehabilitation support. 		

PILLAR 5: POST-CRASH RESPONSE

Medium Term (2023–26)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Establish policy on providing universal insurance coverage for uninsured road users and victims of hit-and-run crashes. 	<ul style="list-style-type: none"> Establish statewide arrangements between the Motor Vehicle Accident Fund and medical facilities to provide cashless treatment for any victim in critical condition in all states and union territories. 	<ul style="list-style-type: none"> Provide accredited training for first responders at the community level, including taxi drivers, roadside business owners, and local traffic police.
	<ul style="list-style-type: none"> Integrate linkage of police, hospital, and insurance crash fatality and injury data. 	<ul style="list-style-type: none"> Establish fully equipped and staffed trauma care centers in all cities with populations of one million or more and in close proximity to National Highways. 	

PILLAR 5: POST-CRASH RESPONSE

Long Term (2027–30)	National Level	State Level	District and Town Level
	<ul style="list-style-type: none"> Network all trauma care centers and establish inter-hospital ambulance system throughout the country. 	<ul style="list-style-type: none"> Improve linkage of police, hospital, and insurance crash fatality and injury data. 	<ul style="list-style-type: none"> Provide accredited training for first responders at community level, including taxi drivers, roadside business owners, and local traffic police.

Appendix A: Regional Road Safety Benchmarks

Table A.1. Regional Vehicle Fleet Composition

Vehicles	Country				
	India	Bangladesh	Bhutan	Nepal	Sri Lanka
Vehicles (per 1,000 people)	159	18	109	81	327
Motorized 2 and 3-wheelers (per 1,000 people)	117	12	12	53	232
Percentage of vehicle fleet	73%	69%	11%	66%	71%
Cars and 4-wheeled light vehicles (per 1,000 people)	29	3.8	70	6.5	35
Percentage of vehicle fleet	18.3%	21%	65%	8%	10.7%
Trucks (per 1,000 people)	3.4	1	16	1.9	37
Percentage of vehicle fleet	2.1%	6%	15%	2.4%	11.2%
Buses (per 1,000 people)	1.5	0.4	0.9	1.8	2.5
Percentage of vehicle fleet	0.9%	2.2%	0.8	2.2%	0.8%

Source: WBG 2019a

Note: The data presented are from WHO 2018.

Table A.2. Regional Road User Fatality Risks

Fatality Risks	Country				
	India	Bangladesh	Bhutan	Nepal	Sri Lanka
Fatalities per 100,000 people	16.6	13.6	15.1	17.0	17.4
Fatalities per 10,000 vehicles	13.0	102.1	16.7	40.0	7.1
Pedestrian fatalities per 100,000 people	1.5	4.4	0.5	-	5.0
Pedestrian fatalities per 10,000 vehicles	1.2	32.7	0.5	-	2.1
Cyclist fatalities per 100,000 people	0.7	0.3	0	-	1.9
Cyclist fatalities per 10,000 vehicles	0.5	2.0	0	-	0.8
Motorized 2 and 3-wheeler fatalities per 100,000 people	5.6	1.5	0.3	-	7.1
Motorized 2 and 3-wheeler fatalities per 10,000 vehicles	4.4	11.2	0.3	-	2.9
Motorized 2 and 3-wheeler fatalities per 10,000 2 and 3-wheelers	6.1	17.5	2.3	-	4.2
Car and light vehicle driver fatalities per 100,000 people	1.2	1.8	7.0	-	0.4
Car and light vehicle driver fatalities per 10,000 vehicles	0.9	13.3	7.7	-	0.1
Car and light vehicle driver fatalities per 10,000 cars and light vehicles	3.8	50.6	11.3	-	0.9
Car and light vehicle passenger fatalities per 100,000 people	1.7	3.8	7.4	-	0.7

Fatality Risks	Country				
	India	Bangladesh	Bhutan	Nepal	Sri Lanka
Car and light vehicle passenger fatalities per 10,000 vehicles	1.3	28.6	8.2	-	0.3
Car and light vehicle passenger fatalities per 10,000 cars and light vehicles	5.4	109.0	12.0	-	1.8
Truck driver and passenger fatalities per 100,000 people	2.2	0.8	-	-	0.4
Truck driver and passenger fatalities per 10,000 vehicles	1.7	6.1	-	-	0.1
Truck driver and passenger fatalities per 10,000 trucks	66.5	90.2	-	-	2.2
Bus driver and passenger fatalities per 100,000 people	1.2	1.1	-	-	0.4
Bus driver and passenger fatalities per 10,000 vehicles	0.9	8.2	-	-	0.1
Bus driver and passenger fatalities per 10,000 buses	86.7	286.6	-	-	7.9

