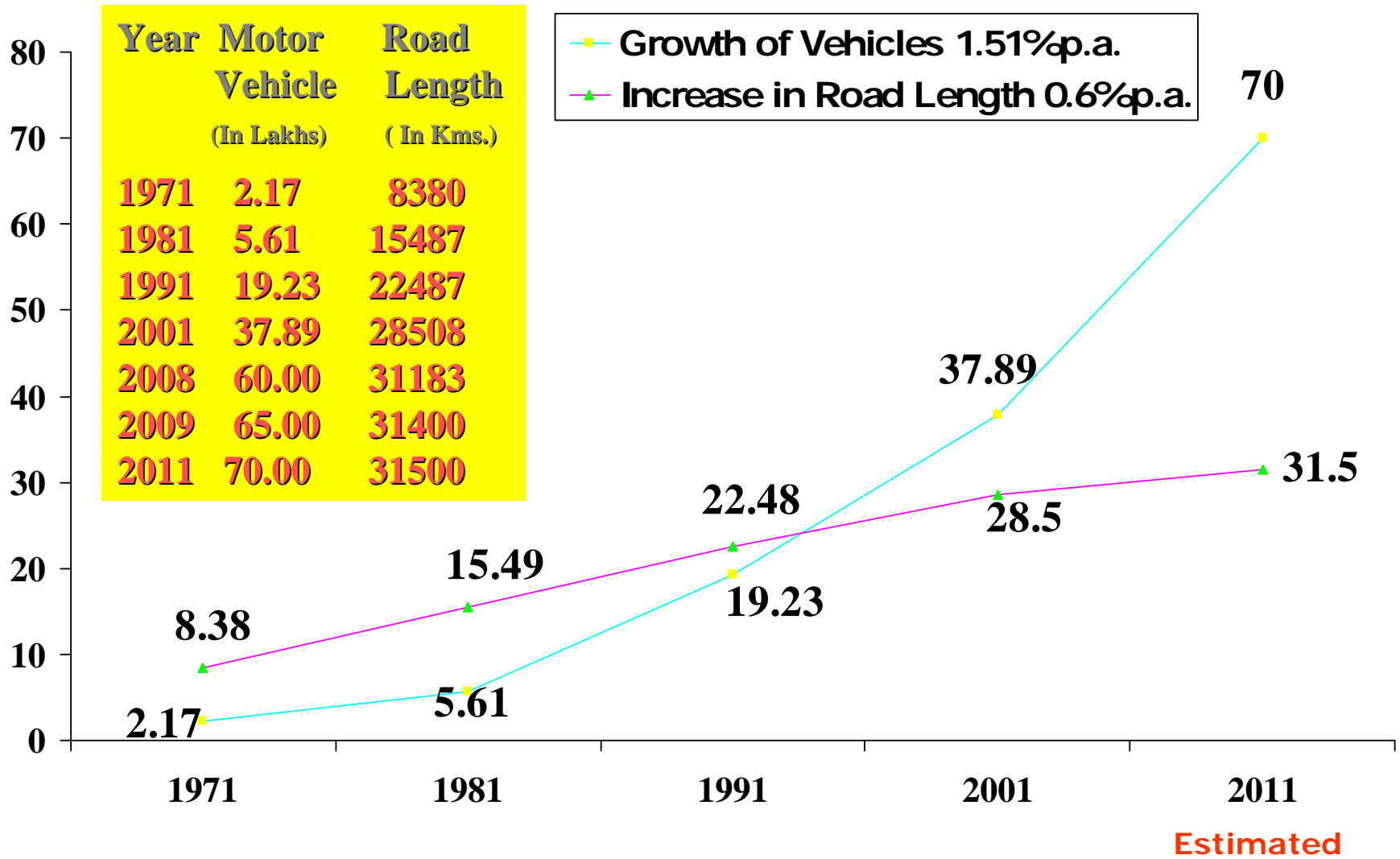


ROAD SAFETY ENFORCEMENT ON URBAN ROADS

Delhi: Few Statistics

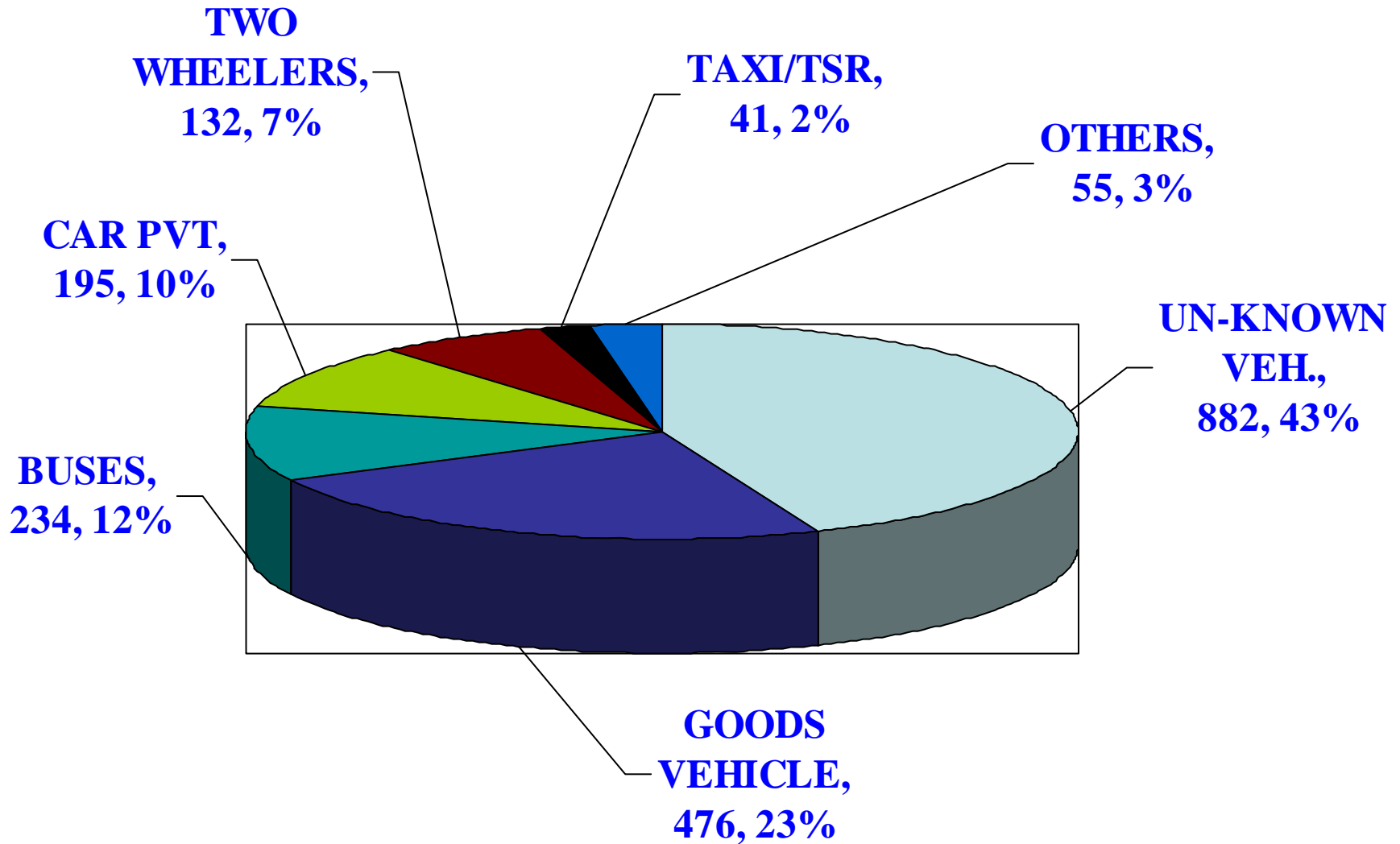
- Delhi has fastest growth of motorized vehicles among Indian cities
- Grown more than four-fold in the last 20 years
- Has more than 6.5 million motorized vehicles
- Massive influx of outstation vehicles – 8 to 10 lakhs floating vehicles
- 6 to 7 lakhs slow moving vehicles – rickshaw equivalent to 7 PCUs
- Has more cars than other three metropolitan cities – Mumbai, Chennai and Kolkata put together
- 8435 accidents were recorded in Delhi in which 2093 persons lost their lives
- There is a fall 3.2% in fatal accidents in 2008 over previous year. The total accidents fell by 9.7 %

