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Suggestions of the Traffic System for the Various Places on Basis of SATIS Project Thane

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Abstract: Station Area Traffic Improvement Scheme (SATIS) is a World Bank funded station area traffic and Thane Municipal Corporation. This project is executed under Mumbai Urban Transport Project road component. The project aims at easing commuter and pedestrian movement by building skywalks, foot over bridges, separate parking areas for auto-rickshaws and taxis at four crowded suburban railway stations Borivali, Dadar, Chembur and Ghatkopar implement by MMRDA and Thane SATIS is implemented by Thane Municipal Corporation. On the basis of SATIS project set up in Thane, we are going to suggest some improvements in the existing traffic systems in Sangli, specifically in ST Stand area, which will lead to the betterment of traffic volume management.

Keywords—SATIS, Population, Traffic Analysis, Sangli & Thane City.

I. INTRODUCTION

The term “S.M.A.R.T. Sangli” stands for “System of Multi-Aspect Rapid Transit, Sangli”. This project relates with the decongestion of the traffic in the three main areas of Sangli city, namely ST Stand, Vishrambaug Chowk and College Corner.

Under this project, MMRDA built city's first skywalk on eastern side of Bandra Railway Station. It is 1.3 km long & four meter wide skywalk built at cost of ₹130 million. The skywalk is on the eastern side of Bandra railway station and it goes till Bandra Kurla Complex.

Under this project Thane station has a completely elevated deck for TMT Buses and an elevated concourse for suburban ticket booking office. Which is connected to existing foot over bridges of Thane railway station. It is also has two skywalks on the south end and north end of the station. These foot over bridges are aligned with the elevated decks so that commuters can directly enter and exit through elevated decks and also directly connected to railway stations foot over bridges. This skywalk has been built at a cost of ₹80 million.

Likewise, Sangli is one of the fastest growing cities of India. Its population has seen the hike of 200000 from 2001 to 2011. With the increase in population, the city has been facing the severe traffic problems. The areas like ST Stand, Vishrambaug, Maruti Road, Harbhat Road, GanpatiPeth, Madhav Nagar Road have seen the severe traffic congestion. Hence, the need of improvement of traffic system arises.

On the basis of SATIS project set up in Thane, we are going to suggest some improvements in the existing traffic systems in Sangli, specifically in ST Stand area, which will lead to the betterment of traffic volume management.

A. Necessities of the Project

Congested Stand Area

Haphazard and crisscross Movement of Vehicles and Pedestrians

No safe passage for pedestrians.

No proper and adequate pickup points for Autos

Queuing of Buses because of Space Constraint in front of Stand

Improperly Planned two Wheeler Parking

No Streamline Movement of Traffic

Inadequacy of space for traffic movement

Demands for Additional Space as well as Segregation of traffic

Need for Planning for Effective Traffic Dispersal

II. OUTCOMES OF THE PROJECT

A. Improvements in Travel Speed

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Traffic flows in Thane Railway Station Area has been streamlined. The crisscross movements of different IPT (intermediate Passenger Transport) modes of traffic have been eliminated by grade separation. The travel time of buses from Thane Station to Talaopali (about 1 km from Thane Station) has reduced to about two minutes as compared to earlier 15-20 minutes.

B. Reduction in Accidents

- 1) *Pedestrian Traffic:* With the provisions of two skywalks, the pedestrian traffic has been provided guarded and exclusively path. Hence, the vulnerability of pedestrians to accidents with moving vehicular traffic has been minimized.
- 2) *Vehicular Traffic:* The vehicular traffic flow has been streamlined by defining corridors and eliminating crisscross movements. Hence, the possibility of accidents has also been minimized.

C. Reduction in Air and Noise Pollution

With the tremendous traffic flow and frequent traffic jams and idling of vehicle in Railway Station area, the pollution levels have been rising alarmingly. With the implementation of projects, the traffic jams and idling of vehicles in the area is avoided. This will help in bringing down the green house emission and air and noise pollution levels in the area.

D. Reduction in Energy Consumption

There will be high savings in energy consumption due to elimination of frequent, traffic jams and idling of vehicles in Railways Station are due to implementation of scheme.

E. Other Benefits

Dedicated Bus corridor will help in encouraging mass transport of passengers from station to rest of city. Thereby encouraging economic mode of public transport by bus. This is the need of the city and the country.

Before the implementation of scheme, there had been no earmarked space for emergency vehicles and private in the station area. Now, proper space for emergency vehicles has been earmarked. The private have been provided exclusive lane for drop down and pick-ups.

The projects is pro-economical, pro- environmental and pro-poor and conforms to National Urban Transport policy-2006.

This is the first of its kind of project implemented outside major metropolitan Railway Station area n country. This will prove to be a pilot project for many other busy stations. All the transport departments in the country will have role model for observing its benefits and efficiency before the model will be taken up elsewhere. It has been one the most challenging projects undertaken by the Thane Municipal Corporation.

