



GOVERNMENT OF ODISHA

ODISHA WORKS DEPARTMENT

Road Sector Institutional Development



FINAL REPORT ON PROPOSED

ODISHA ROAD SAFETY ACTION PLAN



Intercontinental Consultants
and Technocrats Pvt. Ltd.

In joint venture with



In association with

ARKITECHNO
CONSULTANTS (INDIA) PVT. LTD.



Government of Odisha
Chief Engineer, World Bank Projects, OWD
Odisha State Roads Project

Consultancy Services for
Road Sector Institutional Development



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Final Report on Proposed
'Odisha Road Safety Action Plan'

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Executive Summary

Road accident deaths on road network in Odisha are alarming. More than 10 persons per day die on rural and urban roads in Odisha and the situation is very grim compared to many other States of India. Though in absolute numbers, the number of people dying annually in Odisha is comparable to some other States, which have a poor safety record, the reality is that the situation in Odisha is more serious than these States. The table below indicates the road accident deaths and vehicles per 100,000 population in Odisha and few selected States in India.

Sl. No.	State	Number of Fatalities (Year 2011)	Number of Vehicles/ 100,000 population
1.	Kerala	4,145	18,190
2.	Punjab	4,931	22,596
3.	Delhi	2,065	40,278
4.	Odisha	3,802	7,943

The table above clearly indicates that Odisha recorded 3,802 road accident deaths, which is comparable to other States shown in the above table. However, the number of vehicles per 100,000 population (which is the true indicator for comparison) in Odisha is much lower than the other three States shown in the table, and this is cause of significant concern. It is understandable that the current situation will get worse in the coming years given the current rate of motorization in Odisha (10% annual growth), unless immediate and coherent actions are taken.

Road Safety is a multidisciplinary problem, and therefore it is important that interdepartmental and coordinated approach is required for sustainable reduction of road accidents and fatalities in the State. Over the course of last 24 months, the consultant has assessed the issues concerning road safety across all stakeholder departments (Works, Transport, Police, Health & Education), in addition to various meetings with NGOs and Lawyers operating in the State. Further, a road safety assessment of selected road network amounting to 2,000 km were carried out to determine the road engineering road user behavior issues affecting the road safety. Based on the above assessments, a comprehensive draft Road Safety Action Plan (RSAP) for the State was developed. In the action plan, list of actions to be implemented within a time frame, has been suggested for all the above departments.

The document lists actions which are aimed at reducing accidents to improve the road safety in the State, by addressing the following aspects:

- Interdepartmental coordination and management for road safety
- Road crash database system
- Safe planning and design of roads
- Improvements in hazardous locations
- Traffic police and law enforcement
- Road traffic legislation
- Road safety publicity and campaigns
- Road safety education for children
- Emergency trauma care for crash victims

- Driver training and testing
- Vehicle safety standards and testing
- Road safety research
- Funding for road safety

The Final RSAP include different short, medium and long term actions for the stakeholder departments – Works, Home, Commerce & Transport, Education and Health – to act upon the guidance of the proposed State Road Safety Council.

The draft RSAP was formally approved by the World Bank vide their letter no. nil dated 19th March 2014 and by the 4th ISAP Review Committee at the meeting held at office of the Secretary (Works) on 05th December 2013. Further, the draft RSAP was discussed in a high level workshop on 19th February 2014 at Hotel Mayfair, Bhubaneswar, which was attended by the following Secretaries of the State:

- Secretary, Commerce & Transport Department
- Secretary, Rural Development Department
- Secretary, Panchayat Raj Department
- EIC cum Secretary, Works Department
- Special Secretary, Home Department

The feedback and comments from this workshop is incorporated in the final 'Road Safety Action Plan' for the State and the same has been presented to the State Level Empowered Committee (SLEC) held in office of the Chief Secretary on 14th May 2014.

The SLEC agreed to set up a State Road Safety Council and establish a Crash Database System in the State in an agreed time frame. The document 'Odisha Road Safety Action Plan' will act as a business plan for the newly established Council and can be used as guideline to implement various initiatives in the State to improve road safety.

Abbreviations

AIP	Accident Investigation & Prevention
CAD	Computer Aided Design
CE	Chief Engineer
CET	College of Engineering
CMVR	Central Motor Vehicle Rules
CRF	Central Road Fund
CRRRI	Central Road Research Institute
DRSC	District Road Safety Council
DSP	Deputy Superintendent of Police
EIC	Engineer-in-Chief
FPRA	Forum for Prevention of Road Accident
GoI	Government of India
GOO	Government of Odisha
GTA	Grant Thornton Advisory Pvt. Ltd
HQ	Head Quarter
HRD	Human Resource Development
ICT	Intercontinental Consultant & Technocrats Pvt. Ltd.
IDS	Institutional Development Strategy
IG	Inspector General
IIT	Indian Institute of Technology
iRAP	International Road Assessment Program
IRC	Indian Roads Congress
IRF	International Road Federation
IRTE	Institute of Road Traffic Education
ISAP	Institutional Strengthening Action Plan
JnNURM	Jawaharlal Nehru National Urban Renewal Mission
MAAP	Micro-computer Accident Analysis Package
MDR	Major District Road
MoRT&H	Ministry of Road Transport & Highways
MV Act	Motor Vehicles Act
MVD	Motor Vehicles Department
MVD	Motor Vehicle Department
MVI	Motor Vehicle Inspector
NCERT	National Council of Educational Research & Training
NCRB	National Crime Records Bureau
NGO	Non-Government Organization
NH	National Highway

NHAI	National Highways Authority of India
NIT	National Institute of Technology
NRF	National Road Fund, New Zealand
ODR	Other District Road
ORSS	Odisha Road Safety Society
OSRP	Odisha State Road Project
OSRSC	Odisha State Road Safety Council
OWD	Odisha Works Department
PPP	Public Private Partnership
PWD	Public Works Department
RADaR	Road Accident Data Recorder
RD	Rural Development
RDQP	Research Development and Quality Promotion
ROW	Right of Way
RSAP	Road Safety Action Plan
RSID	Road Sector Institutional Development
RTO	Regional Transport Office (or Regional Transport Officer)
SCB Hospital	Shri Ramachandra Bhanj Hospital
SCERT	State Council of Educational Research & Technology
SCRIB	State Crime Records Bureau
SH	State Highway
SI	Sub-Inspector
SLEC	State Level Empowered Committee
STA	State Transport Authority
TC	Traffic Constable
TI	Traffic Inspector
TRL	Transport Research Laboratory
ULB	Urban Local Body
VIP	Very Important Person
VSSUT	Veer Surendra Sai University of Technology
WB	World Bank

THE PROJECT

1. Background

The Government of Odisha (GOO), as part of its laid down strategic objectives, conceived a plan to upgrade major roads in the State and improve the institutional capacity to manage the road sector, with assistance of World Bank (WB). Accordingly, the GOO undertook 'Institutional Development Strategy (IDS) Study' during 1998–99 and identified several key result areas to be addressed in Odisha Works Department (OWD) and all other institutions concerned with road sector, over short (0–2 years), medium (2–5 years) and long term (5–10 Years).

Based on the recommendations of the IDS Study and WB suggestions on road sector reforms, GOO developed an integrated Institutional Strengthening Action Plan (ISAP), which was formulated in 2007, with focus on Institutional Strengthening and Capacity Building for improved management of the road sector. As a follow up action, the implementation of ISAP activities in the road sector as suggested under ISAP 2008–2018, was endorsed by the State Government in 2009.

In order to carry forward the objectives of ISAP on reforms in Road Sector in general and the OWD in particular, OWD initiated the project 'Road Sector Institutional Development' (RSID) and appointed the consultants M/s Intercontinental Consultant Technocrats Pvt. Ltd. (ICT) in joint venture with Grant Thornton Advisory Pvt. Ltd. (GTA) in association with ARKITECHNO Consultants (India) Pvt. Ltd in April 2012.

The major tasks and deliverables entrusted to the Consultants under the RSID project is shown in **Table 1**.

Table 1: Major Tasks and Deliverables

Sl. No.	Major Tasks	Major Outputs/Deliverables
1.	Road Sector Policy and Strategy	Road sector policy and implementation plan
2.	Road Safety Engineering and Planning	Multi-sectoral road safety action plan
3.	Road Network Master Planning	Road network master plan for the main road network in Odisha
4.	Vehicle Axle Load Regulation and Management	Axle load regulation and management system for the state
5.	Future Roads Funding and Management	Potential Road Fund Board
6.	Road Toll Collection and Management	Road toll collection and management system/framework
7.	Re-organisation and Strengthening of OWD	Working paper on short to medium term restructuring
8.	HRD Training and Policy	HRD Policy, Training needs assessment and training plan
9.	Revision of Works Code and Manual	New works code and manual
10.	Future Road Sector Institutional Options	Recommendations on medium to long term institutional framework for road sector

This report puts forth the proposed multi-sectoral Road Safety Action Plan (RSAP), which is one of the major outputs of the task 'Road Safety Engineering and Planning' in RSID project, for consideration by the GOO.

