



ASHOKA

Ashoka Buildcon Limited
presents

**'India Speaks for
Road Safety'
CONTEST
2020**





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**THANK YOU
INDIA**

**FOR THE OVERWHELMING
RESPONSE TO THE CAMPAIGN**



22 states
participated

1,25,000
participants

1,78,095
entries received



Word from the torch bearers

Ashok Katariya
Chairman



“

Ashoka Buildcon Limited, believes that every citizen is an asset for the nation. Every time a life is lost due to road accident, the nation suffers a loss. Imagine the plight of families whose bread earners have either lost their lives or suffered permanent injuries. Such trauma cannot be measured or compensated in any way.

Ashoka is proud that amongst its various CSR initiatives, one is that of road safety. We believe that it is high time that the problem be addressed through nationwide efforts and that is exactly what we have been doing since the past few years. 'India speaks for road safety' organised in 2020 is one such effort that has reached to far corners of the country.

I congratulate my team members for devoting their time and energy for such a noble cause. I am sure the efforts will bear fruits. ”

”

Satish Parakh
Managing Director



“

We have built over 10,000 lane kilometers of roads and highways in the past 15 years. We pride in the fact that the roads and bridges built by us have paved way for progress not only in urban regions but several hundreds of villages and habitats.

We are determined to continue our work towards improving road safety standards such that India, which is currently the most affected by road accidents will become an example for other nations across the globe.

Our efforts so far have included activities such as 700 plus road safety seminars, across the country, free distribution of over 5,000 bike helmets, pasting of reflective stickers on bullock carts, bicycles etc, a Guinness World Record for Largest Road Safety Lesson, free distribution of Alcohol Breath Analysers, Speed Guns etc.

India Speaks for Road Safety Competition launched this year was an effort to engage the citizens of India in sharing their opinion on 'How road safety can be improved in India?' I am delighted that we have received entries in huge numbers and I thank all the participants for being a part of this endeavor. ”

”



Word from the torch bearers

Sanjay Londhe
Director &
CEO-Projects



“

Ashoka has been proudly working with National Highways Authority of India, National Safety Council, Police departments in various states, local bodies and many NGOs in bringing about road safety in the country. We are thankful for their constant support.

We have been conscious about Health, Safety and Environment ever since our inception. We are the first construction company to be certified for Quality, Systems, Monitoring of Green House Gas emissions, workplace safety and health management etc.

Our Ashoka Highway Research Centre is focussed on developing better methods of road construction such that can bring about better standards of health and safety. ”

Ashish Katariya
Director



“

India Speaks for Road Safety is not just a contest. It is a drive to join hands with the people of the nation in order to facilitate a cumulative fight against the rising numbers of road accidents in India.

We believe that the Indian context is different from rest of the world. The road safety tools that are very effective in western nations face multiple challenges in India owing to the diversity in demographics, cultures, beliefs, priorities, economies etc.

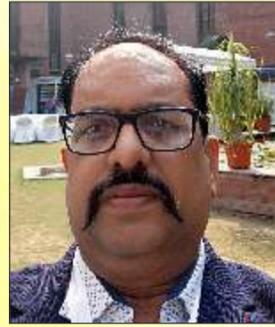
A unilateral effort by enforcement agencies cannot be enough to generate the desired results and hence we have invited suggestions from the citizens in a bid to unravel the sentiment of the end users of the road infrastructure. We are glad to receive 1,78,000 entries from all across India and also from overseas. The 20 of these entries have been chosen by our judges for cash prizes but I would like to say that all the participants are winners as they have shown their concern for this pressing issue being faced by our country. ”



The Team



Vyom Shrivastava



Anil Shimpi



Mukund Chandak



Prashant Joshi



Ajit Patil



Nilesh Parakh



Anil Nikam



Deepak Pawar



Dilavar Mulla



Jayesh Karhe



Pandurang Naik



Rishabh Bhatnagar



Sachin Khairnar



Sadashiv Borade



Sagar Thoke



Sameer Morade



Sandeep Lavare



Santosh Kandekar



Satish Arote



Shailesh Nakhate



Vikas Nalavade



Vishal Pansare



Vitthal Ghorpade



Yogesh Sharavane



Esteemed Jury



Lalit Gabhane
Director General and CEO
National Safety Council

Lalit Gabhane is a "C" suite executive with over 31 years of work experience with leading corporates Diageo India, ITC Ltd and HAL in various leadership roles. He spearheaded Safety, Health, & Environment Sustainability functions in the FMCG industry, alco-Bev industry, paper mills, captive power plants, high rise buildings & 5-star hotels, large construction sites. Currently, he is a Chief Executive (CEO) of National Safety Council of India, a leading national-level organisation.



N.K.Gupta
CEO & Group Editor
of "Fire & Safety"

Publishers of 4 monthly magazines - dedicated on Safety field with the name of "Fire & Safety", "Secure Asia", "Focus Personal Protective Equipments" & "Rescue Management" Monthly Magazines Since 1998. At Kings Expo Media our Mission & Vision is to Promote and Inculcate Safety Culture among common people including Workman & Industries by educating & updating its readership on the best Global standards.



