iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 5 **Issue:** III **Month of publication:** March 2017

DOI: http://doi.org/10.22214/ijraset.2017.3162

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Volume 5 Issue III, March 2017
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

Traffic Analysis of a Twin City

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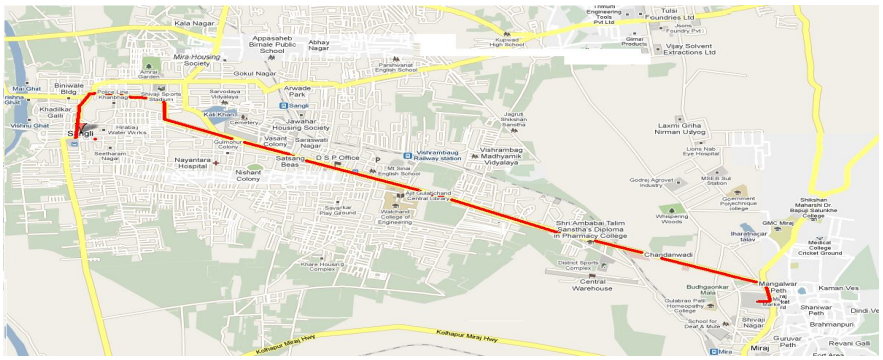
Abstract: ***Except in a few cases, buses operate in the general traffic system. Sometimes they have the benefit of bus lanes and other priorities to offset the effect of traffic congestion, but unless they are completely segregated from general traffic, they are subjected to congestion. Bus stops constitute one potential interruption to smooth traffic flow. As this could easily affect buses, we need to see how we should examine bus stops for their impact on bus operations in the first instance. For areas where rush of passenger is more and congested areas we provide proper parking. The data above collected can be uploaded on internet and used for GPS. This public transport get popularized and reduce the dependability over private vehicles. Reschedule can develop on the basis of bus departure time. Traffic congestion is reduced due to use of public transport. Data is useful for fixing main intermediate stops and rescheduling frequency of buses. Useful for other purpose like binding of roads, parking etc. From above data, we can come to know exact passenger flow over that route with different span of time with respect to daily hourly and weekly basis***

Keywords: Passenger Flow, Traffic, Peak Hours, Off Peak Hour, Traffic Flow Analysis

I. INTRODUCTION

The Sangli-Miraj-Kupwad Municipal Corporation (S-M-K CMC) is located between latitude 16-15` North and longitude 74 – 36` East in the Western Maharashtra region and is a District Head Quarter. The city has a flat terrain with general slope towards Krishna River flowing along the West side of the city. The average level of the city is about 549 MSL. The average annual rainfall is 600 mm. Sangli has a long pre-independence history dating back to 1799 as a capital of a separate State. The Sangli Municipality was established in the year 1876 with a population of about 4,500. The population of Sangli grew to 1.15 lakhs in 1971. With population growth and merging of 3 towns of Sangli, Miraj and Kupwad, the S-M-K City Municipal Corporation was established in 1998. The area of S-M-K CMC is 118.18 sq. km. and the population was 5.56 lakhs in 2011.



II. METHODOLOGY

Here, the activities which are taken grouped to prepare the detailed project report as shown in fig 3.1.The data collected from various surveys including secondary sources have been collected, compiled and analyzed.The case study is carried out on predefined proposed route. In this case, traffic data collected from the field and then analysis is done to find out passenger flow in between the section of predetermined route with traffic survey for 12 hrs.(8AM To 8PM)

III. SELECTION OF STUDY AREA

As per detail data from sangli city to miraj city 12 bus stops are there which currently used by public transport and have greater traffic volume viz. Sangli Stand,ShivajiMandai, City Post, Congress Bhavan, Ram Mandir , Market Yard, guest house, Vishrambahg, Vijaynagar, Mission Hospital, Darga And Miraj Stand. Several of the stops identified as main location where maximum passenger flow is there.