Source: WBG 2019a

Note: The data presented are derived from WHO 2015b as these provide the most comprehensive picture of country road user risks for global and regional comparative purposes that is currently available. However, related data for Nepal was unavailable for these purposes, as was data for truck and bus driver and passenger risks in Bhutan. "Fatalities per 100,000 people" measure personal, or population, safety and for this reason are the favored indicator for country public health assessments. High rates indicate low levels of personal safety. "Fatalities per 10,000 vehicles" measure traffic safety and provide a rough surrogate measure for fatalities per volume of vehicle travel, given the general unavailability of reliable traffic data. High rates also indicate low levels of traffic safety. "Fatalities per 10,000 vehicles by type" provide a useful measure of traffic safety in terms of the population of vehicles of that type, rather than in terms of the total vehicle fleet.

Table A.3. Country Road Safety Measures

UN Global Plan Pillars	India	Bangladesh	Bhutan	Nepal	Sri Lanka
Pillar 1: Road Safety Management					
Designated lead agency	Yes	Yes	Yes	Yes	Yes
Funded in national budget	Yes	No	Yes	Yes	No
National road safety strategy	Yes	Yes	Yes	Yes	Yes
Funding to implement strategy	Partial	Partial	Partial	Partial	Partial
Fatality reduction target	Yes	Yes	Yes	Yes	Yes
Pillar 2: Safer Roads and Mobility					
Audits/star rating required for new road infrastructure	Partial	Partial	Yes	Partial	Partial
Design standards for the safety of pedestrians/cyclists	Yes	Yes	Yes	Partial	Partial
Inspections/star ratings of existing roads	Yes	Yes	Yes	Yes	No
Investments to upgrade high-risk locations	Yes	Yes	Yes	No	Yes
Policies promoting walking and cycling	No	No	Yes	No	Subnational
Policies and investment in urban public transport	Yes	Yes	Yes	Yes	No
Pillar 3: Safer Vehicles					
Seat belt standards	Yes	No	No	No	No
Seat belt anchorage standards	Yes	No	No	No	No

UN Global Plan Pillars	India	Bangladesh	Bhutan	Nepal	Sri Lanka
Child restraint standards	No	No	No	No	No
Frontal impact standards	Yes	No	No	No	No
Side impact standards	Yes	No	No	No	No
Electronic stability control standards	No	No	No	No	No
Pedestrian protection standards	Yes	No	No	No	No
Motorcycle anti-lock braking system standards	Yes	No	No	No	No
Pillar 4: Safer Road Users					
National speed limit law	Yes	Yes	Yes	Yes	Yes
Maximum urban speed limit	Yes	Yes	Yes	Yes	Yes
Maximum rural speed limit	Yes	Yes	Yes	Yes	Yes
Maximum motorway speed limit	Yes	Yes	Yes	Yes	Yes
National drink-driving law	Yes	Yes	Yes	Yes	Yes
BAC limit–general population	Yes	No	Yes	No	Yes
BAC limit–young or novice drivers	Yes	No	Yes	No	Yes
BAC limit–professional/commercial drivers	Yes	No	Yes	No	Yes
Random breath testing carried out	Yes	Yes	Yes	Yes	No
National drug driving law	Yes	Yes	Yes	No	Yes
National motorcycle helmet law	Yes	Yes	Yes	Yes	Yes
Helmet law applies to drivers and passengers	Yes	Yes	Yes	Yes	Yes
Law requires helmet to be fastened	Yes	No	Yes	No	No
Law refers to helmet standard	Yes	Yes	Yes	No	Yes
Child passengers on motorcycles	Not restricted	Not restricted	Not restricted	Not restricted	Not restricted
National seat belt law	Yes	No	Yes	Yes	Yes
Law applies to front and rear seat occupants	Yes	No	Yes	No	No
National child restraint law	No	No	No	No	No
Restrictions on children sitting in front seat	No	No	No	No	Not restricted
National law on mobile phone use while driving	Yes	No	Yes	Yes	Yes
Law prohibits hand-held mobile phone use	Yes	No	Yes	No	Yes
Law also applies to hands-free mobile phones	Yes	No	No	No	No
Pillar 5: Post-Crash Response					
National emergency care access number	Partial	Partial	Yes	Partial	Partial
Trauma registry	Partial	No	No	Partial	Partial
Formal certification for prehospital providers	Yes	No	Yes	No	No
National assessment of emergency care systems	No	No	No	No	No

Source: WBG 2019a

Note: The data presented are from WHO 2018.