Traffic Outpaces Road Network

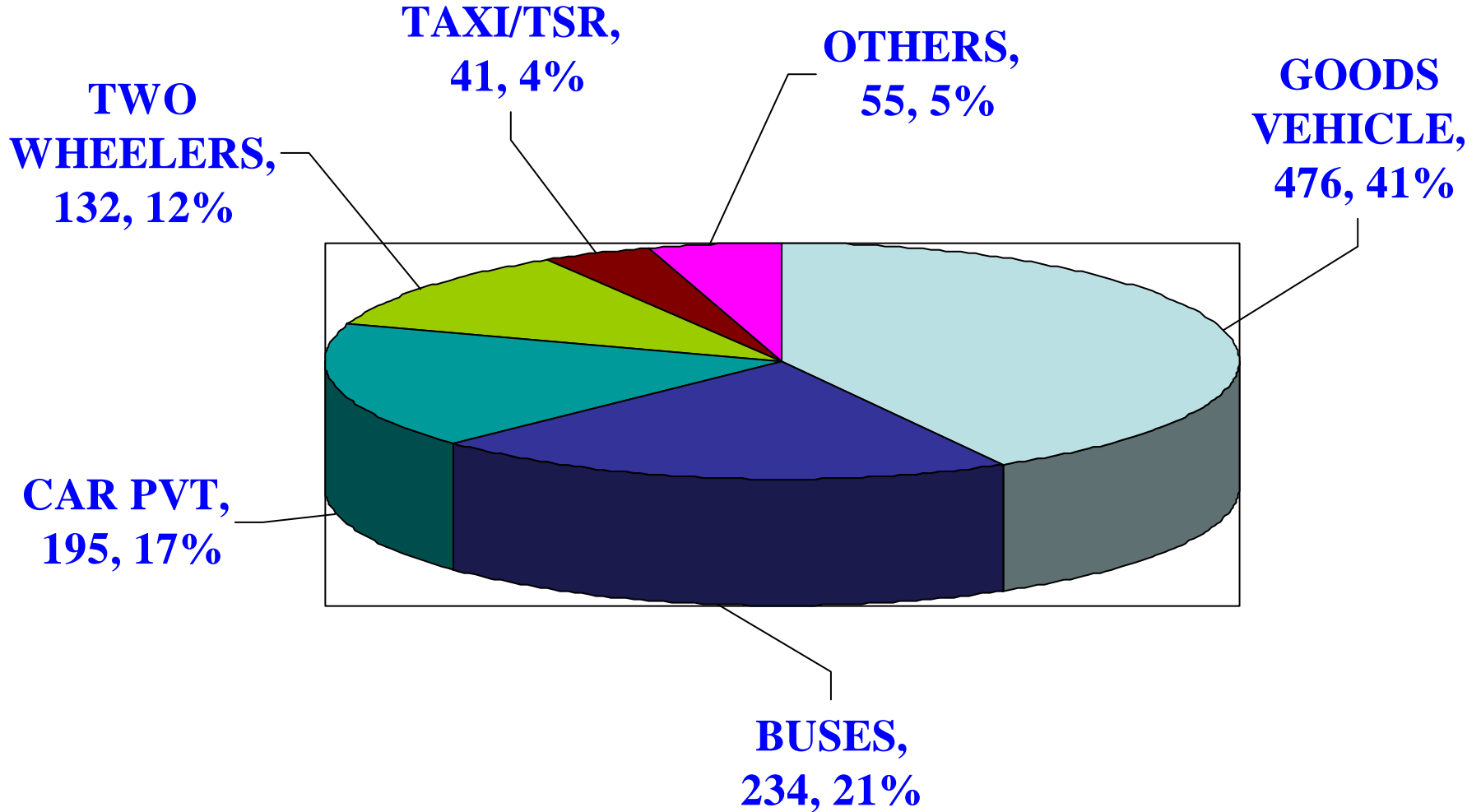


**ANALYSIS
OF
ROAD
ACCIDENTS
2008**

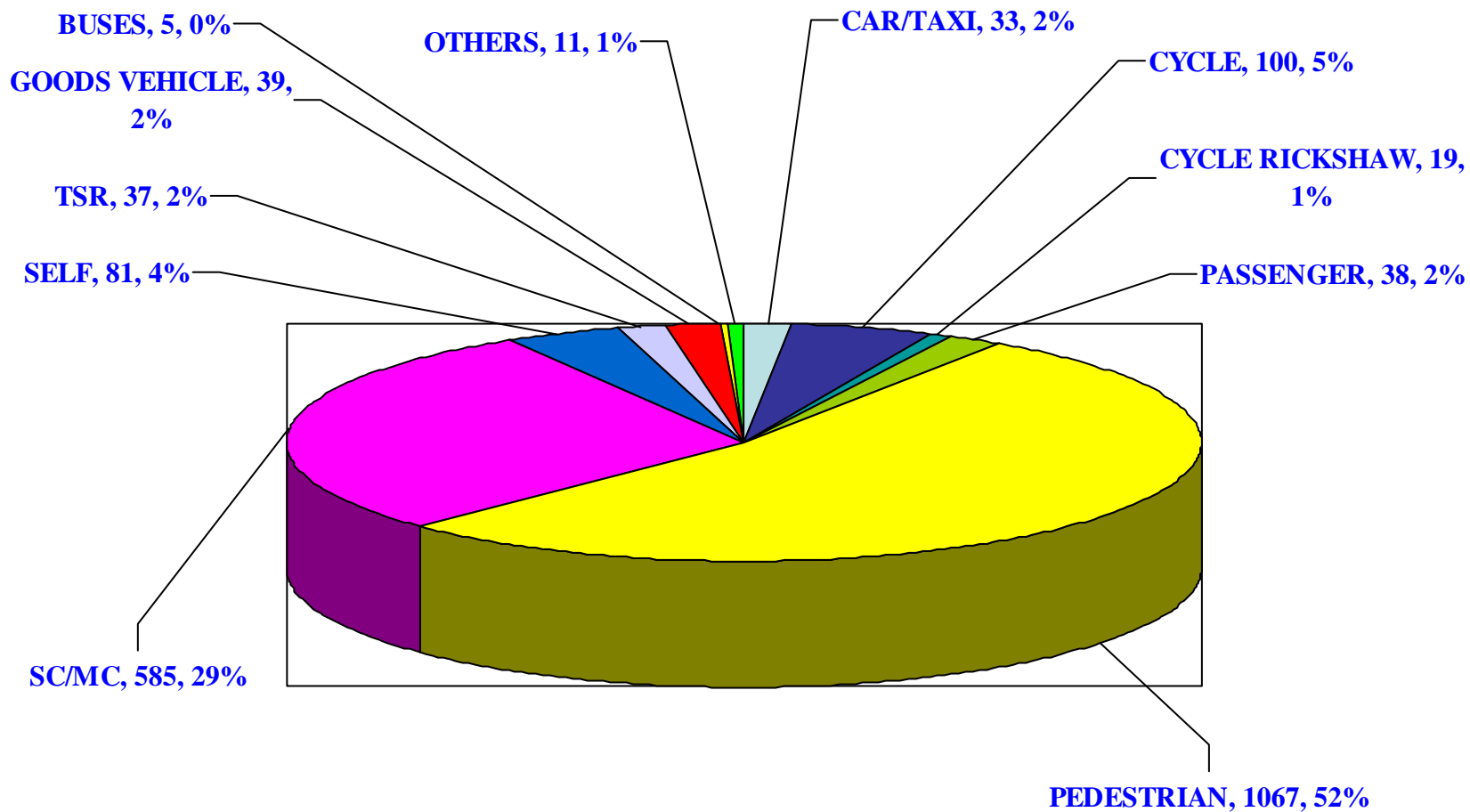
VEHICLES AT FAULT – 2008



KNOWN VEHICLES AT FAULT – 2008



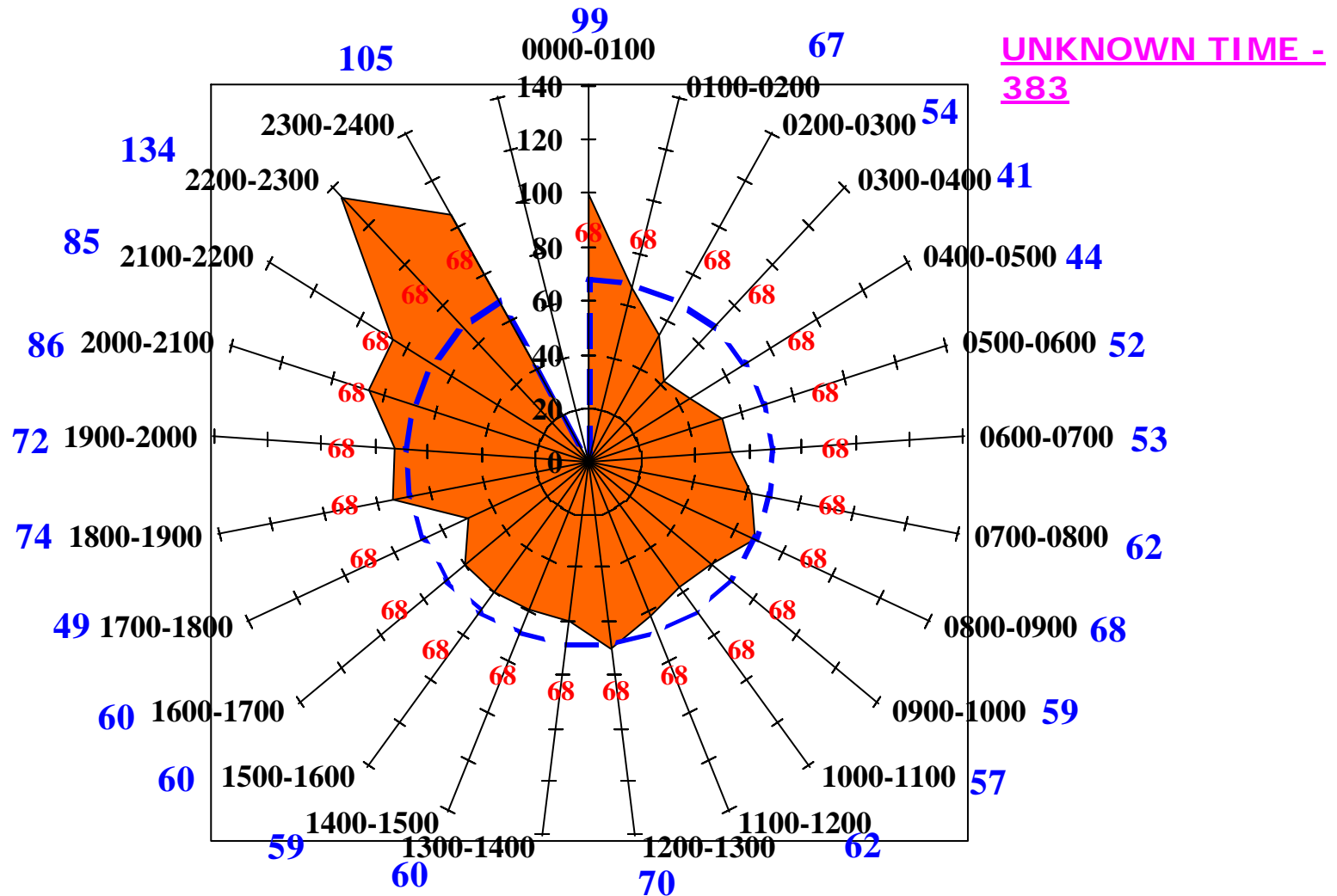
VICTIMS IN FATAL ACCIDENTS – 2008



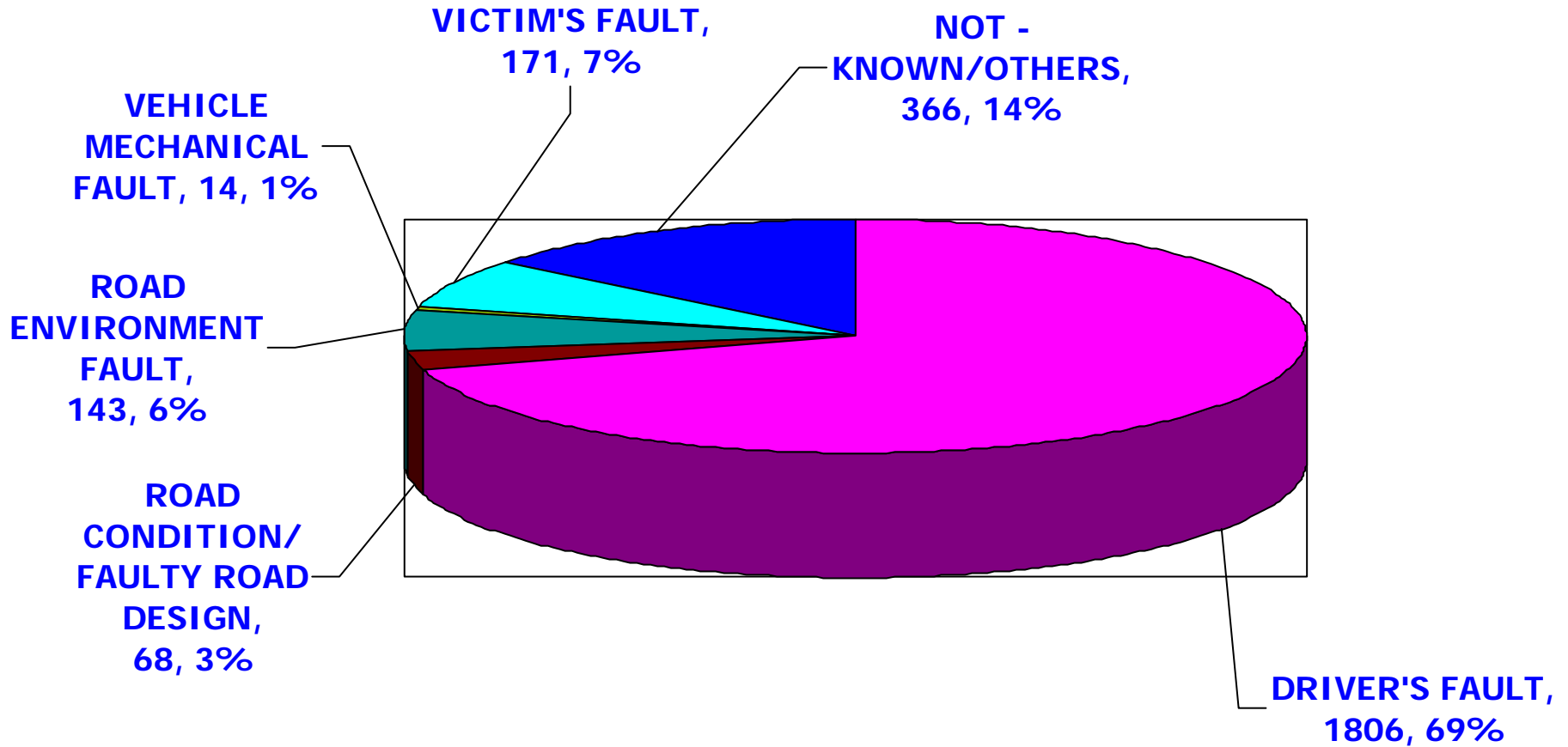
4 HOURLY TIME SLOT – 2008

S.NO	TIME - SLOT	NO OF FATAL ACCIDENTS
1	2200-0200	405
2	0200-0600	191
3	0600-1000	242
4	1000-1400	249
5	1400-1800	228
6	1800-2200	317
7	UNKNOWN TIME	383
	TOTAL	2015