Ashok Emani
Principal - ESG,
NIFF

Specialties: ESDD; E&S Safeguard Policies; IFC Performance Standards on Social & Environmental Sustainability; Environmental monitoring and evaluation; Community Development; Ashok, has over 22+ years of diversified consulting, research and assessment experience in the environment and social field. Since 2002 at IDFC, Ashok has been responsible for undertaking Environment and Social Due Diligence of projects, compliance of E & S conditions.



Norbert D'Souza
Retd. G.M. Mahindra
& Mahindra Nashik.

Been working with Mahindra & Mahindra for the last 30 years. Experienced in Manufacturing & Maintenance. Headed the paint shop for 10 years and rest in Maintenance & Safety function.

Core member for Energy and Safety for CII Nashik

Member of Industry institute panel on KK Wagh College Nashik

Panel member for NIMA & IEE Nashik chapter



Rahul Patil
Deputy Director (Tech.),
Indian Roads Congress

Shri RV Patil is a Civil Engineer by profession graduated in the year 2005 and joined Indian Roads Congress in 2007. He is pursuing Master of Engineering in Structural Engineering at MIT Pune. Presently he is the Deputy Director (Technical), Indian Roads Congress. In his short illustrious career spanning 11 years, Shri Patil has been involved in almost all aspects and developments in IRC such as liaising for formation of specifications, codes and guidelines.

The Contest : A Nationwide Initiative

India is one of the most affected when it comes to road accidents. We at Ashoka Buildcon Limited believe that law enforcement alone cannot be a solution to the problem. **The citizens will have to step forward and contribute to developing road safety culture in the country.**

The above belief inspired us to initiate a **nationwide effort** to invite suggestions from people on the topic **“How Road Safety can be Improved India?”**

The effort was shaped into a contest and was aptly named **INDIA SPEAKS FOR ROAD SAFETY.**

The logo i.e a microphone adorned by the colours of the traffic signal depicts the essence of the contest which allows a common man to voice his/her opinion.

The mode of participation was an ‘on-line’ portal that allowed instant submission of entry. We are delighted that the nation has responded to the contest with such enthusiasm.



ASHOKA
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'India Speaks for Road Safety' CONTEST

Your suggestion can save lives!

If you have a suggestion on “How road safety can be improved in India?”, you can share it by participating in this contest.*

Shortlisted suggestions by our jury members will be featured on our website.*

Best 20 suggestions will win **CASH PRIZES***.

To participate
1. Scan QR Code or
2. visit <https://www.ashokaroadsafety.com/my-suggestion.php>

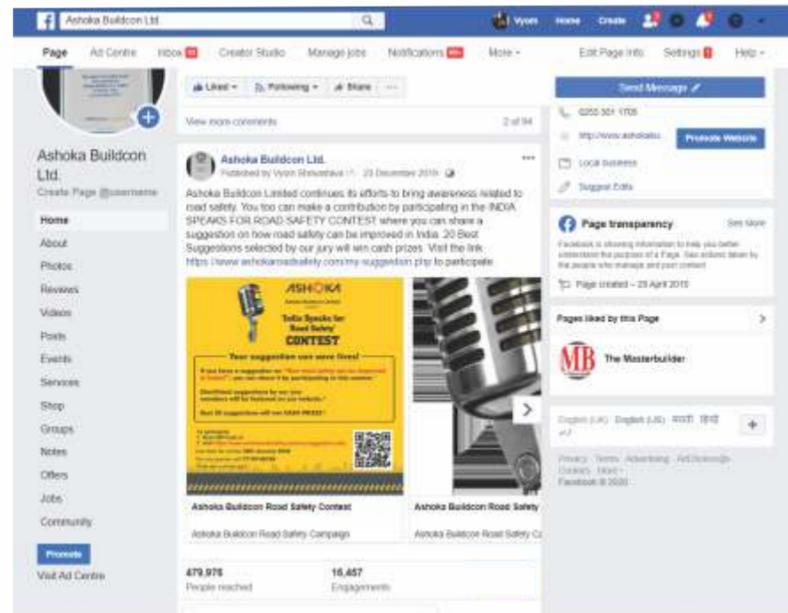
*Terms and conditions apply

Last date for entries **30th January 2020** For any queries call **77199 88188**



Awareness session on **'India Speaks for Road Safety Contest'**
at the AGM of National Safety Council - 18th December 2019

How we reached out to India? : 1. Social Media



Through Facebook our post could reach 4,79,976 people



Our Teams Circulated WhatsApp invite in various citizen forums

How we reached out to India? : 3. Seminars in Schools & Colleges



How we reached out to India? : 4. Road Shows at Sites



How we reached out to India? : 4. Outdoor Media



About Ashoka Road Safety Campaign

Ashoka Buildcon Limited has been actively involved in road safety initiatives since its venture into the field of infrastructure development in 1994. Yet, the formal program - Ashoka Road Safety Campaign was launched in 2014 as part of Ashoka's CSR initiative.

