

PROJECT CHETAK



Road Maint - Impact on Road Safety

15 Dec 2021

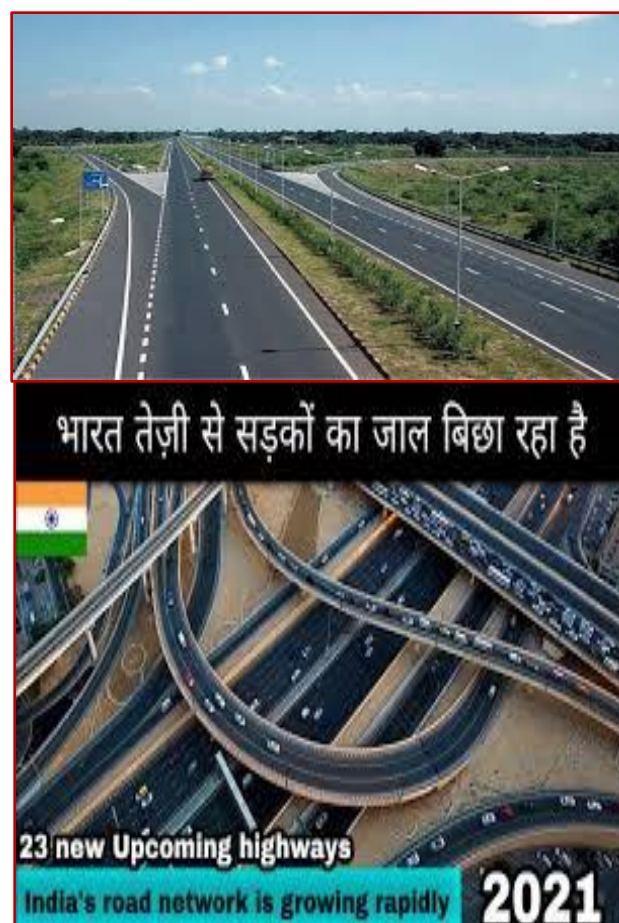
.....We will either find a way or make one....



MACRO ASPECTS



- ✓ 59 lac km road length
- ✓ NHs less than 2% length – 40% traffic
- ✓ Four Percent World Vehicles





IMPORTANT STATISTICS



- ✓ Traffic Injuries – 1.35 million deaths every year
- ✓ First cause of death – Young Adults age 15 – 29 years
- ✓ Economic loss upto 3% of GDP in Developing countries
- ✓ 54% casualties – 28% motorcyclists, 23% pedestrians & 3% pedestrians
- ✓ Low income countries, 1% of veh – 13% deaths
- ✓ High income countries, 40% veh – 7% deaths
- ✓ Every 24 sec fatal cas





INDIAN SCENARIO



- ✓ 1.5 lakh people die & 4.5 lakh injuries
- ✓ Economic loss equivalent to 3.14 % of GDP
- ✓ 4 percent vehicles - 11 percent of the global road accidents
- ✓ 417 fatal casualties, 17 deaths an hr





ROAD CRASHES - CAUSES



- ❖ WHO report - Contributors - fatal accident
- ✓ Speeding & rash driving
- ✓ Drinking & driving
- ✓ Low use of helmets, seat belts & child restraints
- ✓ Overloading
- ✓ Highest impact - on poorer sections (pedestrians, cyclists etc.)





ROAD ACCIDENT- MAIN CONTRIBUTOR



✓ Major Cause - Drivers

S. No.	CAUSE	%AGE
1	FAULT OF DRIVER	78%
2	FAULT OF PEDESTRIANS	2.7%
3	FAULT OF CYCLIST	1.2%
4	DEFECT IN ROAD CONDITIONS	1.2%
5	DEFECT IN VEHICLES	1.7%
6	WEATHER CONDITIONS	1.0%
7	OTHERS	14.20%