TIME -WISE FATAL ACCIDENTS - 2008



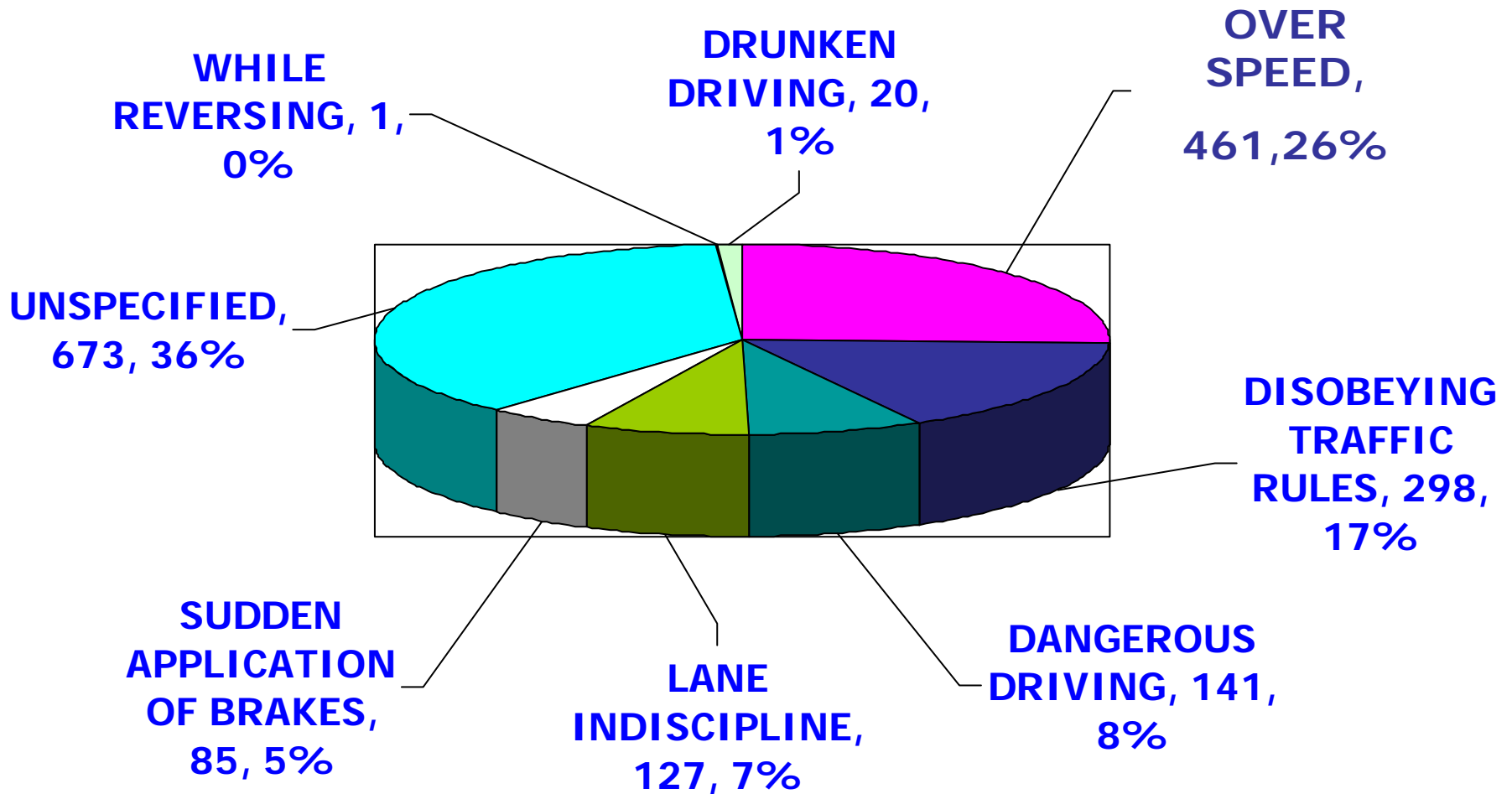
CAUSES OF ACCIDENTS 2008



DRIVER'S FAULT

- OVERSPEEDING
- DISOBEYING TRAFFIC SIGNALS/RULES.
- DANGEROUS DRIVING
- LANE INDISCIPLINE.
- SUDDEN APPLICATION OF BRAKES
- DRUNKEN DRIVING.
- REVERSING.

