

DEVELOPING ROAD SAFETY MANAGEMENT CAPACITY IN INDIA

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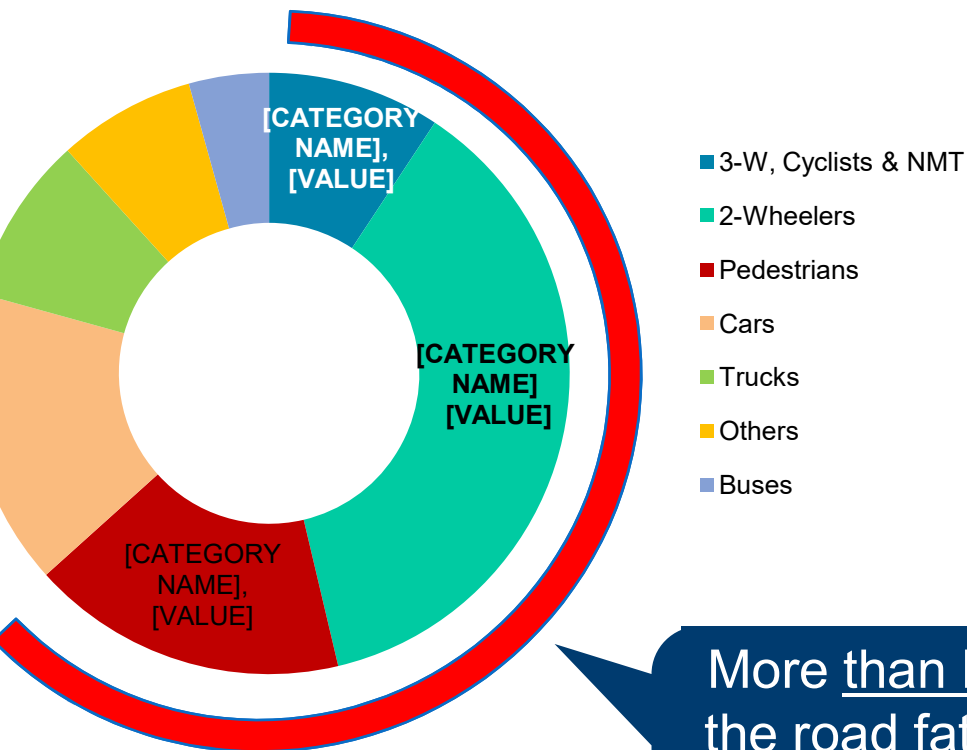
Agenda

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- 1 Road safety challenges in India
 - 2 RS Management Framework
 - 3 Interventions
 - 4 Institutional Management
 - 5 Results
 - 6 What is required?

Road injuries is a developmental priority for India

India reports ~150,000 annual fatalities and ~450,000 injuries

Fatalities by User Category (2019)



More than half of the road fatalities are of vulnerable road users

Recent **WB Poverty and Safety Impact** study in four Indian states indicates:

- ❖ 75% of respondents from Low Income Households reported a decline in income compared to 54% of HIH
- ❖ Income decline for LIH Rural (56%) was more severe compared to LIH Urban (29.5%)
- ❖ Only 6% of Low-Income Household in rural areas availed medical insurance compensation (7 out of 10 unaware of process); delays in insurance payment
- ❖ Women bore the brunt of crashes across poor and rich households

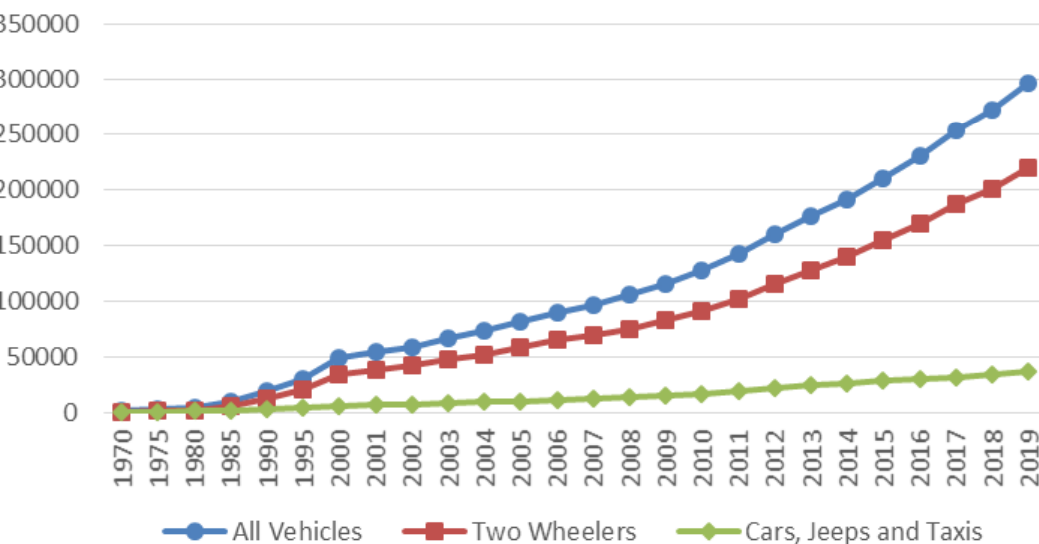
Rapid growth in motorization and infrastructure development

Rapid Motorization



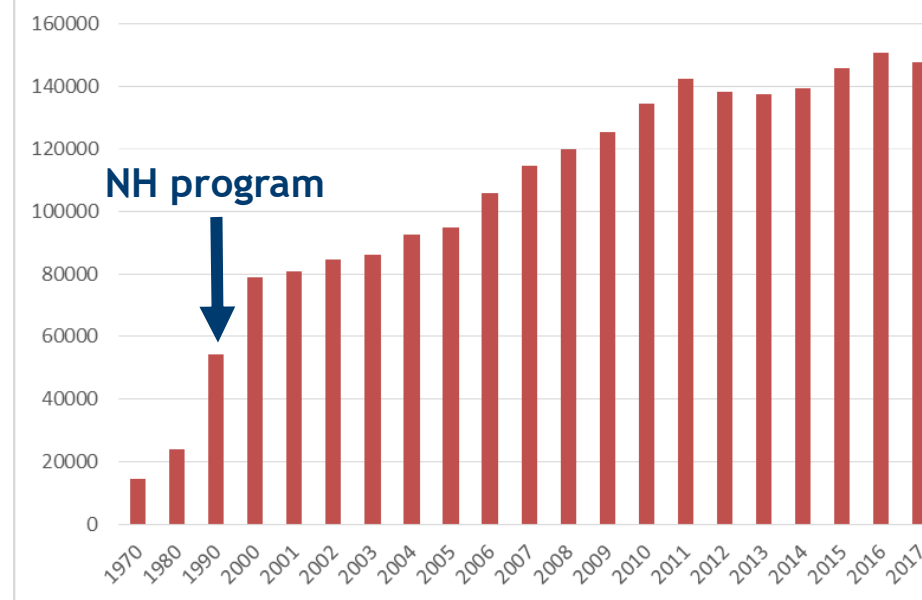
Rising RT Deaths

India Vehicular growth 1970-2019 ('000)