The draft RSAP was formally approved by the World Bank vide their letter no. nil dated 19th March 2014 and by the 4th ISAP Review Committee at the meeting held at office of the Secretary (Works) on 05th December 2013. Further, the draft RSAP was discussed in a high level workshop on 19th February 2014 at Hotel Mayfair, Bhubaneswar, which was attended by the following Secretaries of the State:

- Secretary, Commerce & Transport Department
- Secretary, Rural Development Department
- Secretary, Panchayat Raj Department
- EIC cum Secretary, Works Department
- Special Secretary, Home Department

The feedback and comments from this workshop is incorporated in the final 'RSAP' for the State and the same has been presented to the SLEC held in office of the Chief Secretary on 14th May 2014.

The SLEC agreed to set up a State Road Safety Council and establish a Crash Database System in the State in an agreed time frame. The document 'Odisha Road Safety Action Plan' will act as a business plan for the newly established Council and can be used as guideline to implement various initiatives in the State to improve road safety.

2. Scope of Work

The major activities carried out by the consultants under this task are as follows:

- Collection and analysis of road accident data available with State Crime Records Bureau (SCRB);
- Assessment of safety of the road infrastructure of selected road sections (approximate 2,000 km) including National Highways (NH), State Highways (SHs), Major District Roads (MDRs), Other District Roads (ODRs) and Rural Roads;
- Identification of hazardous locations, vulnerable road users groups and major causes of accidents in the State;
- Assessment of road safety management capacity of various institutions in Odisha, which includes OWD, Transport Department, Police, Health Department, Education Department and Urban Local Bodies; and
- Stakeholder Workshops in December 2012 and February 2014 to seek and incorporate feedback from all stakeholders at all levels of Government and Industry.

The major objectives of the above exercise were to:

- Capacity building within OWD for improved road safety management in planning, design and construction of roads;
- To develop a multi-sectoral RSAP for the State; and
- To assist GOO in the formulation of appropriate Institutional Mechanisms required to deliver the RSAP.

PAVING THE WAY
for
ROAD SAFETY ACTION PLAN

1. Introduction

Road accident deaths and injuries are estimated to be the 4th largest cause of healthy life-years lost by the global population by 2030 in low and middle income countries. Road crashes have disproportionate impact on the poor who experience limited access to post-crash emergency care and face huge cost of treatment and loss of income that push families further into poverty.

In Odisha, road accidents constitute a major economic and social trauma and significant health hazard, as in the other States of India. It is the leading cause of all unnatural deaths in Odisha, and is a major drain to the economy of Odisha and it absorbs huge resources of Odisha's health sector, which has more pressing concerns like dealing with other contagious diseases.

Odisha is rich in mineral resources and it is expected that the economy will grow at a rate faster than the national average rate of growth. It is inevitable that this will lead to increase in transportation demand of goods, personnel and services through its road network, and consequent expansion of road network. However, one of the negative aspects of traffic growth (demand on road transport) is the increase in road accidents/fatalities. Thus, it is important for the State to develop road safety management capacity and put in place processes for improved road safety management on its road network to reduce road accidents and fatalities.

It shall be noted that more than 10 persons die on the road network in Odisha every day since 2010, and this is expected to rise unless GOO initiates necessary actions to tackle this menace in a co-ordinated manner involving all stakeholder agencies.

This multi-sectoral Odisha RSAP is modelled on successful National and local plans in operation in many other countries. It is however specifically tailored to the particular needs of Odisha based on the Consultant's assessment of the existing situation. The RSAP include different short, medium and long term actions for the stakeholder departments – Works, Home, Commerce & Transport, Education and Health – to act upon the guidance of the proposed State Road Safety Council. The RSAP will act as a business plan for the newly established Council and can be used as guideline to implement various initiatives in the State to improve road safety

2. The Problem

Since 2009, Odisha is losing more than **3,500 lives every year** on road accidents. Considering the cost assigned to a life in India, this amounts to more than **Rupees 700 crores loss to the State** every year, which is a disaster for the society and the economy. Moreover, the social and emotional trauma due to road accident deaths is significant in Odisha since more than **50 percent of fatalities occur among low income groups**, which also make it an equity issue in terms of performance of road transport.

The safety problems are generally aggravated by the following:

- mixed traffic conditions operating at different speed on shared right-of-way;
- poor driving skills and a general lack of discipline by most road users;
- lack of clear visibility due to encroachments and other obstructions;
- unsafe road environment (sub-standard or poorly maintained roads);

- lack of enforcement or use of primitive methods; and
- insufficient road safety education and awareness.

Understanding the accident problem (i.e. actual nature of problem) is the key to designing effective action, and therefore, the strategy should start with a review of the scale and nature of the whole accident situation in Odisha.

The following questions need to be answered:

- What are the key characteristics of the road accident situation in Odisha today?
- Do accidents generally involve cars, buses or trucks, and are they involved by hitting vulnerable road users?
- What is the percentage of pedestrians hit by vehicles (% killed, % injured)?
- What is the situation with accidents involving children (7–12 years)?
- What is the percentage of two wheeler accidents?
- What is the percentage of under-reporting of accidents?
- What is the percentage of day/night accidents?
- Is excessive speeding a main cause of accidents?
- How many accidents are due to drinking and driving?
- How many accidents are caused by poor road condition, etc.?

The SCRB holds accident data which answers some of the above questions, but not all. This requires a comprehensive crash database system for the State for implementing data led road safety interventions. However, the Consultants have carried out a comprehensive assessment, the findings of which are used in formulating the draft RSAP.

2.1 Why do accidents/fatalities occur?

The common wisdom still prevalent, among the general public and decision makers, is that it is the road users who are responsible for road crashes/fatalities. However, developed countries, which have successfully reduced road crashes, recognize that it is not the user alone, but the whole road transportation system needs to be improved to reduce road crashes and fatalities in a sustainable manner.

A safe road transportation system includes **safe road infrastructure, safe vehicles and safe road user. If any of these fail to perform, road accidents tend to occur.** Further, once the accident happens, the **extent of emergency care** determines the rate of fatalities and serious injuries (and related permanent disabilities) due to road crashes in a State. To achieve a safe road transportation system, it is important for the following key departments to strengthen functionally and reform within each of them as well as to enhance the co-ordination to tackle the growing threat of road safety situation.

- Transport Department
- Roads Authorities (Works Department and NHAI)
- Police Department
- Health Department
- Education Department
- Urban local bodies

2.2 Where do accidents occur in Odisha?

The crash data available from SCRB indicates the following:

- 50 percent of accidents and fatalities occur on NH network
- 25 percent occur on SH network
- 25 percent on the remaining roads

Figures 1 and 2 below showing the percentage of accidents and fatalities as well as length of road network percentage, respectively.

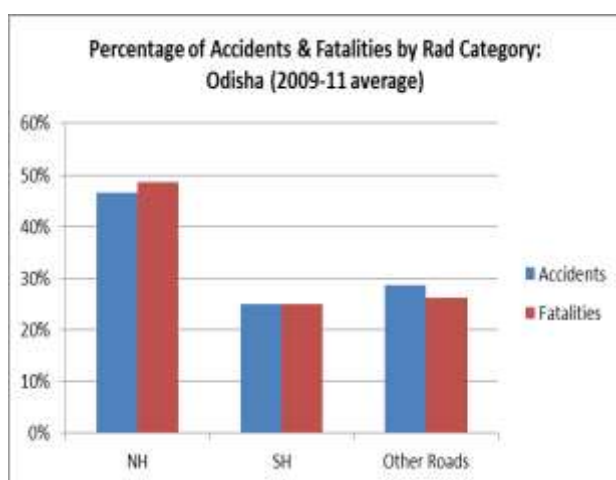


Figure 1: Percentage of Accidents and Fatalities

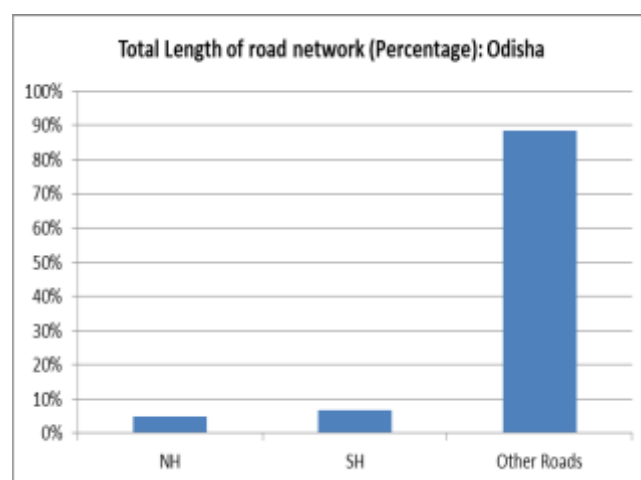


Figure 2: Length of Road Network (Percentage)

It is important to note that NHs and SHs constitute only 12 percent of the total road network, but contributes to 75 percent of road accident deaths. Further analysis of data reveals that following districts are worst affected or having worst records of road safety.

- Balasore
- Cuttack
- Ganjam
- Jajpur
- Keonjhar
- Khordha
- Sambalpur
- Sundargarh

2.3 How accidents occur in Odisha?

The crash data from SCRB indicates various types of accidents, as shown in Figure 3 below.

