Ministry of Urban Development
Government of India

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Appraisal Checklist for Urban Transport Projects

Toolkit - June 2015

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Abbreviations

ATL	Average Trip Length
ATT	Average Trip Time
BAU	Business as Usual
BRTS	Bus Rapid Transit System
CCTV	Closed Circuit Television
CMP	Comprehensive Mobility Plan
DP	Development Plan
DPR	Detailed Project Report
FIRR	Financial Internal Rate of Return
FOB	Foot over Bridge
FSI	Floor Space Index
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GOI	Government of India
GPS	Global Positioning System
HCV	Heavy Commercial Vehicle
HDV	Heavy Duty Vehicles
HIG	High Income Group
HSD	High Speed Diesel
IUT	Institute of Urban Transport
IPT	Intermediate Public Transport
ITS	Intelligent Transport System
ISBT	Inter State Bus Terminal
JnNURM	Jawaharlal Nehru National Urban Renewal Mission
KMPL	Kilometre per Litre
LCV	Light Commercial Vehicle
LDV	Light Duty Vehicles
LIG	Low Income Group
LoS	Level of Service
LRT	Light Rail Transit

MAV	Multi Axle Vehicles
MIG	Middle Income Group
MoUD	Ministry of Urban Development
MRTS	Mass Rapid Transit System
NH	National Highway
NMT	Non Motorised Transport
NMV	Non Motorised Vehicle
NOx	Nitrogen Oxide
NUTP	National Urban Transport Policy
O & M	Operation and Management
PCTR	Per Capita Trip Rate
PCU	Passenger Car Equivalent
PHPDT	Peak Hour Peak Direction Traffic
PM	Particulate Matter
PPP	Public Private Partnership
PT	Public Transport
RoW	Right of Way
RSPM	Respiratory Suspended Particulate Matter
SLB	Service Level Benchmarks
SOx	Sulphur Oxides
SPM	Suspended Particulate Matter
SPV	Special Purpose Vehicle
TKM	Tonne-Kilometre
UFCC	Urban Freight Consolidation Centre
ULB	Urban Local Body
UMTA	Urban Metropolitan Transport Authority
UTF	Urban Transport Fund
VKM	Vehicle Kilometre
VOC	Volatile Organic Compound
WFPR	Workforce Participation Rate



Background

In the recently launched missions on Smart cities and Atal Mission on Redevelopment and Urban Transformati on (AMRUT) efficient urban mobility and public transport is one of the core infrastructure elements. It includes smart parking, intelligent traffic management, integrated multi - modal transport, public transport etc. as the thrust areas for smart solutions under transport sector in both the mission. Cities and state authorities would be required to prepare detailed project reports on urban transport projects for development of sustainable urban transport system. In order to work out the sound project reports and to assess and appraise the urban transport projects there is a need to have some checklist.

It is in this context the Insti tute of Urban Transport (IUT) under the purview of Ministry of Urban Development has prepared a toolkit on Appraisal Checklist for Urban Transport Projects. The toolkit has elaborated on the assessment of urban transport projects in terms of economic, social and environmental impact so as to opti mise the benefits and develop the sustainable urban transport system. The toolkit is based on in-depth study of best practices at national and internati onal level in the field, the existing toolkits, guidelines and policy documents on various aspects of urban transport and wide consultati on with stakeholders comprising experts, policymakers, city officials, academicians, professionals etc. at various stages.

It will be a useful reference guide to the city and state authorities and professional urban transport planners & practitioners for preparation and evaluation of urban transport projects.

OBJECTIVE

The objective of this toolkit is to guide the States/ULB's/Para-statal agencies to appraise urban transport projects for improving urban mobility in a sustainable manner by addressing minimization of greenhouse gas emissions; encouraging social inclusiveness and gender equality; and promoting economic efficiency.

CATEGORIZATION OF URBAN TRANSPORT PROJECTS

Five categories of urban transport projects included in this toolkit are:

1. Transport Planning (includes Comprehensive Mobility Plan);
2. Public Transport (confined to City Bus System and Bus Rapid Transit System only);
3. Non-Motorised Transport Plan (comprising of walk and cycle);
4. Transport Infrastructure (comprising of Network Improvement and Expansion; and Parking Management Plan) and
5. Urban Freight (Freight Management PlanandFreight Terminals/Consolidation Centres).