The objective of the campaign is to work towards the mission-
ZERO ROAD ACCIDENTS IN INDIA.

The initiative aims to achieve the above through a set of activities which will be conducted by Ashoka's team members active in **19 states across the country.**

This nationwide approach helps the company spread the message of road safety to far corners of our nation. The mission believes that if citizens realise the importance of traffic discipline and inculcate it in their behaviour, India will observe a remarkable decrease in the accident numbers on its roads and highways.

3 pronged approach of Ashoka Road Safety Campaign

BEGIN WITH SELF

As a responsible road developer, our team learns and implements road safety principles at the roads being implemented and operated by the company.

ENCOURAGE THE CITIZENS

We believe that road safety behaviour alone can bring about a huge difference. Thus, our teams reach out to schools & colleges, various transport associations etc. encouraging them to promote safety.

COLABORATE WITH LAW ENFORCEMENT AGENCIES

We associate with Law enforcement bodies by in organising public interest campaigns. We have donated speed guns and alcohol-breath analysers to traffic police in various parts of the country.



About Ashoka Road Safety Campaign : The Journey

2012

Prepared **Road Safety Guidelines** as per the MoRTH & NHAI

'**Know Your Highways**' **Training module** prepared & implemented at Ashoka Toll Plazas and Projects

2013

Health (Eye & Blood Sugar) Check-up camps for Road Users

Identification and **Rectifications of Black spot on National Highways** operated by Ashoka

2014

"**Chai Pe Baat**" Campaign where Road Safety Awareness lectures were arranged at **Dhabas and Truck Terminals**

2015

Road Safety Awareness Sessions for **Schools and Colleges**

Road Safety Awareness **Rally** in 12 Cities

2016

No-Hoarding Campaign

Road Safety Awareness Campaign at Dhabha

No Helmet No Parking Campaign for all Ashoka Offices and Project Sites

2017

Guinness World Record For 'Largest Road Safety Lesson'

Road Safety **ON SPOT QUIZ** Show on Local TV

2018

Chemical Emergency Management Training given to Incident Managers and Chemical transporters.

Educational Film "Jaan hai to Jahaan Hai" produced in association with National Safety Council

2019

Road Safety Online Quiz conducted for 10th grade & above students

Vehicle Check-Up Camp for Highway Road Users

2020

"**India Speaks for Road Safety**" **Contest**

Road Safety Walkathon



About Ashoka Road Safety Campaign

950+ seminars
conducted across the country

6,00,000+ participants
attended these seminars

230+ check up camps
conducted free of cost

15,000+ participants
got their health and eyecheckup done

5000+ two wheeler helmets
distributed free of cost

200+ mannequin flagmen
deployed to safeguard our people at work

Online Accident Monitoring Software

developed and implemented at all our road projects



SAFETY IDEAS RECOMMENDED BY TEAM ASHOKA



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We received a mix of suggestions from the “common men and women”, the end users of our road infrastructure.

Some were good, some were well presented and some were unique. On the other hand we received suggestions which had limited relevance to Indian context, some were common and some were copy-pasted from information available on the internet.

Our jury has selected 20 entries as winners and 15 as consolation prize winners.

Post the exercise, our panel of in-house experts reviewed the suggest and blended it with their experience to come up with suggestions that can be implemented in India.

The next set of pages is Ashoka's recommendations for the same.





SUGGESTION : SMART TECHNOLOGY INTEGRATION

Smart technology is reaching new heights every day and it can be implemented to bring about technological breakthroughs in road safety. Ashoka's Smart Infra division's experts can work with the government agencies to plan and implement smart road safety solutions.

Benefits Expected

Technology plays a vital role in awareness and road safety using Location Based Addressing System we can reach out to a target group or groups easily and disseminate the information.

Applicability

A simple use case is all the citizens entering into Mumbai can easily be detected at the Toll Gates, Railway Stations, Sea Ports and Airports all the needful information can be shared to them from the government side.

DATA SCIENCE

Using the data harvesting techniques from the various data sources the required correlation can be drawn as per the use case requirements for any kind of requirement in any combination using various data techniques through which the road safety awareness / information dissemination can be shared through smartphones / tablets / email / DTH / Cable TV / any other form as desired.

Data Science can be combined with AI & ML, LBAS, sensor-based technologies for instant notification also the same can be used to penalize the violating drivers and causing harm or disturbance to other road users.

History of things can be created above violators thus empowering authorities to take evidence-based decision.

ARTIFICIAL INTELLIGENCE

Using the existing devices along with a combination of new generation sensor technologies various outputs and decision support systems can be supported dramatically which can be used for creating road safety awareness and information dissemination

Various types of users would be made to work on simulation and practice environment to make them understand their mistakes and correct methodologies can be taught thus by creating awareness of the road safety

SENSOR BASED INTEGRATION

Various sensors can be used to monitor, control, compliment and support the data systems to regulate the information dissemination of the road safety awareness and the rules to be followed towards to safety

- Traffic Signaling System
- Automatic Number Plate Detection
- Red Light Violate Detection
- Speed Violation Detection
- Congestion Detection based on active and passive methods
- Route Planning
- Clearance of Choke Points
- Vehicle Tracking, Cargo Tracking



SUGGESTION :

INCREASE SURVEILLANCE WITH PARTICIPATION OF GENERAL PUBLIC

Cameras are an excellent way to improve surveillance. The problem is that we try to install cameras on every road and highway of the country then the cost of the same will be very heavy on the government treasury. .Our suggestion is that just like every household has to compulsory install an electricity meter in their house, on similar lines every household should compulsorily install at least one camera facing the street.

