CHAPTER – VIII

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CHAPTER VIII

SUMMARY, CONCLUSIONS AND SUGGESTIONS

8.1 SUMMARY:

The present research work is divided broadly into eight chapters.

The first chapter deals with introduction, research methodology and data base of the present study. It includes origin of passenger road transport in India, mechanized passenger road transport in India, enactment of Road Transport Act 1950, Urban Transport and city efficiency, indicators of efficiency and public transport services in Navi Mumbai. The chapter also presents basic information of Navi Mumbai Municipal Transport (NMMT), need for the study, objective of the study, hypothesis, sample design, method of data collection, analysis and its interpretation, the scope of the study and its limitations are briefly discussed.

Chapter two is concerned with review of literature on urban transport and management. The literature presented in this chapter is mostly collected from sources such as books, journals, periodicals, Government reports, internet web sources and even Ph.D theses. The researchers studied various aspects related to the research work such as performance of different STUs and MTUs, commuters' satisfaction, quality of service, infrastructure, nature of traffic, traffic congestion, waste of energy, parking problems, safe guard of environment, financial problems, social burden, role and importance of public transport.

Chapter three presents profile of study area. Here, researcher studied different aspects of study area which are related to the research topics such as evolution of Navi Mumbai, objectives of Navi Mumbai project, boundaries and areas of Navi Mumbai, physical features, climate and rainfall, housing stock,
demography, land use pattern, commercial and industrial development, infrastructure and connectivity, transport etc.

Chapter four discusses the conceptual and theoretical aspects of the research study and brief history of urban transport in India and the world.

The sub topics discussed here include areas of management, productivity, concept of service, nature of urban transport, trend of urbanization in India, current urban transport scenario in India, service quality indicators, historical development in urban transport and public sector bus transport with special emphasis on problems of municipal transport undertakings.

Chapter five deals with administration of Navi Mumbai Municipal Transport Undertaking. In this chapter study is directed towards organizational setup of NMMT and its working procedure. This chapter also covers the information regarding age of fleet, passenger growth, fleet utilization, fare structure, bus routes and its details, the facilities provided by NMMT to its staff and commuters. This chapter also focuses future plans of NMMT undertaking.

Chapter six is related to the evaluation of performance and efficiency of the NMMT undertaking. Here researcher studied financial and physical performance of NMMT and this performance is compared with standard norms prescribed by the World Bank. This chapter also covers comparison of NMMT's performance with selected other four MTUs namely, BEST, PCMT, TMT and KMT.

Chapter seven highlights the opinions of NMMT bus users and non-users.

The study focuses on the opinions and expectations of 1700 NMMT bus users and 1700 non-users.
The primary data collected from both users and non-users is analyzed and interpreted. It includes data regarding purposes of travel of NMMT bus users respondents, frequency of travelling, usual time of bus travel, bus change over, bus shelters, walking distance to bus stop, waiting time at bus stop. It also deals with opinions about quality of service provided by NMMT and opinions about different public bus service providers in Navi Mumbai. This chapter also throws light on the opinions and expectations of non-users of NMMT bus service and reasons of not availing the NMMT bus service.

Chapter eight deals with the summary, conclusions and suggestions. In this chapter researcher highlighted the facts related to performance of the study organization. The hypothesis was tested with the help of both primary and secondary data presented in the chapter 6 and 7. The researcher has made some valuable suggestions for the improvement of performance and efficiency of the study organization.

8.2 CONCLUSIONS:

The following conclusions have emerged from the present study of Administration and Working Efficiency of NMMT undertaking.

8.2.1 General:

1. The role of mechanized transport in India started in the beginning of nineteenth century and first motor vehicle was imported to India in 1898.

2. Growth of road transport in India actually began in early 1920s
3. Transport demand, in most of the Indian cities has increased substantially due to increase in population as a result of both natural birth rate and migration from rural areas and smaller towns.

4. Traffic composition in India is of mixed nature. There is a wide variety of about a dozen types of both slow and fast moving vehicles.

5. City efficiency largely depends upon the effectiveness of its transport system.

6. The availability of buses is quite low in India (about 0.25 per cent per 1000 population against 1 to 2 in advanced countries).