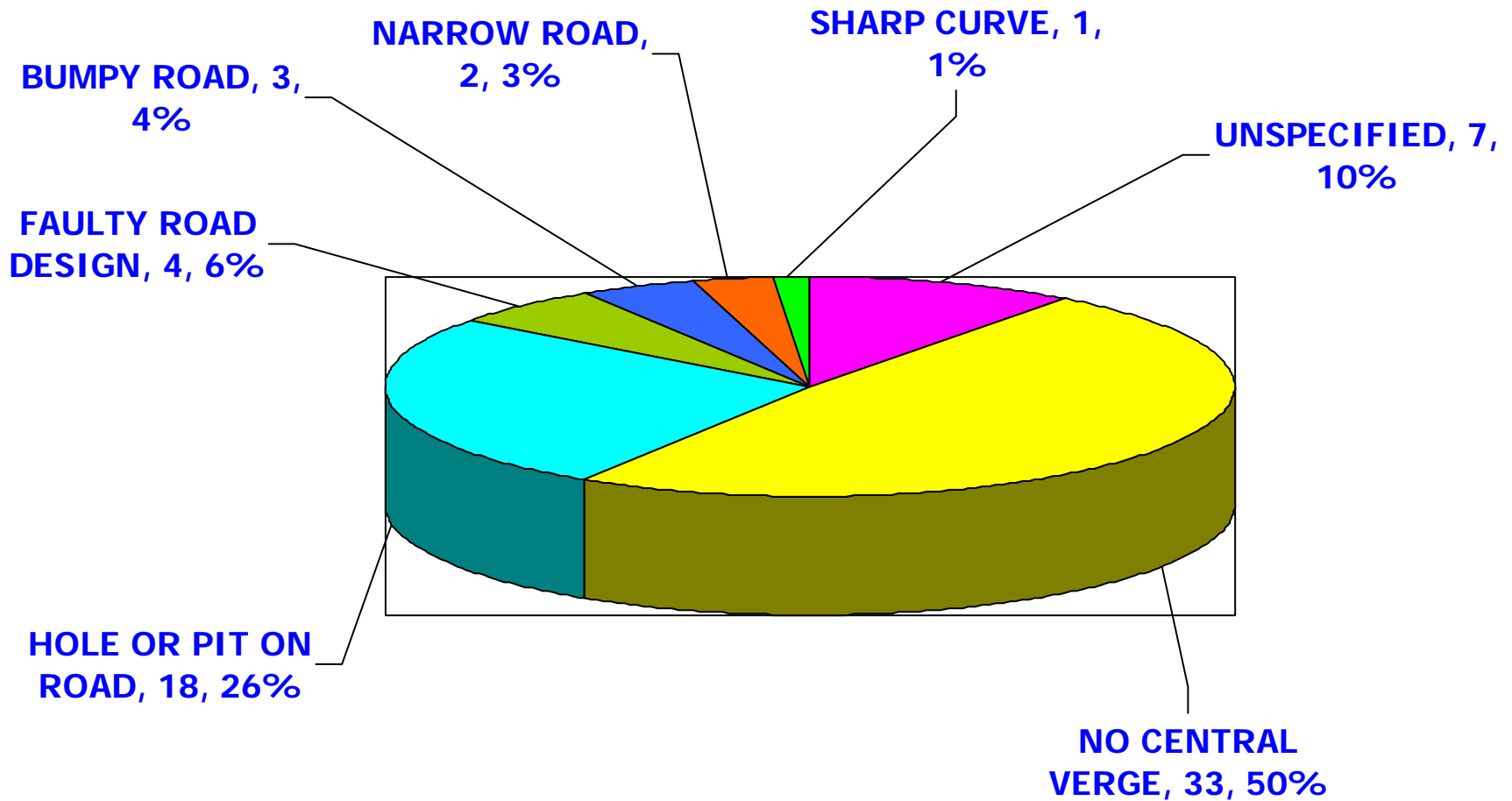
DRIVER'S FAULT-2008



FAULTY ROAD CONDITION / DESIGN

- ABSENCE OF CENTRAL VERGE
- WHILE AVOIDING POTHOLE ON ROAD
- FAULTY ROAD DESIGN
- BUMPY ROAD
- SHARP CURVE

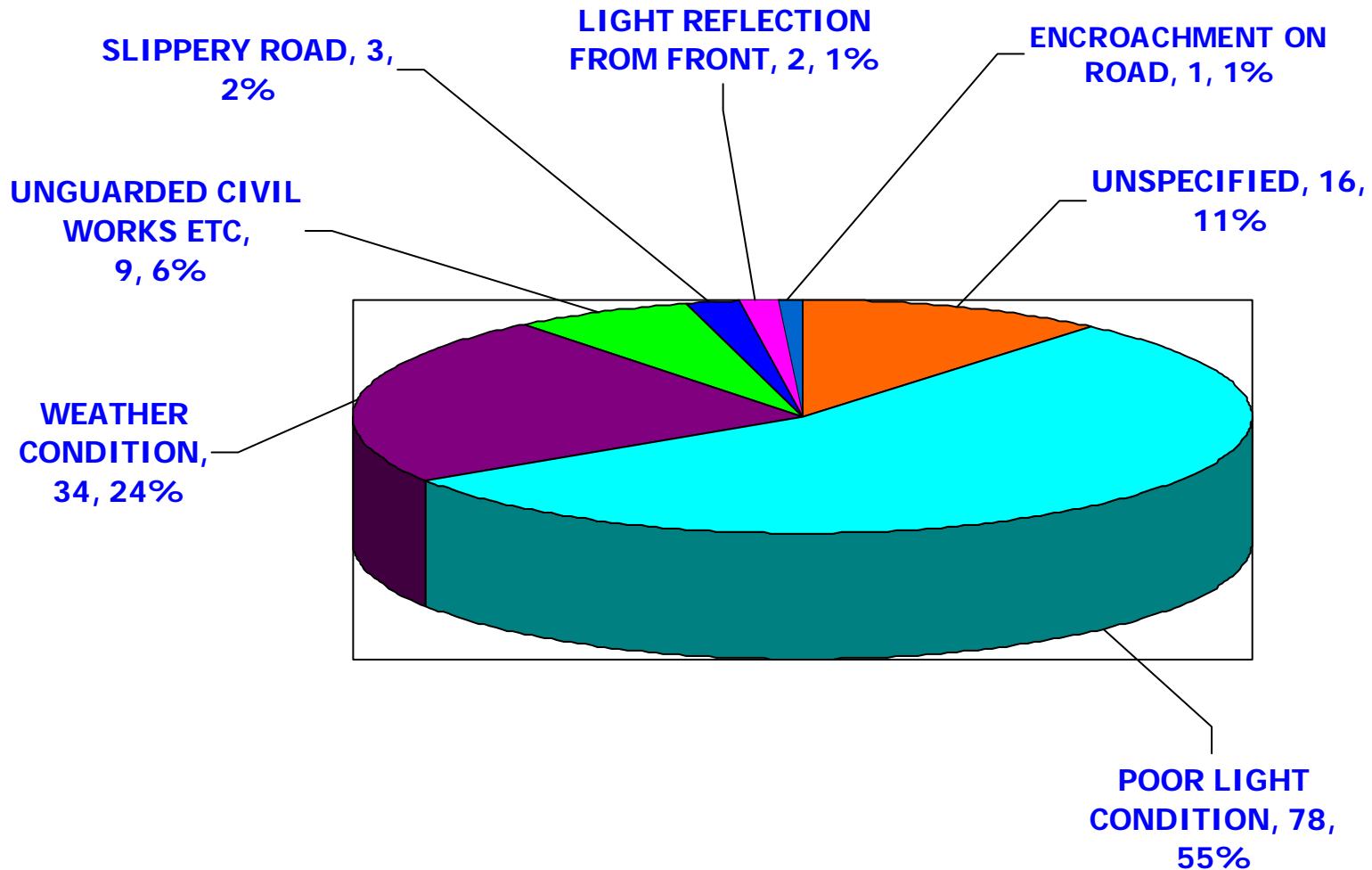
FAULTY ROAD CONDITION / DESIGN- 2008



ROAD ENVIRONMENT FAULT

- POOR LIGHT CONDITION
- WEATHER CONDITION
- UNGUARDED CIVIL WORK
- SLIPPERY ROAD
- REFLECTION OF LIGHT
- ENCROACHMENT ON ROAD

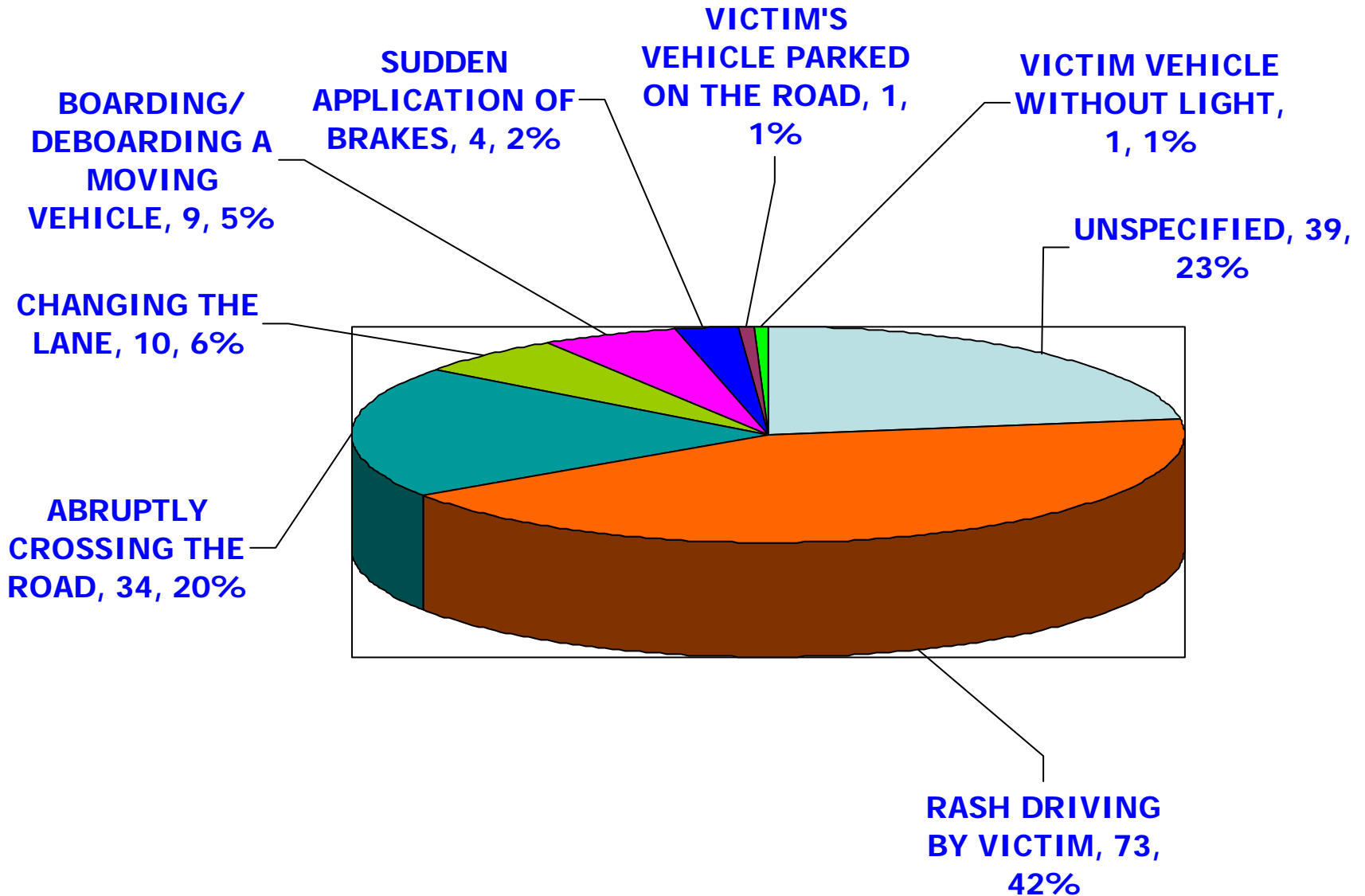
ROAD ENVIRONMENT FAULT(143)



VICTIM'S FAULT

- RASH DRIVING BY VICTIM
- ABRUPTLY CROSSING THE ROAD