Although this compulsion may attract some resistance from certain class of people but we should educate them that eventually the camera is for their safety. These cameras can be integrated with the police control room.

Benefits Expected

1. When more and more streets / roads get covered by cameras, people will be afraid to break traffic rules.
2. Other criminal activities occurring on the roads can be monitored through these cameras
3. Surveillance will be increased without burdening the government treasury as these cameras will be installed by people.

Applicability

This can be made applicable in India very soon. Already several houses and societies have installed cameras for their properties. When at least one camera will be installed such that they cover the street, the related stretch will come under surveillance.



If all households compulsorily install atleast one camera overlooking the street a major part of Indian roads will come under surveillance.





SUGGESTION : DEPLOYMENT OF ROBOTIC POLICEMAN AT VARIOUS LOCATIONS

Few years ago, the concept of Robotic Flagmen was introduced in India. This saved several lives as flagman position is a very dangerous post as it requires facing the incoming traffic.

On similar lines we can deploy ROBOTIC / DUMMY policemen across all our roads and highways. These policemen can be shifted and replaced by real policemen on random instances so that the drivers are never sure whether the police men they are seeing is real or robotic.

Benefits Expected

1. The presence of uniformed law enforcement officer generates a sense of fear of being caught and people become cautious of their behaviour on road.
2. Robotic/Dummy policemen look like real police officers from a distance
3. This will help the government in increasing their deplorable workforce across India.

Applicability

Creating such dummy police men is easy and various kinds of sensors of surveillance equipment can be mounted in them. Even if we do not apply any sensors, the mere glimpse of the dummy officer in uniform will make a difference.



Traffic Marshal Robots have been deployed by Ashoka Buildcon Limited at its work-in-progress locations which has helped save several human lives.



Several countries have already started deploying dummy traffic policemen on their roads and highways.



The robots/ mannequins / dummies can be very realistic looking and it will not be easy to detect from a distance whether the officer is real or artificial.





SUGGESTION : INSTALL LUMINESCENT ROAD MARKINGS

Lights, Led markers etc. are expensive and prone to stealing. They have several other limitations.

Rather than spend a large budget on road lighting or other lighting options, the suggestion is to use glow in the dark road markings as it is a better, more adoptable alternative. The markings are made using paint that contains photo-luminising powder that "charges up" during the day. When it becomes dark they start glowing and the drivers are able to see them easily.

Benefits Expected

1. Such markings are easy to implement
2. These are theft resistant as against led based reflectors that are prone to theft and vandalism
3. They give a sense of confidence to the driver in the dark

Applicability

This product is fairly new, and have been implemented in Netherlands. We can assume that the product will develop further and become easily available in India. Infact we can also expect Indian companies to come up with similar product soon.





SUGGESTION :

VEHICLES TO INSTALL EQUIPMENT THAT CAN DETECT DRUNKEN DRIVING, PULSE RATE, DROWSINESS AND ALCOHOL INFLUENCE

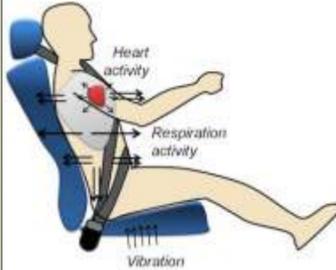
Several innovations have been made worldwide and technologies have been developed that can detect situations when it is not advisable for the driver to drive the vehicle. For example the technology of non-invasive heart and respiratory rate monitoring is now being used to detect when car drivers are getting drowsy. Another example is a breathalyzer that allows the vehicle to start only if the driver is not drunk.

Benefits Expected

1. Technology has power of changing the current safety issues related to road transportation. We need to encourage / enforce that car manufacturers incorporate these technologies even in low end cars. Indeed it will increase the cost of the car but the investment will be worthwhile considering the number of lives it will save.

Applicability

We usually wait for technologies to get proven in western countries first and then incorporate them in Indian context. But considering the severity of situation we cannot delay the incorporation of such technologies in our cars. We will need to lead the way.



A group of researchers from Spain have published a paper on a seatbelt and seat cover embedded with sensors that can detect the driver's respiration and heart rate to combat the driver fatalities and car accidents caused by fatigue.



An ignition interlock device or breath alcohol ignition interlock device is a breathalyzer for an individual's vehicle. It requires the driver to blow into a mouthpiece on the device before starting the vehicle. If the resultant breath-alcohol concentration analyzed result is high, the vehicle does not start.