7. Pollution in cities is alarming due to heavy traffic.

8. Nearly 15 to 20% of urban developed land is under transport use but with no satisfactory level of service.

9. The decadal growth rate of population in Navi Mumbai is 74%.

10. The 48% of the households have shifted from Greater Mumbai to Navi Mumbai.

11. Over the period of 5 years from 2002-03 to 2006-07 operating performance of NMMT has been deteriorated.

12. Public of Navi Mumbai is not satisfied with the Public Transport

8.2.2 Administration and working procedure of NMMT:

1. Tenure of the Chairman of Transport Committee- is less than one year- This affects adversely on working of NMMT. There is no consistency in implementing the policy.
2. Transport manager is appointed by State Government on deputation for short duration. There is no consistency in the policy; hence it has affected the day to day working of NMMT.

3. There is a lack of professional attitude.

4. Posts like, Administrative Officer, Legal and Labour Officer and Public Relations Officer are vacant. This has adversely affected on day to day working. Charges of these posts have been given to the senior staff member of concerned departments.

5. Accounts and Finance Officer is also appointed on deputation by state government for a short period of time.

6. The post of Deputy Transport Manager is also vacant.

7. Recruitment of the staff is not done in time.

8. NMMT has been facing shortage of 240 crew and it has affected day to day working of NMMT.

9. Proper record and data is not maintained. Due to it NMMT failed to exercise control on different aspects.

10. Canteen Facilities are not as per the demand of the staff and well maintained restrooms are not available to the crew.

8.2.3 Financial Performance:

1. **Personal Cost:** It includes salary, wages and allowances. Average share of five years of personal cost was 33.77% of the total cost.

2. **Material Cost:** It includes fuel (Diesel), lubricants, springs auto and spares, tubes and tyres, batteries and other general items. Average share of material cost of five years in total cost was 44.81%. These two costs take away the major share of the total revenue. It means
that NMMT has failed to control its material cost, labour and other expenses.

3. Concessions to students and others concessions which together worked out to Rs. 0.36 per effective kms. (Average of 5 years). NMMT being a loss making organization, even this social cost is an unaffordable to it.

4. Revenue generated per bus on road is less than cost incurred per bus on road and it has resulted in loss per bus. It ranges from Rs 265 to 762 during the study period.

5. The cost per effective kilometre has increased from Rs.21.27(2002-03) to Rs. 28.56 (2006-07)

6. Revenue per effective kilometre has increased from Rs. 21.27(2007-2003) to Rs. 26.13 (2006-07) It shows marginal increase throughout the study period. As compared to the annual average increase in cost per km (7.65%) is more than revenue (5.29%). Hence there is gap between increase in cost and revenue by 2.36% and it has resulted in incurring revenue loss.

7. Profitability:

   I) **Accounting Profitability and Economic Profitability**

   In 2002-2003 the Accounting loss of NMMT was Rs. 0.12 lacs and it has increased to Rs. 389.60 lacs in 2006-2007. Economic loss in 2002-2003 was Rs.19.82 lacs and it has also increased to Rs. 260.23 lacs in 2006-2007. It shows declining trend in profitability of NMMT.

   II) **Operating ratio:** Operating ratio in 2002-2003 was 0.999:1 and it has declined to 0.92:1 in 2006-2007. It
means that NMMT is not able to cover its total cost and it has resulted in the revenue loss.

8. NMMT has major revenue from the traffic. Average % share of traffic revenue of 5 years in total revenue was 96.36%.

Overall, the financial productivity of NMMT has shown a steady decline, during the period from 2002-03 to 2006-07.

8.2.4. Physical Performance:

1. **Bus Fleet:** In 2002-03 fleet strengths was 176 and it has increased to 226 in 2006-07, as compared to 2002-03, it has increased by 28.41%. It shows that NMMT is a growing organization. Fleet strength has increased over the period of five years. However, number of buses on road has not increased to that proportion. Bus purchase decision is taken without prior assessment in demand and designing the new routes.