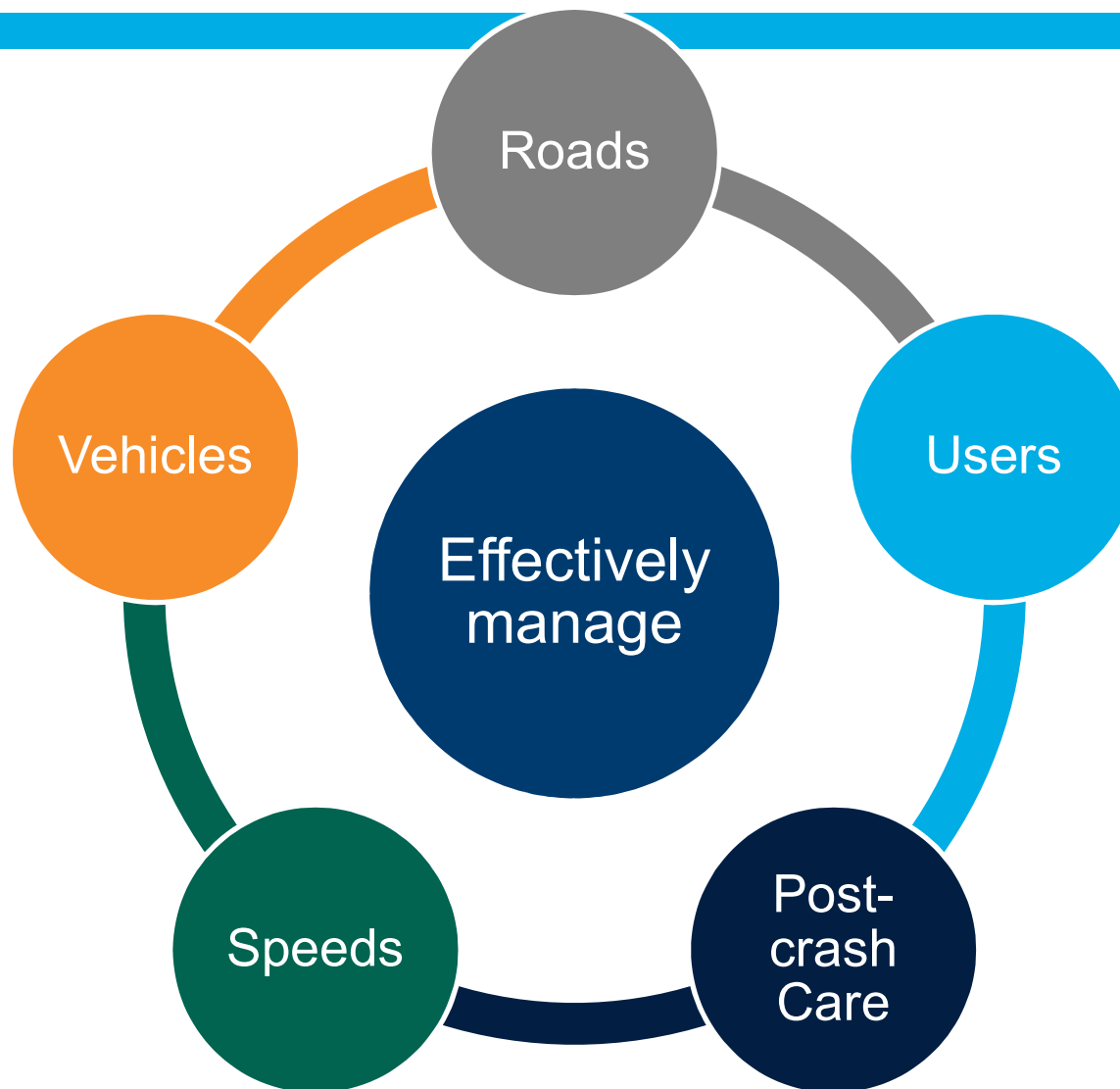
Vehicle CAGR: ~11%

India annual fatalities (1970-2019)