It can be seen that **head-on collisions, overturning and 'others'** are the predominant types of accidents, which occur in road network of Odisha. Further analysis of crash data revealed that **'others' include run-off accidents and hit road side objects like trees, poles, etc.**

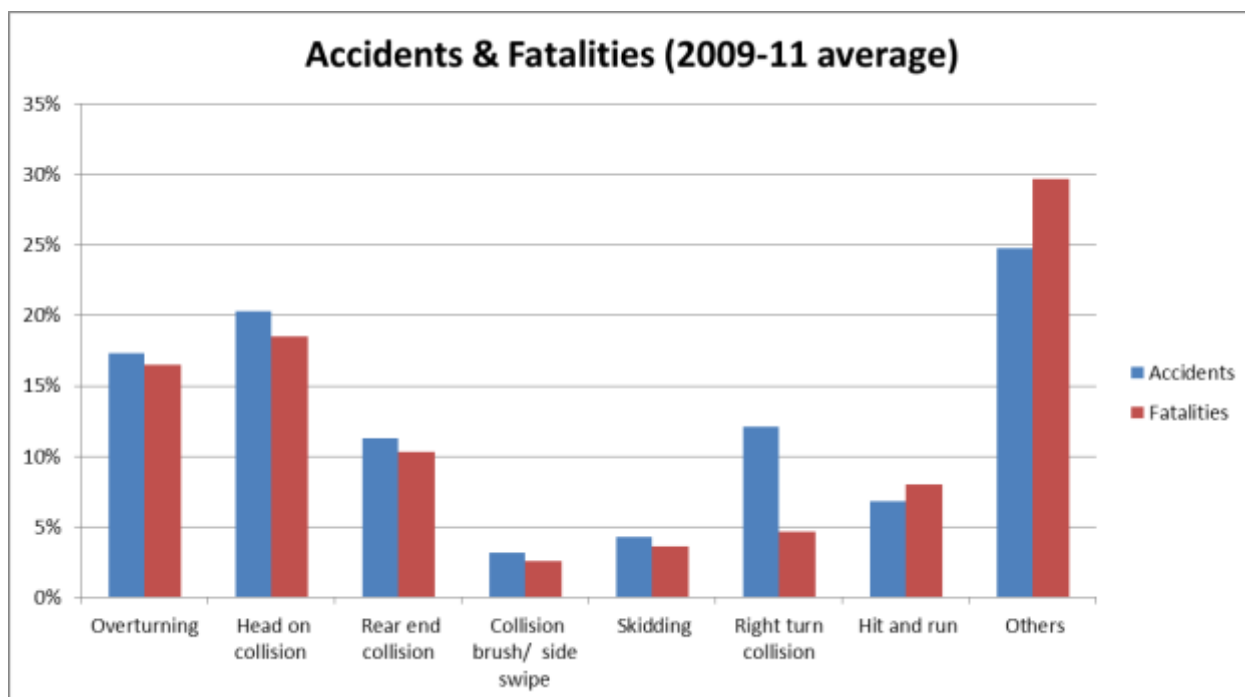


Figure 3: Nature of Accidents and Fatalities in Odisha

2.4 Who are the major victims?

The major share of the victims of road accident deaths in Odisha are **vulnerable road users (26%) including pedestrians, cyclists and motorised two wheelers**. The crash data from SCRB further reveals that **truck drivers and passengers (28%)** also constitute a major group of road accident victims. The **Figure 4** below illustrates the road user groups which are victims of road accidents.

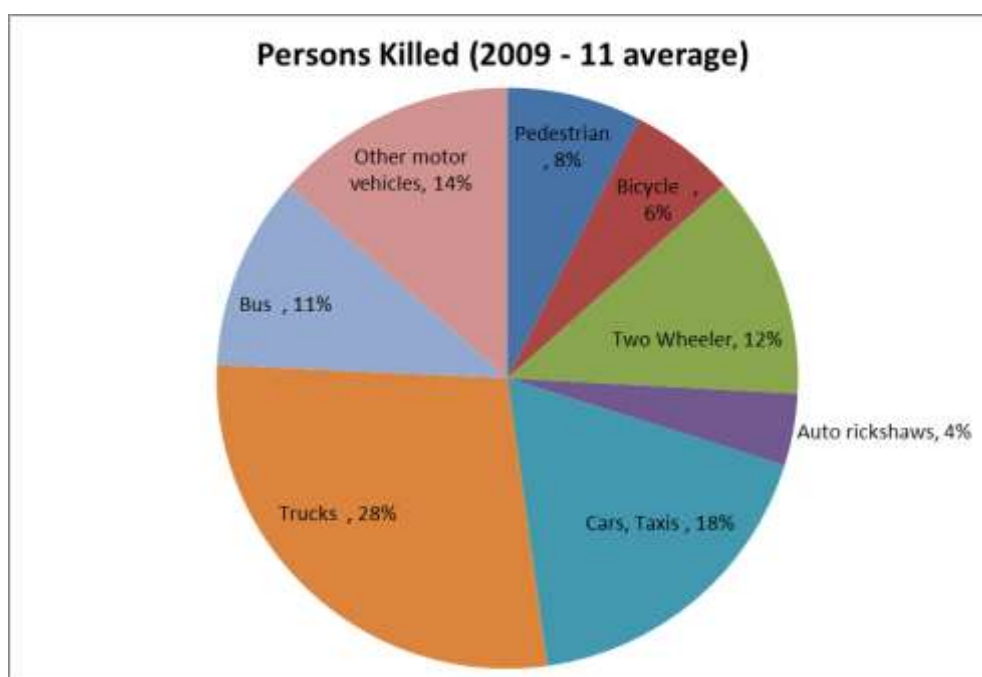


Figure 4: Fatalities in Road User Groups

PREAMBLE

to

ROAD SAFETY ACTION PLAN

The Action Plan was developed to address the following 12 key areas affecting road safety.

1. Coordination and management
2. Road Crash Database System
3. Safe planning and design of roads
4. Improvements in hazardous locations
5. Driver training and testing
6. Vehicle safety standards and testing
7. Traffic police and law enforcement
8. Road traffic legislation
9. Road safety publicity & campaigns
10. Road safety education for children
11. Emergency trauma care
12. Road safety research
13. Funding for Road Safety

The action areas involved are from many different disciplines and government departments which would actually need a wide range of approaches. Therefore, a list of actions were developed for major stakeholder departments – Transport Department, Home Department/Police, Works Department, Urban Local Bodies, Health Department and Education Department – to act in a phased manner to achieve the improvements in the above 12 key areas for sustainable improvements in road safety in Odisha.

The proposed action plan attempts to state ‘Who?’ ‘How?’ and ‘When?’ the initiatives should be taken by responsible GOO Departments. The following sections explain the role and importance of the 12 key areas in achieving sustainable improvements in road safety.

1. Co-ordination and Management of Road Safety

Effective road safety management requires shared multi-sectoral responsibility for results. As is the case of other similar States, co-ordination between departments is practically non-existent in Odisha. However, in Cuttack and Bhubaneswar, city management groups comprising all departments meet every month. There is no system of data sharing on a regular basis. The traffic police identify the hazardous locations, and then communicate to Works Department and Municipal Corporations with suggestions for improvement.

Coordination among departments is poor with different ownership of road network compounding the problems. NHAI owns many roads, but it is generally felt that local safety issues are not addressed by NHAI in either design or construction.

The efforts of Motor Vehicles Department (MVD) through Odisha Road Safety Society (ORSS) and the Road Safety Cell in the office of Transport Commissioner is not yielding the results since the efforts are not co-ordinated with other departments and due to a lack of understanding of road safety interventions required to improve the situation.

Following instructions from the central government in 2011, **Odisha State Road Safety Council (OSRSC)** was proposed by Department of Transport with Minister of Transport as the chairman and secretaries of different departments as its members. It is proposed to collect the necessary funds for the functioning of this Council from 50 percent share of the penalties collected from the Vehicle Check Report. The proposal is with the Department of Commerce & Transport for further action.

District Road Safety Councils (DRSCs) have already been formed with District Collectors as the Chairmen and they had their first meeting organised in 2012. However, the DRSCs have not yet been provided with funds to carry out any significant activity in road safety.

It is the need of the hour to have an improved co-ordination arrangement having statutory powers similar to the proposed **OSRSC**, chaired by relevant ministers with other supporting arrangements in place is needed to identify and co-ordinate the road safety activities to be carried out by the stakeholder departments.

Key Point

- Without effective co-ordination arrangements, tangible results in road safety improvements will not be achieved;
- A 'Lead Agency' represented by Senior Government officials with equal responsibilities is required to co-ordinate the road safety activities within the State;
- Strong political, financial and technical support is needed for those delegated to initiate and co-ordinate road safety on behalf of the State; and
- Such co-ordination is best carried out if the proposed OSRSC is supported by an experienced and effective secretariat of road safety specialists and senior representatives of the government from all stakeholder departments.

2. Road Crash Database System

Many people have opinions about what should be done to make roads safer, often based on personal experiences or anecdotal information that may misrepresent the true issues of priority. By contrast, reliable and detailed data helps to accurately identify the problems, risk factors and priority areas, which would allow to formulate logical strategy, targets and to monitor performance.

The Odisha Police, through its SCRB collects crash data presented in 19 different tables, and compile the same to inform National Crime Records Bureau (NCRB). These summaries are very useful in understanding general patterns and trends with regard to accident severity and types of vehicle involved. However, the crash data collected presently does not form an integrated crash database, which can be used to develop effective road safety interventions.

For example, the data indicates the number of fatalities in NHs, SHs and other roads, but does not provide information on what type of road users are most affected or what type of road accidents occur in different road categories. If in-depth accident analysis is needed for 'Blackspot' identification and investigation work, then a highly tedious manual exercise is needed to review the individual accident forms in various Police Stations. Even then, details of the exact locations of the accidents are often difficult or impossible to ascertain from the present system of data collection.

