

EXECUTIVE SUMMARY

Introduction

TNUIFSL appointed IMAcS for preparing a City Mobility Plan (CMP) for Coimbatore Local Planning Area. Objectives of this CMP are:

- Development of a comprehensive, cohesive and an integrated Traffic, Transportation and a Mobility Plan;
- Discuss key interventions to be undertaken by respective stakeholders to enable Plan implementation;
Optimal Utilization of funds ,human and institutional resources for project implementation (towards efficient and effective city transportation);
- To illustrate a basic plan for urban development and include a list of proposed urban land use and transport measures to be implemented within a time span of 20 years or more
- To ensure that the most appropriate, sustainable and cost effective implementation program is undertaken in the urban transport sector ;
- To identify feasible short term, medium term and long term traffic management measures and transport infrastructure needs to facilitate safe and efficient movement of people for the present and the future.

The Scope of Work for the study as per the Request for Proposal (RFP) and Agreement with TNUIFSL are:

Task 1 : Scope and Timeframe

Task 2: Collect Data and Analyze Urban Transport Environment

Task 3: Prepare and Evaluate Urban Transport Development Strategy

Task 4: Develop Urban Mobility Plan

Task 5: Prepare Implementation Programme

Task 6: Stakeholder Consultations

City Profile

Coimbatore is located in the Tamil Nadu state of India. The district spreads over an area of 3,670 sq. km and an area of 1,052 sq. km. as Reserve Forest. There are six regional transport offices namely: Coimbatore Central, Coimbatore South, Coimbatore North, Mettupalayam, Pollachi and Sulur in Coimbatore. There are three National Highways — NH-47, NH-67 and NH 209 that connects the city to other parts of the state. The Railway stations are located at Peelamedu, Singanallur, Coimbatore North, Mettupalayam, Irugur, Podanur, Pollachi, Sulur, Thudiyalur and Periyanaickenpalayam.

The population of Coimbatore District was 34.58 lakh as per the Census 2011 with a decadal population growth rate of 19.06%. The extrapolated population for the Local Planning Area Coimbatore in 2013 is estimated at 23.31 Lakhs. The population density was recorded at 748 persons per sq. Km as per census 2011. As per Coimbatore Master Plan the population of Coimbatore LPA is estimated to grow at 11.77%. Population of Coimbatore city in 2011 was 10.61 lakh; of which male and female were 5.31 lakh and 5.30 lakh respectively. The population has grown from 7 lakh in 1981

to 10.6 lakh in 2011, with decadal growth rate of 14.03%.The Local Planning Area of Coimbatore comprises of two Municipalities and 12 Town Panchayats.

Coimbatore is the largest industrial centre in Tamil Nadu after Chennai, and is a part of the Coimbatore-Tirupur-Erode Industrial Corridor. Apart from the large number of textile mills, a number of small scale engineering industries like Pumps and Motors are also located in and around the city. As per the Census 2001, 38.49 percent of the total population of the city constitutes the workforce, which has registered as increase of over 4 percent from the previous decade. Around 90 percent of the total workforce is in the tertiary sector followed by secondary sector contributing 5 percent. The city has three major industries contributing to the economic development.

The employment participation rate for Coimbatore local planning area in secondary sector is 76.64% which is more than primary and tertiary sectors of employment in the local planning area. The employment in manufacturing is account for 2.91% of working force followed by other services which accounts for 73.08%.

The Gross District Domestic Product (GDDP) of the Coimbatore district has increased from Rs.20,901 crore in 2004-05 to Rs.39,794 crore in 2008-09. At constant prices, the growth rate of the district GDDP was 11 per cent per annum between 2004 and 2009.The GDDP for the year 2014 is estimated at Rs.60,140 crore. As of 2008-09, of all the districts in Tamil Nadu, Coimbatore makes the highest contribution to the State GSDP at 10 per cent (it is followed by Chennai, Thiruvallur and Kancheepuram). However, in terms of per capita income, it ranks second at Rs. 81,953 per person after Kanyakumari district, which has a per capita income of Rs. 87,873 per person.