Source: Safety Book, MoRTH





ROAD CRASHES- PEDESTRIANS & DEFECTS



- ✓ **Pedestrians- (2.7%)**
 - ✓ Violating regulations
 - ✓ Carelessness - Using carriageway for vehs
 - ✓ Non Avbl of pedestrian's footpath on busy roads
- ✓ **Vehicles Defects – (1.7%)**
 - ✓ Failure of brakes, steering , lighting,tyre burst





ROAD DESIGN & CONDITION



Contributes 1.2% - Total road crashes

Defective Rd Geometrics

Inadequate Sight Distance

Width Shoulders - Insufficient

Improper Lighting

Traffic Control Devices

Poor Maintenance





Contribution -1%

Unfavourable Climatic Conditions

Fog, Mist, Rains, Snow - Visibility

Making Driving Unsafe





OTHER CAUSES - ROAD CRASHES



- ✓ Big Hoardings Along Road
- ✓ Level Xg - Poorly Managed/Unmanned
- ✓ Dumping Materials - Rds/Shoulders
- ✓ Improper Parking of Veh- Major Cause during Night/Foggy Conditions
- ✓ Stray Animals



SRAY ANIMALS- CAUSE OF ACCIDENT



WELL LIT HIGHWAY: LESS ACCIDENTS



ROAD CRASHES - RAJASTHAN



- ❖ Largest State (3,42,339 Sq Km).
- ❖ Motor Veh Increasing @ 11% Per Annum

Year	Accidents	Fatalities	Injured	Cost of Accidents (Cr)
2020	19121	9097	16783	8,925.40
2019	23480	10563	22979	10,197.60
2018	21743	10320	21547	9,951.30
2017	22112	10444	22071	10,068.70
2016	23066	10465	24103	10,087.70

सवारी बताती है साइड में गाड़ी है

9,097 मृतक **17,721** घायल

(आंकड़े 1 जनवरी से 30 नवम्बर 2021 तक)

हर रोज औसतन 33 की मौत!

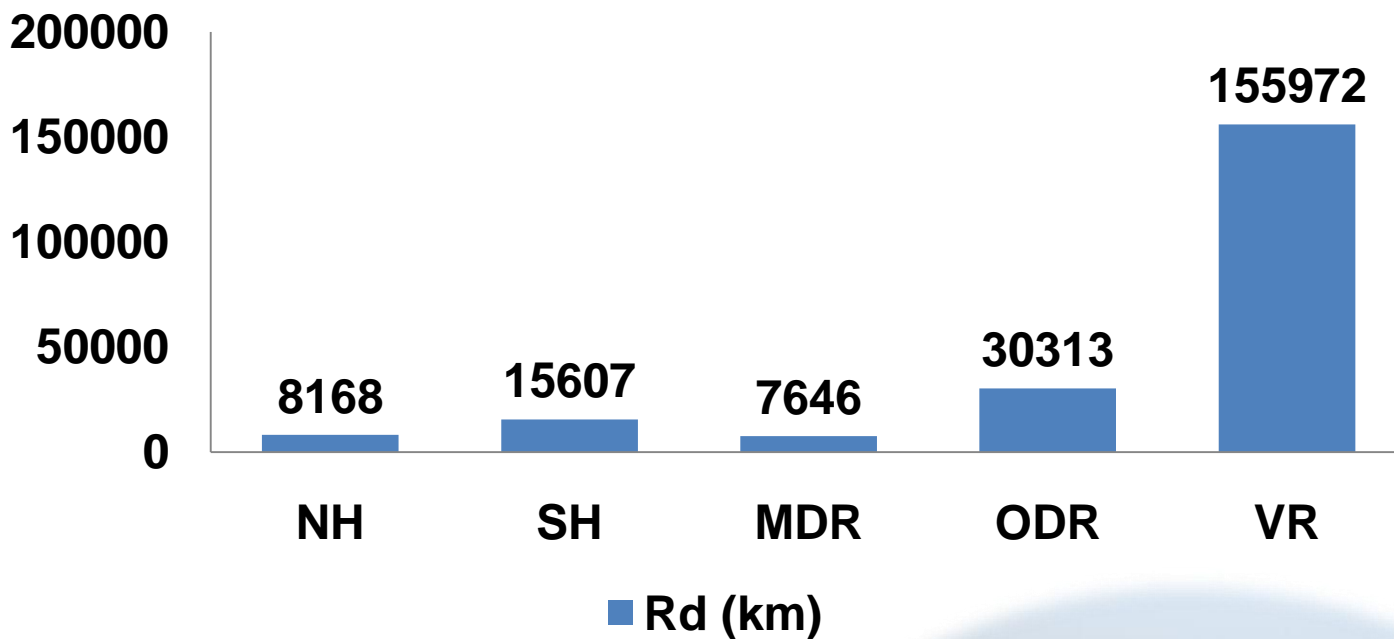
प्रदेश में इस वर्ष नवम्बर माह में ही सड़क दुर्घटनाओं में 1003 लोगों की जान गई और 1913 लोग घायल हुए। यानि 33 से अधिक लोगों की रोज मौत हुई।