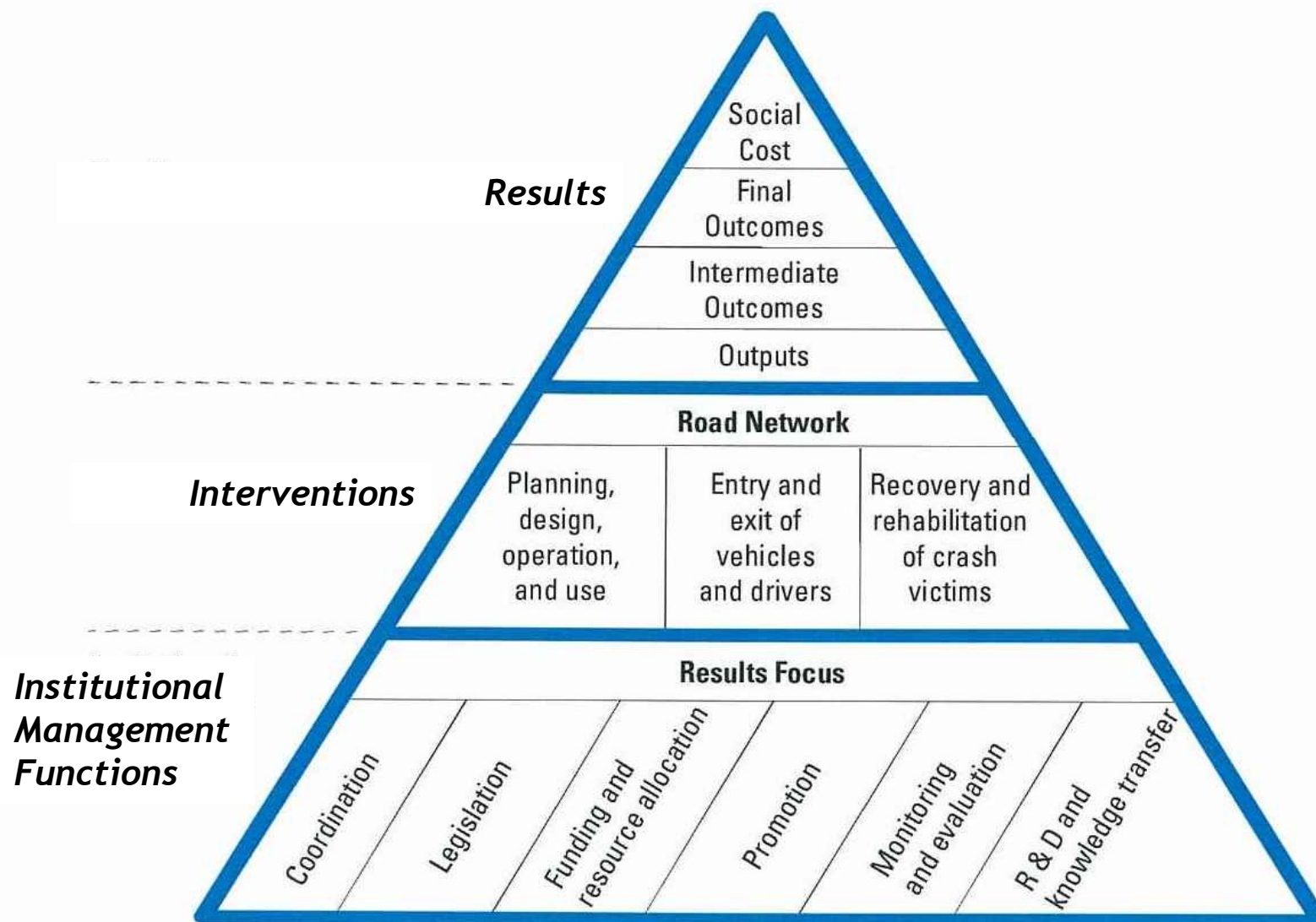


> 10-fold increase in fatalities

Road Safety is a system management challenge .



...and needs a Road Safety Management Framework



Source: Bliss and Breen, building on the frameworks of Land Transport Safety Authority, 2000; Wegman, 2001; Koornstra et al, 2002; Bliss, 2004.

Scorecard

| Road Network | | |
|--------------------------------------|--|---------------------|
| Planning, design, operation, and use | Entry and exit of vehicles and drivers | Recovery of victims |

Planning & Design



Vehicle & Drivers

- + Sound systems and tools for core engineering and civil works
- + Standards and guidelines for planning, design and operation
- Little/no capacity for incorporation of safety in planning/prioritization of road works
- Highway standards are not tailored to safety needs of all road users



Recovery & Rehab

- + Stricter licensing procedures including automated driver testing tracks
- + Several new vehicle standards and regulations; automated Vehicle Inspection Centers
- Suspension of licenses and on-the-spot fines still weak; overloading & capacity issues
- No periodic technical inspection of vehicles



- + 108 system operational across India, along with public emergency services in some states
- + Emergency care centers along some national and state highways
- Recovery of victims still hampered – lack of equipment, protocols, delayed response
- No provisions for rehabilitation of victims suffering long-term disability

WB road safety interventions in India

| Road Network | | |
|--------------------------------------|--|-------------|
| Planning, design, operation, and use | Entry and exit of vehicles and drivers | Rec reh o v |



WORLD BANK

Support at national level

- Knowledge support to the MoRTH on the MVAA, 2019
- Advocacy toward National Safety Policy and Vision 2030
- Development of data management systems and standards



WORLD BANK

Support at state level

- Multi-sectoral Safe Corridor Demonstration Projects
- Proactive safety risk assessments of project roads
- Building road safety management institutions and capacity

Bloomberg
Philanthropies

Support at city level

- Improvements to ~200 km of high-risk roads in Mumbai
- Piloting of road crash data system (DRIVER)
- Technical support and capacity building

Engagement in several areas and corridors

| Road Network | |
|--------------------------------------|--|
| Planning, design, operation, and use | Entry and exit of vehicles and drivers |

Ministry of Road
Transport & Highways
NHCP Nationwide

Rajasthan – RRSMP
Safety Corridors

Gujarat Road Safety
Authority, 2018 (GSHP 2)
& Safety Corridor

Mumbai - BIGRS
Safety Corridor

Karnataka Traffic and Road
Safety Cell, 2011 (KSHIPII)
& Safety Corridor

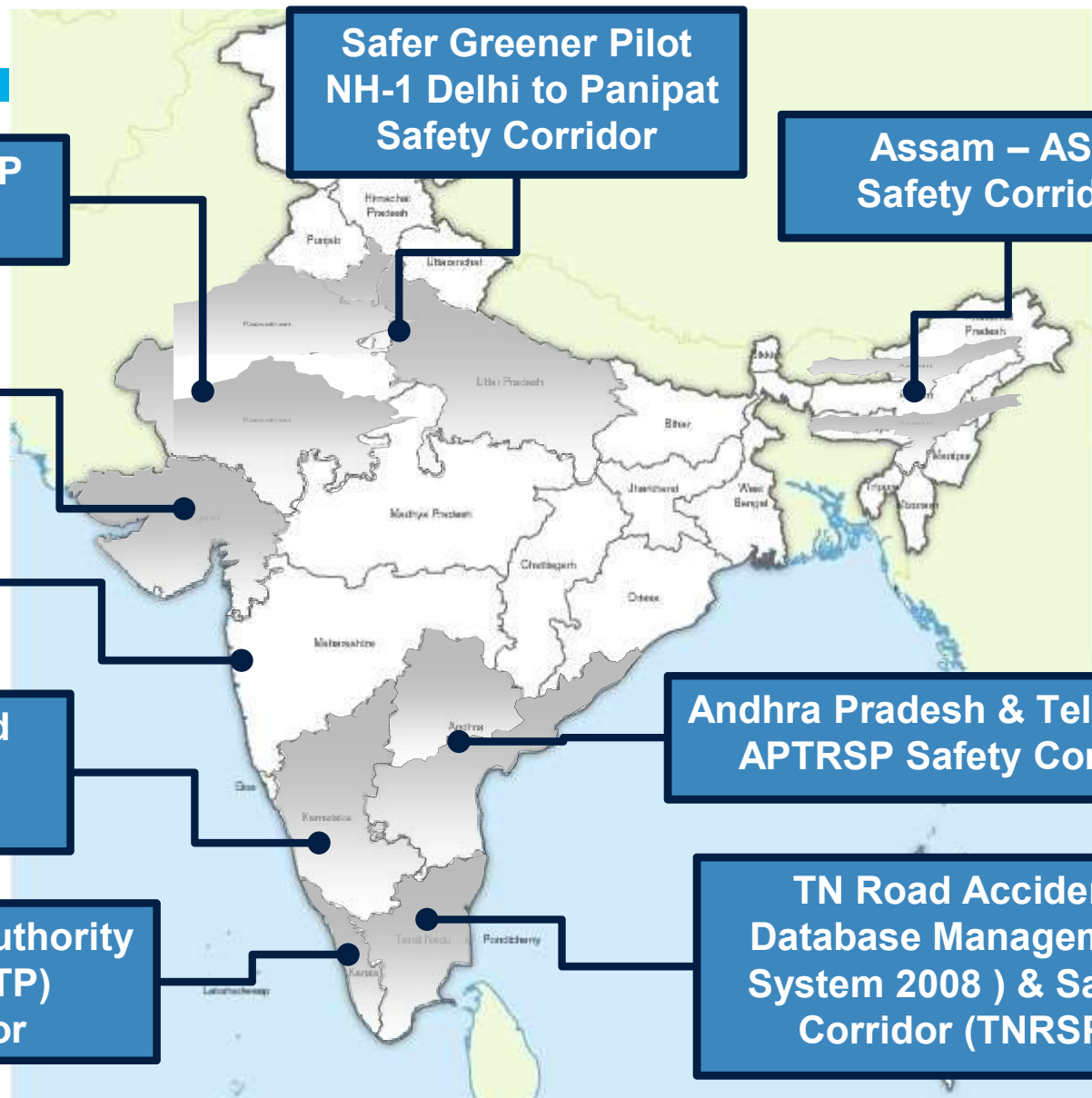
Kerala Road Safety Authority
& Fund 2007 (KSTP)
& Safety Corridor