2. **Route, scheduled and effective kilometres.** Over the period of five years NMMT was able to add only 5 new routes. During the study period there was marginal increase in scheduled kms. It was scheduled to be 193.82 lacs kms. in 2002-03 and has increased to 206.76 lacs kms. in 2006-07. There was also marginal increase in effective kms. In 2002-03 effective kms. were 158.56 lacs and it has increased to 160.98 lacs. It shows that NMMT failed to increase its network.

3. **Fleet Utilization:** It has a direct bearing on the productivity of the system. It is indicative of the effectiveness of bus maintenance, spares and procurement, and stock keeping as well as staff recruitment and management. Fleet utilization of NMMT has steadily decreased during the study period. It was 82.38% in 2002-03 but after this year it ranged from 77.84% to
65.48% and it was below the World Bank norms. (i.e. 80-90%). It was found that fleet utilization of NMMT is not satisfactory.

4. **Bus Utilization**: It is an indication of productivity of a bus fleet. In case of bus utilization, NMMT shows fluctuating trend. In 2002-03 it was 300 kms per bus per day, it has decreased by 0.33% in 2003-04 and again it has increased by 6% and afterwards it has shown declining trend.

5. **Bus breakdowns**: It is an indication of maintenance and driving standards. In 2002-03, there were 1789 breakdowns, which increased to 2650 in 2003-04, and came down to 2536 in 2004-05 but again gone up to 2844 in 2005-06, and came down to 2138 in 2006-07. Breakdowns reduce revenue earning and cause inconvenience to the passengers which further mars the reputation.

6. **Cancelled kms**: During the study period average percentage of cancelled kms. to scheduled kms. was 21.60%. It was found that out of 43.55 lacs average total cancelled kms. 36.61 lacs (84.06%) was cancelled due to shortage of crew. 3.91 lacs (8.98%) was cancelled due to traffic 2.97 lacs (6.82%) was cancelled due to want of buses and 0.06 lacs (0.14%) was cancelled due to accidents. This situation also affects the reputation of NMMT.

7. **Accident rate**: Number of accidents shows the increasing trend. In 2002-03 numbers of accidents were 114 and it increased to 199 in 2006-07. Rate of accidents per 1.0 lacs effective kms has increased from 0.72 (2002-03) to 1.24 (2006-07)

8. **Passenger volumes**: A significant indicator of productivity is the number of passengers carried in relation to the capacity of the
system. In 2002-2003 NMMT carried 527.08 lacs passengers and it increased to 622.35 lacs in 2006-07 (18.08%). Passenger volume shows steady increase during the study period of five years.

9. **Occupancy ratio and load factor:** Both these are very important indicators of operational efficiency indicating whether the bus organization is fulfilling its seat kms. and capacity kms. or not. As compared to the base year these ratios have increased only by 1.25%.

8.2.5. Manpower Productivity:

1. **Bus: Staff ratio:** Average total staff per bus was 8.89 during the study period and it was slightly more than the standard norm that is 3-8. But this was for per bus on road, NMMT’s average fleet utilization is low (73.40%) and the main reason for low fleet utilization is the shortage of crew.

2. **Average salary per employee per day:** Average salary per employee per day ranged from 307.24 to 316.40 during the study period.

3. **Manpower Productivity:** The total effective kilometres operated during a period divided by the total number of employee on roll gives the productivity per employee during period.

   In case of NMMT manpower productivity showed declining trend during the study period. It was 38.65 km per staff in 2002-03 and it has reduced to 32.84 per km. It indicated that productivity of staff has gone on declining during the study period.
4. **Effective kms per crew per day**: Effective kms. achieved by per crew also showed declining trend. It has gone on declining from 43.97 kms. to 37.50 km (14.71%)

8.2.6 **Quality of bus service**:

1) **Regularity percentage**: Regularity percentage has declined from 80.29 to 76.29 at end of the study period. It has indicated that quality of service has been deteriorating day by day.

2) **Breakdown rate**: Breakdown rate per 10000kms has increased and ranged from 1.13 to 1.77. There is a continuous increase in breakdown rate. It shows poor quality of maintenance and driving skills.

