INTERNATIONAL JOURNAL OF PURE AND APPLIED RESEARCH IN ENGINEERING AND TECHNOLOGY

A PATH FOR HORIZING YOUR INNOVATIVE WORK

IMPLEMENTATION OF INTELLIGENT TRANSPORT SYSTEM FOR SUSTAINABLE TRAFFIC DEVELOPMENT IN AMRAVATI CITY

NEHA M. DHARMALE, VAIBHAV A. FULARI, KISHOR BAMBODE

Dept. Of Civil Engineering, DRGIT&R, Amravati

Abstract: The Intelligent Transport Systems (ITS) technologies has the potential to develop a new idea of road safety. Many ITS systems have a direct or indirect impact on road. In order to ensure that systems are deployed so as to ensure the more use to safety, it is important to carry out proper safety evaluation of these systems.

PAPER-QR CODE

Corresponding Author: MS. NEHA M. DHARMALE

Access Online On:

www.ijpret.com

How to Cite This Article:

Neha M. Dharmale, IJPRET, 2016; Volume 4 (9): 44-49

44

INTRODUCTION

SUSTAINABILITY as an important issue in development came into public focus.

The *Oxford English Dictionary*3 defines 'sustainable' as an adjective meaning 'capable of being maintained at a certain rate or level'. *Merriam-Webster Dictionary*4 defines it as 'of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged According to this definition, sustainable development is that which 'meets the needs of the present without compromising the ability of future generations to meet their own needs'. From the above definitions few points about sustainability emerge. These and other thoughts on sustainability and sustainable transportation are the subject matter of the next section.

Sustainability and sustainable transportation

The definitions of the word 'sustainable' indicate that the concept of sustainability includes the following features:

(i) processes need to be maintained (or carried on with) over a period of time, and (ii) harvesting of resources is inevitable for processes to run. It is the contention of the author that systems which remain efficient over a period of time and over space are the ones which can be maintained and hence are the only sustainable systems. Of course, the word efficient is used in a broader sense than it is generally used while describing efficiency of engineering systems. It must be accepted that engineering interventions (like infrastructure) which affect the society at large and use significant resources cannot be viewed and evaluated in isolation and must be looked at as a part of the habitat; that is, the efficiency of such systems must be defined in a more inclusive manner.

Literature Review

1. Partha Chakroborty

'**Sustainable transportation for Indian cities'** in this paper present role of intelligent transportation systems enumerates some of the ways in which application of (modern) information and communication technologies can help improve the efficiency of the transportation system and ultimately help achieve a sustainable urban transportation system.

2. G. D. Parulekar, Prof. D. B. Desai

An Overview of "Intelligent Transportation System": Transportation Management through Modern Technology- A Survey In this paper an extensive survey in the field of Vehicle and Highway System, different alternatives are analyzed to solve this problem and the concept of Intelligent Transportation System is proposed as the best solution. This work analyzes the latest trends in this area and compares the different options.

3 .**Intelligent transport system for Sustainable mobility Report , UNECE Transport Division**

in this Report developing ITS solution for the European transport for reducing congestion and Effective road transport.

4. M. Darbari , A. K. Srivastava

 '**Empirical analysis of urban traffic system of Lucknow using data modeling and capturing technique'**

This paper highlights the empirical analysis of Urban Traffic System of Lucknow and its adjacent areas. It uses various types of questionnaire design methodologies which are helpful in collecting the most relevant data for analysis. The analysis part deals with various extrapolation and interpolation Techniques of statistic to derive some concrete solution which is helpful to traffic department.

METHODOLOGY

1. Selecting study area:

The area selection depends upon where the transport system is in very poor condition or totally collapsed.

2. Data collection:

 Analyzing the traffic volumes in period of peak flows are assessed. Traffic volume counts are performed at major intersections and important links only in the period of peak flows. The traffic volume is expressed as passenger car unit per hour (PCU/h).