Review of Land Use System

The Coimbatore Corporation area as indicated in Coimbatore Master Plan is 105.60 sq.km of which approximately 76 percent of land is put to development use, whereas approximately 23 percent of the land is still being put to agricultural use, water bodies, vacant areas and heritage areas. In the developed land use, almost 80 percent of it is put to residential use.

The Coimbatore Local Planning Area, encompassing Coimbatore Urban agglomeration and its peripheral areas covers an area of 1,287 sq. km.

A study of the present pattern of development of various activities within the Coimbatore Local Planning Area indicates that the expansion is taking place along the major radial roads particularly on North, East and South. Elsewhere the growth is limited due to the character or terrain and location of agricultural fields.

Land use details of Mettupalayam as proposed in 2001 shows majority of total 720 hectare area is residential (55%) followed by agricultural use (23.6%).

Landuse details of Pollachi (2006) shows, of the total corporate area of 13.87 sq. km., two-thirds remained under agricultural and vacant uses, and about one fourth was under residential occupation. Industrial establishments covered 60ha. accounting for 4% of the total area, whereas commercial and public/semi-public activities occupied 2% of the total area each.

Existing Transport Systems

Based on review of past studies and reports all existing transport infrastructures of Coimbatore have been summarized below:

- Major Transportation Corridors
 - NH47(Avinashi Road) towards Salem leading to Bangalore and Chennai
 - NH47(Palakkad Road) towards Trichur, Kochi and Thiruvananthapuram
 - NH 67(Trichy Road) towards Karur, Trichy, Thanjavur and Nagapattinam
 - NH 67(Mettupalayam Road) towards Ooty and Gudalur leading to Karnataka and Kerala
 - NH 209(Sathy Road) towards Sathyamangalam, Chamrajnagar, Bangalore
 - NH 209(Pollachi Road) towards Palani, Dindigul
- Road Network Inventory
 - Corporation Roads – 2,106.11 km
 - Highways – 56.08 km (Major District Roads, National and State Highways)
 - 71% of roads are surfaced
 - Road Density – 7.06/Sq. Km
- Eastern Bypass from Neelambur to Madukkarai on NH 47
- Public Transport Systems: TNSTC and the private bus operators operate Town bus services in most parts of the City and villages in the District; buses also connect to all towns in Tamil Nadu, North Kerala, South Karnataka and Tirupati. Number of mofussil routes operated by the TNSTC Coimbatore division is 119 with 500 No. of buses. Number of town buses in the City is 640 which are operated by TNSTC. In addition to TNSTC buses there are 300 more private buses operating in Coimbatore. To cater to passenger and bus traffic, currently six bus terminals operate under CCMC. These terminals are the Town Bus Stand, Ukkadam Bus Stand, Singanallur Bus Stand, Mettupalayam Bus Stand, Thiruvallur Bus Stand and the Central Bus Stand at Gandhipuram.

In addition to existing transport infrastructures, proposals and recommendations on transport system of Coimbatore from all past studies and reports have been summarized. These includes:

- Comprehensive Traffic and Transportation Plan/Mobility Plan – Coimbatore City
 - Traffic Management Measures
 - Junction Improvements
 - Roadway Riding Quality Improvements
 - Footpaths and Cycle Tracks
 - Missing Links Connectivity (Priority I and II)
 - Flyovers (Priority I and II)
 - Road Over Bridges (Priority I)

- Pedestrian Subways (Priority I)
- Road Widening Schemes (Priority I)
- Ring Roads (Priority II)
- Mass Transit (Priority I)
- Multi-Level Parking Facilities (Priority I)
- Bus Terminals (Priority II)
- Truck Terminals (Priority II)
- Coimbatore Master Plan
 - Link Roads suggested for Immediate Implementation
 - Proposed new parking Lot
 - Railway over Bridges
 - Subways
 - Skywalk with Electrical Escalator
 - Improvement of Existing Parking Lots
 - Outer Ring Road
 - Inner Ring Road
 - Link Roads
 - Bus Terminals
 - Truck Terminals
- Mass Rapid Transit System
- City Development Plan for Coimbatore
 - Improvement of Existing Roads
 - Widening Bus Routes with Signage and Footpath
 - Outer Ring Road
 - New Link Road
 - Flyovers
 - Elevated Highway
 - New RoBs/ RuBs
 - Integration and Up-gradation of SH Network with NH
 - Pedestrian Subways
 - Multi Storeyed Parking Lot
 - Truck Terminal