Key Points

- Without continuous data led diagnosis and management of the leading road injury problems, there will be no significant and sustainable reductions in exposure to crash risk or severity of crashes;

- Modern softwares like RADaR developed by International Road Federation (IRF) and MAAP developed by Transport Research Laboratory (TRL) are available to analyse accidents by location and all other factors listed on the accident report form used in Police Stations and/or the format published by Indian Roads Congress (IRC 53-2102 Revised); and
- The crash database systems allow easy analysis and presentation of accident data in a format suitable for the Police, Engineers and Politicians or for the production of an Annual Report.

3. Safe Planning and Design of Roads

The road safety management review carried out by the Consultants has revealed that road safety engineering has not been considered during the planning, design, construction and operation of road network. The safety assessment of 2,000 km of sample road network has revealed many typical hazardous locations, which otherwise would have been addressed by adopting appropriate road safety interventions during planning and design stage¹. Typical hazards observed on the road infrastructure are given below:

- Median openings in four lane highways, often found with deficient design;
- Side roads forming junction with the major road in rural areas, without speed change lanes and desired junction control;
- Sharp curves after long straight sections in rural areas operating with high speed without necessary warning and speed control measures;
- Roadside villages/Built up areas along the road, without any development control nor any enforcement on traffic;
- Junctions with side roads in rural areas, poorly designed and controlled;
- At grade junctions in NHs and SHs, evolved without proper design;
- Narrow bridges/culverts, without warning and hazard markers;
- Unprotected Ghat sections, where the terrain is one side hilly and the other side valley, without the required level of delineation of the road;
- Intermediate/single lane roads having high volume of mixed traffic, with congestion and unsafe operational controls;
- Locations where roadside objects are found to be on the road shoulder, without logical delineation and hazard marking;
- High speed roads passing through commercial areas and roadside villages, exposing vulnerable road users to high speed traffic;
- Locations where shops/commercial establishments have direct access to the highway, making the hazardous operation of traffic accessing the highway;
- Complete absence of information on speed limits; and

¹ The details of the analysis of accident data, safety assessment of the sample road network of the State and a detailed review of the safety management capacity of various stakeholder departments are given in the report 'Road Infrastructure Safety Management Review' submitted on April 06, 2013 vide letter no. ICT:660:OR:116.

- Lack of signs and markings to delineate the road and inform/warn the road users of the impending hazards.

The analysis of accident data for the period 2009–11, available with the SCRB, revealed that 50 percent of fatalities/accidents occurred on NHs and 25 percent occurred on SHs. Therefore, it is evident that appropriate safety interventions on NH and SH network will bring substantial savings and reduction in accidents.

Key Points

- It is economical to make changes to a design drawing than it is to re-construct a road after a pattern of accidents has emerged;
- A road network having safe infrastructure elements like adequate visibility, appropriate road signs and road markings, curve protection measures, appropriate junction control, traffic calming measures and provisions for vulnerable road users (footpaths, well maintained wide shoulders, cycle tracks/paved shoulders) and designated wayside amenities/service centres on major road network etc. will result in substantial reduction in road accidents/fatalities;
- The safety on the road network is compromised by the lack of suitable legislation or the enforcement problems associated with encroachment, hoardings, and storage of materials on the road, accesses and unauthorized structures or land use within ROW; and
- ‘Traffic Calming’ through the use of physical speed reduction measures is one of the most effective ways of protecting pedestrians and other vulnerable road users near schools, markets or other busy community locations.

4. Improvements in Hazardous Location

The safety benefits that can be derived from identifying hazardous locations (blackspots) through the careful analysis of accident data, studying the sites and then designing remedial measures, have proven to be particularly high. The benefits achieved by low cost remedial measures can be many times the cost of their implementation. It is said to be the most cost-effective way of spending money in the whole transport field.

Until date, Odisha has not carried out a safety assessment of their road network. Though it is understood that blackspot analysis and treatments will help in significant reduction of road accidents and fatalities, the absence of information on exact location of road accidents will be an impediment for an appropriate blackspot analysis.

Key Points

Good accident analysis and the choosing of prioritised locations for action are dependent upon knowing exactly where the collision occurred within 10 or 20 metres. This can only be achieved using crash data system and associated software, and mapping all accident prone locations as described above in ‘Road Crash Database System’.

With a good database there are several types of Accident Investigation & Prevention (AIP) work that can be carried out, for example:

- Blackspot studies (individual locations);
- Route studies (long lengths of road);
- Area studies (town centres, residential neighbourhoods, etc.); and
- Mass action plans (applying single remedy to large area).

Mass action plans can include, better signing, and warning at sharp bends or other hazards; resurfacing where skidding in the wet condition is a problem; slowing traffic at critical locations such as near schools; segregation of pedestrians and slow moving traffic from fast traffic, and so on.

In the absence of a good accident database, tools like iRAP is available to determine the safety star rating of the road network. iRAP classifies sections of the road network based on the perceived safety performance of road infrastructure (using measured geometric parameters) for different classes of road users and assign safety star rating on different sections of the network. This tool can be used for identification of hazardous road sections of the road network.

5. Driver Training and Testing

Driver Licensing – Like in other States, Odisha has set up a process for issue of driver licenses. The eligibility or access to driving on the road network is 18 years for motor vehicle drivers, and 16 for motorcycles without gears.

The applicants for driving licenses are far too high for the capacity of RTOs to handle the process in an efficient and fair manner. The stipulated test time is 30 minutes, but there are approximately 300 applications processed per day, and there is no graduated licensing system in Odisha. Driver licensing and testing requirements in Odisha need to be reviewed and revamped against good practices.

Driver training - Private driver training institutes provide driver training and these training centres need to be certified by RTOs. The present system/arrangement is very loosely structured and ineffective in providing required skills. Further, certificate of training is not mandatory to apply for license, except for applicants of licenses for transport vehicles.

In Commissionerate areas, computer simulators are available in RTOs. An advanced driver training institute is opened at Chandikhol, but is dysfunctional. There is a PPP project for driver training, which has been established in collaboration with Ashok Leyland, but this also seems to be not started. Heavy motor vehicle driver training institute is also established in Chatia, which is also not fully functional yet.

The primary focus of private driver training institutes is to get the applicant to know the mechanical aspects of driving, and very little focus and awareness of road safety is found to be existing in their training contents. State Transport Authority (STA) own driver training institutes in Bhubaneswar, and simulators are also available in Bhubaneswar and Cuttack, but not provided in other districts.

The **MVD** carries out all the tasks pertaining to implementation of Motor Vehicles Act (MV Act) through a network of 31 Regional Transport Offices headed by Regional Transport Officers (RTOs) and assisted by team of Motor Vehicle Inspectors (MVIs) and Traffic Inspectors/Sub-Inspectors (TI/SI). The **department is grossly understaffed** for the growing demands of vehicle registration and

driver licensing, and to make matters worse, **available advanced technologies and operating methods have been put into little use** to improve the working efficiency of the MVD.

The staffing situation of the MVD in Odisha is shown in **Table 2** and for comparison, the staffing situation of MVDs of Kerala, Tamil Nadu, and Andhra Pradesh are also shown.

Table 2: Staffing of MVD in Odisha and Comparable States

State	No. of Districts	No. of RTOs	Jt./Addl./ Deputy TCs	RTOs/ Jt. RTOs	MVIs	Asst. MVIs	MVI (NT)	Others
Odisha	30	31		55	33	79		Traffic Insp. – 27; Traffic SI – 25; Traffic Const. – 156;
Kerala	14	70	24	97	212	401		
Tamil Nadu	32	76	17	85	197	144	77	
Andhra Pradesh	23	43	20	49	206	218		

The applications for driving licenses for of motor vehicles is steadily growing for the last few years, but the resources and technology required to meet these challenges are not keeping pace with the growth in number of applications.

Whereas, several other States like Kerala and Andhra Pradesh have streamlined the process for issuance of learner’s license with its tests through on-line procedures using web-based technologies, Odisha is yet to modernize its business procedures to improve efficiency.

Key Points

- Truck drivers and motor cyclists are included in the major share of road accidents in Odisha;
- Driver error is understood to be the reason for more than 95 percent of road accidents;
- The compliance to safety requirements in licensing and driver testing regimes in Odisha is generally unsatisfactory, and a revamp of the system is required;
- The MVD is heavily under-resourced and a major capacity improvement programme along with implementation of technology in driver licensing process is required; and
- The driver training of two wheelers, three wheelers and four wheelers are not focused on safety, but rather on mechanical handling of the vehicle, which results in unsafe road user behavior.

6. Vehicle Safety Standards and Testing

The condition of the in-use vehicle fleet are, in general, found to be at very poor levels with many commercial vehicles and cars more than 10 to 15 years old operating on the road network of the

State, which are probably not roadworthy. The powers to set standards for production of vehicles are vested with central government, while inspection and maintenance are with State.

In the State, MVD issues fitness certificates for various classes of vehicles. It has been found that MVD is grossly understaffed to ensure actual fitness of vehicles including the aspects for safety. The MVIs do not check compliance to all the standards, and particularly those aspects which are likely to affect safety. In Odisha, like most of the other States, as per the Central Motor Vehicle Rules (CMVRs), it has been made mandatory for commercial vehicles to renew certificate of fitness every year. However, the interval for checking of road worthiness of private vehicles has been set as 15 years, as per its tax life.