Safer Greener Pilot
NH-1 Delhi to Panipat
Safety Corridor

Assam – ASRP
Safety Corridor

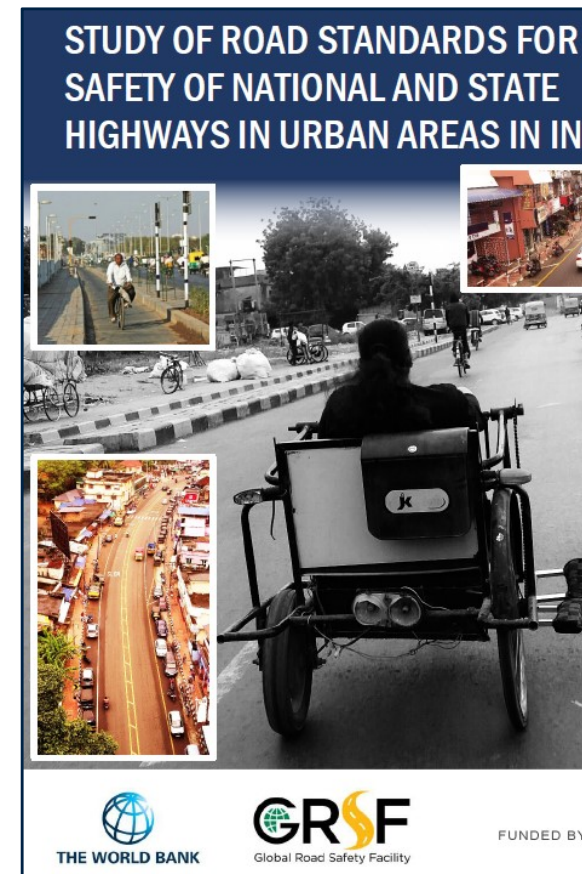
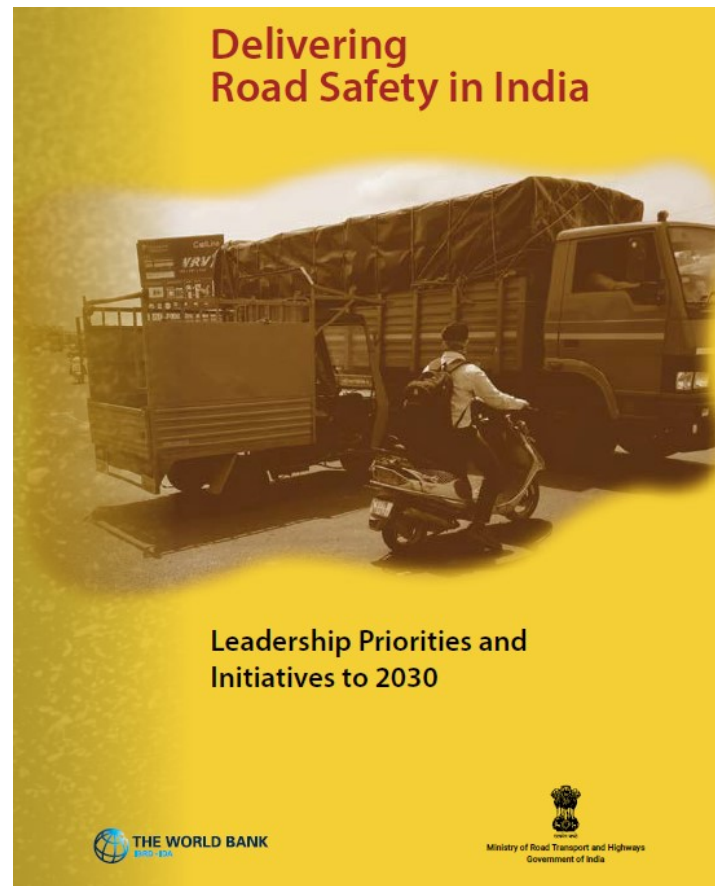
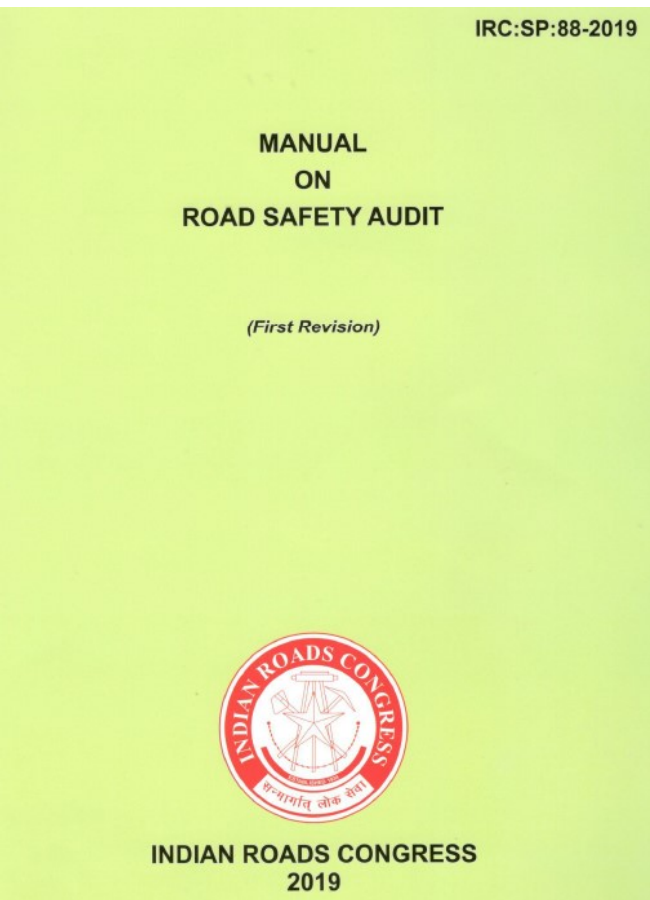
Andhra Pradesh & Telangana
APTRSP Safety Corridor