Fatigue and microsleep at the wheel are often the cause of serious accidents. The Bosch driver drowsiness detection can do this by monitoring steering movements and advising drivers to take a break in time.





SUGGESTION :

INSTALL ATM (AUTOMATED TRAFFIC MANAGEMENT) SYSTEMS ON HIGHWAYS THAT CAN DETECT E.T.C. TAGS AND AUTO PENALISE

Almost all vehicles today carry ETC tags. If we install ATMs sensors that can not only detect speed but also identify the ETC tag, we can charge the fine amount directly to the tag.

Benefits Expected

Currently imposing of fines is a tedious process. It requires manual intervention due to which many speed limit violators get away without being penalised. This lacuna encourages drivers to take chances which often results in accidents. If the system becomes automated then escaping the punishment will not be easy.

Applicability

ETC tags are already installed in the vehicles. All we need is to integrate speed detection, ETC tag detection and automatic fine imposing systems. Also this system can be integrated with monitoring systems of law enforcement agencies.



In the recent drive initiated by the government almost all motor vehicles have installed. We can take advantage of this scenario by installing Automatic Speed Detection and fine deduction from the ETC account.





SUGGESTION :

MAKE VOLVO LIFE PAINT OR SIMILAR PRODUCT COMPULSORY FOR 2 WHEEL RIDERS

Volvo Cars has introduced a product called LifePaint. Road safety shouldn't be for the few. It should be for everyone. LifePaint is a unique water based reflective safety spray. Invisible by daylight, it glows brightly in direct glare of car headlights. Making the invisible, visible. LifePaint washes off, and will not damage the colour or the surface of your chosen material, lasting more than a week of normal usage.

Benefits Expected

Very fast and aesthetic way to be become prominently visible on dark highways. This will reduce accidents involving cyclists, or pedestrians.

Applicability

LifePaint can be used in all sorts of ways. Please note that it works best on textile materials. Applied to clothes, shoes, helmets, pushchairs and children's backpacks - even dog leads and collars.



The paint is invisible in normal light but springs up to light when headlights of motor vehicles fall upon it.



The paint lasts for a week and can be applied to clothes, shoes, helmets, pushchairs and children's backpacks - even dog leads and collars.





SUGGESTION : FOCUS ON STRAY ANIMALS

Absence of street lights in state and national highways is one among the most important reasons for road accidents in several cities. Major range of accidents occur throughout the dawn and night because of lack of visibility as a result of the road lights aren't replaced with new ones on time. In situations like these, stray animals tend to stray onto the road and by the time they get noticed it is too late leading to accidents. The animal is hurt, sometimes fatally, and often cars/two-wheelers end up into serious collisions in a bid to avoid these animals.

The suggestion is to place reflective round these stray dogs, cows etc. which will make them visible from reasonable distance and the driver can become alert.

Benefits Expected

1. These reflective collars are not very expensive and can be implemented in large numbers
2. It will save animal lives
3. It will save accidents, especially by 2-wheelers, who fall victim to sudden appearance of dogs and other animals on the road

Applicability

NGOs can be encourage to conduct this activity across India. Already few organisations and individuals have done this activity but there is a need to scale it up.



SPOT THEM, SAVE THEM

- For every death that is registered, there are three to four that go unnoticed
- Approximately 45 to 50 strays are injured every month

The Solution | Animal rights activists are now advocating reflective collars, which cost around ₹50 for stray animals

Some wounded animals walk away from the accident site and die far from the road, so only instantly-killed animals get counted in most cases

P Dattatreya Joshi | CEO, PEOPLE FOR ANIMALS (PFA)

IMPORTANT : THE REPRODUCTION OF SUCH STRAY ANIMALS SHOULD BE BROUGHT UNDER CONTROL





SUGGESTION :

REPLACE CONVENTIONAL SPEED BREAKERS WITH OOBLECK SPEED BREAKERS

Oobleck is a fluid material which acts as a suspension of cornstarch and water that can behave like a solid or a liquid depending on how much pressure you apply. If you grab oobleck in your hand, and it feels like a solid ball in your palm after you release the pressure. Materials are that behave as non-Newtonian fluid because their flow properties are not described by a constant viscosity. When a vehicle approaches the speed breaker below the prescribed speed limit the breaker remains soft, but if the vehicle comes at high speed the breaker turns hard. This way a driver's that maintain speed limit do not experience the jerk caused the speed breaker.

Benefits Expected

1. Oobleck speed breakers are mobile and can be mounted and removed from the road
2. These speed breakers facilitate improved fuel efficiency
3. Since they are not harsh on slow approaching vehicles the damage to the trauma on the vehicle components is minimised.

Applicability

Such breakers are easy to install and remove and are cost effective.



The speed breaker includes an outer cover and a bottom plate. The bottom plate may include more than one fastening holes. The breaker can be either permanently or temporarily placed to a roadway with bolts, screws. The cover encloses with Non Newtonian fluid, which reversibly hardens or stiffens in response to an applied pressure and goes back to its original form when the pressure is relieved.

