

# A CASE STUDY ON TRAFFIC MANAGEMENT SYSTEM IN GANGTOK ( SIKKIM)

<sup>1</sup> Samjana Rai , <sup>2</sup>Sonia Sharma

<sup>1</sup>PG Research Scholar, AP Goyal Shimla University, Shimla-171009

<sup>2</sup>Assistant Professor, AP Goyal Shimla University, Shimla-171009

---

## ABSTRACT

*Traffic management system advice the command control and signaling and receive for purpose information about the current traffic system and future demand and disturbance from other system. It has been observed that at present day number of vehicle is more according to population so the Management of traffic is important in Sikkim as well as in other states. The study area consider for the preparation of traffic management system is located in Gangtok which consist comprise of 75 sq. kms including the surrounding area namely Bhusuk, Ranka, Pakyong, Assamlingzey, Rumtek, Penlong and Pangthang. Most of road in Gangtok is of two lane undivided carriageway with footpath on one side of the road and drain on the other. By taking a well-planned structure and professional approaches to traffic management installation that place the higher importance on the welfare of our employees and city workers and the public satisfaction and minimizing traffic disruption. This study results tell about how Traffic management system is managed to have a safe and smooth flow of traffic in Sikkim. A one way street is either facilitating only one-way traffic, or designed to direct vehicles to move in one direction. One-way streets typically result in a higher traffic flow as driver may avoid encountering oncoming or turn through oncoming traffic. This one way traffic was implement in Gangtok ranka taxi stan area and it is controlling one way traffic over the Gangtok area. Traffic management system is very important to every cities for safe flow of traffic and without any disturbance to nearby area and environment .*

**Keywords:** Traffic Management System, Traffic Flow, signaling and traffic disruption.

## INTRODUCTION

Traffic management is the organization, arrangement, guidance and control of both stationary and moving traffic, including pedestrians, bicyclists and all types of vehicles. Its aim is to provide for the safe, orderly and efficient movement of persons and goods, and to protect and, where possible, enhance the quality of the local environment on and adjacent to traffic facilities. Various basic traffic characteristics relating to road users, vehicles and roads, and traffic regulation and control, are discussed, including some traffic volume and traffic flow considerations relevant to traffic management. For effective traffic management, it is essential that the practitioner works from factual information. Road inventory and statistical methods, and the more common types of traffic studies, including traffic volume and composition, origin and destination, speed, travel time and delay, accidents and parking are described. "Before and after" studies, and estimation of future traffic are also covered. As a

basis for logically applying traffic management techniques it is necessary to develop a classification or hierarchy of all roads to ensure that the primary purpose of each of them is defined, agreed and understood. A functional classification of roads suitable for traffic management purposes, and a process for developing such a system is described. The objectives of local area traffic management schemes, and a systematic process for developing them are described, and the various techniques that may be used and the principles of design of traffic management devices are summarized.

## **STUDY AREA**

The study area consider for the preparation of traffic management system is located in Gangtok which consist comprise of 75 sq. kms including the surrounding area namely Bhusuk, Ranka, Pakyong, Assamlingzey, Rumtek, Penlong and Pangthang.

## **METHODOLOGY**

Developing a traffic management system in a timely manner is important for works to proceed on schedule. It is equally important for the Traffic Management to be accurate with all risks identified and controlled. Appropriate signage, plant and method of minimizing impacts on traffic flows should also be identified. By submitting an accurate and detailed application authorizing bodies such as viceroads will have a clearer understanding of the purposed work. This allows them to grant approval with minimal delays. The information contained in the detailed traffic management system assists the traffic controllers on site to accurately setup and maintained a safe working environment. Before any road closure can be implemented the work package contractor will submit the purposed road closer plan complete with scheduled of closer for review and approval. The road closer will only be implemented after the approval is obtained from the owner. The traffic management shall be implemented in a safe and accident free manner and the following majors shall be carried out without fail at site.

## **DATA (ROAD NETWORK CHARACTERISTICS)**

The total length of road network is 88.22 km with average link length of 0.39 km. For Gangtok road network consisting of national highway major road and other road .The major classification of road is given as national highway, state highway, major road and other road. Out of the total road network national highway constitutes to be about 20.6 %, State highway is about 24.6%, major road and other road together constitutes to about 54.6%.

**Table 1.1: Distribution of total Road length in Gangtok Municipal area by classification of road's**

Classification of Road's			Road length in kms	Percentage
National highway(NH 31A)	NH		18.24	20.68
State highway		SH	21.78	24.68
Major Road		MR	32.1	36.39
Other Road		OR	16.1	18.25
<b>Total</b>			<b>88.22</b>	<b>100</b>

The total road network surveyed is about 52.01 kms which is about 50% of the total Road network .The classification of road surveyed is also detailed below in.

**Table 1.2: Distribution of surveyed road length by classification of Road's.**

Classification of Road's			Road length in kms	Percentage
National highway(NH 31A)	NH		10.2	19.61
State highway		SH	8.9	17.11
Major Road		MR	19.8	38.07
Other Road		OR	13.11	25.21
<b>Total</b>			<b>52.01</b>	<b>100</b>

## TRAFFIC VOLUME CHARACTERISTICS

It is seen that about 10000 vehicle enter or leave Gangtok Municipal area on a typical working day. It is observed that the traffic at different location's varies from 670 PCU's (563 vehicle) at Assamlingzey road to 4485 PCU's (3747 vehicle)at Ranipool throughout a normal fair weather working day. The table given below shows the traffic volume counts both in terms of number of vehicle and passenger car units(PCU's)have been computed for the total daily(16 hours)traffic at various outer cordon location.

Table 1.3: Traffic volume at cordon points.

Sl.no	Location name	Grand total(Nos)	Grand total(PCUs)
1	Ranipool	3747	4485
2	Assam Lingzey	563	670
3	Seti pool	905	1084
4	Tashi view point	1457	1756
5	Rumtek	1200	1257
6	3 <sup>rd</sup> mile	712	1025
7	Rumtek-sang	660	686

## RESULT

One way streets typically result in a high traffic flow as driver may avoid encountering oncoming or turn through oncoming traffic. The one way traffic was implement in Gangtok in Ranka taxi Stan area and it is controlling one way traffic over the area.

## CONCLUSION

The study of traffic management system is in Gangtok Ranka Taxi Stan and it is work and controlling one way traffic over the Implemented area. Traffic management system is very important to every city for safe flow of traffic and without any disturbance to nearby areas and environment. Through this case study on traffic management system we came to know about how to manage and control the traffic volume.

## REFERENCE

- Traffic Engineering and transport planning , By Dr.L.R Kadiyali
- Principal of Highway engineering and traffic analysis,By Fred L.Mannering,Scott S.Washburn
- Traffic engineering and management, V. Sankar Subramaniyan(Lakshimi publications)
- Traffic engineering Design : Principal and practice by, Mika Slinn, Peter Guest, Paul Matthews,(Publisher: Arnold,1998) ISBN 0340676477, 9780340676479
- [www.thisismyindia.com/sikkim](http://www.thisismyindia.com/sikkim)
- [www.swarco.com/trafficmanagementsystem](http://www.swarco.com/trafficmanagementsystem)