3) **Accident rate**: In 2002-2003 accident rate per 100000 kms was 0.72 and it has increased to 1.24 in 2006-2007 (72.22%). It shows that quality of service is deteriorating day by day.

4) **Public complaints**:

   Complaints register is not maintained by NMMT, however through the correspondence, and inward register the researcher found that the percentage of complaint as compared to base year is increased by 116%. It indicates that services provided by NMMT are not satisfactory.

8.2.7. **Comparison of NMMT’s performance with other MTU’s**.

1. Per Km Loss of NMMT has been increasing at a high rate (641.63%) as compared to other selected MTUs.

2. Accounting and Economic profitability of NMMT(0.92:1and 0.94:1) is higher as compared to BEST (0.72:1and 0.67:1),
PCMT (0.68:1 and 0.61:1) and KMTU (0.83:1 and 0.75:1) but lower than TMTU (0.94:1 and 0.98:1)

3. Average annual increases in Revenue per bus was higher (5.15%) as compared to BEST (4.13%) TMTU (1.08%) but less than PCMT (9.32%) and KMT (9.08%).

4. Average annual rise in cost per bus on road of NMMT (6.03%) was less than BEST (7.63%), PCMT (11.94%) and KMT (14.71%) but TMTU was able to fall it by 6.27%.

5. **Profit/loss per km in paise:** NMMT’s average annual rise in loss was reported at a high rate (641.63%) as compared to BEST, PCMT & KMTU. However, TMTU has shown average annual fall in loss (18.44%)

6. **Fleet Strengths** NMMT has succeeded in increasing its fleet strength at a high average annual rate of 6.45% as compared to all MTU’s during the study period.

7. **Fleet Utilization:** Average Fleet utilization % is very low (73.40%) as compared to BEST (90.76%), TMT (85.72%) and KMT (91.26%)

8. **Scheduled kms:** NMNT has increased its scheduled kms by 1.63% at average annual growth rate. It is more than BEST (0.88) but less than PCMT (4.67%) and KMT (4.59%).

9. **Effective kms:** In case of NMMT average annual growth rate of effective kms is 0.38% and it is more than BEST (-0.02%) but less than PCMT (8.2%) and KMT (4.05%).

10. **Bus utilization:** Average bus utilization of NMMT is 303.2 kms. and it is more than other selected MTUs.
11. **Passenger volumes**: (Per Bus per day) NMMT showed average annual growth in passenger volume by 3.7%. This percentage was more than BEST(-1%) but less than PCMT.(5.69%)

12. **Occupancy ratio and load factor**: Average Occupancy ratio of NMMT( 84.79%) is higher than all other selected MTU’s but load factor is less (60.0%) than TMT(75.95%) and KMT (65.11%).

13. **Cancelled kms**: Average of cancelled kms. of NMMT(43.55lacs) is less than BEST(105.44 lacs) and PCMT(59.21lacs) but more than TMT (43.49lacs) and KMT (0.92lacs)

14. **Breakdowns rate**: Breakdown rate of NMMT is higher (1.52) than BEST (0.73) but less than PCMT (12.16) TMT (3.20) and KMT (2.81). However, it shows annual growth by 4.16%.

15. **Accident rate**: During the study period NMMT showed average annual rise by 14.56% in accident rate but average annual rise in case of selected MTUs is less.

16. **Regularity %**: NMMT’s average regularity % is low (77.01%) as compared to other selected MTUs. BEST regularity % is 96.87 and KMT registered higher % (98%) of regularity.

17. **Fuel consumption**: (KMPL) fuel efficiency of NMMT is low (3.04 kmpl) as compared to selected MTUs.

18. **Bus staff ratio**: In case of NMMT average staff ratio per bus on road is higher than (8.89) KMTU(6.72) but less than BEST (11.40) PCMT (15.06) and TMT (10.84)

19. **Manpower productivity**: NMMT’s average manpower productivity is lower (34.37 kms.) than KMT (38.95) but higher than BEST (18.69) PCMT (18.38) and TMT (19.09 kms).
20. **Effective kms per crew/per day:** In case of NMMT average effective kms per crew per day is 39.29 and it is less than KMT (50.57) but more than BEST (26.17), PCMT (28.71) and TMT (23.2)

8.2.8. **Bus Users' Survey:**

1. More than three fourth commuters (85.8%) travel in peak hours (Morning and Evening)

2. Through the survey, it was found that 23.6% respondent commuters have to change the bus during journey and 18.1% have to change the bus once during the journey.

