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REVIEW ON ANALYSIS OF JUNCTION UNDER MIXED TRAFFIC CONDITION IN BANGALORE CITY

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ABSTRACT

With the increase in population in Bangalore, the number of vehicles have also increased. A significant effort has been made to study the traffic volume of Konanakunte cross - Jaraganahalli signal and also known as Kanakapura main road .The safe and efficient movement of people and vehicles depends on the traffic characteristics or the traffic flow. In the absence of effective traffic management of the city, the current road cannot accommodate the traffic capacity which has led to traffic congestion due to the development or growth of the city. The vehicle and pedestrian volume has increased significantly. In this work, importance is given on traffic volume and traffic volume count was carried at 3 major junctions which contributes to traffic congestion. Other than this, Pedestrian volume count and pedestrian opinion survey was also carried to know the problems faced by the pedestrians. After analyzing all the data some of the remedial measures such as widening of road, increasing the number of lanes, providing medians or separators between the opposite lanes, improving the footpath condition and providing skywalks or pedestrian crossover where the congestion is more. These are some of the remedies suggested based on the outcome of the work.

1. INTRODUCTION

Bangalore is the capital city of Karnataka and is the fifth largest city in the country and it is growing at a higher rate than other cities. Due to the growth in economic activities, it is attracting more migrants and it requires developed roads, grade separators,subways,mass transit system etc. In Bangalore on an average, 2 major and 2 minor junctions are there per kilometer of road length, due to which increase in travel time and frequent bottlenecks and breakdowns occur and also delay and congestion beyond tolerable limits. A traffic study is a detailed examination and analysis of a transportation system supported by data collection. Transportation studies serve to quantify the extent of a transportation problem or to provide an analysis of a proposed transportation solution.

So we have taken initiative to study and analyze the traffic and provide solutions i.e. study area is near Konanakunte junction which is located about 3.2km away from Jaraganahalli circle , bengaluru. It is four legged intersection with arms leading towards Jaraganahalli road side, kanakapura road side, Electronic city side, kengeri road side and it has a lot of delay and queue length during office hours with many engineering colleges in the vicinity, Konanakunte Cross has become a prime traffic junction plagued with frequent traffic gridlocks and commuters have a harrowing time crossing it. The ongoing Metro construction work has added to their woes. Moreover, the BMTC has failed to provide an adequate number of buses to the area and hence most of them are overcrowded. In addition, it has also turned into a black spot with many vendors and nearby residents illegally dumping garbage under cover of darkness.

Most engineering students in the city are familiar with Konanakunte Cross as it is one of the prime junctions of the way to colleges such as KSIT, KSSEM and Dayananda Sagar Academy of Technical Education. But with an increase in the number of colleges, long traffic snarls and deteriorating road conditions, commuting has now become a nightmare.

“There are many black spots in Uttarahalli and at the junction of Konanakunte Cross, where in the evening one can see an army of vendors. The traffic becomes unmanageable by evening," said Alok Bharti, a businessman who has been residing in the area since 2010. When Deccan Chronicle visited the spot, Bharti said that since a lot of residents are on vacation and the colleges are closed, one can see a clear street, otherwise it Is riddled with gridlocks. Hundreds of vehicles pass by Konanakunte junction since the area connects to Kanakapura, which also is a hub of engineering colleges, and the ongoing metro rail construction is also affecting traffic flow.

2. OVERVIEW

Traffic congestion in urban road and freeway networks leads to a strong degradation of the network infrastructure and accordingly reduced throughput which can be countered via suitable control measures and strategies. After illustrating the main reasons for infrastructure deterioration due to traffic congestion, a concise overview of proposed and

implemented control strategies is provided for three areas: urban road networks, freeway networks and route guidance. The paper concludes with a brief discussion of future needs in this important technical area.

The survey would comprise primarily of questions that would help to improve the understanding of decisions that travelers make when traveling to the Konanakunte signal- Jaraganahalli signal

3. LITERATURE REVIEW

Analysis of Junction and Road User Traffic Data, to reduce the Congestion at Tin Factory Junction AKARSH 2019.