- LANE INDISCIPLINE.
- BOARDING/DEBOARDING A MOVING VEHICLE.
- SUDDEN APPLICATION OF BRAKES
- VICTIM'S VEHICLE WITHOUT LIGHT

VICTIM'S FAULT-2008(171)



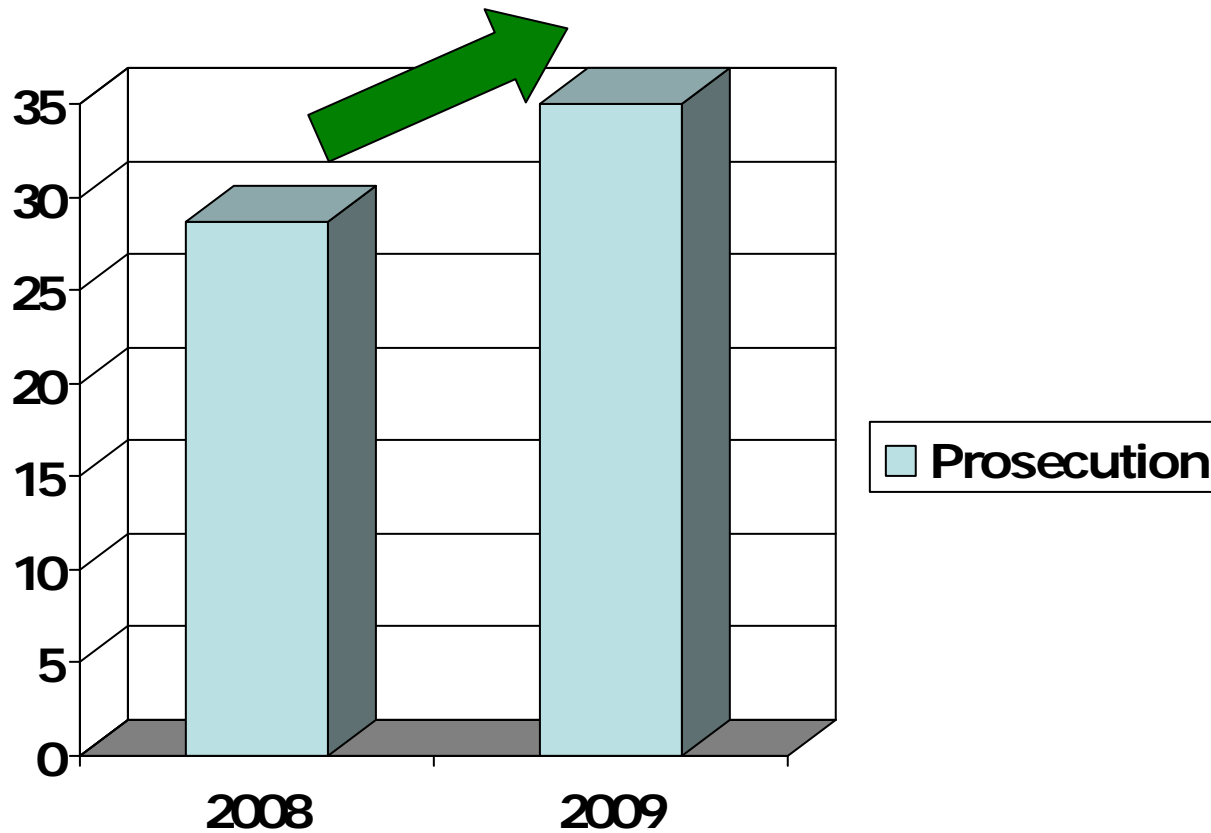
Summary of Causes

- A large number of accidents go undetected
- Good Vehicles account for 41% accidents
- Pedestrian and two wheelers are victims in 52% and 29% of accidents
- Maximum accidents takes place between 6.00 p.m to 1.00 a.m
- Poor light conditions account for substantial number of accidents.
- Drivers fault account for 70% of accidents.
- Overspeeding is one of the main cause of accident