Source: Times of India

Source: Rajasthan Patrika



ROAD NETWORK

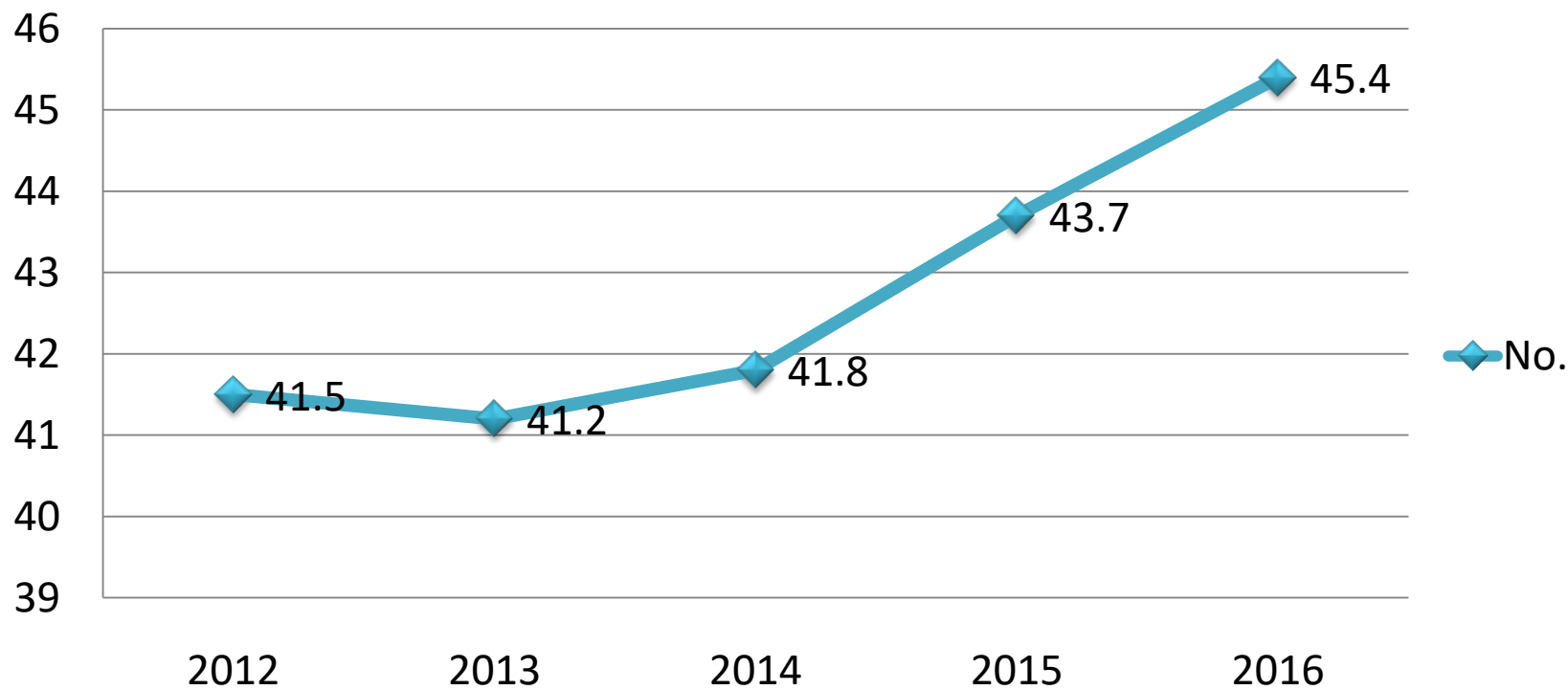


- ❖ Rd Network in Rajasthan - 2,17,706 Km
- ❖ NH- (3.75%), SH- (7%), Other Rds - 89.25%
- ❖ Goods & Passenger Traffic - Max on NHs
- ❖ Fatalities Higher - Other Rds