The condition of the fleet of public buses is improving owing to the new standards of buses delivered under JnNRUM project; however large number of old buses still operate on the roads (especially outside major cities). While the increasing number of new cars, motor-cycles and scooters are all fully equipped with effective components, many of the older vehicles, particularly the buses and trucks are clearly deficient in basic lights, reflectors and indicators.

The summary of the crash data for the period 2009–11, classified based on vehicle defects, is shown in the **Figures 5 & 6** below:



Figure 5: Road Accidents (2009-11)

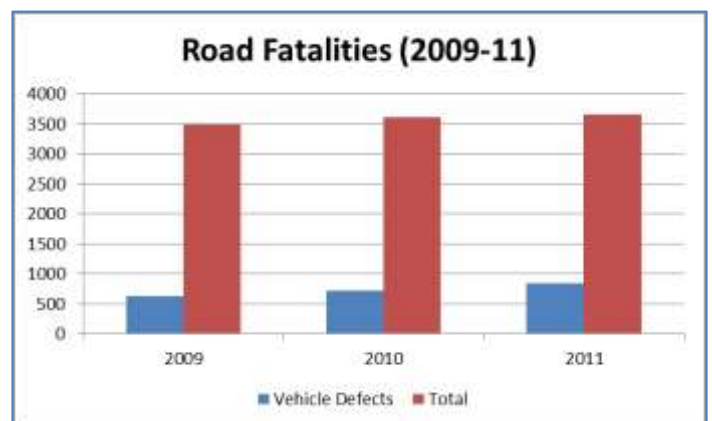


Figure 6: Road Fatalities (2009-11)

The data shows that average number of accidents due to vehicle defects during the period 2009–11 was 30 percent of total number of accidents and average number of fatalities due to vehicle defects during the same period was 20 percent of total number of road fatalities.

It is pertinent to note that in more than 95 percent of the fatalities/accidents identified to be due to vehicle defects, vehicles carried a fitness certificate issued by the competent authority. This clearly demonstrates that vehicle safety standards and testing are a major concern in Odisha.

Key Points

- Accidents and fatalities due to vehicle defects are significant;
- In more than 95 percent of cases where vehicle defects were recorded as a cause of accident, these vehicles had fitness certificates issued by a competent authority;

- The MVD is under-staffed to carry out proper checks for the safety and road worthiness of vehicles;
- The vehicle fitness system relies almost entirely on the issuing of a 'Certificate of Fitness' to transport vehicles each year, which only make up a small percentage of the total vehicle fleet;
- Routine checks by MVIs on road are inadequate to provide for an effective control mechanism;
- MVIs, who have specialist knowledge on vehicles and vehicle maintenance and are supposed to conduct random inspection, are regularly diverted to other tasks which are not related to ensuring vehicle safety;
- There are no training aids and instructions for vehicle inspections and roadside testing;
- As MVIs are not in a position to examine the vehicles properly by mechanical tests, there is a real potential for vehicles that are passed by MVIs to still have serious shortfall in roadworthiness;
- The testing or checking procedure do not focus on the implications of vehicle defects on safety of the road user; and
- Private inspection companies or garages are not utilised to conduct routine inspections, thereby overloading the scarce MVI resources, leading to not serving the purpose of this provision of law.

7. Traffic Police and Law Enforcement

The role of Odisha State Police in road safety is limited to collection and compilation of accident records in SCRB. However, Bhubaneswar-Cuttack Police Commissionerate, established in 2008, is responsible for enforcement of road safety measures in twin cities of Cuttack and Bhubaneswar under Urban Police Act, 2003.

The major responsibilities of traffic police in Commissionerate area are:

- Enforcement of overloading of bikes and autos;
- Removal of black film (tinted glass);
- Wearing of helmets and seat belts; and
- Drunken driving (breathalyzers available in each police station).

In all other districts of Odisha, RTOs are responsible for the above functions. The traffic police department is under-resourced for managing the affairs in Commissionerate area also. It has been noted that 150 traffic police is assigned to manage traffic in Cuttack City. Though 150 police personnel has been assigned, 30 to 40 police personnel will not be available on any given day due to leave from work and to attend other duties such as court hearings, VIP duties and others. Hence, there will be only 110 traffic police personnel available to manage the traffic in Cuttack city in two shifts, leaving only 50 to 55 traffic police personnel on duty on the streets of Cuttack at any given time.

Apart from Bhubaneswar and Cuttack, the following five cities/towns have been provided with special arrangement for traffic management within the city/town area: **Rourkela, Puri, Berhampur, Sambalpur and Jajpur**. However, no separate traffic cell has been created for traffic management in

these above cities/towns as in case of Commissionerate area. Instead, a team of Inspectors, Sub-Inspectors, Assistant Sub-Inspectors and Constables reporting to DSP (responsible for law and order) has been provided the responsibility to manage traffic. However, the team has not been provided with any powers (as per Urban Traffic Police Act) to enforce provisions of MV Act concerning road safety. It has also been noted that police personnel assigned for traffic management are not aware of basic traffic rules which are meant for influencing safe road use behaviour. This indicates that the police personnel need sustained training in road safety.

Police department is having general responsibility of law and order in the State. While the understaffed Transport Department is having many responsibilities for enforcing the road traffic and vehicle related rules of MV Act, a host of them can easily be transferred to Police Department as their primary responsibilities. Police in entire State can be given enforcement responsibilities as in the Commissionerate area.

Though data is not available, the local consultations reveal that incidence of drunken driving is significantly high in rural and urban areas in Odisha. According to the doctors in SCB Hospital in Cuttack district, road crash trauma is a major concern and a larger share of fatalities and major injuries are related to injuries to head or bones (ortho related).

Key Points

- Enforcement should be based upon the analysis of accident data and targeted to the road network locations where accidents occur most frequently and on the associated unsafe driver behaviour and moving offences;
- Traffic Police need to be trained in many areas including: *traffic management, comprehensive accident data collection, accident investigation, motor-cycle riding or car driving, management skills and public relations*; and
- Traffic Police should be uniformly responsible for managing and enforcing traffic rules in entire State.

8. Traffic Legislation

The laws governing speed limits, wearing of seat belts and helmets, drunken driving, contra flow and encroachments are as per the MV Act notified by the Government of India (GoI), and no amendments has been made by the State government. The following pieces of legislation deal with the above:

- Motor Vehicles Act 1988;
- Central Motor Vehicle Rules 1989;
- State Rule 1973; and
- Urban Traffic Police Act, 2003.

The **Urban Traffic Police Act** gives powers to Traffic Police in twin cities of Cuttack and Bhubaneswar to enforce spot penalties for drunken driving, not wearing helmets and seat belts. Under this Act, traffic police is also empowered to enforce speed limits in Bhubaneswar & Cuttack, which is also called Commissionerate area.

Speed management – As per MV Act, the following speed limits are prescribed for motor vehicles along different categories of roads in India.

- Taxis – 65 Km/hour on NHs
- Bus/Trucks – 55 Km/hour on NHs
- Private Cars – No limit on NHs

CMVR does not prescribe speed limits on State roads. District Collectors are authorized to issue speed limits for State and District roads. Provision under law exists for District Collectors to amend speed limits in all roads in respective districts. The notification of speed limits is already being done in Bhubaneswar and Cuttack by Commissioner of Police, but the provision of information of speed limits to the road user by road signs is poor. However, the speed limits are enforced by the MVD in all other areas outside Commissionerate area, and the result is a very poor system of information dissemination about speed zones by signs, when compared to other countries.

The responsibilities of road authorities to some extent are covered under the TORT. In addition, responsibilities for different parts of the road network are spread over many road agencies, leading to some confusion and inefficiency.

For effective improvements in road safety, the existing legislative set up needs to be reviewed including the potential updating of the legal provisions required to improve safety. Though the updates in law and regulations are not planned and focused, the existing law caters for all major interventions required, though certain acts/provisions need update. A mechanism for regular review and reform of legislative instruments and procedures and other institutional management functions need to be established.

A Highway Protection Act is required to be developed to address responsibilities of Highway Authorities, Development and Maintenance of the Highway, Prevention of Encroachments, Prevention of Ribbon Development and Control of Access, Offences, Penalties and Procedures.

Key Points

- Central Government's Motor Vehicle Act and CMVRs addresses to some extent the laws concerned with road safety;
- A State Motor Vehicle Rules needs to be developed as an amendment to CMVR to address the local issues concerning road safety; and
- Amendment of existing laws is required to address the highway authority's responsibilities, with regard to prevention of encroachments and ribbon developments and control of access to the road network.

9. Road Safety Publicity and Campaigns

Road Safety Publicity Campaigns are used extensively throughout the World and Odisha is no exception. Since last few years, Road Safety Week is organised in various parts of Odisha every year in the first week of January, during which a number of activities are undertaken by NGOs, Transport Department, Traffic Police and Road Authorities to spread the message of road safety among

school/college students and road users. It has been recognised by stakeholders that public awareness is essential on topics such as pedestrian crossing, wearing of helmets and seat belts, safe parking, consequence of drunken driving, etc.

NGOs are involved in road safety campaign, but this has been only in a limited way, and not sustained owing to lack of funds. Pappu Zebra Campaign has been initiated in 2011 in Cuttack and Bhubaneswar to make aware the road users of pedestrian safety. The NGO FPRA has carried out training for selected college students and lecturers on wearing of helmets. This initiative is supported by Red Cross Society and the programme started in 2011. Until date, 200 colleges all over Odisha have been covered under this training programme.