- Traffic Management Measures
- Non-motorised Transport, Public Transport and Travel Demand Management proposals
- Proposed BRT Corridors

Analysis of Existing Traffic/ Transport Situation

To understand existing traffic and transportation situation of the study area, extensive primary surveys have been conducted and the collated survey data have been analysed. The primary surveys along with their findings from analysis include:

- Classifieds Traffic Volume Counts at Mid-Block
 - Average mid-block traffic volume within LPA is 14,931 PCU and outside LPA within the study area is 17,995 PCU.
 - Coefficient of variation is less than 5%.
 - Peak hour is observed from 8:00 to 11:30 in the morning and 19:00 to 20:30 in the evening.
 - Peak hour factor for all locations of Mid-block TVC varies in the range of 6.01 to 10.68
 - Traffic movement on Pollachi Road is observed to be highest and lowest traffic is observed at Kottur Main Road.
 - Percentage of 2 Wheelers are high i.e. around 40 %, followed by Cars and 3 – wheelers;
 - Percentage of public transport buses is between 4 – 10% on at Mid-block survey locations.
- Classifieds Traffic Volume Counts at Inner Cordon
 - The volume of traffic is highest on Mettupalayam Road.
 - Average inner cordon traffic volume is 37,265 PCU
 - Two wheelers constitute more than 55% of the total traffic.
 - Overall passenger vehicles share 93% of the total traffic, while goods traffic share is 7%.
 - The hourly variation shows that the peak hour observed is 08.00 – 09.00 Hours.
- Classifieds Traffic Volume Counts at Screen Line
 - Average screen line traffic volume is 27,589 PCU
 - Average traffic composition of all screen lines are presented in the Figures below, which indicates the high share of two wheelers i.e. varies in the range of 52% to 54%.
- Classifieds Traffic Volume Counts at Outer Cordon
 - The volume of traffic is highest on Palladam Road (NH-67) followed by Avinashi Road (NH-47).
 - Average outer cordon traffic volume is 19,498 PCU

- Morning peak hour is observed from 07:00 to 12:15 and evening peak hours from 17:00 to 20:00.
- Average daily traffic composition indicates the maximum share of two wheelers (i.e. 37.3%) followed by Car and 2 and 3 Axle vehicles. Outer cordon survey location also indicates lower share of public transport bus.
- Classifieds Turning Volume Counts at Intersections
 - Maximum peak hour volume at junction is 13,103 PCU at Coimbatore-Ooty-Gundlupet Highway crossing with Mettupalayam Annur Road (Anna Statue Intersection).
 - Maximum peak hour percentage observed is 12% of total volume.
- Parking Survey
 - Maximum parking accumulation varying from 24 PCE to 161 PCE
 - More than 30% of the vehicles are parked less than one hour.
- Origin – Destination Survey
 - External to external interaction for the LPA is 23% and the rest 77% is between internal and external zones.
 - Occupancy of bus is on lower side as around 35, whereas occupancy for other modes is slightly higher (3.45 for car and 4.08 for taxi).
 - Major Trip Producing and Attracting Zones (Within LPA) : Coimbatore Railway Station, Avaram Palayam, Udayampalayam, Agricultural University, Nangundapuram
 - Major Trip Producing and Attracting Zones (Outside LPA) : Mettupalayam, Paladam, Pollachi.
- Speed and Delay Survey
 - Average journey speed in the study area is around 20kmph and average running speed is around 25kmph in the peak hour.
 - The least speed is observed on Sathy Road between PN Palayan Road and Sanganoor Road.
 - Average Journey Speed (including peak and off peak both) in Municipal Corporation: 24.5 kmph, Average Journey Speed outside Municipal Corporation and within LPA: 32.kmph and Average Journey Speed outside LPA but within study area: 27 kmph.
- Public Transport Passenger On Board Survey
 - In different public transport modes, Maximum travelers were the daily commuter i.e. to the extent of 82.77 percent.
- Commuter Survey
- Household Survey
 - The overall per capita trip rate (PCTR) observed in the study area was 1.43 including walk and 1.25 while excluding walk trips.
 - Income level of 87% of households is less than Rs. 15,000 per month which indicates captive requirement of public transport
 - More than 80% of the households spend less than Rs.1000 per month on transport.