TN Road Accident
Database Management
System 2008) & Safe
Corridor (TNRSP)

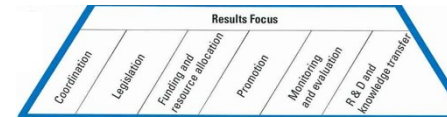


Support for reports, standards and guides

| Road Network | |
|--------------------------------------|--|
| Planning, design, operation, and use | Entry and exit of vehicles and drivers |



The Good



- National, State and District Road Safety Councils in place
- Some State Transport Departments have Road Safety Cells



- Motor Vehicles (Amendment) Act, 2019 (with provision for a National Road Safety Board)
- Gujarat and Kerala have set up independent Road Safety authorities through legislation



- Funds allocated for road safety awareness and post-crash equipment by MoRTH
- Several have set up road safety funds



- Road Safety Weeks have been held since 1991; Road Safety months started from 2021
- Several NGOs and corporates involved in awareness and communication campaigns

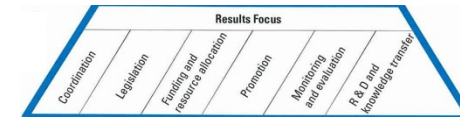


- Supreme Court Appointed Committee on Road Safety
- Integrated Road Accident Database and NHAI Rating system would facilitate better monitoring



- IRC, IAHE, CRRI, CIRT, NIMHANS, ARAI, NATRIP, IITs, NITs
- Several institutions are also now providing road safety certification courses

Areas for improvement



- Road Safety Councils lack legislative backing and mandate, resources and capacity
- State and District levels hampered by lack of targeted and result-oriented action plans



- MVAA yet to be fully implemented
- Most States yet to fully comply and to set up state-level counterparts to NRSB



- No dedicated funds for systematic road safety improvements
- No objective framework for allocation of funds for road safety in states



- Road safety weeks have mostly been PR exercises with little effect
- Promotion and communication campaigns are not combined with enforcement drives



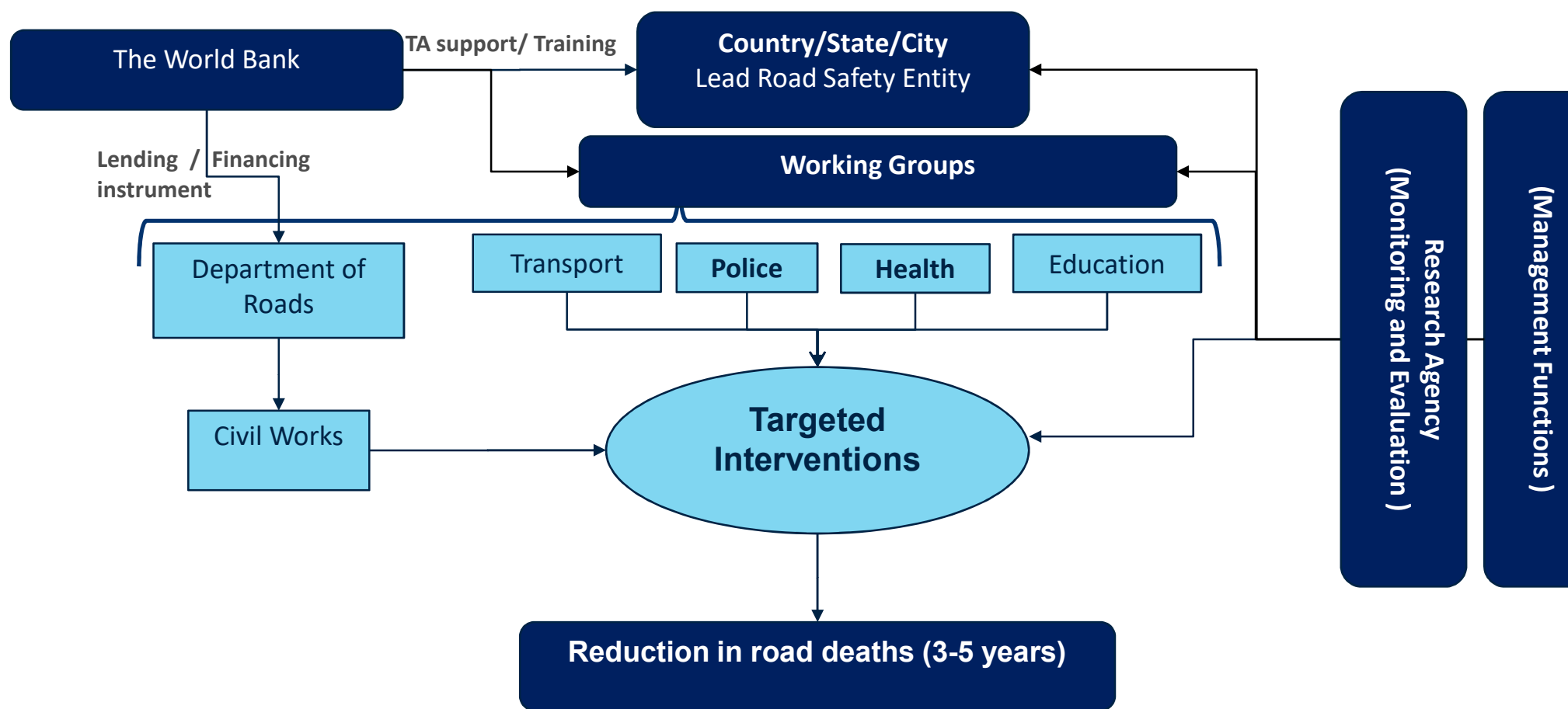
- No systematic monitoring and evaluation of interventions and initiatives
- Little information on what works and what does not in the Indian context



- Limited research in road safety measures, equipment and enforcement in India
- Training and dissemination of standards/codes/guidelines is sporadic

Safe Corridor Demonstration Project Approach

| Results Focus | | | |
|---------------|-------------|---------------------------------|-----------|
| Coordination | Legislation | Funding and resource allocation | Promotion |