The publicity and campaign activities are patchy and there is little or no championing at a higher level of the government for the need of such intervention.

Key Points

- To be effective, campaigns should have a deep emotional effect on the local people, and thus be relevant to their culture and background;
- An understanding of the accident problem will allow priorities to be established for targeted publicity campaigns;
- Publicity is most effective if it is planned to follow a programme, is coordinated at National, State and local level, is well targeted at a particular problem and is supported by an enforcement campaign;
- All new legislation should be accompanied by publicity campaigns, if the enforcement is to be effective; and
- New highway schemes and particularly the OSRP project should be accompanied by publicity campaigns with aim of both informing the public what is happening and also to encourage safe road behaviour. It should also be co-ordinated with enforcement campaigns.

10. Road Safety Education of Children

Children are the future of any society and often are some of the most exposed road users, as well as the least equipped to cope with the safety problems. Developed countries have managed to develop safe road behaviour in their citizens by including lessons on road safety in all stages of the curriculum.

Road programmes exist in the State sporadically to educate children in road safety, but often the initiatives are confined to the Road Safety Weeks or other special occasions. NGO FPRA has carried out training for selected college students and lecturers on wearing of helmets. This initiative is supported by Red Cross Society and the programme started in 2011. Until date, 200 colleges all over Odisha have been covered under this training programme. Pappu Zebra Campaign has been initiated in 2011 in Cuttack and Bhubaneswar to make aware the road users of pedestrian safety.

During 2012, Traffic Police has set up a temporary traffic park in Bhubaneswar with the aim of teaching road safety to children. However, this is found to be not sustainable for various reasons related to staffing and financing.

Except for the primary level curriculum prescribed by NCERT, the State board syllabus does not have lessons in the school syllabus to impart road safety education in a sustainable manner. NGOs are involved in road safety campaign, but this has been restricted and not sustained owing to lack of funds.

Key Points

- The risks associated with children in Odisha will continue to grow as both the speed and volume of traffic increases especially on new or improved roads;
- Most parents are unable to provide road safety training as they themselves never received any training, and even if they did traffic conditions have changed dramatically since their childhood;
- The conditions inside the traffic parks do not reflect the conditions on real roads that children have to use. There is little point in teaching children in the park a well-marked, well sign posted road network, if these do not exist in their local environment;
- To be effective, road safety should be specifically targeted at each age group and should be continuous. It can be incorporated into all subjects of the school curriculum and should be much wider than teaching road signs and regulations. It should change children's attitudes and enhance their whole safety culture. Such curriculum is developed for Class VI to X by IRF and IRTE and NCERT is actively engaged in evaluation and implementation; and
- Teaching road safety in schools is best carried out by teachers, who have themselves been trained in road safety issues.

11. Emergency Trauma Care for Crash Victims

At the time of writing this action plan, emergency care in Odisha remains very poor and trauma has been identified as the leading cause of death in the State. Moreover, road accidents are identified as the leading cause of death among all deaths occurring due to trauma.

However, GOO is planning to introduce 108 ambulance services in Odisha in phased manner, which will have a driver, helper and pharmacist/paramedic for each ambulance operating in rural areas. Fifteen districts are identified for implementation. Four hundred and twenty (420) ambulances are planned exclusively for trauma care, out of which 280 will be rolled out in the first phase, by around June 2013 (as was informed by the Health Department, GOO) and the rest by end of 2013. Two types (basic and advance) of ambulances will be provided.

A total of 81 trauma care centres are planned along the highways and is in various stages of implementation. Also, JIGITSA healthcare has been awarded the responsibility to implement another ambulance project.

Key Points

- The key principle is to provide first aid that will stabilise the injured (victim of road crash) during the so called 'GOLDEN HOUR', (the first hour after the injury);
- The general road users can be made aware of the simple actions that can be taken to preserve life; and

- The general public may be given confidence to assist the road crash victims, which is generally avoided fearing police harassment.

The ultimate ambulance service consists of the following components:

- ✓ A notification and communication system
- ✓ A central control and co-ordination of operations
- ✓ Effective rescue and medical aid at the scene
- ✓ Transport to a hospital
- ✓ Provision of specialised care in an emergency department of hospital.

12. Road Safety Research

Road safety research in India is generally in infantile stage including accident costing, which is done in piecemeal method by different research organisations. The Central Road Research Institute (CRRI) in New Delhi had carried out Road User Cost Study, which included accident costing as well. However, at the State level, there is hardly any institute engaged in road safety research. OWD has created a separate wing for Research Development and Quality Promotion (RDQP) headed by a CE. But, no research activities are initiated yet.

Much research has been carried out internationally and some nationally also that can be of reference to Odisha, but there is always a need to carry out local research related to the local culture, environment and traffic mix.

Key Points

- Road Safety Research will ensure to examine whether the funds are utilised effectively (cost effectiveness of safety measures) to get the best value for the money.
- Research areas include:
 - ✓ Accident data
 - ✓ Road user behaviour
 - ✓ Road planning and design
 - ✓ Remedial measures for specific safety issue
 - ✓ Vehicles
 - ✓ Accident injuries – type and remedy
 - ✓ Accident costs.

A monitoring and evaluation of all road safety initiatives also will ensure that future funds are channelised effectively. Lessons can be learned from failures as well as successes.

13. Funding for Road Safety

An **Odisha Road Safety Fund** exists and is managed by ORSS, but funds are not shared with other agencies to improve road safety. The available funds with this agency are in the tune of 1.5 to 2 crore per year, and the funds for ORSS are collected from check gates at inter-state border. In addition, twenty percent of fines collected by 1 (one) interceptor only come to the Society, and

Society uses these funds to hire home guards (for managing traffic) and to conduct awareness programmes. 15 interceptors and 14 breathalyzers are available for 31 RTOs, and the funding sources for these are different.

From 2012 onwards, the Ministry of Road Transport & Highways (MoRT&H) provides 10 percent of funds (allocations from CRF to States by MoRT&H) to state PWDs, which is a special allocation and dedicated for road safety improvement works only.

Road Safety funds from annual budgets are available with transport department, and the same are transferred to STA. These funds are utilised for buying solar blinkers, cranes and ambulances, and some of these funds are earmarked for the department to carry out road safety campaign. In addition, private business enterprises are contributing to road safety interventions by way of advertisements, albeit on a smaller scale, in Bhubaneswar, Cuttack and other major towns.

In general, though some efforts have been made, particularly by Transport Department, to implement a sustainable funding mechanism, these are not enough and not targeted to interventions focusing on results.

As per the proposed OSRSC Act 2010 *'The Proposed Road Safety Fund'* shall include (i) Rupees 1 crore for corpus fund of the council (ii) grants, loans or advances made by the GOO (iii) grants, loans and advances made by the Gol (iv) contributions from public or private institutions or organisations. In addition to the above, the Government shall contribute to the Fund every year, an amount equal to fifty percent of the compounding fee collected in the previous year under section 200 of the MV Act 1988 (Central Act 59 of 1988).

The section 200 of the MV Act 'Composition of certain offences' includes:

- Section 178: Penalty for travelling without pass or ticket
- Section 179: Penalty for disobedience of orders, obstruction and refusal to information
- Section 180: Penalty for allowing unauthorised persons to drive vehicles
- Section 181: Penalty for not possessing a driving license or driving under the age of 18
- Section 182: Penalty for offences related to licenses
- Sub-section (1) or (2) of 183: Penalty for driving at excessive speed
- Section 184: Penalty for driving dangerously
- Section 186: Penalty for driving by mentally or physically unfit to drive
- Section 198: Penalty for unauthorised interference with vehicle

The sources for collecting road safety fund needs to be revisited and the GOO needs to look beyond the above sources to tap further resources to invest in road safety. Possible such sources are:

- portion of insurance fee paid by all vehicles
- dedicated portion from State's revenues
- a percent from other traffic violations such as red light jumping
- additional cess by State on petrol and diesel

Key Points

- The ring fencing of funds for road safety is required for sustainable funding of road safety interventions;
- The insurance industry has a vested interest in ACCIDENT PREVENTION and can be sourced;
- In many industrialised countries the Insurance Companies spend the equivalent of millions of dollars a year on road safety; and
- Some governments add a small levy (5–10%) on vehicle insurance contributions to be specifically allocated to Road Safety.

Few examples of funding and resource allocation are:

- **New Zealand** – Funding for roads safety comes from National Road Fund (NRF), road user taxes and charges, local property taxes and from share of fee for the personalised license plate sales;
- **Netherlands** – a dedicated fund for road safety from general tax revenues;
- **Sweden** – through general government revenue, 75% of the sale of personalised license plates, 35% of parking fines; and
- **Victoria (Australia)** – State and national government funding, revenue from compulsory state injury insurance scheme, revenue from speed and red light camera fines and road safety levy (10%) of the injury insurance premium.

14. Proposed Odisha Road Safety Action Plan

A list of actions proposed for all departments to address the issues explained in the above 13 key areas are shown in the 'Proposed Road Safety Action Plan'. The 'Road Safety Action Plan' constitutes a list of actions for the following departments to consider and implement in phases during the period 2014 to 2019.

- Government of Odisha at the level of Chief Secretary of the State
- Transport Department
- Home Department
- Works Department and other Road Agencies
- Health Department
- Education Department

In addition, actions were listed to enable 'Road Safety Research' and 'Road Safety Funding', which should be addressed by all of the above departments.