3. The 61.1% respondents said that they do not get the seat in the bus during their journey. It shows that buses are overcrowded during the peak hours.

4. The 76.1% respondents said that there is proper provisions of bus shelter at the boarding point.

5. The majority commuter respondents (61.3%) said that they have not been following queue system. It means that there is a lack of civic sense among the commuters.

6. The 60.8% commuters said that the stops are available within 0.5 kms. from their residence.

7. The 42.4% respondents said that they have to wait for bus more than 20 minutes. It means that frequency of buses is low.

8. An opinion survey among the bus users has revealed that –

   1. The 38.2% commuters perceive the punctuality of bus service as being poor.
II. The 34.2% commuters said the reliability of bus service is poor and 55% agreed it to be fair.

III. The 37.2% commuters perceive comport/convenience as being poor and 52.4% responded fair.

IV. The 57.7% commuters perceive courtesy as being fair

V. The 44.9% commuters perceive adequacy of bus service being as poor and 45.3% rated it fair.

VI. The 40.8% commuters see safety of bus travel as being fair and 34.5% said it poor.

VII. In case of route network the 44.4% commuters said that the network of route is poor and 42.9% rated it as fair.

VIII. Through the opinion survey about different city bus service providers in Navi Mumbai, researcher found that –

a. The 45.8% commuters said that behaviour of bus crew of BEST is good but in case of NMMT only 22.7% commuter said it is good.

b. Majority of commuters (62.8%) said that BEST buses are clean and well maintained. However, only 15.1% commuters said that NMMT’s buses are clean and well maintained.

c. The 53.5% commuters said that the BEST’s time management is good and only 13.8% commuters said that NMMT’s time management is good and 43.6% rated it as poor.
IX Public of Navi Mumbai is not satisfied with the quality of public transport in Navi Mumbai only 20.6% commuters said it good, 52.1% said it fair and 27.4% rated it as poor.

8.2.9. Non-Users’ survey:

1. Majority of non users (46.7%) do not have their own vehicles and those having vehicle majority of them own the two Wheeler.

2. Majority of non users (44.9%) travel for the purpose of education, 12.8% for business, 24.5% for employment and remaining for social (14.8) and other (2.9%) purposes.

3. The 30.9% non users travel by local trains and 15.7% own vehicle and remaining by ST (15.7%), KDMT (10.9%) BEST, (13.8%) and Taxi (2.0%)

4. Majority of non users (74.7%) have not been availing NMMT buses being over crowded.

5. The 74.5% non users said that they are not availing NMMT buses due to low frequency.

6. The 69.7% non users do not avail NMMT bus service because of uncomfortable buses.

7. The 60.8% non users reject the NMMT bus service due to the unclean buses.

8. Majority non users (74.2%) said that NMMT service is not reliable.

9. The 48.8% non users said that they reject NMMT bus service because of longer time required to reach destination.
The 26% non users said that the bus stop is far away from their residence.

Majority of them (52.1%) said that no proper routes are designed by NMMT undertaking.

A very large majority (77.2%) of the non users are willing to avail NMMT bus service if they are assured of convenient timing and frequency, bus routes, punctuality as well as clean and well maintained buses.

8.3. TESTING OF HYPOTHESIS:

The hypothesis of present study is ‘Operational efficiency of NMMT undertaking is not satisfactory’.

The revenue loss of NMMT has increased from 0.12 lacs to 389.60 lacs (Table no. 6.1a) over the period of five years. Table no.6.1b, shows increasing trend in loss and it presents average annual rise in revenue loss at 654.85%.

The operating ratio presented in table no. 6.9 also shows declining trend. The operating ratio has decreased from 0.999:1 to 0.92:1 over the period of five years. At present, the operating ratio is far below the World Bank norm (1.05:1-1.08:1)

Physical performance of NMMT presented in table no.6.2a shows that it is not satisfactory. The percentage of fleet utilization at present is 65.48% which is quite below the World Bank norms (80-90%).

The quality of service is also not satisfactory. The regularity percentage shows declining trend. It has decreased from 80.29% to 76.29% (Table no.6.3). The breakdown rate per 10000 effective km. has increased from 1.13 to 1.33, while the accident rate per 100000 effective km. has increased from 0.72 to 1.24.
The data from the survey strongly supports the hypothesis. The survey data presented in table no. 7.13 shows that only 14.9% respondents said that the NMMT service is punctual, while 38.2% rated it as poor. About 1/3\textsuperscript{rd} of all respondents (34.2%) rated NMMT’s reliability as poor and 44.4% respondents said that route network is poor.

Table no. 7.24 presents different reasons of not availing NMMT bus service. About 3/4\textsuperscript{th} of all respondents (74.5%) do not avail the NMMT bus service due to low frequency and other reasons such as lack of cleanliness (60.8%), not reliable (74.2%) and no proper routes (52.1%).

The financial performance, Physical performance and survey data prove that operational efficiency of NMMT undertaking is not satisfactory.

8.4. MAJOR SUGGESTIONS:

Above conclusions show that working of NNMT is inefficient. To make it efficient, following suggestions have been made.

8.4.1. Administration and Organizational set up.

1. For improvement in day to day working the NMMT undertaking should take the following steps.

a. The tenure of the chairman of transport committee should not be less than prescribed period.

b. Additional transport manager's post should be permanent.

c. Management of the organization should be carried out professionally

d. Important vacant posts should be filled as early as possible.

e. Proper data should be maintained for exercising control over the working.
f. There should be proper co-ordination among the different departments.

g. At present, Traffic Department needs 240 additional crew. NMMT should recruit the 240 crew.

h. Good canteen facilities and well maintained rest rooms should be provided at all depots and terminals.

8.4.2. Improvement in Physical and Financial performance

NMMT should adopt the measures for revenue increase, cost reduction, Manpower productivity and efficiency improvement, and improvement in service quality.

1. Revenue increasing measures:

I. There should be increase in the frequency of buses on profit making, high traffic volume routes and competitive routes e.g. route no.1,31,41,44 and 50, which would result in making commuters loyal to NMMT.

II. The NMMT should improve the fleet utilization.

III. Reduction in daily pass fare and the bus fare for short distance could be done marginally to patronize more passengers towards NMMT.

IV. Periodic survey to assess the traffic volume on terminals and routes which will help to improve up to date schedule of buses. It ultimately affects the adequacy reliability and punctuality of the buses.

V. For increasing non traffic revenue through advertisements, proper place should be made available to advertisers, and develop terminals and depots on BOT basis and spare space should be given on rental basis to commercial organizations.
2. **Cost reduction measure:**

1. The average age of buses should be reduced to overcome the problem of high maintenance cost and higher fuel cost with high rate of breakdowns. The NMMT has decided to scrap its old aged buses after 15 years where as BEST buses are scraped after eight years. NMMT undertaking should revise its policy regarding scraping of buses.

2. NMMT should take care regarding proper maintenance of buses in time. It would help them to reduce cost on fuel.

3. Proper bus utilization should be maintained.

4. The purchase policy should be based on prior assessment of demand and buses should not be purchased in lot.

5. Introduction of quality circle programme in workshop should be undertaken.

6. NMMT should go for computerization in case of all departments. It will improve the staff productivity.

7. Management of NMMT should implement costing principles, methods and techniques for accurate decision making process.

8. NMMT should undertake manpower audit of all department to assess the efficiency and quality of staff.
8.4.4. Manpower Productivity and Efficiency improvement.

NMMT administration should take the following measures to improve the efficiency of the staff.

I. Incentive plan:

Special awards/merit certificates, cash awards/gift pack etc may be given to employees for extra ordinary work in their concerning department e.g. accident free driving for specified period, maximum collection by conductor, good attendance etc.

