

CORRIDOR MANAGEMENT USING SERVICE LEVEL BENCHMARKS (LB NAGAR RING ROAD TO UPPAL RING ROAD)

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Abstract- The present transportation infrastructure is inadequate to cater to the increasing traffic. Improper design in junction, inadequate carriageway width and irregular parking in the carriageway are reducing the flow rate in the corridors. In order to alleviate all these problems corridor management is necessary. Performance monitoring of the corridor from one time to time will alter the traffic managers to know the deficiencies in the present traffic. The ultimate aim of any corridor management study is to improve the mobility of the corridor within the available facilities using the corridor management strategies.

The present study aims to obtain the overall level of service of the city's urban transport. The service level benchmarking issued by Ministry of Urban Transport is updated with new parameters which influence the quality of urban transport. The study area LB Nagar ring road to Uppal ring road is addressed with management strategies to improve performance of corridors.

Keywords - Corridor Management, service level benchmarks, urban transport.

I. Introduction

Traffic congestion and safety issues continue to be increasing concerns to both the traveling public and transportation agencies. Many of the nation's urban corridors experience a considerable amount of congestion every day.

The growth in population and travel needs will continue and the challenges are for the growth to be handled in ways that don't make travel time considerations an undue burden. While congestion in traffic, transit, or other forms will not be eliminated, there are many improvements that can make congestion easier to deal with. Corridor Management deals with some of the way that are used to reduce congestion and improve the present day travel on transport corridor. Because of these challenges, Corridors Management Planning (CMP) and related concepts have been proposed.

CMP aims to find solutions to corridor-level mobility and congestion problems via both planning and operational analyses by defining how a travel corridor is performing, understands why it is performing that way, evaluating potential, (current and future) improvement strategies to address problems within the context of the existing short-term, and long-range planning vision.

II. Need for the study

To address the urban transport challenges faced in India, corridor management techniques can be applied on the urban corridor. The ultimate aim of any corridor

management study is to improve the mobility of the corridor within the available facilities using the corridor management strategies are suggested which addresses the current problem.

III. Literature Review

British Columbia Ministry of Transportation (2004) proposed specification on the strategies of management in their country to maintain the corridors in winter to make 100% route availability to make their roads safer. Public relations are considered and see that they have nil complaint from them. The main areas that are taken care are safety, lighting, signage, electrical System access control, line marking and vegetation control.

David et al. (2006) initiated a study on strategic approach to corridor management by looking into the safe, greater, responsive, sustainable transportation system. The issues in New Zealand are urban growth, high level of car ownership, land values, low car occupancy. The suggested measures are buses First program on all arterial corridors, safety and personal security improvement by providing formal pedestrian /cycle facilities at school zones, access and mobility improvements by bus priority lanes at intersection and bays, promoting public health by Street side planting wherever possible.

Edwin et al. (2008) proposed management measures for Texas as a part of Guidelines of corridor management, US department of Transportation, which is facing mobility, capacity and safety issues. Land use plans and development trends traffic volumes were also discussed. Part of corridor management is management of the transportation facility to optimize operations. Optimization from an efficiency

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perspective means matching capacity to demand, minimizing delays, ideally all major roadway facilities should be included in corridor operations plans. These plans provide for coordinated operations through coordinated and optimized traffic signal operation (signals retimed maintenance program, and regular monitoring and evaluation of operations), incident management (detection and response), and optimized capacity at critical (high through or turn volume locations).

IV. Data Collection

The services undertaking for the measurement of level of service of each of the benchmark identified are as follows. The specific surveys are carried out on key public transport corridors, major roads, and arterial roads and aggregated to give the overall level of service of the city. This also includes secondary data from different secondary sources. They are:

Primary surveys

- ✓ Journey Speeds and Level of comfort of public transport
- ✓ Speeds of private transport
- ✓ Waiting time for passengers at bus stops
- ✓ Physical inventory data
- ✓ Parking spaces count
- ✓ Waiting time for pedestrians at signalized intersections

Secondary data

- ✓ Pollution level data
- ✓ Accident data from police records
- ✓ Public transport details
- ✓ Land use and population data
- ✓ Other miscellaneous data

V. Study Methodology

The study methodology for the present study through which the transportation management study would be completed for the selected area is listed below:

- ✓ Identification of the study area
- ✓ Physical inventory of the corridors in the study area
- ✓ Traffic data collection, Secondary Data Collection
- ✓ Evaluating the Corridor using Service Level Benchmarks By MoUD
- ✓ Performance Report for all the parameters chosen
- ✓ Review of all the available alternatives

- ✓ Suggest the best Management Measures

VI. Data Analysis

The Data Analysis for Service level benchmarks is done under MoUD for the following parameters:

1. Public transport facilities
2. Pedestrian infrastructure facilities
3. Non-motorized transport facilities
4. Level of usage of Intelligent Transport Facilities
5. Travel speed along major corridors
6. Road safety
7. Pollution levels
8. Availability of parking spaces
9. Integrated land use transport systems
10. Financial sustainability of public transport

Table 1: Overall LOS of all parameters

Sl.no	Parameter	LoS MoUD SLB
1	Public transport facilities	1
2	Pedestrian infrastructure facilities	3
3	Non-motorized transport facilities	4
4	Level of usage of ITS	3
5	Travel speed	2
6	Road safety	3
7	Pollution levels	1
8	Availability of parking spaces	4
9	Integrated land use transport systems	2
10	Financial sustainability of public transport	2

VII. Summary

The corridor management study has been carried out for LB Nagar X Road to Uppal X Road using the concept of service level benchmarks. The following studies have been carried out to evaluate the performance of corridor.

The SLB's were developed to understand the deficiencies in the corridor and to compare the conditions of two or more cities. This can be an effective technique to

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manage a corridor as the survey required, data requirements are fixed and no biased judgements of level of service calculations are possible.

The data has been collected and analyzed as per Service level benchmarks given by Ministry of Urban Development (MoUD). The overall level of service of the urban transport is found for each of the parameter discussed above. Based on these results and causality analysis done during the survey to identify the problems and their root cause, the low cost management measures have been suggested in order to improve their performance.

VIII. Conclusions

- The Public Transportation system in LB Nagar X Road to Uppal X Road is in better condition in terms of service coverage and number of buses in the city.
- Pollution levels of the city are under control.
- Non-Motorized transportation facilities are to be improved.
- It is observed that Bus stops are not in proper condition.
- All the arterials in the city are not covered with footpaths. Footpaths are need to be improved and maintained.
- Pedestrians' facilities are found to be very bad.
- The measures that are to be taken to overcome the deficiencies in present transportation system are discussed.

IX. Specific Conclusions

- Public transportation facilities, LOS (SLB MoUD)- 1.
- Pedestrian infrastructure facilities, LOS (SLB MoUD) - 3.
- The speed of public transport in the city is around 23 KMPH, LOS (SLB MoUD) - 2.

- The speed of private vehicles in the city is around 29 KMPH, LOS (SLB MoUD) - 2.
- NMT facilities are not provided, LOS (SLB MoUD) - 4.
- ITS facilities, LOS (SLB MoUD) - 3.
- The Road safety measures, LOS (SLB MoUD) - 3.
- The pollution levels, , LOS (SLB MoUD) - 1.
- Availability of paid parking in the corridor is 0%, LOS (SLB MoUD) - 4.
- Integrated land use transportation, LOS (SLB MoUD) -

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