- 42% of trips served by public transport due to limited affordability rather than better service and convenience of public transport
- Vehicle Operator’s Survey
 - The total vehicle operator’s survey was evenly distributed i.e. 33% of the total survey was for bus operator’s and 41% and 25% for taxi and auto operator’s respectively.
 - While talking about ownership of vehicles, it can be seen that a high vehicle ownership is seen for taxi and auto i.e. to the extent of 91% and 81% respectively. This means that very less vehicles move on hired basis
- Terminal Area Survey
 - The maximum inflow and outflow of passengers is seen at Town Hall bus terminal and the minimum utilization of terminal is seen at Mettupalayam Bus Terminal.
 - The peak hours for all the terminals are seen during evening hours.
 - The maximum share in composition is of the walk, bus and the auto rickshaw trips, whereas the trips made by car and two wheelers contribute only 2%.
 - The maximum trip lengths for access and dispersal trips are less than 5 km, only few trips i.e. to the extent of 10% were seen having trip lengths greater than 5 Km.
- Pedestrian Survey
 - Summary of Pedestrian survey analysis indicates the maximum peak hour’s count of 3,438 at CMC hospital at Trichy Road and corresponding to that time is 10:00 to 11:00 A.M.
- Road Inventory
- Topographic Surveys at Key intersections/Junctions

An operational travel demand model is required to enable estimation of future travel demand that will help towards identifying transport requirements for the study area. The standard 4 stage UTPS (Urban Transport Planning System) model procedure was adopted for the said purpose; that inter-alia consists of:

- Trip generation and attraction model/s
- Trip distribution model
- Modal split model
- Assignment model

To develop four stage UTPS model in CUBE software, the entire study area has been divided in 197 zones including 176 zones within the LPA.

Development of Vision and Goals

The vision as envisaged for Comprehensive Mobility Plan for Coimbatore is as follows:

- To improve connectivity and travel throughout Coimbatore LPA
- To improve mobility within neighborhoods, wards, zones and satellite towns to address inter and intra city transportation needs
- To achieve efficient arrangement of landuse and transport system to minimize overall travel cost

- To offer viable and reliable transportation options that aim at reducing dependence on cars, with widespread use of non – motorized modes and mass rapid transit system

The Mobility Plan for Coimbatore will be addressed through a multi-prolonged approach. Solutions for complex transport improvements cannot be achieved by a single strategy. The following strategies need to be adopted in tandem to meet the various goals set for Coimbatore.

1. Land use and Transport Strategy
2. Development of Mobility Corridors
3. Public Transit Improvement Strategy
4. Non – motorized transport strategy
5. Freight Management Strategy
6. Traffic Engineering Measures
7. Travel Demand Management Strategy

A set of performance indicators has been developed as goals to be achieved for the study area. The goals have been defined based on the vision and objectives. The goals were set in consultations with TNUIFSL and the other stakeholders in Coimbatore. The mobility strategies mentioned above will aim at attaining these goals. The CMP includes measurable goals listed below to quantify various transport and mobility strategies:

- Increase the mode share for pedestrians and cyclists to at least 20 per cent.
- Ensure that at least 75 per cent of major streets have footpaths.
- Ensure that at least 80% of streets with a right-of-way (ROW) of over 30m have unobstructed, segregated, continuous cycle track of 2m width.
- Increase public transport mode share to at least 70 per cent of motorised trips.
- Stabilise private motor vehicle kilometres travelled (VKT) so that there is 0 per cent annual growth in VKT.