Volume 5 Issue III, March 2017
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A. Ram Mandir
B. Market yard
C. Visharambhag
D. Vijaynagar
E. Mission Hospital

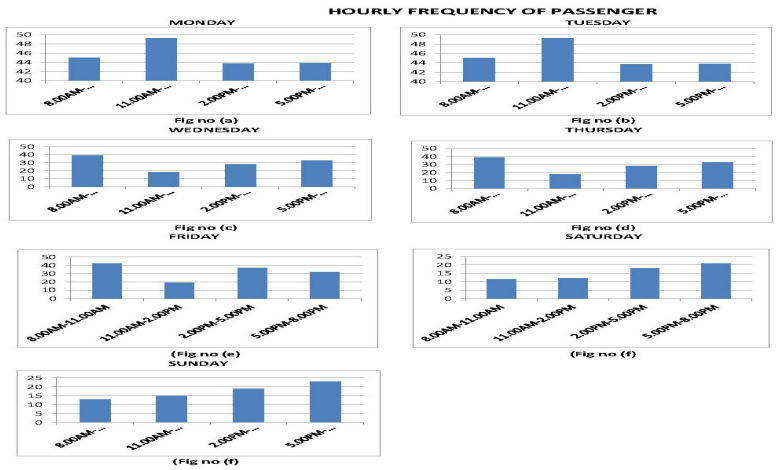
PHASE	FROM	TO	ROUTE LENGTH
1	Sangli Stand	Ram Mandir	3km
2	Ram Mandir	Market yard	1.5 Km
3	Market yard	vishrambagh	2 Km
4	Vishrambagh	vijaynagar	2.5 Km
5	Vijaynagar	Mission hospital	5km

IV. PROBLEM STATEMENT

Sangli&Miraj cities were combined together and were recognized as a twin cityDue to majority of the buses having their terminal at Central Bus Stand, large number of interchange trips coverage at the CBS. It is observed that some of the junction experiences traffic jam and needs an immediate attention in terms of engineering interventions. There is lack of pedestrian's facilities at most of the major junctions that need to be looked into to avoid pedestrian vehicular conflicts at junction. As a result, the vehicles are generally found to be parked on road causing traffic congestion and conflict points. This reduces the speed of travel and reduces the level of service of the roads this is unorganized and causes a lot of problems to the citizens as well as the operators.

V. DATA ANALYSIS AND RESULT

In order to predict traffic flow volumes that can be expected on the road. Network during specific periods, cognizance should be taken of the fact that traffic volumes changes considerably at each point in time. There are three cyclical variations that are of particular interest as Hourly pattern, Daily Pattern and Weekly Pattern.



A. Hourly Frequency Of Passengers

1) The fig.5.1 (a)& (b) Shows, the frequency of passengers for the day Monday & Tuesday is similar .The maximum frequency of passengers is at 11 A.M.To2.0 P.M. & minimum frequency is at 2.0 P.M. To 5.0 P.M

2) The fig.5.1 (c) & (d)Shows, the frequency of passenger for the day Wednesday &Thursday is similar. The maximum frequency of passengers is at 8.0 A.M To 11 A.M. Minimum frequency is at 11A.M. To 2.0 P.M.

3) The fig.5.1(e)Shows, the frequency of passengers for the day Friday is maximum at 8.0A.M. To 11A.M. & minimum at 11A.M

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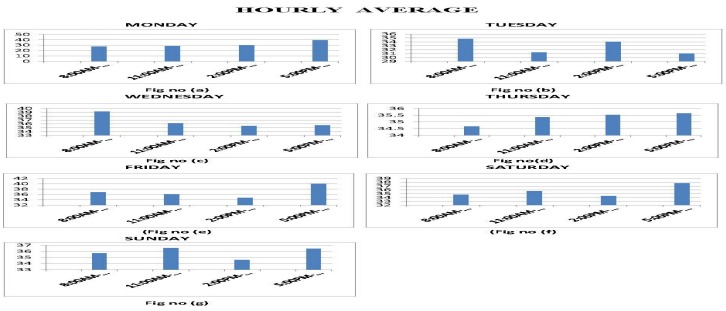
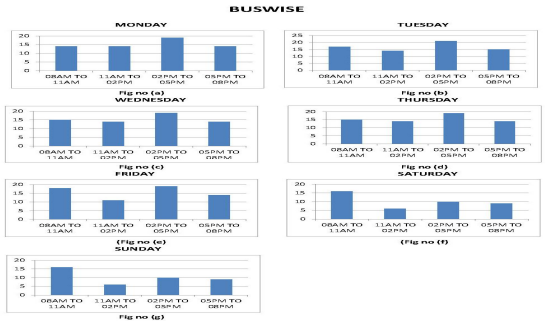
To 2.0P.M.