PROSECUTION

Traffic Enforcement

(in lakhs)

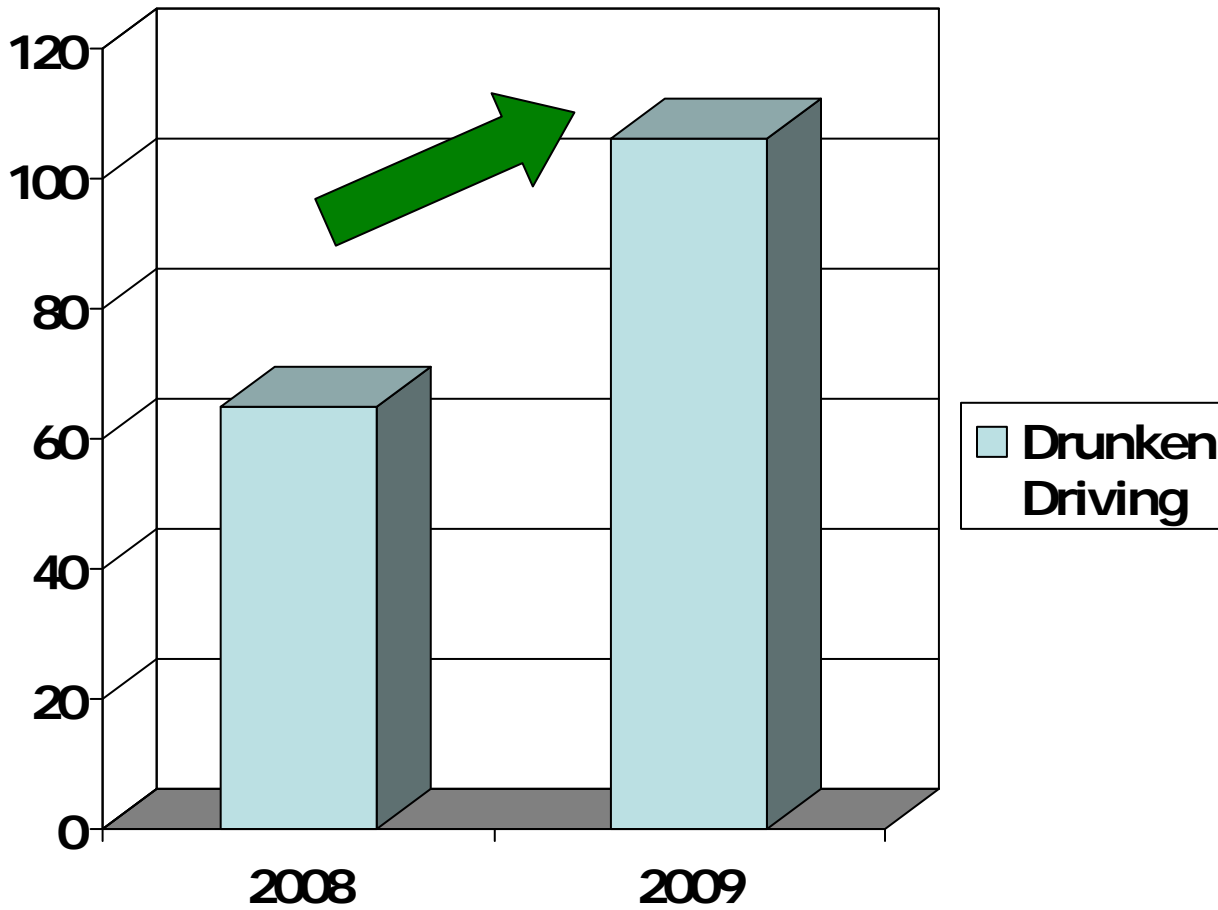


Stress on Quality Prosecution

- ☞ Traffic Signal
- ☞ Minor Driving
- ☞ Improper Parking
- ☞ Over speeding
- ☞ Dangerous Driving
- ☞ Drunken Driving

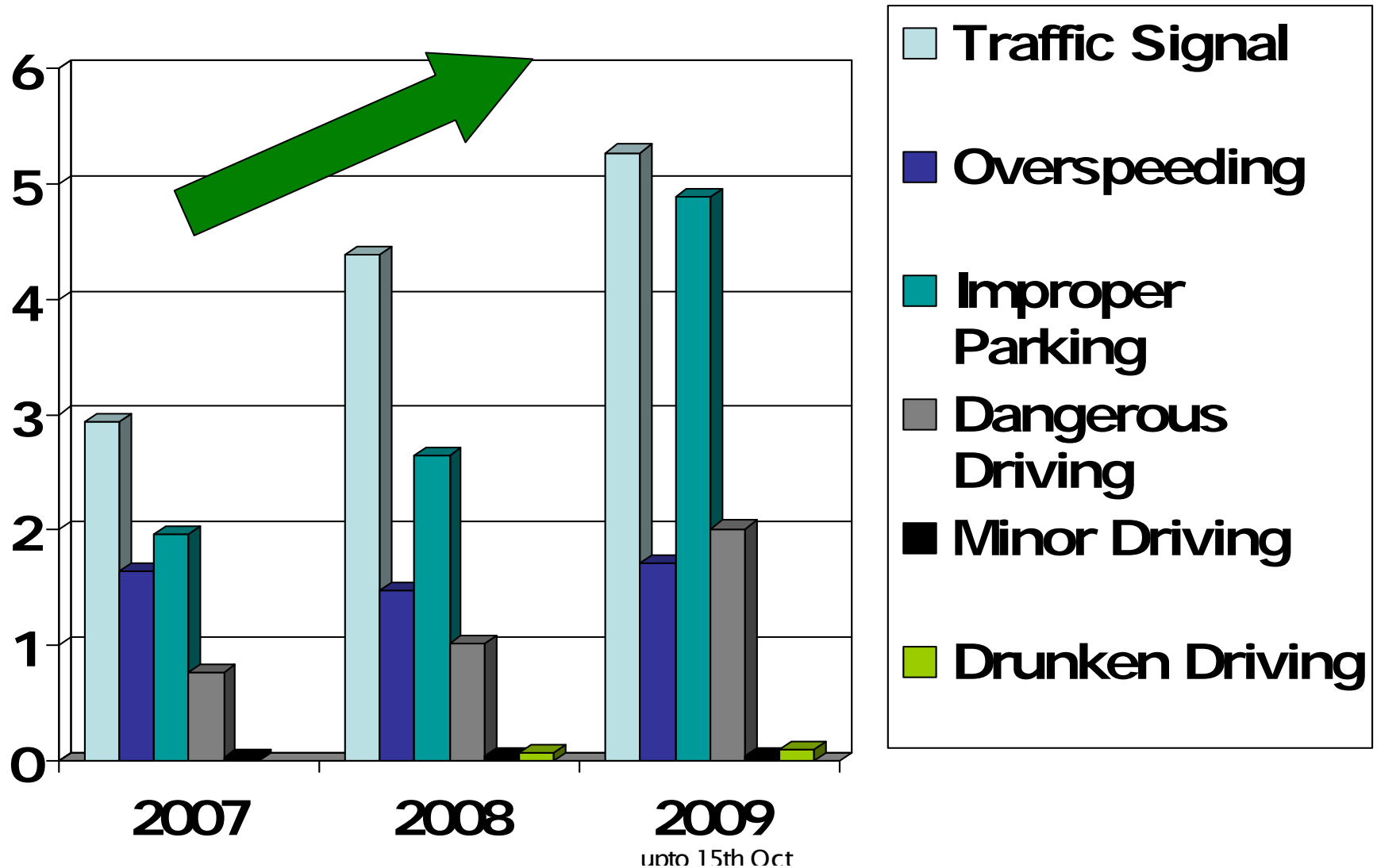
Drunken Driving

(in hundred)



Quality Prosecution

(in Lakhs)



New Initiatives

- Night Checking
- Traffic Patrol Squads
- Cancellation of Driving License

Traffic Patrol Scheme

➔ 410 Traffic Motorcycles on Patrol

- ✓ Effective prosecution
- ✓ Quicker response
- ✓ Increased visibility
- ✓ Widely appreciated

Prosecution by Motorcycle Patrol

Red Light Jump	Without Helmet	Improper Parking	Dangerous driving	Defective No. Plate	Others	Total
296914	135056	167224	48866	55119	213031	9,16,210

% increase over last year: 144%

upto 30th Sept. 2009 : 8,65,224

Intensive Enforcement

- 👉 Areas selected for intensive enforcement to bring about traffic discipline.
- 👉 The area is saturated by deployment of extra manpower.
- 👉 Zero tolerance observed and every violation is prosecuted.