Appendix B: WBG Road Safety Engagement in India

World Bank Group (WBG) support to road safety in India is spread across 11 national and state highway projects. Road safety safeguards are now mandatory across all road projects.

At the national level, the WBG has provided advice on the Motor Vehicles (Amendment) Bill, 2016 and is now considering the support it can provide to the establishment of the proposed State Road Safety Incentives Programme grant fund. It has also supported the development of a framework for post-crash financial assistance, a strategy for crash database management, and the revision and update of engineering safety standards and practices. Under a WBG-funded technical assistance project, the draft National Road Safety Strategy 2018 to 2030 has also been prepared. The WBG is supporting the Ministry of Road Transport and Highways on revision of codes of practice and the development of a crash data system and data collection. It is also partnering with the World Economic Forum to collaborate with private sector partners on data and related initiatives. Road safety audits are also being systematically introduced through contracting requirements in WBG projects. Related road safety audit training and capacity building engaging all partner Public Works Departments is ongoing through the Asian Institute of Transport Development.

The WBG has conducted road safety management capacity reviews in Rajasthan (2013, 2017), Uttar Pradesh (2014), Tamil Nadu (2014, 2017), Gujarat (2011), and Karnataka (2010). It is also supporting several multisectoral, safe system-based road safety interventions in these states, plus in Kerala, Assam, Andhra Pradesh, Punjab, and Telangana, with loan funds and advisory assistance. The results of safe corridor demonstration projects in some of these states have been encouraging. For example, the Karnataka Safe Corridor Demonstration Project led to increased compliance with posted speeds and helmet wearing, and a reduction in road fatalities by nearly 60 percent in 2017 compared to 2016. A notable success of WBG assistance has been the establishment of an independent road safety authority and road safety fund in Kerala in 2008. Addressing the need for improved post-crash response, a pioneering initiative was piloted with the WBG's support to improve health and transport sector coordination through the establishment of a functioning emergency response service in Karnataka (2011–12). Regarding the need for improved enforcement and safer infrastructure, a recently approved project in Uttar Pradesh aims to introduce proactive deterrence-based enforcement with the establishment of a dedicated Uttar Pradesh Highway Police service, supported by intensive marketing and media campaigns targeting unsafe road user behaviors on National Highways. The project also aims to implement systematic, cost-effective safety engineering improvements on the state highway network. A similar WBG supported effort is ongoing to support the national government with the development of enforcement services on the National Highway network. In the area of data collection and management, the WBG helped establish a comprehensive crash analysis and management system in Tamil Nadu (2009) and Himachal Pradesh (2016).

At the city level, the WBG is leveraging private sector funds and global donors to improve road safety in urban jurisdictions through the Global Road Safety Facility (GRSF) and the Bloomberg Initiative for Global Road Safety (BIGRS) in Mumbai, which has been ongoing since 2015.

In addition to this work in India, the WBG along with key partner organizations (the Federation Internationale de l'Automobile, the Asian Development Bank, and the International Transport Forum) has initiated development of a Road Safety Observatory (or Observatories) for Asia, with the first multi-country workshop held in Singapore in 2019 (see Section 4.1, crash data recording and management). In 2018, the World Economic Forum and the Fédération Internationale de l'Automobile initiated a joint venture pilot project to establish a Road Safety Partnership for India (RSPI), in which the WBG is playing an active role. The RSPI aims to improve road safety in India by facilitating cooperation between health and mobility stakeholders (public, private, and civil society), while also seeking engagement by other interested industry groups. Its initial focus is on developing a sustainable governance model, securing the commitment of industry and government players, and aligning stakeholders on data collection and sharing needs to inform better policies and practices.

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