Karnataka – Belgaum-Yaragatti (60 km)



Traffic Calming at all Major



Median Delineation



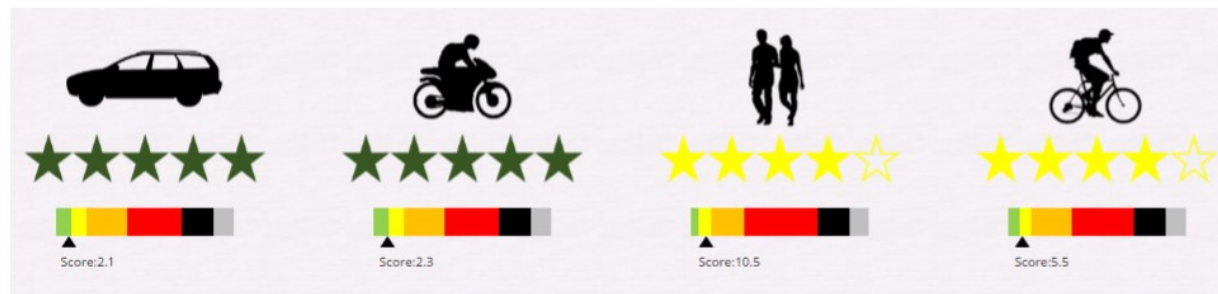
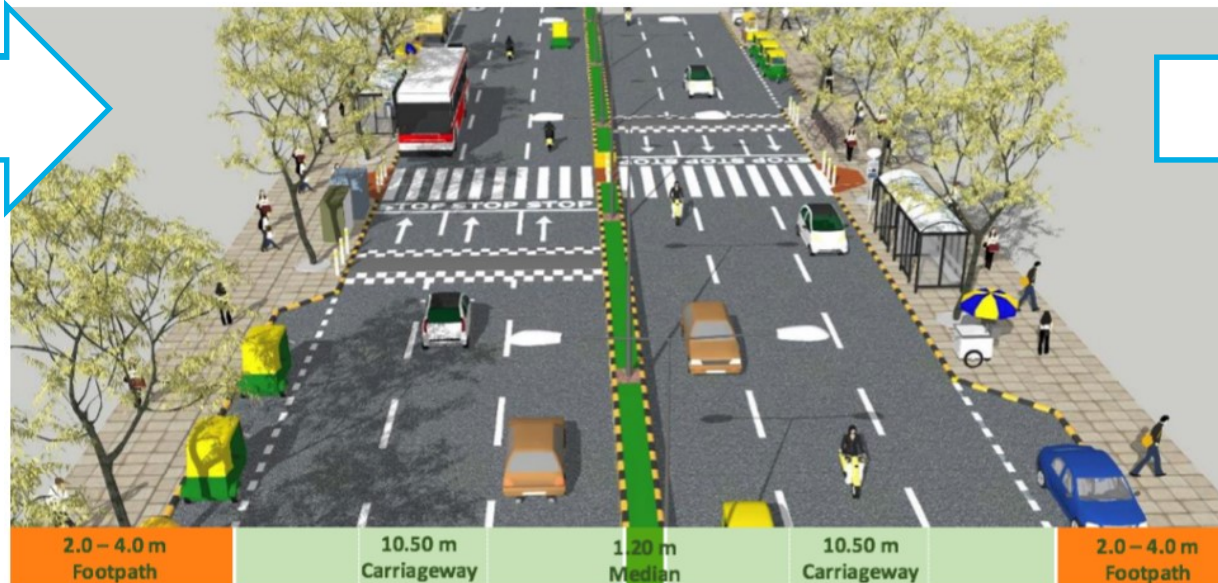
Better Pedestrian and Bus Facilities



Better Truck Parking Facilities

More than 50%
reduction in
crashes, fatalities and
serious injuries
between 2015 and
2018

LBS Marg, Mumbai (Urban Arterial)

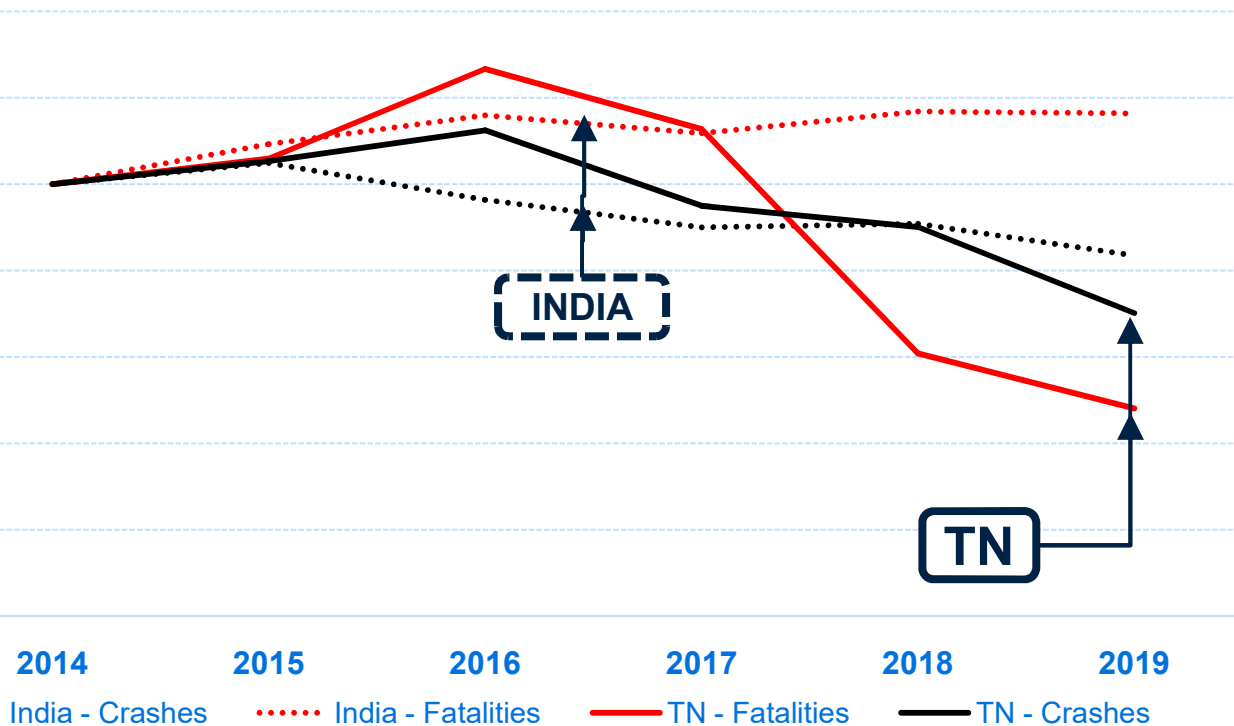


Note this analysis has been done using an estimated 85th percentile operating speed of 45km/h.