4) The fig.5.1 (f) shows that, the frequency of passenger for the Saturday is maximum at 5.0P.M. To 8.0 P.M. Minimum at 8.0A.M. To 11A.M.
5) The fig.5.1(g)Shows that, the frequency of passengers for the day Sunday is maximum at5.0P.M. to 8.0P.M.&minimum at 8.0A.M To 11A.M



B. Hourly Average Travel Time

1) The fig.5.2 (a) Shows , the bus takes maximum time to reach at destination is at 5.0 P.M To 8.0 P.M.& minimum is 8.0 AM To 11.0 AM
2) The fig.5.2 (b) Shows, the bus takes maximum time to reach at 8.0 A.M. To 11 A.M. Destination is. & minimum is at 5.0 P.M To 8.0P.M.
3) The fig.5.2 (c) Shows, the bus takes maximum time to reach at 8.0 A.M. To 11 A.M. destination is at. & minimum is at 2.0P.M. To 5.0A.M.
4) The fig.5.2 (d) shows, the bus takes maximum time to reach at destination is at 5.0 P.M To 8.0 P.M & minimum is at 8.0 A.M. To 11 A.M.
5) The fig.5.2 (e) Shows, the bus takes maximum time to reach at destination is at 5.0 P.M to 8.0 P.M. & minimum is at 2.0 P.M. To 5.0 P.M.
6) The fig.5.2 (f) Shows, the bus takes maximum time to reach at destination is at 5.0 P.M To 8.0 P.M. & minimum is at 2.0 P.M. To 5.0 P.M.
7) The fig.5.2 (e) Shows, the bus takes maximum time to reach at destination is at 11 A.M To 2.0 P.M. & minimum is at 2.0 P.M. To 5.0 P.M.



C. Buswise Average Travel Time

1) The fig.5.3(a) Showsthatthe number of buses is maximum at 2.0P.M. To 5.0 P.M. & minimum at 5.0 P.M. To 8.0 P.M.
2) The fig.5.3(b)Showsthat the number of buses is maximum at 2.0P.M. To 5.0 P.M. & minimum at 11.0 A.M. To 2.0 P.M.
3) The fig.5.3(c), d) & (e) Shows that the number of buses is maximum at 2.0P.M. To 5.0 P.M. & minimum at 11.0 A.M. To 2.0 P.M.
4) The fig.5.3 (f)& (g)Shows that the number of buses is maximum at 8.0A.M. To 2.0 P.M. & minimum at 11.0 P.M. To 2.0 P.M.