Problems and Issues

The population of Coimbatore Local Planning Area has been growing fast at a rate of over 1% per year in the last decade. There has been a phenomenal growth in the population of vehicles as well especially the two and four wheelers in this period and their rising use due to rising household incomes.

Coimbatore has one of the highest per capita income in the country between at Rs. 7000 and Rs. 12,000 per month. Besides nearby towns such as Mettupalayam, Pollachi are also growing fast and have large traffic interaction with the Coimbatore City. In the absence of adequate and quality mass transport system, people are using the personalized modes which is not only leading to congestion on road network but also increasing environmental pollution. Such growing congestion is resulting in loss of productivity, reduced air quality, reduced quality of life, and increased costs for services and goods.

The analysis of collected data from primary and secondary sources has brought the following major issues regarding the transport system of Coimbatore Local Planning Area.

Key Issues for Vehicular Traffic and Travel Characteristics

- High number of private vehicle registration indicates over dependence on private modes and lack of public transport.
- Registered vehicle growth is much higher than population growth resulting in higher motorization and reduced usage of NMV and walk.
- **10 Intersections** with Peak Hour Volume between 6,000 - 10,000 PCUs demand **signalization** according to IRC Standard.
- **5 intersections** with Peak Hour Volume above 10,000 PCUs require **grade separation (flyover or underpass)** according to IRC Standard.
- Income level of 87% of households is less than Rs. 15,000 per month which indicates captive requirement of public transport.
- Average journey speed in the study area is as low as 20 kmph in the peak hour.
- Goods Traffic enter the city core due to location of terminal at Ukkadam and absence of bypass.

Key Issues for Pedestrian and NMV Facilities

Key issues observed analyzing the existing pedestrian and NMV facilities through the study area are as follows:

- High pedestrian vehicular conflict at more than 30 intersections and mid blocks. They have PV^2 greater than 2×10^8 which require grade separated facilities.
- Absence of footpath and NMV tracks on major arterials (80% of the major arterials).
- Existing footpath are poorly maintained and encroached upon (75% in the CBD area).

Key Issues for Public Transport

Key issues observed analyzing the existing public transport in the study area are as follows:

- 42% of trips served by public transport due to limited affordability rather than better service and convenience of public transport.
- Static PT modal share (42%-45% since 3 years).
- Bus Terminal location at city centre (Gandhipuram and Ukkadam) leads to congestion within the CBD area with large number of interchange trips.
- Overlapping PT routes- Sub optimal Load Factor at 39.39% even though number of buses per 1,00,000 population is 38 and have fleet utilization is as high as 99.93%.
- IPT traffic is estimated to reduce average journey speeds around CBD by as much as 20%.

Future Growth and Transport Demand Forecast

Coimbatore and particularly nearby towns are planned to experience high growth in coming decades. Projected population for Coimbatore Local Planning Area as per their development plans is given in the table below. Thus population of these towns is expected to grow from 23.3 lakh in 2013 to 27.7 lakh in 2033. Many high density areas are being planned in Coimbatore. Various industrial areas and other economic activities are being planned and developed in the Coimbatore LPA. This will increase employment opportunities in these areas. Therefore it is prudent that a compatible, adequate and extensive mass transport network system and road system is planned and developed in order to meet the transport demand up to 2033.

Table: Population Forecast

Year	Population Projections			
	2013	2020	2025	2033
Coimbatore Corporation	15,99,710	16,56,549	16,98,381	17,67,518
Local Planning Area	23,30,808	24,72,717	25,81,308	27,68,806

Four stage transport demand model has been adopted to estimate future transport demand up to 2033. Total daily trips are estimated to increase from 30 lakh in 2013 to 47 lakh in 2033. Modal split in favour of public transport system needs to be increased from present 45% to 59% by 2033. Considering proposed land use in various areas, transport demand modelling and forecasting has been done to identify major corridors of travel in future. An integrated and multi-modal transport system has been evolved to cater to projected transport demand in an effective and coordinated manner.