Designs aimed at 50% fewer road traffic injuries per year

Tamil Nadu success story

Crashes & Fatalities: Changes post 2014



❖ WB support in:

- ✓ cross-sectoral working
- ✓ pilot corridor and district safety demo
- ✓ enforcement & crash data system
- ✓ trauma care and knowledge transfer

❖ Intermediate outcomes:

- ✓ IRAP 3-star rating for > 20% of network
- ✓ 2-wheeler fatalities due to non-wearing helmet fell by 28% from 2018 to 2019
- ✓ Emergency response time fell to 14 min (from 18 minutes in 2016)

- ❖ If it were a country, would be only close to achieving the 2020 goal of halving 2010 fatalities (~46%)

What is required ...Roads

SHORT TERM

- Review/update codes and standards to incorporate road safety requirements in [design](#)
- Re-categorize road types in terms of link and place functions and set safe speed limits
- Adopt uniform safety performance metrics and policies on all road projects
- Launch national capacity building program - safe road design, construction, management

MEDIUM TERM

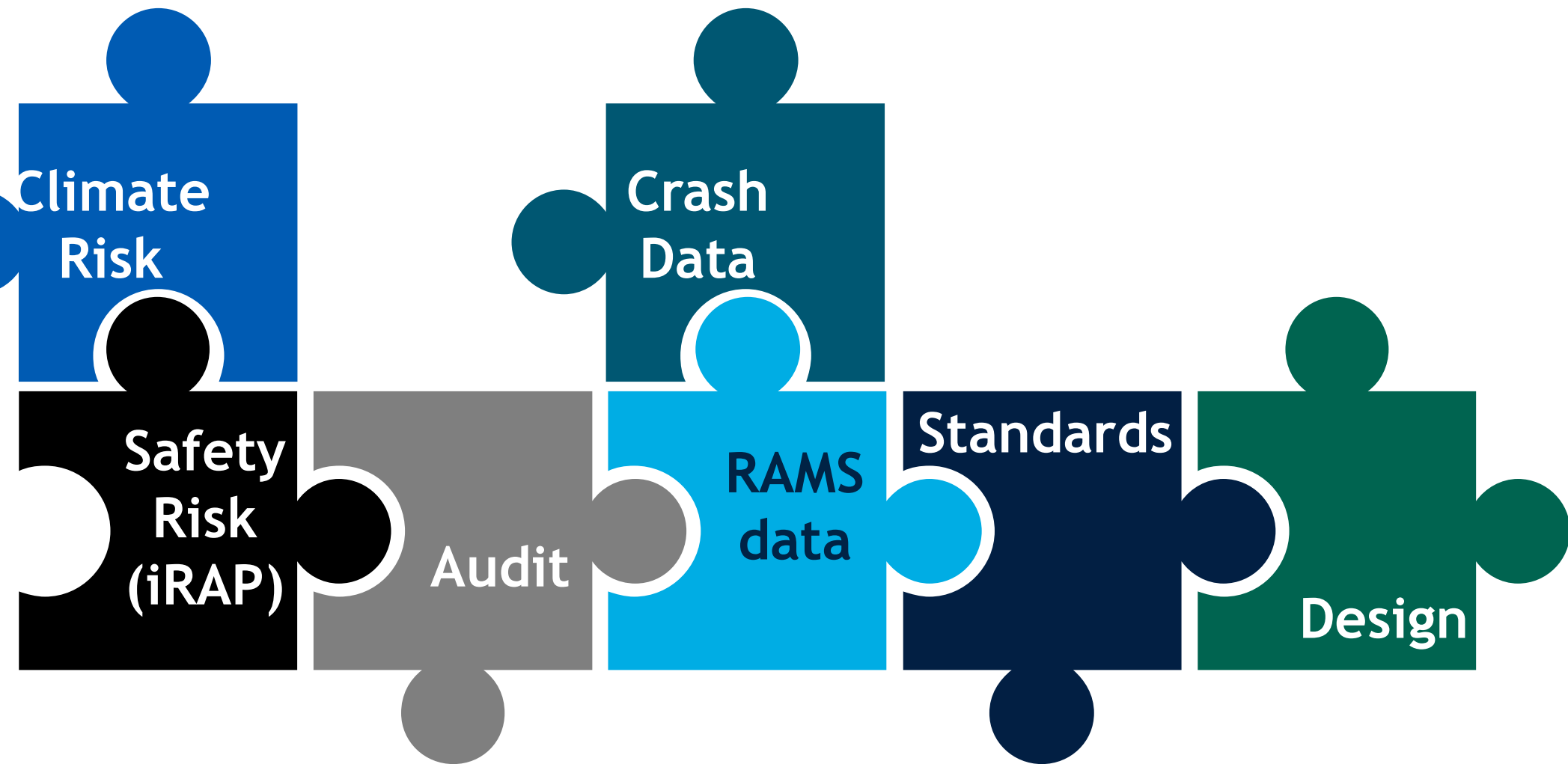
- All states adopt policy on mandatory road safety audits at road planning, design, construction and maintenance stages for all state highways & district roads.
- Recommendations from road safety audits and inspections conducted on National/State highways and district roads implemented on priority basis.

LONG TERM

- 100% coverage of national road safety capacity building program
- Safe speed limits are set in line with respective link and place functions.
- Roads are prioritized based on proactive risk assessments
- Tools for risk assessments are mainstreamed into asset management systems

Best practice in road planning and design

| Road Network | |
|--------------------------------------|--|
| Planning, design, operation, and use | Entry and exit of vehicles and drivers |



Capacity constraints in road safety management

| Results Focus | | | | | |
|---------------|-------------|---------------------------------|-----------|---------------------------|---------------------|
| Coordination | Legislation | Funding and resource allocation | Promotion | Monitoring and evaluation | R & D and knowledge |

Supply Constraints

- Inadequate supply of road safety professionals and experts
- 20,000 road safety auditors required, hardly 200 available

Research gaps

- Limited research and training in road safety aspects
- Limited use of innovative road safety services, products and equipment

Capacity & Capability

- Institutional/knowledge gaps in road safety management
- Strong technical capacity, but little regard for needs of all road users & danger of speeds
- Limited use of scientific frameworks/tools for safety management, monitoring/evaluation

Accountability

- Lack of safety standards for highways passing through urban areas
- Little or no accountability of entities for the safety of roads built