Source: Road Safety Report, Rajasthan

SEVERITY OF CRASH



Persons Killed Per 100 Accidents - Rising & Cause of Concern



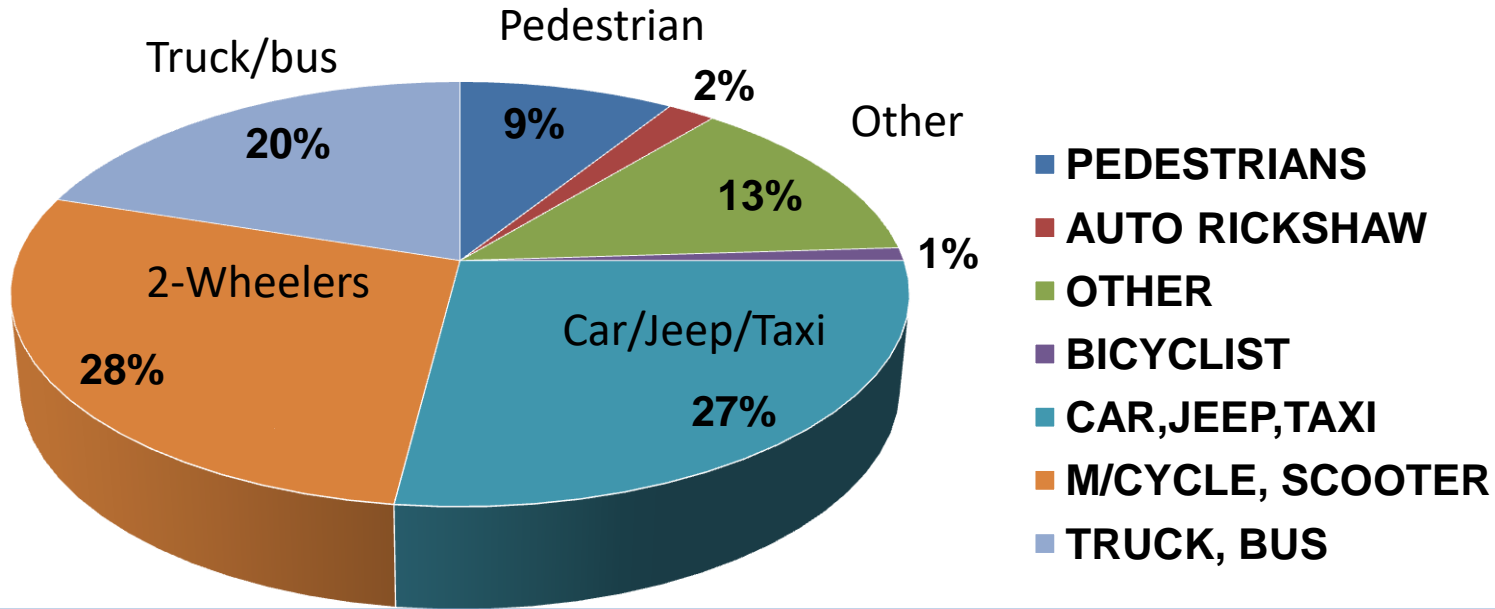
Source: Road Safety Report, Rajasthan



VULNERABILITY ROAD USERS



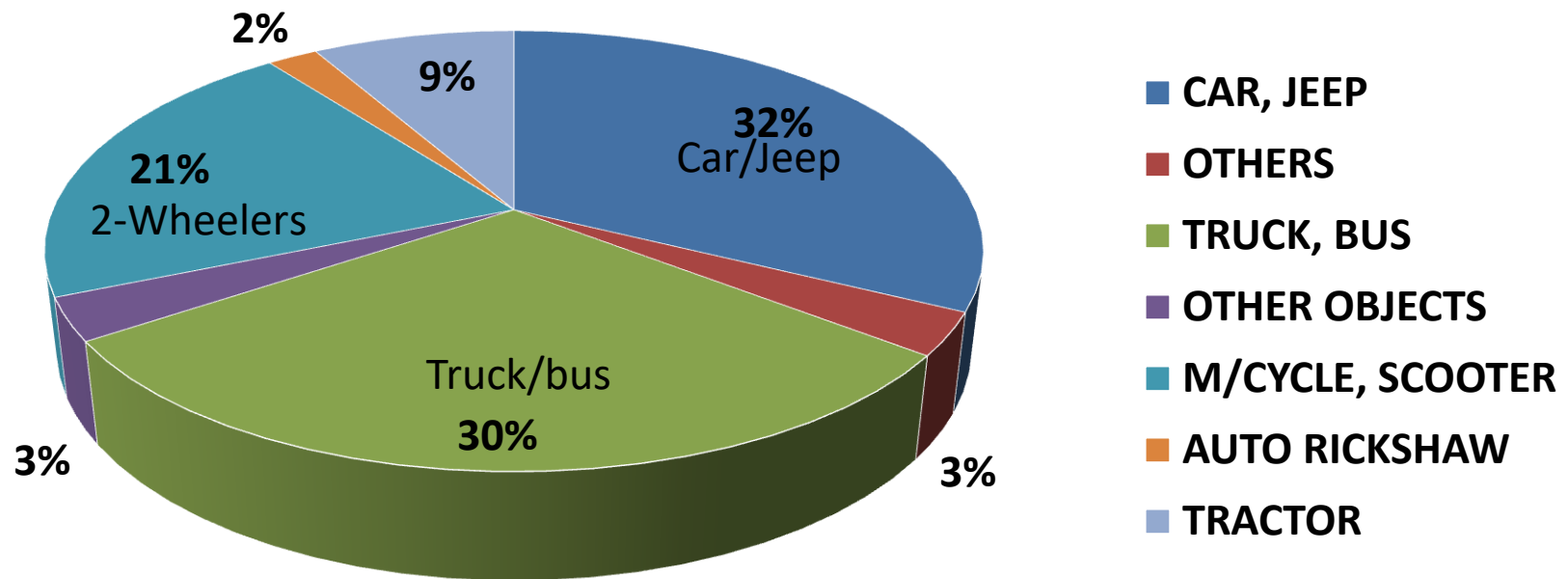
Source: Road Safety Report, Rajasthan

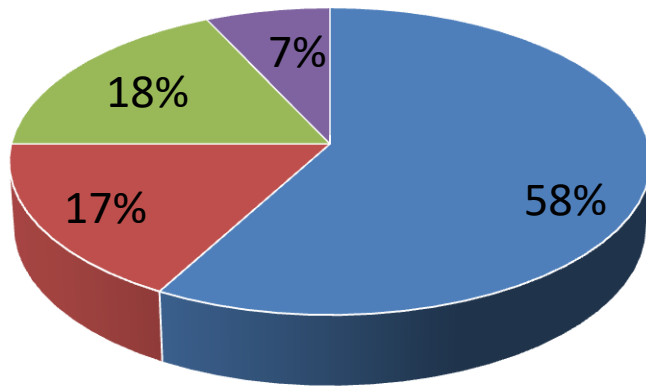


- ❖ 2-Wheeler Highly Affected-28% , Car/Jeep - 27% & 9% Pedestrian - 64% fatalities
- ❖ Good Practices - Promote Use of Helmets, Seatbelts, Speed Limits
- ❖ Awareness Among Pedestrians