Annexure 1: Proposed Odisha Road Safety Action Plan

ACTION PLAN: FOR IMPROVED COORDINATION – GOVERNMENT

SL. NO.	SHORT TERM ACTIONS	RESPONSIBLE	TIME FRAME
1.	Establish an OSRSC through an executive order or legislation for improved coordination and multi-sectoral road safety improvements. <i>Note: ORSS shall be fully merged with OSRSC and the funds available with ORSS have to be transferred to the Odisha Road Safety Fund to be administered by the OSRSC.</i>	GOO/Works, Transport, Home, Legal, Health, Education & Finance Departments	November 2014
2.	Identify sustainable funding sources and create an Odisha State Road Safety Fund to fund multi-sectoral road safety programmes in the State.	GOO/Finance Department	November 2014
3.	Prepare road safety policy & strategy <ul style="list-style-type: none"> • Set targets for short term (0 to 2 years), medium term (2 to 5 years), and long term (5 to 10 years) based on this action plan. 	GOO/State Road Safety Council	December 2014
4.	Prepare road safety schemes in focus areas (road infrastructure, enforcement and safety awareness campaign).	State Road Safety Council	April 2015 onwards
5.	Develop an accident information system between Police, Works department and Transport department to share the details of road accidents as soon as it occurred. <i>Note: An old system of information sharing system exists, which was discontinued, explore the possibility of revoking the system.</i>	GOO/Works, Home & Transport Department	December 2014
MEDIUM TERM ACTIONS			
6.	Implementation of approved road safety schemes by OSRSC.	All concerned Departments	April 2015 onwards
7.	Monitor and evaluate implementation of road safety programmes and overall co-ordination.	OSRSC	April 2015 onwards

ACTION PLAN: FOR IMPROVED CAPACITY OF DEPARTMENTS - GOVERNMENT

SL. NO.	SHORT/MEDIUM TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
1.	<p>Re-organise Police for improved traffic management in the State; Allocate dedicated traffic police for traffic management in all district headquarters and other major cities; Allocate for</p> <ul style="list-style-type: none"> • IG (Traffic & Road Safety) at Cuttack • DSP (Traffic & Road Safety) at all 30 district HQs • Inspector (Traffic & Road Safety) at all urban centres managed by ULB's • Highway Patrol (for major NHs and SHs) headed by Sub Inspectors <p><i>Note: Each Highway Patrol shall be headed by a Sub Inspector assisted by 3 to 4 Constables. They shall be equipped with State of the Art equipment to enforce road safety and law & order along the highways. Each highway Patrol shall be in charge of 30 km section and will report to Inspector (Rural).</i></p>	GOO/Home Department	December 2014 – June 2015
2.	<p>Review and take effective actions to address the resource crunch in Motor Vehicle Department (MVD).</p> <p><i>Note: MVD is under resourced, the number of RTOs and MVIs has to be enhanced to reflect the existing and future requirements and effective discharging of their duties and responsibilities.</i></p>	GOO/Transport Department	March 2015
3.	<p>Strengthen the 40 ULBs (Municipalities & Municipal Corporations) with Traffic Engineering department (deputed from Works Department) who will be responsible for:</p> <ul style="list-style-type: none"> (i) design of urban road schemes; (ii) design and implementation of junctions in urban areas in coordination with traffic police; (iii) design and implementation of designated parking and waiting spaces for Auto Rickshaws, Taxis, etc.; 	GOO/Works Department	March 2015

SL. NO.	SHORT/MEDIUM TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
	(iv) design and implementation of bus stops and bus bays; (v) design and implementation of all street furniture; (vi) design and implementation of road safety schemes.		
4.	Review the enforcement responsibilities of police/traffic police and MVDs in rural and urban areas and amend the same to relieve MVIs to carry out more vehicle testing enforcement and driver licensing functions <i>Note: The enforcement of all traffic violations must primarily rest with the Traffic Police on all urban centres and with Highway Police Patrol on all major highways.</i>	GOO/Transport Department/Home Department	March 2015

Note:

- The enforcement responsibility of traffic rules (drunken driving, wearing of seat belts and helmets, over speed, contraflow driving, etc.) coming under MV Act must rest with the Police; and
- MVIs, having been qualified automobile engineers, must focus on Vehicle Testing and Driver Training and Licensing.

ACTION PLAN: FOR IMPROVED LEGISLATION- GOVERNMENT

SL. NO.	SHORT/MEDIUM TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
1.	Develop and implement OSRSC Act , to implement multi-sectoral road safety programmes in the State. <i>Note: This is required only if the State decides to make the State Road Safety Council a Statutory body</i>	GOO/Transport Department/Legal Department	August 2014
2.	Review enforcement responsibility framework and implement Urban Traffic Police Act in all district headquarters and other major urban centres	GOO/Transport Department/Legal Department	March 2015
3.	Devise a penalty point system for traffic violations, whereby persistent offenders will lose their driving licenses, if their penalty points exceed a well-defined threshold within a set period.	GOO/Transport Department/Home Department/Legal Department	March 2015
4.	Make amendments to MV Act and/or formulate State Act to implement the following: <ul style="list-style-type: none"> • Enforcement of traffic measures influencing road safety (drunken driving, over speeding, wearing of helmets and seat belts, jumping of signals and contra flow and other traffic related offences) must be the responsibility of the Police. 	GOO/Home Department/Transport Department/Legal Department	March 2015

ACTION PLAN: HOME DEPARTMENT/POLICE

SL. NO.	SHORT TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
1.	Establish a strategic Police Enforcement Plan, listing objectives and proposed actions, which should be drawn up to compliment this RSAP.	Police	March 2015
2.	Upgrade the vehicles, equipment and training of the Traffic Police to implement effective traffic management and enforcement measures.	Home Department	2014 - 2016
3.	Review the advantages of various types of database systems used by other States and available in the market.	Police in liaison with Works Department	August 2014
4.	Review possible sources of funds to establish a robust crash database management system.	Home Department	August 2014
5.	Establish a robust crash database management system to be used by Police, OWD, Transport Department and Health Department to help develop and implement road safety interventions.	Police	March 2016

Note:

1. The responsibility for collection and management of Crash Data must rest with the Police.
2. Crash Data systems must be useful for the following:
 - For road engineers, to identify accident blackspots and to develop countermeasures
 - For Police to carry out targeted enforcement measures
 - For transport department and NGOs, to determine focus areas for road safety campaign

ACTION PLAN: ROAD AGENCIES

SL. NO.	SHORT TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
1.	Provide Road Markings on all NHs, SHs, MDRs and ODRs in the selected districts ² : <ul style="list-style-type: none"> • Centre line marking and edge line on all two lane and two lane with paved shoulder sections • Edge line markings on all Intermediate lane sections <p><i>(Refer to IRC 35:2012 for guidelines on road markings)</i></p>	Works Department, NHAI & RD Department	Before March 2015
2.	Provide curve treatments on all curves having radius less than 230m in all NHs and less than 150m in all SHs and MDRs in the selected districts	Works Department, NHAI & RD Department	Before March 2015
3.	Provide safer treatment as shown in Plate 19 on all roadside villages in all SHs and MDRs in the selected districts	Works Department, NHAI & RD Department	Before March 2015
4.	Provide safe treatments on all locations where NHs, SHs and MDRs forms junction with ODRs and other rural side roads owned by RD Department and Panchayat Raj Department in the selected districts	Works Department, NHAI & RD Department	Before March 2015
5.	Re-design and develop all major junctions with safer treatments (NH-SH, NH-MDR, SH-SH, SH-MDR, MDR-MDR) in the selected districts	Works Department, NHAI & RD Department	Before March 2015
6.	Remove vegetation for 20m on either side of the median opening and provide 'blinking amber' signal poles on all 4 lane with divided carriageway sections;	Works Department, NHAI & RD Department	Before March 2015
7.	Remove trees, other objects and encroachments to improve visibility at all junction locations in NHs, SHs and MDRs in all selected districts	Works Department, NHAI & RD Department	Before March 2015
8.	Provide 'Object Hazard Markers' at both end of the parapets of bridge/culvert at all locations in all NHs, SHs and MDRs in all districts	Works Department, NHAI & RD Department	Before March 2015
9.	Remove trees occupying space within 2m from the pavement edge in all NHs, SHs and MDRs in the selected districts;	Works Department, NHAI & RD Department	Before March 2015

² Balasore, Cuttack, Ganjam, Jajpur, Keonjhar, Koraput, Khurdha, Mayurbhanj, Nayagarh, Rayagada, Sambalpur & Sundargarh

