CONCLUSION

The Thesis examines the features of Chennai Metropolitan Transport Corporation System concepts and application of selected strategies in solving transportation problems in Chennai city for the forthcoming decades. Detailed analytical and field investigations of certain selected aspects for improvements in the Chennai metropolitan transport corporation.

TICKETING SYSTEM: -

From the sixth chapter we conclude that 50 paise tickets may be rounded off next higher rate. Then 14.22 (lakhs) per day excess amount will be collected. This will avoid the unnecessary arguments between conductors & the passengers. If Rs.2 to Rs.5 tickets are sold @ Rs. 5/- each then 129.11 lakhs excess amount collected per day. If Rs. 5.50 to Rs.10 tickets is sold @ Rs.10 each, then 42.72 lakhs per day excess amount will be collected per day. From Rs. 10.50 to Rs.20 tickets are sold @ Rs.15 each, and then 6.03 lakhs per day excess amount will be collected per day. If all MTC bus tickets are sold @ Rs.5 each, then 177.87 lakhs per day excess amount will be collected.

Trip loss is a major default to less collection. Most trip loss occurs due to want of Crew, Break down, want of Bus, Traffic Jam, late run and other minor electrical, minor mechanical problem and heavy traffic in Chennai city. If we
maintain the bus by adopting checking of busses regularly through job card / history card bases method 50 percent of the trip loss will be recertified.

In the year 2006 and 2007 approximately Rs.1219 lakhs accident claims settled. Insurance for one bus will amount to Rs. 8000 per year. As on 2006 and 2007 total 2870 busses therefore approximate insurance amounts to 22.96 lakhs only. All busses can be insured properly to reduce the heavy loss and there is no necessity of any section to maintain such type of accounts.

MTC growth at the time of start and at present

The Growth

<table>
<thead>
<tr>
<th></th>
<th>As on 01/01/1972</th>
<th>August 2008</th>
<th>Times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depots</td>
<td>8</td>
<td>25</td>
<td>3.12</td>
</tr>
<tr>
<td>Fleet</td>
<td>1029</td>
<td>3093</td>
<td>3.00</td>
</tr>
<tr>
<td>Route</td>
<td>176</td>
<td>610</td>
<td>3.46</td>
</tr>
<tr>
<td>Employees</td>
<td>12178</td>
<td>21643</td>
<td>1.78</td>
</tr>
</tbody>
</table>

a. Depots - 3.12 Times
b. Fleet - 3.00 Times
c. Route - 3.46 Times
d. Employees - 1.78 Times
e. Passengers - 3.70 Times
f. Collections - 86.17 Times

Depots, Fleet, Route Passengers are increased three times as on date, but the employee strength has increased 1.78 times only. Therefore increase in
the employees in the same ratio is essential for up keeping the standard of MTC. Otherwise arrange out sources for the non essential categories like bus cleaning, bus checking Mechanical/Electrical. Periodic work study has to be conducted.

A large proportion of buses is over aged and is due for replacement/discarded. Buses that are above 10 years must be discarded from service. Old buses tend to increase the operating costs, rate of breakdown and accidents. Buses should be of a standard design with a capacity of about 80 and above passengers. Standardize the seating arrangement to avoid discomfort to standees. Buses should be released for operation only after making checks by Depot supervisors.

(a) HSD Checking
(b) Engine Oil
(c) Mechanical defects
(d) Electrical defects
(e) Tyers and Tubes
(f) Battery
(g) Overall thorough checking

Open a separate bus history card and forward it to the Depot Manager daily for updating records of the buses. Each bus should have the name of the route and route number in bright colour both in English and Tamil. Route
number and name may be written both in front and back of the bus, which will be help to the tourists. The location of bus stops on a route requires a careful consideration of the trade-off between average transit speed and walking distance. The spacing between bus stops is vital elements affecting transits efficiency. Hence the bus stops should be located at optimum intervals. This case study examined these aspects which indicate that a 10 (Ten) per cent reduction in the overall number of stops may lead to a six percent increase in the overall operating speed, resulting in better productivity.

Observation on route No. 23 C revealed that by reducing the number of bus stops from 20 to 15, while still maintaining the average distance between the bus stops to be less than 1 Kilometer, there could be a saving of about eight percent in the number of buses required to perform at the existing level of service. Introduce mini depots of 50 bus capacity at different locations in order to optimize vehicle maintenance. Posting of stand conductors at crowded areas will avoid ticket less travelers during peak hours. This step can improve the bus operation on an average week day by five percent through reduced service time and more productive kilometer operated. As twelve percent of the public use the MTC buses, bus transit merits special attention by periodic review of routes and constant rescheduling of service in response to the variations in travel demand for overall bus productivity. Since the breakeven occupancy is about seventy five percent, the headway needs to be increased suitably, in some cases even up to thirty minutes during non peak hours, in order to achieve better
productivity. Bus ways for stop locations will improve the total vehicle flow on the road and thereby improve the throughput of passengers along existing traffic corridors.