FATALITIES ACCORDING TO TYPE OF VEH





- T-JUNCTION
- Y-JUNCTION
- X-ING
- ROUND ABOUT Jn

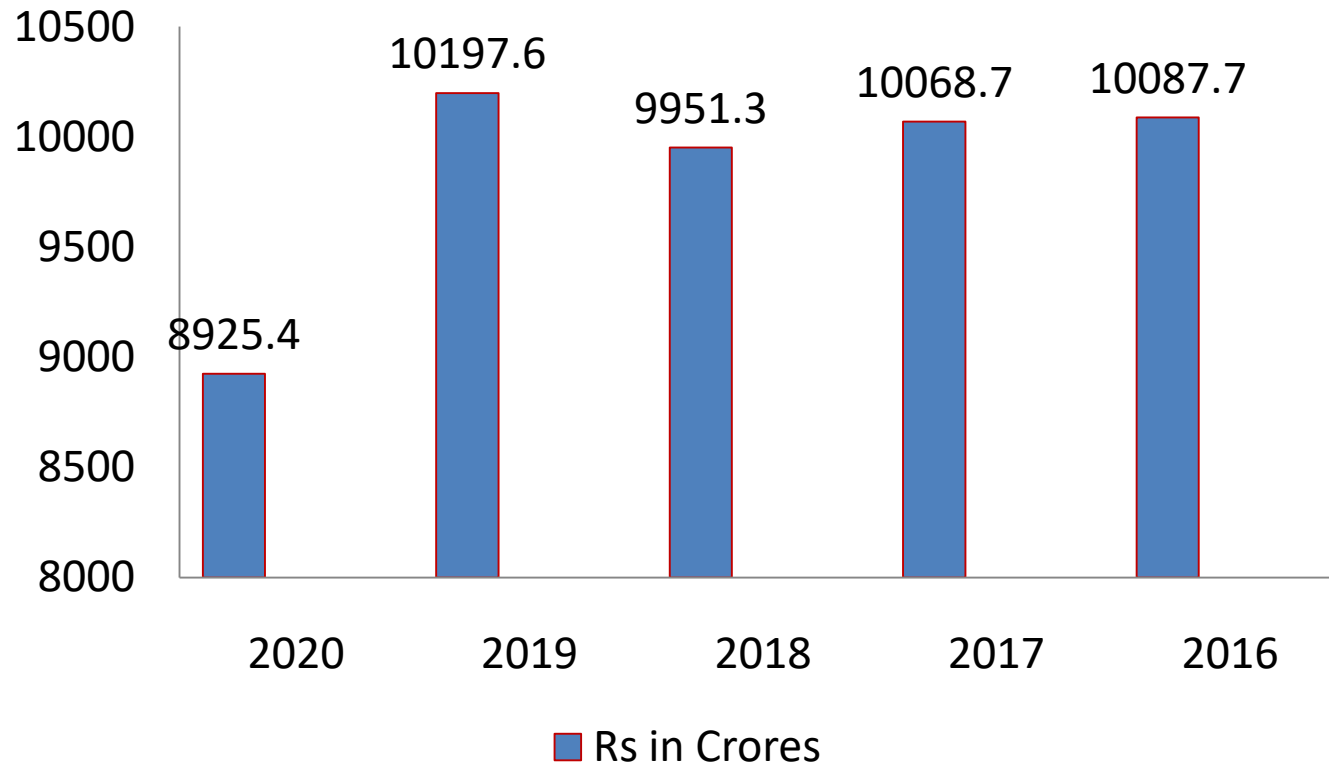


- ❖ 58% Crashes - T Junction
- ❖ Imperative - Modify Designs of T Junctions
- ❖ Implement Speed Limit, Proper Traffic Signal, Rd Marking