The Preferred Strategy for Transport Development

Urban Transport Strategy can play an important role in tackling urban problems, traffic congestion constraints and business efficiency which degrades the quality of life. Urban Transport projects can reduce journey times and their unpredictability yielding large savings of travel time and vehicle operating costs and thus release city's economic and social potential. Urban transport problems of Coimbatore have been analysed in the context of area-wide issues and transport strategy evolved. Special attention has been paid to aesthetics aspects so that the proposed system gels well with the environment. In order to prepare the Comprehensive Mobility Plan the following policy measures have been considered.

1. Provision of bus rapid transit system and LRT along trunk corridors to provide wide coverage and transport integration with other modes of transport.
1. Rationalisation of local bus system and its augmentation along with feeder network for the BRT and LRT operations
2. Improvement in traffic management through TSM measures
3. Special facilities for pedestrians within the entire network specially in the core areas; provision of pedestrian subways, footpaths and road furniture along the roads where necessary.

4. Diverting through traffic on bypasses, providing transport hubs at the periphery of Coimbatore City.
5. Improving primary, arterial and other important roads (particularly radial and ring roads) by providing grade separation in the form of flyovers and underpasses

The Proposed Traffic and Transportation Plan

On the basis of projected traffic, an integrated multi-modal mass transport system plan on various corridors has been suggested in order to cater to traffic up to the year 2033. The mass transport systems have been proposed on various corridors considering expected traffic demand by 2033, available road right-of-ways and system capacity. The balance traffic should be carried by road system in order to satisfy the needs of normal bus system and other modes such as two wheelers, cars, bicycles, trucks, pedestrians etc. The proposed Comprehensive Mobility Plan for Coimbatore contains the following types of proposals, which will cater to requirements of the projected travel demand up to the year 2033.

Traffic engineering and management measures have been finalised in the light of problem identification and included in this report. The schemes have been discussed in various meetings and agreed. The schemes consist of the following measures:

Table: Summary of Projects

Improvement Measures	Details
Intersection improvements (corridor improvement by traffic circulation measures such as ban on certain turning movements, one way streets etc, providing Channelizers, underpasses at junctions etc.)	Signalised – 18 on existing roads Grade Separated – 10 on existing roads and 9 on new roads
Provision of automatic multilevel parking lots	6 Locations
Schemes for non motorised modes	Pedestrian Grade Separated Facilities – 14 Locations Footpath – 231 km of Road Length Cycle Tracks – 126 km
MRT	
LRT	Total – 85 Kms
BRT	Total – 50 Kms
Public Transport Improvement Plan	
Augmentation of Bus Fleet	Number of Buses Required (2020) – 1,148 Number of Buses Required (2025) – 1,327 Number of Buses Required (2033) – 1,397
Feeder Network	402 Kms
Bus Terminals	5 Locations
Bus Shelters	85 Locations
Additional Depots	5 Locations
Inter – City Bus Terminal	1 Location
IPT Stands	27 Locations
Inter Modal Interchanges	1 Location

Road Infrastructure	
Integrated Freight Complexes	7 Locations
New Links	Phase I – 58 Kms Phase II – 10 Kms Phase III – 36 Kms
Capacity Augmentation	Phase I – 89 Kms Phase II – 37 Kms Phase III – 126 Kms
ROB	12 Locations

Integrated multi modal transport system has been recommended in order to ensure seamless travel. For the balance travel demand, road improvement proposals have been formulated. While making road proposals, entire corridor has been proposed to be improved instead of isolated improvements.

The proposed mass transport corridors are shown in the table below.

Table: Proposed Mass Transport Corridors

S. No.	Corridor Name	Length (km)
LRT		
1	Karanampettai to Thannerpanthal (Along Trichy Road and Thadagam Road)	42
2	Ganeshapuram to Karunyanagar (Along Sathyamangalam Road and Perur Road)	44
BRT		
1	Kaniyur to Ukkadam Bus Stand	26
2	Bilichi to Ukkadam Bus Stand	24

Summary of Cost Estimates

The estimated investment for the entire Traffic & Transportation Plan based on public transport oriented system for the period till 2033 is estimated to be Rs 14,225.73crore at 2014 prices as given in **TableTable 18-1**. The proposed Implementing Agency and tentative financing structure for each of the major investments proposed is dealt with briefly in the table below.