The material in the tubes can be selected based on a desired shear rate. The shear rate selected will correspond to predetermined vehicle speed. When a vehicle rolls over the breaker below the predetermined speed i.e. below the critical shear rate of the material, the material remains in fluid form and the weight of the vehicle compresses the outer cover and the tubes. If the vehicle impacts with the speed breaker at high speed the breaker becomes hard and acts like a regular speed breaker.





SUGGESTION :

VEHICLE SAFETY CHECKING STATIONS THAT WILL STRICTLY CHECK THE HEALTH OF THE VEHICLES.

According to the World Health Organization 80% of cars sold in the world are not compliant with main safety standards. Many vehicle owners ignore the health and maintenance of the vehicle. The efficiency levels of brakes, lights, fuel emissions, glass wipers and many such aspects when ignored turn the vehicle into an unsafe equipment which can put many lives in danger. Just like we have PUC checking centres we should have VEHICLE SAFETY CHECKING STATIONS which will strictly check whether a vehicle complies with all the safety standards as prescribed by the government. Every vehicle owner should have this vehicle health clearance certification.

Benefits Expected

1. This will reduce the accidents occurring due to technical failures of motor vehicles
2. Well maintained vehicles will have lesser carbon footprint thus it will help the environment also.

Applicability

Such stations are operational in developed countries. India too can have government authorised stations without much difficulty.



Just like PUC stations are playing a role in enabling pollution control, Vehicle Safety Stations will bring control in road accidents.





SUGGESTION :

PREVENTION OF REAR-END COLLISIONS BY TAKING STRICT ACTIONS AGAINST UNSAFE PARKING

One of the major problems being faced in India is that of unsafe parking on roads and highways. Some halt due to breakdowns, some for sleeping at night, some for enjoying the view, etc etc. Every time such unauthorised parking is done, it creates a potential for rear end collision. Such accidents are very common in our country. Unfortunately people still continue to park where ever they wish. This issue should be dealt with strictly and heavy penalty should be issued against such vehicle owners.

Benefits Expected

1. Rear end collisions will be reduced significantly
2. Traffic congestions will be reduced

Applicability

Strict highway patrolling can make this possible to be implemented in India





SUGGESTION: APPLYING MEASURES TO PREVENT ANIMALS FROM ENTERING INTO HIGHWAYS.

Animals crossing the highways are a common cause of accidents on Indian Highways. While the world is working on implementing ways to prevent them from entering into the highways, India appears to be not taking this issue as a priority. Some of the methods that can be considered are

- 1) There is considerable data available internationally suggesting that properly designed overpasses and underpasses can significantly reduce wildlife fatalities.
- 2) Awareness programs for villagers to prevent their cattle from entering the highways
- 3) Biofencing can be done using plants like lemongrass, agave, rambans, and certain species of chilly which have been identified as effective to keep wild animals away.
- 4) Ultrasonic electronic repellent; silent to humans, high-frequency sound waves repel wild animals

Benefits Expected

1. Lesser number of animals on highways will mean lesser number of accidents.

Applicability

The measures seem to be tedious and in some cases expensive, but they are worth the investment .



Overpasses for Animal Crossings



Ultrasonic Repellants



Bio Fencing





SUGGESTION : INNOVATIVE WAYS TO INSTAL SOLAR PANELS ON HIGHWAYS

India is blessed with plenty of sunlight. Solar energy can be generated in plenty especially on Highways.. India does struggle with issues related to theft and vanadalism when it comes to installation of road furniture but eventually we will have to grow beyond it. Other countries have already started installing solar panels along their highways in innovative ways. For example there is a road in South Korea where bike lanes have been covered with solar panels. Research is being conducted on solar arches in highways running through villages.

Benefits Expected

1. Tapping of renewable energy
2. Solar roofs can protect roads from rains
3. Rain water harvesting can be facilitated

Applicability

India has begun installing solar panels near toll plazas. This can now be taken a step further.



This Korean Highway Has a Solar Panel-Covered Bike Lane Down the Middle. Yes, there is the issue of safety (cars plowing into cyclists at commute speeds) but it seems it's safe enough for tech-savvy South Korea, so it could be used elsewhere too.



The Solar Arch is a concept formulated by industrial designer Tyson Steele. It will provide covering for rural roads, that in turn can generate renewable solar energy for off-grid highway lighting. The Solar Arch can also supplement electricity demands in neighboring low capacity required areas. Other advantages of this visionary concept include – protection of the road from hails and icing during winter, and the sustenance of cooling effect during summer.





SUGGESTION : INSTALLATION / REPAIR OF WARNING MECHANISMS AT BLIND U-TURNS

U-TURNS, especially in hilly region roads become very dangerous as the vehicle is unable to see if another vehicle is approaching from the opposite site. Often this leads to accidents or traffic jams. If an uphill car is warned about the downhill vehicle and vice-versa, both drivers will be able to manoeuvre the vehicle accordingly. This warning mechanism could be as simple as installation of mirrors or more advanced such as sensor based audio visual warning systems. Already there are some locations where such systems are installed but again many of them are not functioning and need repairs.