Some key MVAA provisions and ramifications

| Results Focus | | | | |
|---------------|-------------|---------------------------------|-----------|---------------------------|
| Coordination | Legislation | Funding and resource allocation | Promotion | Monitoring and evaluation |



| Results Focus | | | | |
|---------------|-------------|---------------------------------|-----------|----------------|
| Coordination | Legislation | Funding and resource allocation | Promotion | Monitoring and |

What is required ...overall management

SHORT TERM

- Constitute fully empowered, staffed, and accountable state counterparts to NRSB
- Earmark a portion of construction budgets for safety measures and incident management
- Support formulation of state road safety action plans to implement Vision Zero 2030
- Establish a uniform framework for the evaluation of state level road safety performance

MEDIUM TERM

- Establish centers of excellence for support in projects, research, monitoring and training
- Use IRAD platform to devise safety strategies and programs in selected states
- Enter into a MOU with at least one independent research/academic institute to provide technical advisory and monitoring support to state government agencies

LONG TERM

- Ensure Vision Zero 2030 targets are achieved.
- Support ongoing delivery of Vision 2030 action plans and related multisectoral projects
- Support road safety management training initiatives for officials and specialists.

me final reflections

Interventions to consider needs of all road users

- ❖ Systematic, proactive safety assessment of roads for identifying safety risks to all road users
- ❖ Application of best practice road safety audits during road design
- ❖ Ensure “safety by design” and consistent implementation of countermeasures
- ❖ Revision of codes, standards and manuals with clear safety-focused guidance, and ensure their use
 - ✓ Consider “Interim Design Notes” for IRC changes in between revisions to incorporate innovations

Effective institutional management needs

- ❖ Strong autonomous, well-equipped and well-resourced road safety agencies
- ❖ An online country-level repository of knowledge/resources to foster a road safety community of practice
 - ✓ Road safety toolkits on road safety management for use by all states
 - ✓ Mandatory road safety courses as part of Staff induction/orientation programs
- ❖ Active involvement of the private sector
 - ✓ Setting up of Centres of Excellence in Road Safety
 - ✓ Pilot road safety projects, wayside amenities, post-crash care, electronic enforcement
 - ✓ Research studies, specialized training courses and theme oriented road safety months throughout the year

Results focus vital

- ❖ Continuous focus on results vital to drive interventions and achieve national and SDG goals
- ❖ Uniform monitoring framework of results across states as basis for national support

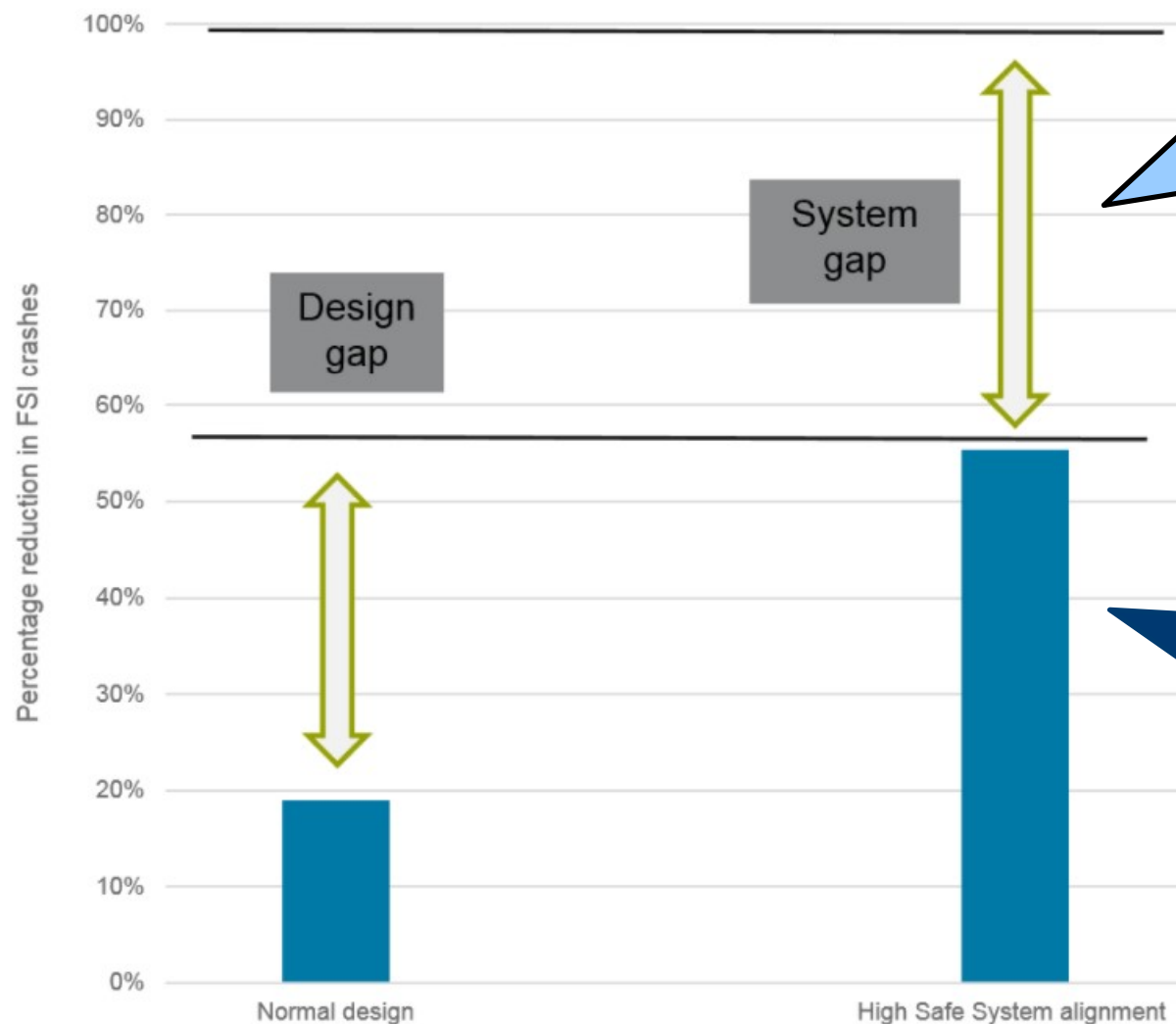
Story of 3 States!

<https://vimeo.com/508567613/8ccbcdd7b>

THANK YOU

Concept of safety by design ...

| Road Network | |
|--------------------------------------|--|
| Planning, design, operation, and use | Entry and exit of vehicles and drivers |



- More substantial infrastructure improvement
- Innovation
- Other pillars

- With just infrastructure design improvements

to avoid construction of such roads!

| Road Network | |
|--------------------------------------|--|
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NH8 Bypass severing a local road near Jaipur