GADGE NAGAR	⬑	→	—	⬇	PCU
4W	97	35	40		172
3W	110	32	41		183
2W	1307	346	407		1030
SUM	1514	413	488		
PCU	882.5	246.4	292.7		
TOTAL					1385
BUS/ TRUCK	30	1	0		`93

Speed	Obs Freq	% Freq	Cumulative Frequency
20-21	3	2.29	2.29
22-23	4	3.05	5.34
26-27	7	5.34	10.68
28-29	3	2.29	12.97
30-31	8	6.1	19.07
34-35	9	6.87	25.94
38-39	14	10.68	36.62
40-41	16	12.21	48.83
46-47	18	13.74	62.57
54-55	11	8.39	70.96
64-64	17	12.97	83.93
76-77	9	6.87	90.8
94-95	12	9.16	99.96

SPEED Vs OBSERVED FREQUENCY
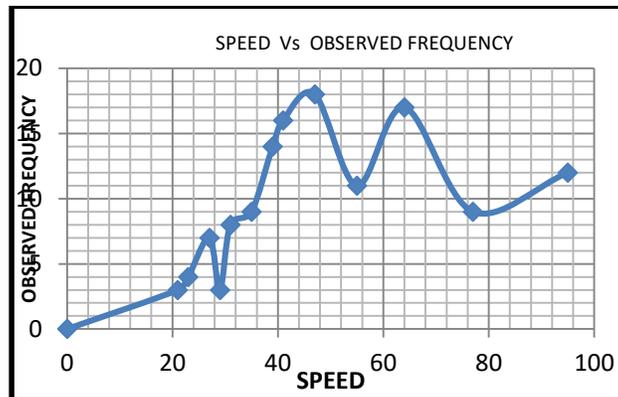
3. Road Geometry and Flow

Capacity:

Road geometry data of roads will surveyed and traffic flow capacity of those roads will be calculated and expressed as PCU/h according to Indian Roads Congress (IRC).

3. Questionnaire Survey

Public views and opinions about the problems and solutions relating to traffic movements and facilities have been gathered through questionnaire survey. Pedestrians, passengers, drivers, street hawkers, shopkeepers etc. are the main target of the questionnaire surv

4. Analyzing the data :

after collecting overall data solve the problems analytically using models and other suitable method.

5. Implementation of ITS:

After collecting and analyzing the data of road applying the different types of ITS technique for develop sustainable Transport in Amravati for making 'Smart city'

Some of the types of ITS technique summarized below:

Electronic stability control	ESC	Preventing a car skidding in a bend or when making a manoeuvre
Intelligent speed adaption	ISA	Gives information about speed limit, warns of exceeding the limit
Electronic Vehicle Identification	EVI	Location and follows a vehicle in the network can for instance be used for 100% chance of

		apprehension when speeding
Vehicle detection at intersections	--	Warns when crossing traffic is detected
Night time vision system	--	Improves night time vision, and thus timely detection of pedestrians/cyclists

CONCLUSIONS

This paper has examined the potential of ITS measures to reduce the impacts of congestion on the Amravati's road network. The measures could, if implemented, produce sustainable benefit to the Amravati's transport network. Economic growth in Amravati city will lead to further demand for motorway travel and subsequently, Productivity growth will increase the demand for transport as more people are in work and also as a result of increasing business activity. Without countervailing measures, the trend of longer commuting and other trips, in part associated with increased personal wealth will continue.

REFERENCES

1. Partha Chakroborty 'Sustainable transportation for Indian cities' *IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE) www.iosrjournals.org*

2. G.D.Parulekar1,Prof.D.B.Desai2,Prof.A.K.Gupta An Overview of "Intelligent Transportation System": Transportation Management through Modern Technology- A Survey *IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE) ISSN: 2278-1684, PP: 33-34 www.iosrjournals.org*

3. M. Darbari *a, A. K. Srivastava a, S. Medhavib Emperical analysis of urban traffic system of lucknow using data modeling and capturing technique4] Bandmann, m. & finsterer, H.(1997).

4. Safety aspects of traffic management systems. Proceedings, 4th World Congress on Intelligent Transport Systems, 21-24 October, Berlin, Deliverable 6 of HOPES. Departmen t of Traffic p lanning and Engineering, University ofLund.

5. carsten*, o.m.j., ed. (1993). Framework for Prospective Traffic Safety Analysis. World Congress on Intelligent Transport Systems in Berlin, Germany.*

6. Clowes*, D.J., (1997). What we know about ITS user needs. Proceedings, 4th World Congress on Intelligent Transport Systems, 21-24 October, Berlin, Germany. ITS America, ERTICO & VERTIS.*

Available Online at www.ijpret.com