Benefits Expected

1. Reduction in accidents occurring at blind U-Turns.
2. Reduction in traffic jams due to mix up between the crossing vehicles

Applicability

Installation of Mirrors can be an easy and quick solution while investment in sensor based warning systems would be all the more effective.





SUGGESTION : THE YELLOW SAFETY CARPETS FOR SCHOOL CHILDREN

In India thousands of children go to school on their own. They are required to use the roads and streets and often become victims of road accidents. 3M has invented the yellow carpet which creates bright yellow spots where children can wait before crossing the road. The spots are prominently visible and drivers become alert and careful. We can have such zones in relevant locations in our urban areas where such accidents occur in high numbers.

Benefits Expected

1.Reduction in number of accidents involving school children

Applicability

Already implemented in many parts of Seoul, we see that this step is not so difficult to be implemented.



As of October 2019, 208 Yellow Carpets have been installed in Seoul proper, with an additional 401 Yellow Carpets installed throughout South Korea. The positive effects of the program are starting to come into focus, with a Visual Attention Software (VAS) analysis measuring the impact. Overall, the 3M high-performance materials used for the Yellow Carpet help to increase visibility in school zones up to 179%.¹

- 1) For kids, the Yellow Carpet creates a “nudge effect”; that is, it piques their interest and encourages them to remain in the yellow carpet zone.
- 2) For drivers, the Yellow Carpet provides a very noticeable pop of color, increasing their ability to see where the children are.



SUGGESTION : ROAD DESIGNS TO FOCUS ON DRAINAGE

Rain water not getting drained properly leads to potholes. Despite this fact being well known we see that several of our highways especially the two lane highways get built without arrangements for drainage of rainwater. The slope on the road should be strictly monitored by inspection authorities and no compromise should be accepted.

Benefits Expected

1. Damage to highways by rainwater will be controlled by this action.
2. Rainwater harvesting can be achieved.

Applicability

It is a question of adherence to road construction norms and its enforcement which can be easily achieved.



Lack of drainage arrangements is the major cause of pot holes on Indian Highways.





SUGGESTION : AUDIT & REDESIGNING OF ACCIDENT PRONE JUNCTIONS

Road junctions at several locations in India have become age old . The traffic around these junctions have increased manifold and they have become hot spots for traffic jams and accidents. A drive needs to be initiated to audit such junctions. They should be redesigned to suit the movement of pedestrians, cyclists, bikers, cars and heavy vehicles. Beautification of these junctions with plantations will lead to improved aesthetics of the roads. Some cities have already started working on this subject but across India there are thousands of many such junctions which need immediate attention.

Benefits Expected

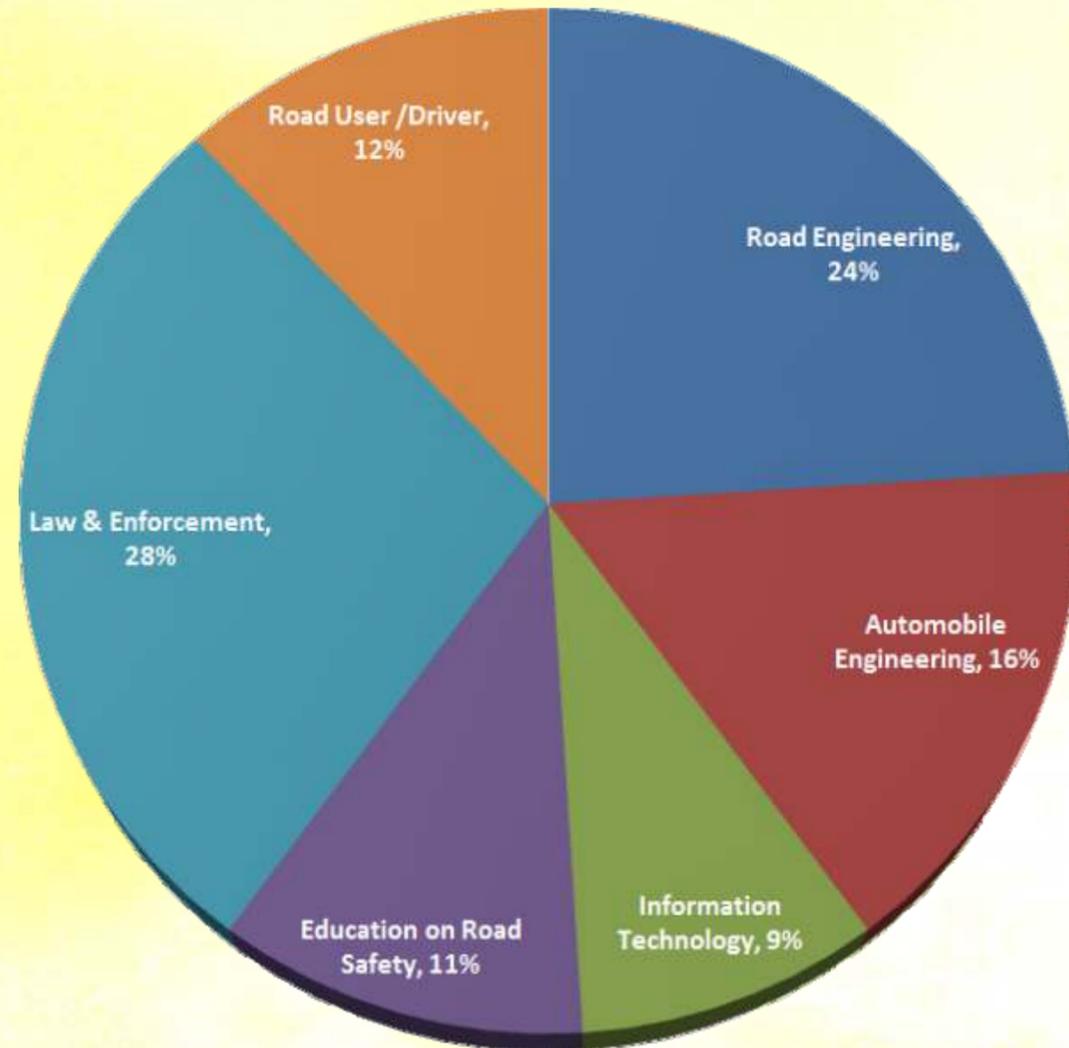
1. Reduction in accidents at junctions
2. Improved aesthetics of the road and city
3. Plantations will reduce pollution and help the environment