RECOMMENDATIONS
Return bus tickets may be introduced for the same day travel. A/C buses should have a fixed rate @ Rs. 30/- per ticket. Bus passes to the school/college students may be issued on yearly basis instead of monthly basis. Buses during school/college timings and peak hours may be deployed. Bus timing must be displayed at important bus stops. Bus and Train ticket can be linked for the use of commuters. Using train and bus services to read their destination will also prove useful. Every year number of accident is increased, particularly the fatal accidents have also increased, and therefore the following points are recommended for reducing the MTC bus accidents.

(a) Avoid rash driving.
(b) Follow strict and Safety driving.
(c) Periodic training and Yoga to the MTC drivers.
(d) Quarterly medical checkup.
(e) Restrict over time to the senior drivers.
(f) Arrange minor repairs and cleaning the buses during nights.
(g) Buses should be maintained properly and daily. For that private contract may be given through tender announcement at the rate of maintenance per bus basis by every bus Depot.
(h) Insure all MTC buses to take care of accident claims.

Separate credit card system can be used for the Chennai Metropolitan Transport Corporation. Point to point buses can be introduced at a flat rate. For the Staffs those who have done excellent jobs can be given cash awards by the MD MTC every year. MTC can arrange ‘e’ passes for Monthly/yearly passes. First Aid box
must be made available in every bus. During rainy seasons fifty present buses are leaking, the duty conductor should note it and inform the workshop for clearing the defect. Each and every important Junction bus stops like Saidapet, Tambaram, Guindy, Avadi, Ambathur, Annanagar West, Koyambedu, Vadapalani MTC opened ticket counter for mooring 08.00 am to evening 8.00 pm.

The impact of socio economic conditions and the development of behavioral models for TSM actions to reduce travel demand may be studied. The feasibility of encouraging HOV and the development of related energy models may be examined. The organizational structure of Para-transit system needs to be strengthened so as to integrate the system within itself and with other modes for efficient urban mobility. Bus recovery team and two or three recovery vehicle can be purchased for MTC to recover the buses from the point which they faulted.

A fully adequate shelter should have the following features:

(a) A large enough roof overhang to keep commuters dry
(b) Vertical transparent walls on more than two sides to control wind, but with enough entry/exit points so that users do not get trapped.
(c) Ensure seats for aged people/ sick people.
(d) Litter baskets,
(e) Drinking waters
(f) Lighting in the buses
(g) Full information displays, with schedules and maps.

Improve the quality of service by providing better stations, covered bus stops, enquiry officer, better buses, punctual and regular services and polite behaviors with commuters.

1. Route chart with detailed bus stops must be placed inside the bus.
2. Through the in-door and out-door advertisement, the MTC can earn certain income.
3. Proper training for all Staff to be provided in every alternative year.
4. Payments and other perks may be given through credit cards to reduce the clerical works.
5. Daily Bata allowances may be doubled for the Drivers and Conductors.

Every staff has to be trained to remember the following slogan always:-

“A ‘Customer’ is the most important visitor on our premises.
He is not dependent on us. We are dependent on him.
He is not an interruption on our work. He is the purpose of it.
He is not an outsider on our business. He is a part of it
We are not doing him a favor by serving him. He is doing us a favor by giving us an opportunity to do so.”

- Mahatma Gandhi

RECOMMENDATION FOR FUTURE RESEARCH
The present case study has been confined to the general strategies in developing countries with particulars and references to conditions obtaining in Chennai. Future research is required to elucidate the problems on other allied areas. Some of the specific aspects which can be studied further are briefly indicated below:

1. Study on the synchronization of signals for fuel consumption and free vehicle flow to improve the transport productivity.

2. Sky bus metro; Eco friendly MASS urban transport system revolutionizes urban life.

3. Parking is an essential component of the transport system. Vehicle must park at every destination. A typical automobile is parked 23 hours each day, and uses each day, use several parking spaces each week: Parking Management.

4. Study on ‘e’ ticket system in Chennai Metropolitan Transport Corporation Chennai Ltd.

5. Study on purchase tickets though prepaid smart card system in Chennai Metropolitan Transport Corporation.

6. Study on Train/Bus and Bus/Train linked tickets.