Source: Road Safety Report, Rajasthan



TOTAL COST OF ACCIDENTS



- ✓ **Cost of Accidents - Medical, Property Damage, Admin Cost & Compensation**
- ✓ **Enforcement Mechanism - Rd Safety**

Global Ministerial Conference on Rd Safety

- **Third Global Ministerial Conference on Rd Safety held in Stockholm, Sweden – Feb 20**
- **Final year of Decade of Action for Rd Safety 2011 – 20**
- **Extend 2020 tgts to reduce deaths to 2030**
- **All new rds achieve tech stds for all rd users that take into acct rd safety**
- **Halve rd deaths & serious injuries by 2030**



RD MAINT IMPACT



- ❖ Road User Cost, Comfort & Safety - Directly Linked to Rd Maint
- ❖ Chances of Rd Crash/Accidents Minimised - Rd Properly Maintained





❖ Types of Maint

- ❖ Regular/Routine - Pot Holes, Landslides, Cleaning Drainage Wks, Rain Cuts, Marking, Painting, Rd Furniture
- ❖ Spl & Emergent Repairs- Restore Line of Comn - Invoking Para-559 & 560 (SRMD/IRMD).
- ❖ Renewal of Surfacing - Completion of Life Cycle – Wearing Course





Drifting Sand Dunes & Rain Cuts/Erosion of Embankment peculiar problems of Rds in Desert

Plantation of Trees, Grass

Boulder Pitching, Lined Chutes, Edge Walls/Check Walls

Defects in Pavements

Slippery Surface, Cracks, Rutting, Corrugations, Pot Holes

**Shoulders - Support Pavement & act as Parking Area for veh.
Proper Maint important – avoid accidents**



SHOULDERS - LATERAL SUPPORT



Land Slides, Snow Clearance, Avalanches -Major Security Hazards in Hill Rds .

❖ Rd Furniture

- ❖ Proper Rd Signages, Marking, Fixing Cats Eye & Delineators – Useful at night
- ❖ Improper Placement Sign Bd, Km Stones, Parapet/Gd Walls, Railing of Culverts/Br – Potential to be Fatal for Rd Users



- Speed Limit Sign Boards on Roads.
- Comprehensive Speed Calming Measures - On roads connecting with Major Roads or Highways & Inhabited Areas.
- Removal of Encroachment
- Removal of Road Side Objects causing obstruction in flow of traffic or distract drivers - hoardings, banners, electronic LED displays, running commercials.



Blackspots for Identification

- **Blackspot - A rd section 300 – 500 m length- Has an abnormally high number of rd crashes showing a pattern of rd crash types due to some underlying local risk factors**
- **Vol of traffic in NH/SH substantial & crash frequencies & fatalities high**
- **These classes – 55 to 60% of overall crashes & deaths in last decade**
- **A uniform guiding value cannot be applied across country for identifying blackspots based on volume, trn & geometrics**



RECOMMENDATIONS

- **Multi Agency Coord for Rd Safety Management**
- **Identify Blackspots**
- **Accurate/ Reliable & Complete Accident Data – NA**
- **Road Safety Engrs needed**
- **Road Safety Engineering - Recognition**
- **Making RSA Compulsory at Design Stage**
- **Sustainable Funding for Rd safety**
- **Enforcement 24 x 7 using technology**
- **Better Emergency Care Response**
- **Large 2 wheeler population with poor operational safety**



HAPPY PEOPLE MAKE BETTER ROADS,
BETTER ROADS MAKE PEOPLE HAPPY !

JAI HIND