SL. NO.	SHORT TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
	<i>Note: Where the trees can't be removed due to local/political resistance, provide black & white bands or reflectors/hazard markers to inform the road user of the hazard during dark conditions.</i>		
10.	Provide zebra crossing markings with warning signs ('Pedestrian crossing' and 'SLOW') at appropriate locations near all the schools along all NHs, SHs, MDRs and ODRs in all districts.	Works Department, NHAI & RD Department	Before March 2015.
11.	Provide safer treatment as shown in Plate 18 on all roadside commercial areas in all NHs, SHs and MDRs in the selected districts	Works Department, NHAI & RD Department	Before March 2015
MEDIUM TERM ACTIONS			
12.	Extend the above actions 1 to 11 to the remaining districts in the State	Works Department, NHAI & RD Department	2014 - 16
13.	<p>Constitute a 'Road Safety Cell' in OWD headed by an Executive Engineer under the administration of CE (Roads). The 'Road Safety Cell' shall have the following members:</p> <ul style="list-style-type: none"> • Executive Engineer (1) • Assistant Engineer (3) • Junior Engineer/CAD Draughtsman (3) • Secretary (1) <p>The Road Safety Cell shall, among various others, be responsible for:</p> <ul style="list-style-type: none"> • Road Safety Audit of all capital and maintenance schemes proposed by 30 divisions • Blackspot Investigation & Design of improvement measures (Liaise with Police & Field Units) • Training of field engineers in Road Safety 	EIC cum Secretary (Works)	By June 2015
14.	Develop a maintenance strategy for assets influencing road safety	EIC cum Secretary (Works)	March 2015

SL. NO.	SHORT TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
	<ul style="list-style-type: none"> • Traffic Signs • Road Markings • Road Safety barriers • Bridge/Culvert Parapets • Storm Water Drains 		
15.	Implement mandatory safety audit for all new capital and maintenance schemes; The safety audit shall be carried out by the 'Road Safety Cell' of OWD.	EIC cum Secretary (Works)	March 2015
16.	Carry out Road Safety Assessment of all NHs and SHs in the State using tools like iRAP or similar and determine the star rating of the NH and SH network;	EIC cum Secretary (Works)	By March 2016
17.	Carry out sustainable improvements in NH, SH and MDR network based on iRAP findings, so that all sections of the major road network in Odisha achieves a '3-star' rating by 2020.	Works Department, NHAI	2016 - 2020
18.	Develop and implement annual blackspot improvement schemes based on the analysis of data available in the newly developed 'Road Crash Database Management System'.	Works Department, NHAI	2015 onwards
	LONG TERM ACTIONS	AGENCY RESPONSIBLE	TIME FRAME
19.	Improve the curves on all NHs, SHs and MDRs in the State to achieve consistent speed limit across the network. For example: NHs – 100 km/hour; SHs – 80 km/hour; MDRs – 65 km/hour	NHAI, Works Department	March 2019
20.	Upgrade all SHs and MDRs in the State to two lane with paved shoulders with all safety features in a phased manner: SHs – by 2018 & MDRs – by 2023;	Works Department	March 2023
21.	Develop a handbook on 'Road Safety Design Guidelines' to be used by engineers at all levels in all road sector agencies covering urban and rural roads	OWD	March 2015

ACTION PLAN: TRANSPORT DEPARTMENT

SL. NO.	MEDIUM/LONG TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
1.	<p>Should carry out an in-depth review of the safety aspects of all procedures related to Driver Licensing, Training & Testing including training curriculum, examining and training of instructors for all motorised vehicle types.</p> <p><i>Discuss with World Bank for possible continued support for this component.</i></p> <p>Areas to focus:</p> <ul style="list-style-type: none"> • Learner's and Regular License application process; • Driver testing process for awarding licenses; • Separate work units/steps/procedures for vehicle inspectors and licensing officers; • Development of an improved graduated licensing system; • Review of vehicle classification categories; • Networked computer system for licensing and registration data (all RTOs); and • Incorporating road safety training in acceptance of licenses for driver training institutes. 	With the help of external experts	Nov 2015
2.	Enforce motor vehicle insurance regulations by a concerted and ongoing campaign, in order to achieve a high rate of coverage, and to help maximise the insurance contribution to road safety.	State Transport Authority	April 2015 to March 2017
3.	Calculate financial cost of road accidents annually and give wide publicity.	State Transport Authority	May 2015 onwards
4.	Review the causes of accidents due to vehicle defects and to carry out a programme of enforcement of the relevant vehicle safety regulations	State Transport Authority	Mar 2015

SL. NO.	MEDIUM/LONG TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
5.	Carry out a State wide programme of implementation for: <ul style="list-style-type: none"> • Retro-reflective reflectors for bicycles; • Brake lights and indicator lights of commercial vehicles; and • Retro-reflective conspicuity tape fixation on all sides of commercial vehicles. 	State Transport Authority	2014 - 17
6.	Develop and organise a State wide targeted campaign (with the help of NGOs) for vehicle service requirements and basic safety features to be adhered to	State Transport Authority	2014 - 17
7.	Design and implement a monthly targeted publicity programme continually throughout the State: Focus areas shall be: <ul style="list-style-type: none"> • Truck drivers and Taxi operators on NHs and SHs to address contraflow; • Motorcyclists at junctions; • Pedestrian behaviour in urban and rural areas; • Motorcyclists on NHs; • Wearing of helmets and seat belts in urban areas and rural highways; • Vehicle maintenance requirements for safety; • Safe driving tips during night conditions; • Speed limits in urban and rural areas; and • Safety of cyclists. 	State Transport Authority with NGOs	Apr 2015 – March 2018
8.	Develop a robust and attractive manual 'Driving Test and Highway Code' in Oriya and English to enable organised and effective learning of road rules and regulations.	State Transport Authority	March 2015
9.	Conduct an in-depth review of all of the components of vehicle road-worthiness testing and plan a strategy to upgrade the inspection/maintenance system through a network of authorised garages across the State.	State Transport Authority	Nov 2015

SL. NO.	MEDIUM/LONG TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
10.	Vehicle registration and driver licensing data to be created in line with 'Vahan' and 'Sarathi' developed by GoI and integrate with it for deriving maximum benefits in enforcing the legislations.	Commerce & Transport Department	Mar 2015
11.	To establish priorities and programme for road safety campaigns each year following the publication of the Annual Report on Accidents and aimed at getting road users to modify their behaviour. Each campaign should be designed with a clear objective, identified target audience and with messages that are simple and focused.	Commerce & Transport Department with OSRSC	2015 to 2020

ACTION PLAN: EDUCATION DEPARTMENT

SL. NO.	SHORT/MEDIUM TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
1.	<p>Incorporate road safety in school curriculum as developed by IRTE & IRF:</p> <ul style="list-style-type: none"> • Develop continuous intervention, structured by age group; and • Training of road safety in teacher’s training courses. 	SCERT	Mar 2016
2.	<p>Develop guidelines and appoint Road Safety Clubs headed ‘Road Safety Officer’ in all schools in Odisha. The road safety officer shall:</p> <ul style="list-style-type: none"> • Be responsible for road safety education and training in schools; • Conduct organised and sustained awareness programme; • Provide feedback to road authorities and police regarding road safety improvements required outside the schools; and • Sensitise the parents on safe road use behaviour. <p><i>The above can be done in phases, starting with schools nearer to NHs and SHs on the most hazardous districts identified in this report.</i></p>	With Transport Department & NGOs	2014 - 17
3.	<p>Develop associations with national agencies like expert NGOs for sustained teacher training in road safety. e.g., IRTE, IRF etc.</p>	GOO/Education Department	Mar 2015

ACTION PLAN: HEALTH DEPARTMENT

SL. NO.	SHORT/MEDIUM TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
1.	Implement Emergency Care Ambulance Services in phases in entire State. <i>Priority shall be given to NHs and SHs on the most affected districts identified in this report.</i>	Health Department	To complete by Mar 2016
2.	Carry out mass publicity campaigns regarding Emergency Care Ambulance Services on target areas.	Supported by NGOs	2014 -16
3.	Develop fully equipped Trauma Care Centres along the NHs and SHs. <i>One Trauma care centre must be available within 50 km from any point on NH and SH network.</i>	Health Department	Mar 2017
4.	Train all commercial vehicle drivers in First Aid trauma care as required by M.V Act. Similarly, able bodied volunteers from villages along highways also to be trained. <i>Target 60 drivers per district per month</i>	In association with Commerce & Transport Department	2015 onward
5.	Implement cashless treatment for 48 hours in main trauma care centres along NH and SH network, along similar lines that of MoRT&H scheme launched for NH-1.	Health Department	Dec 2015

ACTION PLAN: ROAD SAFETY RESEARCH

SL. NO.	SHORT/MEDIUM TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
1.	Initiate discussions to nominate one agency to carry out road safety research in the State and to prepare a comprehensive list of projects, researchers and Institutes.	OSRSC	Nov 2015
2.	Identify and nominate key institutes to carry out road safety research in the State and to support all Stakeholder departments to implement road safety schemes/ interventions. <i>Consider IIT Bhubaneswar, NIT Rourkela, VSSUT Burla and CET Bhubaneswar among others.</i>	OSRSC	Mar 2016
3.	Prepare priorities for research following an in-depth review of road safety data available from the newly developed Road Crash Database System.	OSRSC & Selected Institutes	March 2016

ACTION PLAN: FUNDING FOR ROAD SAFETY

SL. NO.	SHORT/MEDIUM TERM ACTION PLAN	AGENCY RESPONSIBLE	TIME FRAME
1.	<p>Identify funding sources and make constitutional mechanism to create a dedicated 'Road Safety Fund' to be managed by the OSRSC.</p> <p>Possible sources of funds can be:</p> <ul style="list-style-type: none"> • Cess on Road Tax for various categories of vehicles; • A portion of Insurance fee paid by all vehicles; • Penalties compounded under all traffic violations as per MV Act 1988; and • Additional State level cess on petrol and diesel. 	GOO/Transport Department	August 2014
2.	Fund available with ORSS has to be merged into the newly formed OSRSC	Transport Department	January 2015