II. Training to employee:

To increase and sharpen the skill, to meet the challenges of changing condition and to adjust to new environment, training must be given to the new recruitee as well as existing employees. NMMT should organize training programmes of short duration for labour force once a year. Training device like occasional lectures, conferences etc should be used for general administrative staff.

III. Workers participation in Management:

To achieve higher productivity, greater efficiency and job satisfaction, management should practice with workers participation in management at least two levels. One is informative and associative participation which ensures that, workers are able to receive information and offer their opinion on matter of general economic importance. And second is consultative participation which means that on matters affecting their working conditions and welfare.
Iv. Works committee:

Management should form a work committee with equal representative of employee for proper encouragement, avoid past errors and play useful role in the organizational system. Generally, work committee should deal with working conditions, amenities, safety, recreational facility etc.

V. Working hours:

Especially for traffic department workers, management should make efforts to genuine working hours with required rest interval to enable the workers to perform their duties happily and efficiently.

8.4.5. Improvement in the service quality:

1. The NMMT management should undertake various area wise periodic surveys e.g. origin and destination survey, loading survey waiting time survey, vacant seat survey, etc under proper guidance and supervision. The findings of which would help to decide operations and introduce improvement in service quality. The survey would also enable to redesign the routes, prepare bus schedules understand the commuter’s expectations and determine the level of service quality as well as efficient bus utilization.

2. NMMT service should be made commuter oriented by rendering the service according to the needs and expectations of the commuters.

3. Traffic department in charge should visit terminals and routes periodically and study the reports submitted by traffic staff to improve the service quality and passenger volume.
4. Management of NMMT should make proper arrangement for bus cleaning facility for the buses in the workshop that every bus will be cleaned at least every alternate day.

5. The commuters’ grievances should be promptly redressed and the action taken should be communicated to the aggrieved commuter.

6. Proper training and motivation should be given to drivers to reduce the rate of accidents.

7. Roadworthy buses should be made available for operation thereby they can reduce the breakdown rate.

8. NMMC should maintain good condition of roads.

8.4.6. Proposed new routes:

The proposed new routes are as follows:

1. Nerul to Dombivali

2. New Panvel to Thane, via APMC market.

The proposed route would facilitate the following

1. Increase in the occupancy ratio and load factor and thereby revenue.

2. Elimination of prevailing change over and better services to passengers.

Apart from above NMMT should initiate ring route service and ring routes can originate from railway stations and they can connect residential areas, commercial establishments, offices and business centers. Some of the desirable ring routes are as follows.
8.5. GENERAL SUGGESTIONS:

1. There is a need of professional managers at the top in the management and the Municipal Corporation should incorporate transport experts, marketing experts for improvisation in the decision making process of the transport committee.

2. The strengths, weaknesses, opportunities and threats (SWOT) analysis pertaining to NMMT depot/workshop, staff, routes and organization as a whole, be undertaken to plan the future strategy.

3. There should be less political interference in day to day operations.

4. Government should re-imburse the passenger tax to the city bus operations.

5. Government may grant appropriate subsidies to the municipal transport undertakings.
6. Government should impose congestion tax on private vehicles and amount collected through it should be given to public transport undertaking for infrastructural development.

7. There should be good co-ordination among different agencies like NMMT, BEST, KDMT, ST etc. for intercity travel between Mumbai, Navi Mumbai and Thane. One agency should not treat other as threat and should try to clip its wings.

8. To curb the bad habits of the commuter or bus conductors various check such as corridor check, special checks and inspections by senior officers besides their regular checking should be carried out. These checks will help to arrest the possible leakage of revenue.

9. NMMT should consider automatic fare collection through the smart card system and this system will reduce the change problem.

10. 50% of NMMT's buses ply on Thane-Belapur road and due to traffic congestion they find difficult to observe time schedule therefore, there should be special lane for public transport buses from Turbhe Naka to Thane. It will save the time of commuters and will help to increase revenue of NMMT.

11. Out of total 43.55 lacs cancelled kms (five years average), 3.91 lacs kms (8.98%) are cancelled due to traffic congestion. One of the important causes of traffic congestion is the road side parking of vehicles. That is why there is an urgent need for evolving comprehensive parking policy.