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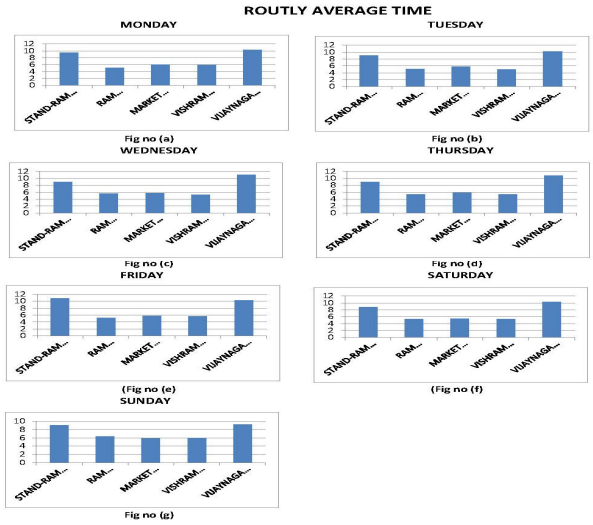
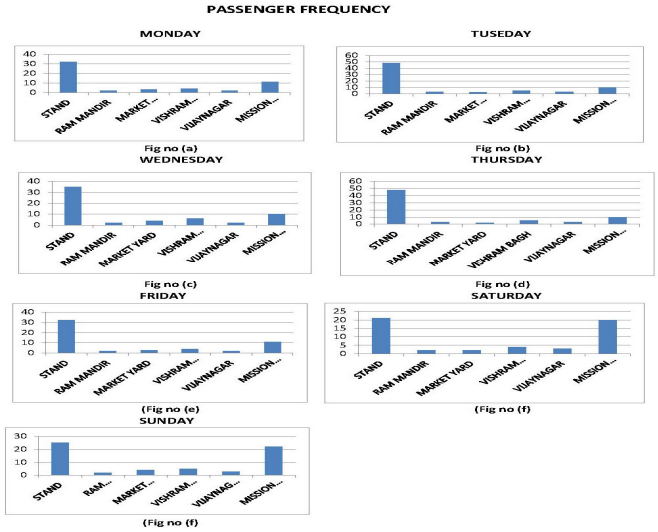


D. Rouwise Average Travel Time

1) The maximum average time for all days is on Stand to Ram Mandir & Vijaynagar to Mission Hospital.

2) The minimum average time for all days is on Stand to Ram Mandir& Market Yard



E. Stopwise Flow Of Passengers

1) The frequency of passengers is maximumat Stand for all days.

2) The fig.5.5(a)Showsthat, the frequency of passengers is minimumat Vijaynagar& Ram Mandir.

3) The fig.5.5 (b)showsthat, the frequency of passengers is minimum at Market Yard.

4) The fig.5.5(c)Showsthat, the frequency of passengers is minimum at Vijaynagar& Ram Mandir.

5) The fig.5.5(d) Showsthat, the frequency of passengers is minimum at Market Yard.

6) The fig.5.5(e) Showsthat, the frequency of passengers is minimum at Vijaynagar& Ram Mandir.

7) The fig.5.5 (f) Showsthat, the frequency of passengers is minimum at Ram Mandir.

8) The fig.5.5 (g) showsthat, the frequency of passengers is minimum at Ram Mandir.

VI. CONCLUSION

Here,the data collected from various surveys including secondary sources have been collected, compiled and analyzed.The case study is carried out on predefined proposed route. In this case, passenger flow data collected from the field and then analysis is done

to find out flow of passenger for various span of time, travel time frequency of buses with respect to weekly, daily and hourly basis.

A. With the Help of above Data Collection and Analysis we can use this Data in Following Manner

1) Here we have identified various locations where rush of passenger is more and their peak hours and off peak hours of travelling.

2) From the above analysis we have studied frequency of passengers. We can re-schedule number of buses for that particular area when frequency of passengers is more, buses provided should be more on that particular day and vice versa. For e.g. : From passenger flow analysis we came to know that flow of passengers is more during Monday –Friday instead of whole week.

3) At the location of Vishrambagh for Monday-Friday 8.00 A.M. to 11.00 A.M. number of buses should be re-scheduled in such a way that they travel from stand to Vishrambaghand travel back from Vishrambagh to stand. Data is useful for fixing main intermediate stops and rescheduling frequency of buses

4) Reschedule can be developed on the basis of bus travel time, as well as passenger flow so that more number of people can use public transport instead of private vehicles.

5) From the above analysis we came to know exact passenger flow over that route for each of the stop with different span of time with respect to daily hourly and weekly basis.

6) The data above collected can be uploaded on internet and can be used for GPS.