Brief outline of five types of urban transport project structured in the toolkit is as under:

CATEGORY 1: TRANSPORT PLANNING

This category includes mobility plans for cities and urban agglomerations like Comprehensive Mobility Plans, Comprehensive Traffic and Transportation Study, Comprehensive Transportation Study and Traffic and Transportation Master Plan as well as Regional Transportation Plan. The checklist highlights on the components of existing transport scenario, development of sustainable mobility plans and its benefits in terms of social, economic and environmental benefits.

Note 1: refer following documents and guidelines issued by MoUD (moud.gov.in)–

- Comprehensive Mobility Plan (CMP) - A Toolkit (Revised), 2013
- Code of Practice for design of Urban Roads, 2012
- National Urban Transport Policy, (NUTP), 2006

CATEGORY 2: PUBLIC TRANSPORT

Public Transport Projects involve appreciating the role of existing public transport system and selection of system technologies and their planning, operations and management.

Under this category Appraisal checklist for City Bus System, Bus Rapid Transit System (BRTS) projects, allied infrastructure like Bus Stations, Bus Terminals, Transit Centres, Depots and Workshops, Control Centres, ITS for City Bus System and BRTS is included. Also, it includes planning for feeder services, multimodal integration and institutional reforms.

Source: www.indiaprwire.com


The checklist contains the followings:

- **Existing Condition –** City Profile, Travel and Traffic Characteristics, Surveys Conducted and Existing Public Transport Characteristics (Available Modes, Route Details and Bus Typology, Physical & Financial Performance, Infrastructure etc.)
- **Proposals –**
  - Route Planning – Planning of new routes and route rationalisation of existing routes.
  - Assessment of Fleet - Number and typology of fleet.
  - Infrastructure Planning - Stations/ Terminals/Depots
  - ITS – Control Centre, On Bus ITS, ITS in Stations/ Terminals/Depots, Services for the people.
  - System Design for BRTS – Network and Roadway; Vehicles, Services and Operations; and Feeder Network & Infrastructure.
  - Cost - Total Cost, Funding Pattern, Fund Transfer Mechanism, Financial Intermediary for timely payment to manufacturers etc and Financial Analysis.
  - Governance – Roles & Responsibilities of agencies/government bodies and Institutional Reforms
- **Benefits -** Sustainable Benefits in terms of society, economy and environment.

Note 2: refer following documents and guidelines issued by MoUD (moud.gov.in)–

- Guidelines for Financing of Buses for Urban Transport Systems, 2009
- Guidelines for Purchase of Buses and Ancillary Infrastructure for Urban Transport Systems, 2013
- Handbook on Service Level Benchmarks (Urban Transport), 2009
- Guidelines and Toolkits for Urban Transport Development in Medium Sized cities in India, Module 2, Bus Rapid Transit (BRTS): Toolkit for feasibility Studies, 2009
- Development of Training Material under Sustainable Urban Transport Project, Reference Guide Volume 2 Public Transport, 2013

CATEGORY 3: NON-MOTORIZED TRANSPORT

This category mainly involves NMT facility improvement plan. The sub components of NMT Improvement Plan includes provision of clear walkable footpath throughout the city, cycle tracks, streetlights, cycle stands and NMT designed signals at all junctions. It also includes planning for pedestrian crossing facilities like at-grade crossings, foot over bridge and subways.

The checklist contains the followings:

- **Existing Condition –** City Profile, Surveys Conducted and Existing Non-Motorised Characteristics (Walk and Cycle)
- **Proposals –**
  - Footpath and Cycle Tracks – Network Coverage, Geometric Design, Pavement Materials, Street Lighting, Disabled Friendly Infrastructure etc.
  - Crossing Facilities – Geometric Design and Design Capacity
  - Cycle Parking – Parking Facilities at Interchanges & PT Stops
  - Road Safety
  - Public Bicycle Sharing Scheme – Control centre, Customer service and ITS for PBS.
  - **Cost –** Total Cost, Funding Pattern and Contracting Mechanism if any.
  - **Governance –** Roles & Responsibilities of agencies/government bodies.
- **Benefits –** Sustainable Benefits in terms of society, economy and environment.

Source: www.dnaindia.com

Note 3: refer following documents and guidelines issued by MoUD and IRC–

MoUD (moud.gov.in)–

- Code of Practice for design of Urban Roads, 2012
- Service Level Benchmarks in Urban Transport , 2009

IRC Codes

- IRC: 103 – 2012 - Guidelines for Pedestrian Facilities
- IRC: 86 – Geometric Design Standards for Urban Roads in Planning
- IRC: 69 – Space Standards for Roads in Urban Areas
- IRC: 92 – Guidelines for Design of Interchanges in Urban Areas
- IRCSP: 41 – