

# Implementation of BRTS in Madurai City

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**Abstract** - BusRapid Transit System (BRTS) is the Safe, Economical, Rapid, Convenient & New concept of Public transport in Indian scenario perhaps in India there are more than 150 series of BRTS was running successfully world wide the few examples are Bogota, Beijing, etc, Ahmadabad (India) is also a successful example of BRTS. Population wise India is the second largest country & fastest growing economy of the In spite of numerous measures, the mass transportation facilities haven't controlled the rising traffic rate. Also the upcoming METRO network in the city does not have an efficient feeder network. Madurai is the second largest city in tamilnadu, this city is more congested in peak hours, So travelling time in peak hours are high .So the BRTS are implemented in the city.

## INTRODUCTION

Most of the million plus cities are faced with serious problem of congestion and pollution. They are looking for cost effective, efficient and sustainable means of public transport solutions. BRTS is increasingly being recognized as amongst most effective solution for providing a cost effective and high quality public transport service in urban areas for both the developed and the developing countries.

Bus rapid transit (BRT) is a bus-based mass transit system. true BRT system generally has specialized design, services and infrastructure to improve system quality and remove the typical causes of bus delay. BRT systems can easily be customized to community needs and incorporate state-of-the-art, low-cost technologies that Result in more passengers and less congestion. BRTS basically consists of segregated lanes dedicated exclusively to these buses. The outermost or the innermost lanes can be reserved for the system.

AIM

It should be a high quality public transportation system oriented to the users that offer FAST, COMFORT and LOW CARBON MOBILITY, EASILY ASSESIBLE by the public.

## OBJECTIVE

BUS RAPID TRANSIT SYSTEM (BRTS) which should be,

- ❖ Fast
- ❖ Comfortable
- ❖ Safe
- ❖ Reliable
- ❖ Affordable
- ❖ Environment friendly

## CHARACTERISTICS OF BRTS

As we look at the length, area and population of cities, there is increases in the type of BRT and level of BRT changes from a basic bus service to a Full BRT service. The other factors that affect the type of BRT system may include local preferences and culture, population density, distribution of trips, climate, geography, topography, available financial resources, local technical capacity.

## NEED FOR BRTS

The basic premise on which public transport is based is that if the road seems too narrow with high volumes of traffic, there is a case for public transport. The higher the volume of traffic on a road, the stronger is the case for public transport. . A new, faster & cost efficient system is required for quality conscious groups, over & above the existing low

quality bus network. BRTS fulfills these requirements & is perhaps, the only available alternative.

**ADVANTAGES OF BRTS**

- ❖ BRT having more flexibility than Light Rail
- ❖ Bus Rapid Transit routes can also be adjusted and rerouted over time to serve new development

Bus Rapid Transit can respond to changes in employment, land-use, and community patterns.

On the other hand, Light Rail Transit lines are fixed and cannot easily change to adjust to new patterns of housing and employment.

Compared to other mass transit alternatives, the BRT is by far the most cost-effective means of providing rapid transit service—about 10-20 percent of the cost of light rail and 1-10 percent of Metro.

**DEFINITION OF BRTS**

Bus Rapid Transit (BRT) is a high-quality bus-based transit system that delivers fast, comfortable, and cost-effective services at metro-level capacities. It does this through the provision of dedicated lanes, with bus ways and iconic stations typically aligned to the center of the road, off-board fare collection, and fast and frequent operations.

**HISTORY OF BRTS**

The first BRT system in the world was the implemented in Curitiba, Brazil, in 1974. Most of the elements that have become associated with BRT were innovations first suggested by Curitiba Mayor Architect Jaime Lerner . Initially just dedicated bus lanes in the center of major arterial roads, in 1980 the Curitiba system added a feeder bus network and inter-zone connections, and in 1992 introduced off-board fare collection, enclosed stations, and platform-level boarding. Other systems made further innovations, including platooning (three buses entering and leaving bus stops and traffic signals at once) in Porto Alegre, and passing lanes and express service in São Paulo US BRT began in 1977, with Pittsburgh South Busway, operating on 4.3 miles of exclusive lanes. Its success led to the 1983 Martin Luther King Jr. East Bus way a fuller BRT deployment including a dedicated bus way, traffic signal preemption , and peak service headway as low as two minutes.

**MAIN FEATURES OF BRTS**

BRT systems normally include most of the following features:

- ❖ Dedicated lanes
- ❖ Bus Way Alignment
- ❖ Off – board Fare Collection
- ❖ Intersection Treatment
- ❖ Plat form level boarding

**ADDITIONAL FEATURES FOR BRTS**

- ❖ High Capacity Vehicle
- ❖ Quality Stations
- ❖ Prominent brand (or) Identity

**ELEMENTS FOR BRTS**

- ❖ BRT is tailored to each unique corridor
- ❖ BRT can be implemented incrementally



**SCOPE OF BRTS COMPARISON FOR BRTS AND MRTS**

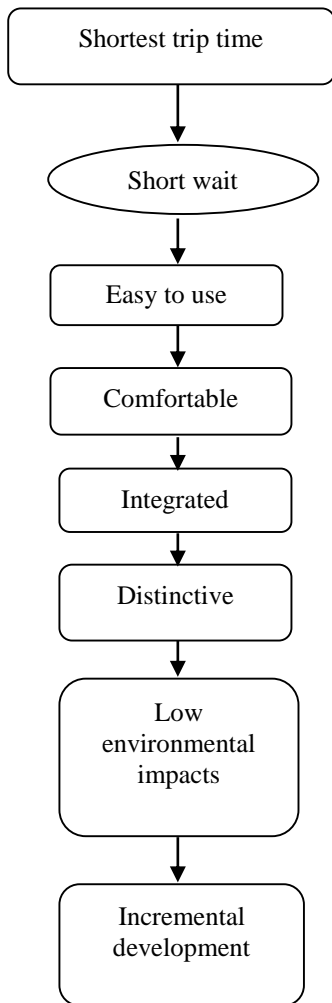
BRTS	MRTS
1. Not crowded	1 crowded
2. Separate route	2 . Common route
3. No Traffic	3. Traffic
4. Time Management	4. No Time Management
5. Possibilities of Accident is less	5. Possibilities of Accident are more.
6. No intersection of other vehicles	6. Intersection of other vehicles
7. Plays a role in development of the country	7. Plays a normal role in country.



BRTS

MRTS

REASON FOR IMPLEMENTING BRTS

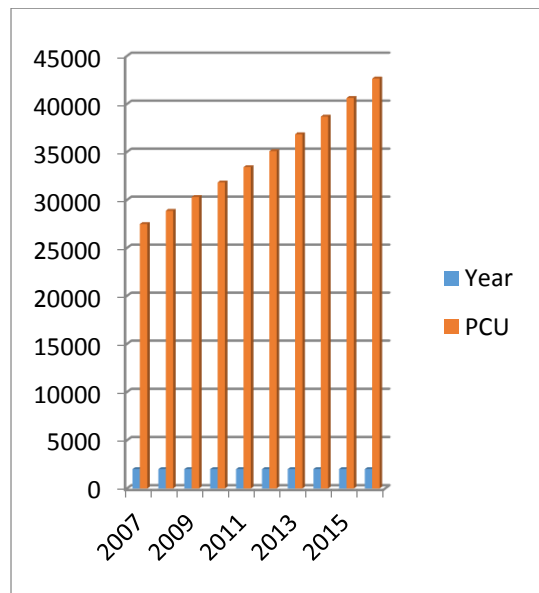


SPECIFIC REQUIREMENTS FOR BRTS

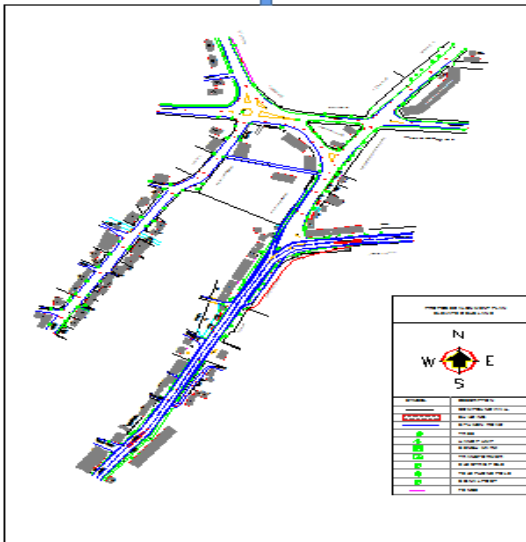
- ❖ BRTS
- ❖ Automated vehicle location system (AVLS )
- ❖ Fleet management system (FMS )
- ❖ Passenger announcement and passenger Information System (PA & PS)
- ❖ Fare collection System (FCS)

PRE FEASIBILITY FOR BUS RAPID TRANSIT SYSTEM (BRTS) FOR MADURAI

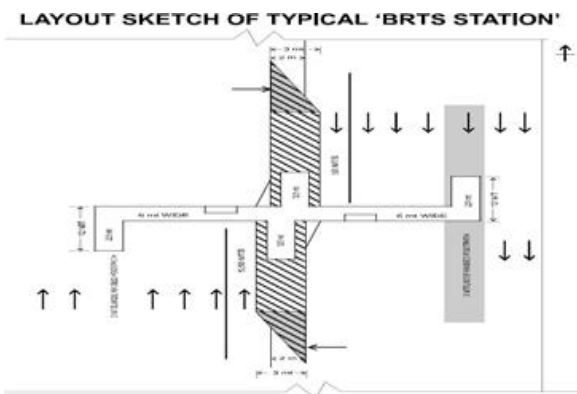
Madurai is a major city and cultural headquarters in the state of Tamil Nadu in southern India. It is the second largest city in Tamil Nadu and connects the southern districts to northern districts in Tamil Nadu, and is also the major transport city in Tamil Nadu. The city covers an area of 242.97 km<sup>2</sup> and had a population of 1,017,865 in 2011. Modes of transport in Madurai include road, rail and air. Madurai faces increasing daily traffic problems, so master plans have been prepared to reduce the city traffic and traffic problems in suburbs. Day by day Madurai city faces more traffic problems. It is the one of the important traffic circles in Tamil Nadu. The other major mode of local transportation in Madurai is the city bus. People travel from one part of the city to the other by city buses only. During peak hours, like in the morning and the evening, the buses are quite crowded. Being one of the most important means of public transport, you will find a lot of rush in the buses during the festivals. The other options available are Town buses and suburban buses, connecting the nearby places. Madurai has five bus stands to cater to the needs of the people



OVER ALL TRAFFIC SURVEY DATA IN MADURAI CITY



ELEVATED CORRIDOR DESIGN FROM  
 THAMUKKAM  
 TO CORPORATION OFFICE



**CONCLUSION**

From this project we come to the traffic problems faced all over the world and also come to know about basic and advanced techniques transport systems in world. We know about existing system which is been adopted. We studied and analysed about the traffic congestions, mode of transportation existing in Madurai. We collected data about PLY data of buses, Number of buses, existing routes, and type of buses from Tamilnadu State Transport Corporation.

We got information about the Road systems and upcoming road plans from Highway Department. We studied about the Elevated Corridor which is an upcoming project in Madurai. By analysing these data's, we come to conclude that implementing BRTS in Elevated Corridor in Madurai has many merits and essential.

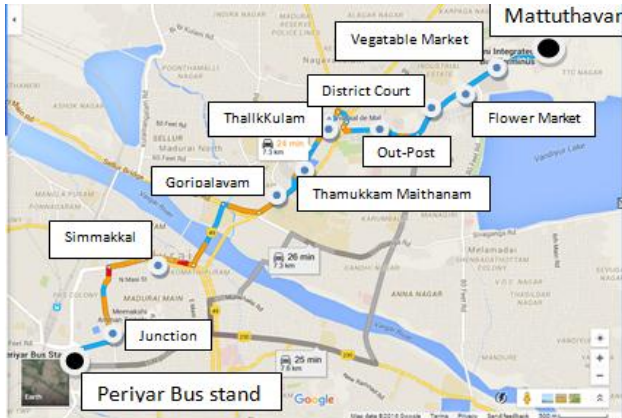
**PUBLIC OPINION FOR BRTS**



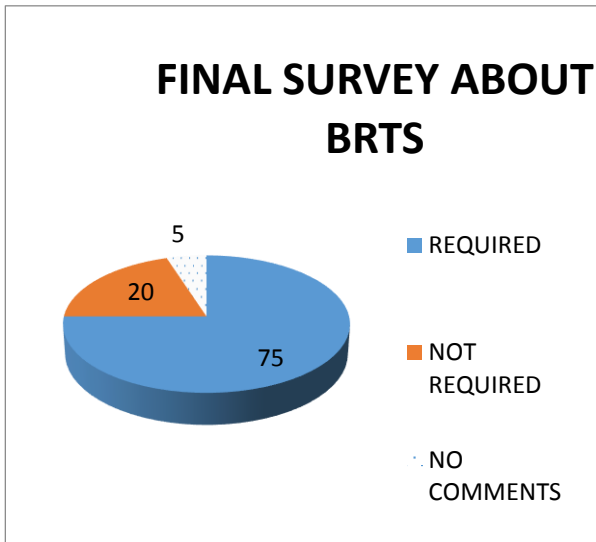
OPINION FROM TRAFFIC OFFICIAL



COLLECT THE VEHICLE TRAFFIC SURVEY IN  
 PERIYAR BUS STAND SIGNAL



BRT STATIONS IN MADURAI CITY



FINAL REPORT FOR BRTS

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