Vehicle specific Enforcement

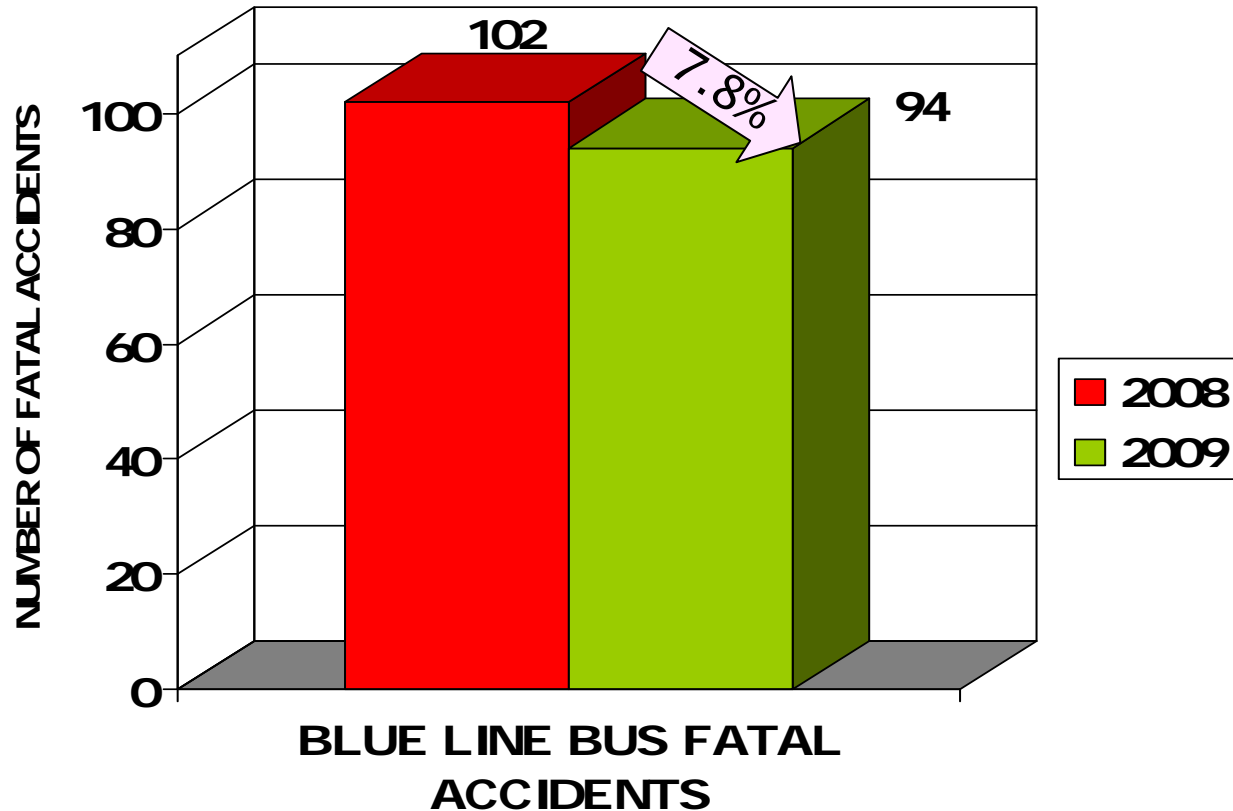
- Checking of commercial vehicles for red light jumping and dangerous driving at night. Action also taken for violation of restriction timings.
- Suspension of permits of commercial vehicles for violation of permit condition. Disqualification of holding of a driving license
- Non destined vehicles to Delhi are returned from the border.
- Disciplining of Blue line buses.
- Action against call centre cabs.
- Action against two-wheelers to discipline them

NON-DESTINED VEHICLES

Range	Vehicles Returned Back			
	Previous FN	Current FN	2008	2009
NDR	124	0	4360	1478
NR	1505	1500	4810	16119
SR	0	1533	2272	17934
Total	1629	3033	11442	35531

* upto 15th Oct.

COMPARATIVE ACCIDENTS BY BLUELINE BUSES



upto 15th Oct. 2009

Other steps to reduce accidents

- ❖ Increased presence of Traffic personnel in accident prone areas
- ❖ Use of Public Address System
- ❖ Bus lane to be kept free
- ❖ Prosecution of vehicle without R.C.
- ❖ Corridors to be kept free of beggars and vagabonds
- ❖ Strict prosecution of dumpers
- ❖ Checking of Fitness Certificate
- ❖ No Entry restrictions.

INTENSIVE TRAFFIC MANAGEMENT OF AREAS WITH HIGH FOOTFALLS

- Main **traffic corridors** to be kept clear of encroachment and unauthorized parking.
- Important **bus stands** to be kept free of encroachment by vendors/hawkers/TSRs.
- Major **markets** selected for improving the traffic circulation and parking arrangement.
- Improved traffic circulation and keeping traffic corridors clear of encroachment and unauthorized parking in **marriage season**
- **Railways stations** for improving the traffic circulation and parking arrangement.

REMOVAL OF OBSTRUCTIVELY PARKED VEHICLES

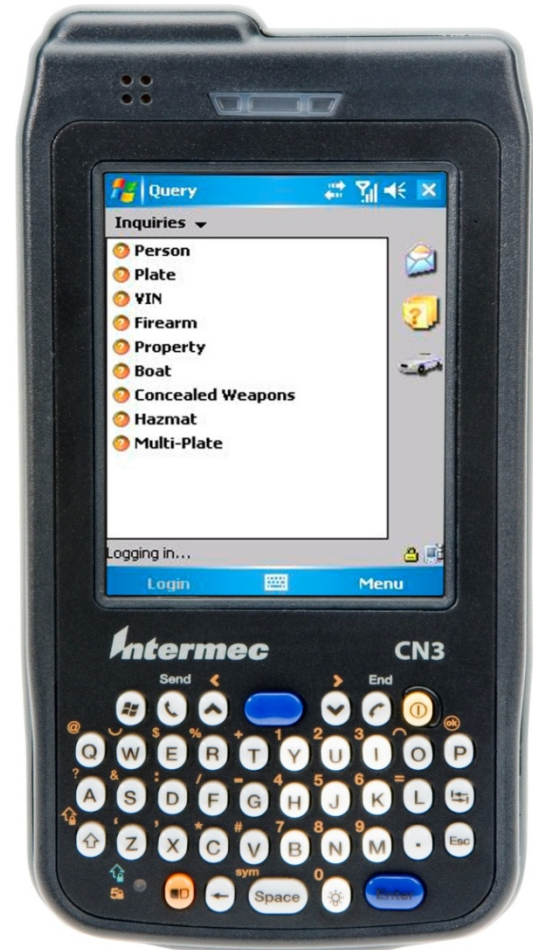
- Purchase of new cranes – for heavy and luxury vehicles
- Hiring of cranes for towing ordinary and luxury vehicles
- Purchase & hiring of clamps

INTRODUCTION OF MODERN TECHNOLOGY

- Intelligent traffic system
- Speed measurement devices
- E-Enforcement
- Automated vehicle tracking system

E – Enforcement

- ➔ Ability to run mobile query on a handheld device
- ➔ Easy identification of status of vehicle – stolen/involved in crime
- ➔ Previous history of involvement of vehicle/driver in accident
- ➔ Previous prosecution history of vehicles enabling enhanced fines
- ➔ Pendency of notices
- ➔ Facilitation to access the web & generate desirable MIS reports



Countermeasures directed at drivers

- Lack of awareness & attitudinal problems
- Lack of Driver Training Institutes
- Easy Procurement of Driving License
- Compulsory training and licensing
 - periodic retests
- Compulsory insurance to compensate victims.
- Restrictions on commercial vehicle driver hours
- Conventional and automated enforcement of traffic laws
- Road safety education

Education & awareness – 2009 (up to 30th Sept.)