- Proper bus stops should be provided, So that the buses will go and stop there, by allowing the other vehicles to move easily in the required direction**.**

A Study on Urban Road Widening Project based on Prediction of Level of Service (LOS) – A Case Study in Bannerghatta Road Bangalore 2015

- The present investigation concludes that the Gottigere to Koli Farm Gate of Bannerghatta road has a LOS of D which means the vehicle approaches unstable flow.
- Koli Farm Gate to Gottigere stretch has also a LOS of „D". Approaching unstable flow, affected by changes in operating conditions

Proposal for signal free junction at KUNDALAHALLI GATE JUNCTION 2016

- Proposal-A is having 33.76% increase in capacity, whereas proposal-B has 14.53% increase in capacity for existing traffic conditions. Hence Proposal-A has a very good level of service compared to Proposal-B.
- Proposal-A has a 3.5mt width of 4-lane road bidirectional; hence, the capacity of the road is increased. For proposal-A, requires more land acquisition since it requires wider roads, whereas proposal B requires less land acquisition. Hence Proposal-A is more beneficial in construction and land acquisition.

COST BENEFIT ANALYSIS FOR SIGNAL FREE TRAFFIC AT INTERSECTION: A CASE STUDY 2016

- Junction improvement, it is feasible to provide flyover, underpass and the available area permits its construction.
- According to the Benefit-Cost ratio analysis, the cost forSignal (Congestion) Free Vishrambagh junction is recovered within 9 years.

Study of Road Traffic & Management: A Case Study at Katraj and Nal Stop Intersections In Pune City 2017

- Increasing the Intelligent Transport System by redesigning the signal system at the two intersections to accommodate the increasing traffic.
- Traffic claiming can be done at the Katraj intersection by providing a Y-flyover, whose one arm shall be for traffic coming from Pune and going to Katraj.

Study of Traffic Volume and its Safety Measurement at Dadabari Circle, Career Point University, Kota 2018

§It can be concluded that vehicle composition most of the vehicles in the traffic stream were motorcycles. Percentage of two wheelers is higher than other vehicles. After volume study as we observed that more traffic is in the peak hours i.e. in morning and evening

4. OVERVIEW

- To identify the various proposals to reduce traffic
- To provide best proposal at reduced land acquisition
- To conduct the classified volume studies and turning movements
- To conduct speed studies

5. METHODOLOGY

- Manual method:
  - Number of observers
  - Equipment needed
  - Field data sheets and summary sheet
- Manual counts at intersection method:

The field data sheets can be modified to suit the particular requirements of any intersection.

- Road-side interview Survey:
  - Traffic modeling

- Environmental impact assessments
- Junction improvement schemes

➢ Parking space Inventory:

- Parking prohibited fully or partially
- Pedestrian crossing
- Parking in marked bays , Parallel parking
- Parking capacity
- Metered parking
- Parking in marked bays,angle parking
- Parking without Marked bays
- Bus Stop

➢ Questionnaire Type Parking Usage Survey:

- Address of origin of the trip
- Address of destination of the trip
- Trip purpose
- Time of arrival at the parking place
- Time of departure from parking place
- Type of vehicle

➢ Delay Studies: A speed-delay study shows overall speed and moving speeds between specified locations. It shows delay times, locations and total delay times. It can show the cause, frequency and location of delay. A study made during peak hours and nonpeak hours is good for a comparison study.

6. CONCLUSION

The improvement of town traffic conditions is largely dependent on the modern ways of traffic management and control. Advanced traffic signal controllers and control systems contribute to the improvement of the urban traffic problem. The intelligent traffic signal controller that is introduced in this project with powerful functions and hardware interface. Good quality social benefit has been made through the application of the intelligent traffic controller in practice, and the application result shows that the intelligent traffic signal controller will improve

7. REFERENCES

[1] MAR 2019 | IRE Journals | Volume 2 Issue 9 | ISSN: 2456-8880 Analysis of Junction and Road User Traffic Data, to reduce the Congestion at Tin Factory Junction AKARSH HARSHA GOWDA B Dept. of Civil Engineering, Nagarjuna College Is Engineering And Technology

[2] International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181 IJERTV4IS060439 www.ijert.org (This work is licensed under a Creative Commons Attribution 4.0 International License.)Vol. 4 Issue 06, June-2015

[3] A Study on Urban Road Widening Project based on Prediction of Level of Service (LOS) – A Case Study in Bannerghatta Road Bangalore.Britten singh konthoujam Dept, of civil engineering DSCE, Bengaluru 2016

[4] International Journal of Research in Engineering and Technology eISSN: 2319-1163 | pISSN: 2321-7308 PROPOSAL FOR A SIGNAL FREE JUNCTION AT KUNDALAHALLI GATE JUNCTION 2017

[5] Associate Professor, Department of Civil Engineering , Sir M.VIT Bangalore IJRET: International Journal of Research in Engineering and Technology eISSN 2018

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