

Abstract

The road network system & design of road of a country plays very crucial or vital roles in development & growth in various field like economic, social, cultural etc. So for better & rapid growth for any country we must focus on road condition, design of road, facilities for user & bad road network survey because there are many problem faces by residue people in their daily routine life. Some modern innovative technique and method are previously introduce to make or construct road smarter and resolve all problem likes traffic jams, accidents, injuries & delay due to bad road condition etc. In this paper we are working on those methods and techniques that previously introduce but not get so much of helpful as we accepted. So there is need of improvisation in previously techniques and methods and introduce some more techniques to get out of all problems as much as possible.

Key Words

3d Speed Breaker, Photoluminescence, Downward Breaker, Power Generation, Smart Highway.

INTRODUCTION

Smart road system, whenever we hear these word, the first thing that strike in our mind is that the road should be free from traffic, it should be free from accident, it shouldn't have any damage or trench on surface, it provide good facilities to road user, traffic flow

intensity should be good, it should have proper marking with road indicators and proper sighting of street. As we know very well the condition of Indian road, a survey (conduct by the team of NDTV India) says that in 2013, over 1, 37,000 people were killed in road accidents, that means 16 people die on Indian roads every hours or 377 people die every day in which 16 children die daily on roads accident and 25 % of accident is of two wheeler.[1] These statics was 4 year old so there is no doubt that the ratio is get increased by huge amount. Only one factor i.e accident causes that much impact lets imagine other factors occur on road and how much they cause problem to a country. Although the road getting modernize day by day but still we have limited techniques and technology to ensure road safety & smooth traffic flow in our developing country. Road safety system could have significant impact on our economic growth.

LITERATURE SURVEY

While working on this case study there are many paper had been gone through, here are some of them which describe the categories and some of the factors which are mostly responsible for the accident and traffic jams and helps to reduce their effect.

Power generation through speed breaker.

Present breakers are design in semicircular or semi oval shape in upward direction but for power generation we are designing a breaker in downward direction with long cylinder shape steel bars with specific diameter.

A breaker contain five steel bars (shaft) whose both side is joint with bears for providing relative motion to steel bar when vehicles passes over the circular shaft (steel bars) its tends to rotated on their axis of rotation due to friction between tires and circular shaft. Each shat (steel bars) is interconnected with

connecting belt for maintaining rpm (rotation per minute) throughout the breakers.

The depth depend on minimum base clearance of most used vehicles and the length is carried out by the size of tires of most used vehicles of that area with considering factor of safety, and the arrangement of shafts (steel bars) in a such way that design length and depth will appear automatically.

3D speed breakers

This concept is totally new and innovative to provide long distance illusion without any jerk to vehicles. But the effect of illusion is not long lasting for residue people, so need to be design well. Instead of replacing speed breaker with 3D painting we will reduce the height of breaker in such way that low base clearance vehicle pass through it easily with less jerk and provide 3D paint on it so that it give illusion height of breaker

When a road user is going to pass breaker they will able to visualize height of breaker and will reduce speed. Basically it's an intermediate stage of 3D painting speed breaker and normal speed breaker which give effective illusion as well as minimum jerk.

Road Marking and Indicator

Road markings are used as a means of controlling and guiding traffic. They are highly important on urban roads and intersections as they promote road safety and bring out smooth and harmonious flow of traffic along guided paths of travel. [3] In winter season, fogs are very heavy hence the visibility of road marking is very low which causes increment in traffic volume and promote chances of accident and same case appear also in night time.

ATTRIBUTE OF SMART ROAD:

The attributes with a direct influence on road design, construction and maintenance. It classify into two category are as follows-

Structural attributes:

Smart Roads are associated with structural aspects such as, although not limited to, the following

☐ Optimal environmental integration and energy efficiency

- ☐ Optimal service quality
- ☐ Economic sustainability
- ☐ Improved safety
- ☐ Coverage of externalities
- ☐ Assurance of regional cohesion
- ☐ Social commitment
- ☐ Economic contribution
- ☐ Provide alternative use of non-renewable resource
- ☐ Technology and innovation
- ☐ Proper guidance and controlling

Emotional attribute:

Smart road is also attributes emotionally associated with new concept, are as follows

- ☐ Reliability
- ☐ Safety
- ☐ Security
- ☐ Comfort
- ☐ Modernity
- ☐ Freedom

CONCLUSION

In this paper, we introduce an innovative idea or concept and methods to minimize the road accident, traffic volume and road casualties with utilizing road for electricity generation and other factor and also improvisation and give attention to pervious method and concept.

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