Applicability

Some cities have already acted upon the issue but we need to speed up the process to cover all the junctions across India.



Summary of Suggestions Received



Category	This Included	Percentage
Road Engineering	Road Design	24
	Safe Junction Improvement	
	Speed Breaker	
	Parking Issue	
	Median issue	
	Signal Issue	
	Sharp Curve & Sight Distance	
Road Marking		
Automobile Engineering	Sensor for speed control	16
	Sensor for collision alert	
	EBS	
	ABS and Anti Collision System and protection system	
	In-built Analysers (Drowsiness, Alcohol Analyser)	
	Track Cameras	
Tyre Safety		
Information Technology	CCTV & Road Surveillance	9
	GPS	
	Inter-connections between car and Tracking system	
Education on Road Safety	Accident Spot Surveillance by CCTV	11
	Road Safety Curriculum for school and college	
	New Course of Road Traffic Engineering	
	Skill Development program	
Law & Enforcement	Regular Training to Truck & Bus Drivers	28
	Helmet, Seat Belt compulsory	
	Fine or Penalty for Not following road safety	
	Fine or Penalty for Not following MVA Rule/ ACT	
	Licence Cancellation	
	vehicle Fitness	
	Duty Hours of Drivers (Presently Not in Act	
Removal of distractive and unsafe Hording		
Road User /Driver	Health	12
	Age Licence and Periodicity	
	Pedestrian Safety	
	Yellow Space	
	Drink & Driving	
	Total	100



Prize Winners



Praveen Kumar
IIT, Delhi



K.Krishna Chaitanya
Guntur, Andhra Pradesh



Rajesh Aherrao
Bangalore, Karnataka



Devendra Yashwant Jagtap
Pune, Maharashtra



Shital Thakare
Nashik, Maharashtra



Pradnya Rane
Nandurbar, Maharashtra



Malay Mast
Lucknow, Uttar Pradesh



Gaurav Thipse
Ahmedabad, Gujarat



Sana Pathan
Nashik, Maharashtra



Saloni Hardia
Indore, Madhya Pradesh



Prachi Singh
Patna, Bihar



Sanjeevani Kharat
Awdi, Tamil Nadu



Muneer Wani
Shrinagar, Jammu & Kashmir



Sabeeha Barudwala
Nashik, Maharashtra



Saurabh Yashwant Singh
Nashik, Maharashtra



Mahesh Navale
Sangamner, Maharashtra



Karan Suresh Kriplani
Pune, Maharashtra



Nimai Maity
Contai, West Bengal



Mrudula M
Bangalore, Karnataka



Krishnendu Dutta
Kolkata, West Bengal



Anuj Kalyanshetti
Gokak, Karnataka



Shubham Gupta
Porbandar, Gujarat



Nilesh Chaudhari
Vadodara, Gujarat

Consolation Prizes



Girish Kharat
Maharashtra



Moinak Dutta
West Bengal



Nimai Maity
Contai, West Bengal



Ritam Ganguly
Uttarpara, West Bengal



Saloni Satone
Kolkata, West Bengal



Manik Ghosh
Gopiballvpur, West Bengal



Neha Darade
Raipur, Chattisgarh



Pawan Prajapati
Ratlam, Madhya Pradesh



Ratikanta Biswal
Bhadrak, Orissa



Santosh Shelar
Nashik, Maharashtra



Mehul Parekh
Surat, Gujarat



Neelam Joshi
Akola, Maharashtra



Pranjali Wandile
Pune, Maharashtra



Sachi Sisodia
Nashik, Maharashtra



Yash Hivarkar
Navi Mumbai



Gayatri Palade
Surat, Gujarat