VII. ACKNOWLEDGEMENT

The author thankfully acknowledge to Asst. Prof. Chetan Patil, Dr.S.M.Shiyekar (HOD), Sanjay Ghodawat Institute, Atigre, Kolhapur, Maharashtra.

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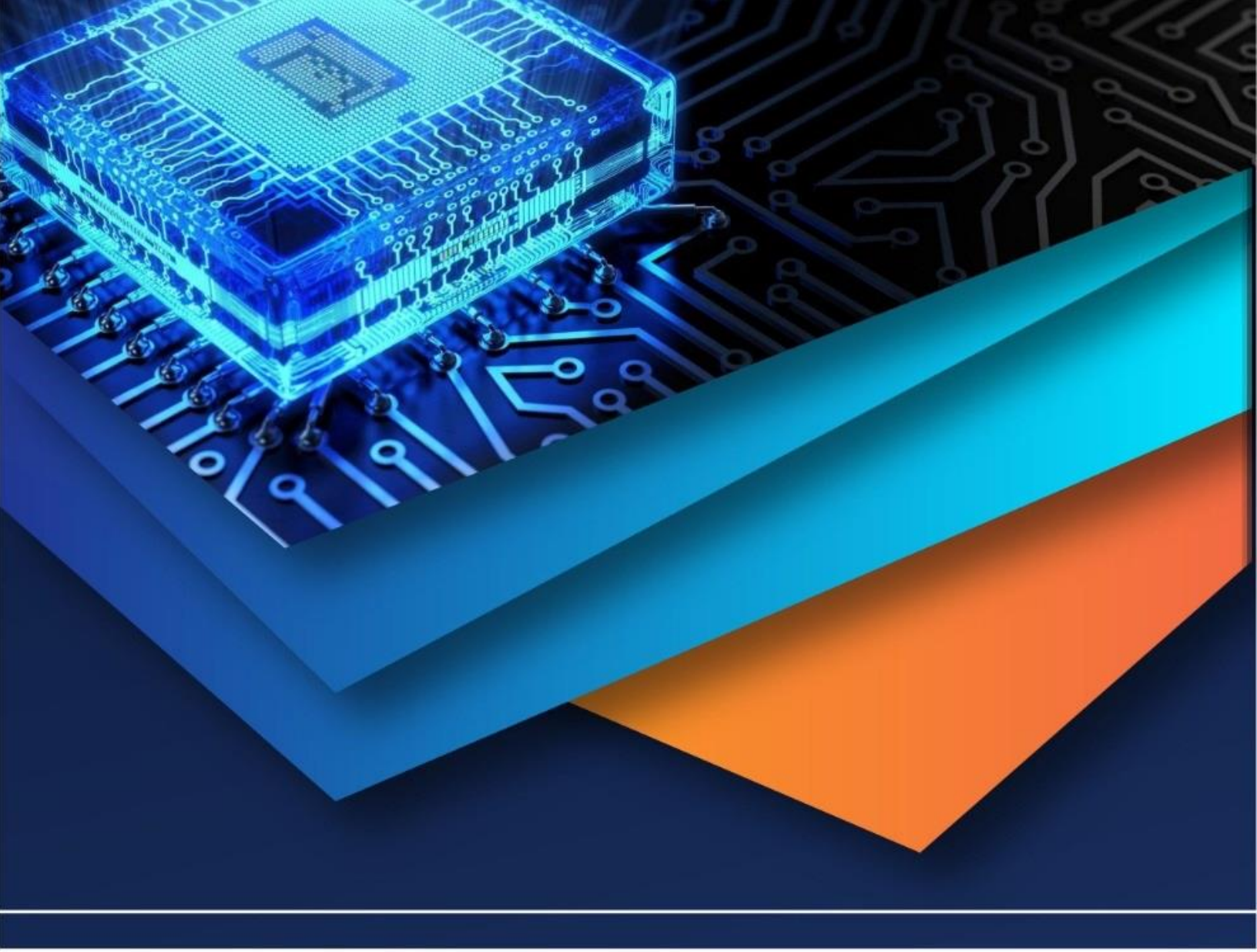

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