Table: Project Matrix

S. No.	Project	Implementing Agency	Funding Mechanism	Phase	Cost (Rs. Crore)
1	Road Infrastructure Development Plan	CCMC/Mettupalayam Municipality/ Pollachi Municipality/ Local Planning Authority / NHAI / Highways Department	PPP / BOT (Annuity) / JnNURM / Cash Contract	Phase I, II & III	5,410.55
2	Improvement in City Bus System and Intercity Bus Terminals	TNSTC	JNNURM / Cash Contract / TNSTC / PPP	Phase I, II & III	4,676.55

3	Junction Improvements	City Corporation / Local Planning Authority	JNNURM / Cash Contract	Phase I & II & III	501.10
4	ROBs , RUBs and Rail	City Corpoartion / Local Planning Authority / Railways	JNNURM / Cash Contract	Phase I	345.82
5	Pedestrian Facilities	City Corporation	JNNURM / Cash Contract	Phase I	386.57
6	Parking Facilities	City Corporation	PPP/ BOT	Phase I, II & III	162.30
7	Integrated Freight Complexes	Local Planning Authority	PPP/ BOT	Phase I	262.32
8	Transport System Management Measures	Local Planning Authority	Multilateral Agencies - World Bank, Asian Development Bank	Phase I	165.09
9	IPT Stands	City Corpoartion	JNNURM / Cash Contract	Phase I	10.82
10	BRT	SPV	Multilateral Agencies - World Bank, Asian Development Bank	Phase I, II & III	753.48
11	LRT	SPV	Multilateral Agencies - World Bank, Asian Development Bank	Phase II and III	14,452.00
Grand Total					27,126.61
Total Cost without Land Acquisition Cost					23,355.91
Total Cost without System Cost					11,921.13

Social and Environment Considerations

Several traffic and transport proposals with more emphasis to Public Transport schemes that are proposed in this study which when implemented have positive impact on the environment. The elements of emissions from vehicles such as Carbon-mono-oxide, Hydrocarbons and Particulate matter have significantly reduced during in the horizon years.

The impact of the proposed projects from the social angle is analyzed at a broader perspective. It is found that most of the projects have significantly less impact with respect to Rehabilitation and Resettlement. Land acquisition for some of the projects is inevitable. The proposed projects significantly improve mobility with reduced travel time.

Institutional Strengthening

There are many agencies involved in the urban transport in Coimbatore. As such there is nothing wrong in multiplicity of authorities. However currently there is no mechanism to ensure coordination among various institutions which is one of the key road block affecting formulation and implementation of major schemes and initiatives to improve the traffic situation and mobility plans in the city. Setting up a Unified Metropolitan Transport Authority (UMTA) is proposed which would ensure co-ordination, cooperation and continuity.

Also, the Municipal Corporation of the Coimbatore deals with road construction and maintenance. Traffic Police looks after traffic management in the city. There are numerous issues of proper road geometrics, traffic circulation, junction design, traffic signals, road signs/markings, street furniture etc which are not properly attended to by these agencies due to lack of traffic engineering expertise. Traffic planning is a continuous affair. It is therefore important that Traffic Engineering Cells (TEC) are established in these organizations with qualified and adequate staff such as traffic engineers. This will ensure that the traffic schemes are properly implemented with better results and fine tuned later, if necessary. This will go a long way to improve traffic flow in Coimbatore. Similar TECs should also be set up for all towns in the Local Planning Area

Effective revenue management is the most important component of a sustainable public transport. The cities/local bodies do not have enough revenue sources. Thus, they cannot provide an effective Public Transport system without outer support. Along with this, they (cities/local bodies) have to find new revenue sources or non-revenue sources at their level and financial discipline needs to be implemented for its utilization. For this DUTF needs to be formulated both at the city and state level. The State Govt., Central Govt., and outer fed financial sources should be used for viability gap funding.