Road Safety March

- **65356** people educated through Mobile Exhibition Van
- **494** schools imparted Road Safety Education
- **118851** school children educated in road safety values
- **3287** school teachers given interactive training regarding road safety in the current year
- **684** lectures/film shows on road safety organized at various places for the benefit of general public and industrial workers/employees
- **825** students from **26** schools participated in painting competition and debate competition among school children during Road Safety Week and Delhi Police Week
- **1,343** commercial vehicle drivers trained in the current year
- **193289** pamphlets /literature on road safety distributed



- **4580** cyclists were educated and reflective tapes were affixed on their cycles to ensure their better visibility at night
- **1423** TSR Drivers educated through workshops & lectures
- **2722** Slum dwellers briefed
- **450** Girls/Students have been educated on Road Safety during Summer Camps
- **610** Drivers/Staff of MNCs (LURGI, IGL etc) have been educated about the safe driving tactics.
- **44** Women Cab Drivers have been educated about defensive driving
- **1700** NCC Cadets have attended the Road Safety Awareness Campaign
- **1020** students trained as Road Safety Patrol cadets

Pasting of reflective tapes on cycle to ensure their visibility



- **326** senior officers from Armed Forces and 333 from other government organizations and professionals have been nominated as Special Traffic Wardens and **148** as General Traffic Wardens in the current year
- **39165** notices have been issued by Spl Traffic Wardens the current year
- Pedestrians educated at major intersections by distributing pamphlets on road safety and announcement through PA System
- Road safety awareness programmes/ workshops are being organised for school children, college students and general public in association with agencies and NGOs such as SIAM, AAUI, IRTE, Hero Honda, Hyundai, CRRRI, Indian Alcohol Policy Alliance, Sports Trax Society, DLSA, etc

Distribution of Literature



Pedestrians and Cyclists

- segregated facilities such as cycle lanes, underpasses and overbridges
- pedestrian barriers
- limiting pedestrian access to highways
- traffic awareness campaigns
- pedestrian crossings
- Installation of Pelican signals
- Speed Humps
- reduced urban speed limits
- rigorous speed limit enforcement by automated means such as speed cameras

Motorized vehicle safety features

- Seat Belts
- Airbags
- Electronic Stability Control
- Safety cages to protect driver from impacting objects
- Compulsory safety testing of vehicles over a certain age.

Issues affecting traffic congestion

Volume and nature of traffic

- Unchecked growth of vehicles – 65 lakhs registered vehicles
- Massive influx of outstation vehicles – 8 to 10 lakhs floating vehicles
- 6 to 7 lakhs slow moving vehicles – equivalent to 7 PCUs
- 900 vehicles registered daily – growth much faster in NCR region
- *8000 vehicles sold on Dhanteras (Diwali) day – TV report*
- Personalized mode of transport – inadequacy of public transport
- Fast changing characteristics – motorized & non-motorized, fast & slow moving vying for road space

Inadequate road network

- Inadequate road network – growth in traffic volume far exceeds the road carrying capacity
- Absence of pavement
- Encroachment on roads/footpaths affecting flow of traffic
- Conversion of single occupancy unit to multiple residential flats/commercial establishments
- Parking problems – idle parking of vehicles on roads – no garage law, parking of commercial vehicles in residential colonies
- Important trade corridors – city acts as a storehouse of wholesale trade

Road improvement and Metro construction has adversely affected the road capacity in short term

Affected roads

- Large scale construction activities in progress
 - DMRC – Airport, ISBT Anand Vihar, Rohtak Road, Gurgaon, Aurobindo Marg, Badarpur corridors.
 - Flyovers – Gazipur, Naraina, Azadpur, Pushta Road, Shyam Lal College, Apsara Border, **Nangloi**, Dabri, Outer Ring Road (Rao Tula Ram Marg, Munirka, Africa Avenue)
 - Road widening works – NH 24, Noida Link Road, Outer Ring Road, NH 1
- Main arterial roads affected are – Outer Ring Road, Ring Road, NH 24, Aurobindo Marg, Rohtak Road, BKS Marg, G.T. Road, Pushta Road, Pankha Road etc.
- DJB and Power companies augmenting the respective capacities on many roads

Reduced capacity of roads has resulted in diverted traffic on alternate roads, thus congesting them further

Absence of road sense

- Faulty driving licensing system
- Non-observance of traffic laws – human behaviour
- Lack of Road safety education
- Low traffic fines – fail to deter traffic violations
- Traffic on major roads obstructed by people to express their grievances against the govt on non-supply of water, power failure, major crime etc.

Peak hour movement

- Peak hours traffic load unable withstand even moderate disturbances
- Breakdown of a vehicle has a cascading effect on traffic and queue lengths may run in kms
- Processions/rallies/demonstrations – capital centre of such activities

Efforts made to meet the Challenges

Efforts in Traffic Regulation

- Police deployment for traffic regulation is based on visibility, activity and availability
- Each major traffic intersection manually regulated during peak hours to ensure faster discharge of traffic
- Optimization of signal timings during off peak hours
- Traffic modelling for improved traffic flow
- Restrictions on the plying of heavy, medium, light goods vehicles and slow moving vehicles during specified timings on specified roads/areas (under section 115 MV Act, 1988 and DP Act, 1978)
- Mobile patrolling by cranes for removal of obstructive and unauthorized parking
- Issue of NOC by Delhi Traffic Police for declaration of on street parking.

Steps to further smooth flow of traffic

- Traffic corridor improvement measures
- Traffic Patrol scheme
- Facilitation of construction for Metro corridors, Grade separators, subways, FOBs etc.
- Traffic regulation at construction sites through Traffic Policemen & Marshals.
- Removal of obstructive/ improperly parked vehicles
- Concerted & heavy prosecution for idle parking
- Towing capacity augmentation
- Use of Clamps – pilot project launched
- PA system being fitted in all GO-TI/Gypsies, ZO/Motorcycles, Patrol Motorcycles to educate traffic while on cruise mode

Traffic corridor improvement measures

- Creative Solution Module
 - provision of slip roads
 - change in road & junction geometric
 - Installation of iron railings
 - Closure of gaps in central verges
 - Construction of traffic islands/central verges
- Traffic Management Centre
 - Traffic Communication Centre.
 - Traffic Help Line Desk.
 - Hot Line Desk.
 - Signal Fault Monitoring System.
 - Traffic Monitoring System.
- Unified Traffic & Transportation Infrastructure (Planning & Engineering) Centre at DDA

Public Interface

- Traffic help line on phone number 23010101 and 1095 round the clock
- Traffic Website (www.delhitrafficpolice.nic.in)
- SMS Traffic Information System on phone No. 56767
- Traffic situation & challan information on 9811452220
- E-mail facility on info@delhitrafficpolice.nic.in and info@hub.nic.in
- Road safety advertisements

Traffic management solution

Traffic management solution

- Infrastructural solution at critical areas & points eases traffic situation by increasing the discharge capacity
- However, it also sucks in more traffic as a result of the relief provided
- Thus, creates fresh bottleneck at points of weak discharge capacity
- Demand management should go hand in hand with infrastructural solution
- Solution lies in managing traffic by striking a balance between demand side and supply side management

DND flyover, Chowk Mukarba flyover etc are examples. Ghazipur flyover and Akshardham flyover will soon join the list

LONG TERM INFRASTRUCTURAL SOLUTIONS

- Early completion of Western and Eastern peripherals - likely to be completed by end of 2010 and 2012 respectively
- Further expansion of Metro
- Restoration of MG Road
- Improvements at Andheria modh intersection
- Elevated corridor over Outer ring road
- Provision of multi-level parking
- Expansion of road network

DEMAND MANAGEMENT THROUGH VEHICULAR RESTRAINT MEASURES

- Plying of vehicles of odd and even number plates on alternate days
- Reliable and adequate public transport, including Delhi Metro
- Park and ride
- Car pooling
- 'Pedestrian only' in select business areas
- Congestion pricing in institutional areas
- Extending the areas to be covered for goods vehicle restriction
- Restriction on plying of rickshaw/slow moving vehicles

CAR POOLING

- Promote car pooling
- Licensing of promoters by transport dept
- Encourage regular commuters to register themselves on car pooling websites
- Priority to car pool on congested roads during peak hours
- Promotion of medium sized luxury buses on desired routes by Transport dept
- Help reduce congestion and discourage use of single occupancy private vehicles
- Security issues
- Initial implementation problems

'PEDESTRIAN ONLY' IN BUSINESS AREAS

- This will promote public transport, including Metro
- Pedestrianise business areas with high public transport accessibility level

EDUCATION AND AWARENESS

- SPECIFIC TRAINING FOR FOLLOWING GROUPS
 - School children – road safety education to be made part of the curriculum
 - Truck drivers
 - Bus drivers
 - Taxi/TSR drivers
 - Pedestrians
- TRAFFIC UPDATES TO ROAD USERS
 - [Radio Channel](#)
 - Traffic Help Line
 - SMS
- [MEDIA CAMPAIGN](#)

Thanks