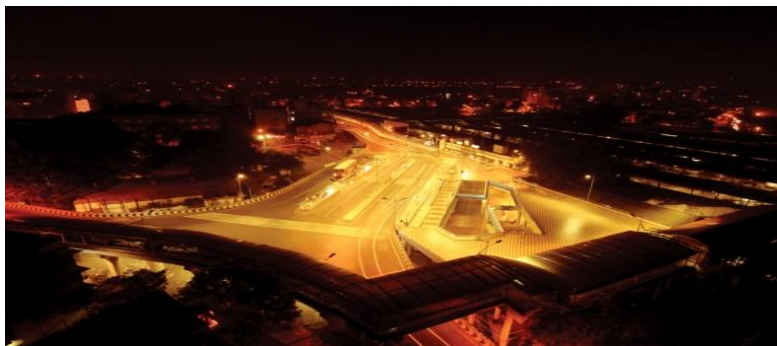


Figure 1.1: SATIS Project: Night View

III. METHODOLOGY – SURVEY, ANALYSIS AND FORECAST OF TRAFFIC

A. Survey at Thane

As an essential part of primary study we decided to visit the Thane site which was required to be surveyed. We observed the whole area of SATIS (Station Area Traffic Improvement Scheme) for further study. Under this observation we studied about the dedicated lanes provided for buses, parking system for various vehicles and FOB provided for the use of pedestrians. The survey was carried for the peak hours of day from 8:00am to 11:00am and from 5:00pm to 8:00pm. Pedestrians using FOB, passengers using middle

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deck for the use of bus, buses passing through different dedicated lanes were counted. The width of FOB was also measured.

B. Visit to Thane Municipal Corporation

For the collection of detailed information about the SATIS project and to get the idea about the design procedure of the project, we visited Thane Municipal Corporation. We met Project Executive Shri. S. M. Patil. We gave him idea about our project regarding the suggestions for Sangli ST Stand which is based upon SATIS. He gave us the information about SATIS and also gave us data regarding the project.

C. Survey at Sangli ST Stand

After the survey and collection of information of SATIS we proceeded with the survey of Sangli Stand. This survey included the counting of buses and counting of other vehicles for different roads. The counting was carried at peak hours from 9:00am to 11:00am and from 5:00pm to 8:00pm. Width of roads approaching bus stand were measured.

D. Comparative Study of Survey at Thane and Sangli Stand

To give the suggestions for the provision of easiness for the Sangli Stand, the data collected from Thane and Sangli Stand were studied. From this comparative study of the collection of data, the relative density of traffic volume and the required width of lanes were found out. From this the final required data for the preparation of model were finalized.

E. Preparation of Miniature Model

To get the visual idea about the proposed model and to take into account about the flexibility required for the model, a rough miniature model was prepared. This model was not upto the dimension. The column size, column position and gradient of lane were not upto the scale. This model we named as S.M.A.R.T. (System of Multi Aspect Rapid transit, Sangli).

F. Questionnaires Based Response from People

To take into account about the views of people regarding the proposed suggestions for the Sangli Stand, some questionnaires were prepared. These questions included the current traffic volume, need for the improvement in current situation, information about SATIS (Thane) and information about the proposed model. Based on the response of the people final model preparation was started.

G. Preparation of Final Model

With the collected data and the information final model was prepared. This final model is of scale 1:200. The model shows all the detailing of the proposed plan. We are going to present proposal of this project to Sangli-Miraj-Kupwad Municipal Corporation as well as to Ministry of Public Works (Public Undertakings), Government of Maharashtra and we will request them to consider this proposal.

IV. DESIGN OF TRAFFIC MODEL FOR SANGLI ST STAND AREA

A. Finalization of Routes

Vehicles from Shivaji Mandai to
Civil Hospital Road will pass through LEVEL-ZERO
ST Stand (Buses) will enter from Zulelal Chowk Gate
Kolhapur will pass through LEVEL-ZERO towards Patrakar Nagar
Shivaji Statue (U-turn) will pass through LEVEL-ONE
Miraj (City Buses) will take U-turn on LEVEL-ONE without entering ST stand

B. Vehicles from Civil Hospital Road to

Kolhapur will pass through LEVEL-ZERO towards Patrakar Nagar
Shivaji Statue will through LEVEL-ONE
Towards ST stand (Buses) will enter through Zulelal Chowk Gate

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C. Vehicles from Kolhapur to

Civil Hospital Road & Shivaji Statue will directly pass over the flyover (LEVEL-TWO)

Haripur Road, Maruti Road and ST sand (buses also) will pass over a small flyover and pass through LEVEL-ZERO

D. Suggestions for Vishrambag Chowk

Flyover along Sangli-Miraj road accomodating the lanes of both directions

Foot Over Bridge in square shape providing exit to each corner of junction

Rail Over Bridge across the railway crossing along Kupwad Road

Merger of service roads in main road for 100m length on each side of junction along Sangli-Miraj road

Foot Over Bridge in front of Walchand College gate

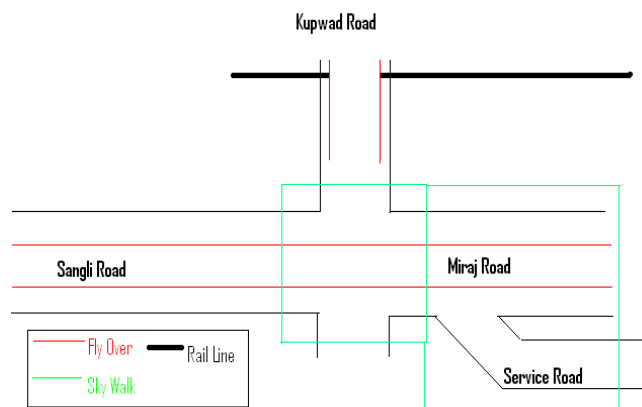


Fig.3: Proposed System for Vishrambag Chowk

E. Suggestions for College Corner

Widening of Apta Police Station Road

Increase in diameter of traffic island of College Corner

Circular FOB providing exits to each corner of junction and access to KWC College Campus

Provision of automated signalling system

Provision of multi-level parking system on Madhav Nagar Road

Provision of dividers on High School road and Madhav Nagar Road

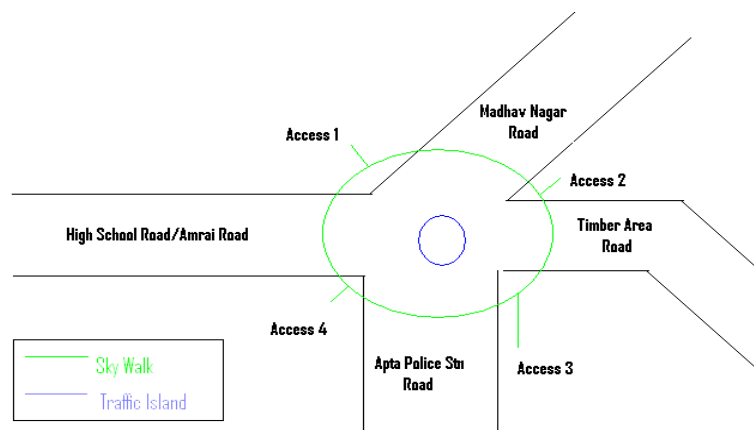


Fig.4: Proposed System for College Corner

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V. SUGGESTIONS OF DIVERSIONS OF ROUTES FOR HEAVY VEHICLES

Sangli is an important city of Maharashtra from the agricultural, industrial and commercial point of view. Agricultural products from Sangli are marketed in other parts of the country and mechanical and other industrial products from other industrial parts are imported in Sangli.

Thus the trade between Sangli and other cities like Mumbai, Pune, Kolhapur, Ratnagiri, Solapur, Bijapur, Belgaum, etc. is on the considerable scale. This trade is generally carried out via three main roads passing through Sangli namely Ratnagiri-Nagpur Highway, Karad-Bijapur State Highway and Sangli-Tasgaon State Highway.

Consequently, the heavy transportation through Sangli city is considerable and it interrupts the urban transport system of Sangli. Hence, our project suggests the diversions of heavy traffic for some routes. The suggestions are as described in Table No. 1

Table No.1: Proposed Route Diversions

Origin-Destination	Route
Miraj-Jaysingpur	Hotel Harish Chowk-100ft Road/Dhamani Road
Miraj-Pune	Market Yard-Madhav Nagar bridge-Sangli Wadi
Pune-Miraj	Sangli Wadi-Mavhav Nagar bridge-Market Yard
Pune-Jaysingpur	Sangli Wadi-Madhav Nagar –College Corner-Ram Mandir Corner-Civil Hosp. Chowk-100ft Road
Jaysingpur-Pune	100fr Road-Civil Hosp. Chowk- Ram Mandir Corner-Madhav Nagar- Sangli Wadi
Jaysingpur-Miraj	100ft Road/Dhamani Road-Hotel Harish Chowk

VI. CONCLUSIONS

If the proposed model and other suggestions are implemented by sangli-miraj-Kupwad Municipal Corporation and Ministry of Public Works(Public Undertakings); a huge positive transformation in traffic system of Sangli city will take place.

Though the estimated construction cost seems to be very high, it will impart positive effects in reduction and regulation of peak hour traffic of Sangli city estimated for year 2035.

The project when implemented will bring about the following changes:

Congestion free traffic movement in the area of Sangli ST Stand, Vishrambag Chowk and College Corner

Signal less transit system in Sangli ST stand area

Easy pedestrian movement at all the three locations mentioned above Specialized lanes for Sangli-Miraj city buses, auto-rikshaw and other vehicles on the proposed “S.M.A.R.T. Sangli” traffic model

Separate elevated lane for through-vehicles at “S.M.A.R.T. Sangli” traffic model

Hawkers-free and encroachment free road

Dome over middle level having solar panels to enable solar street light system on “S.M.A.R.T. Sangli” traffic model

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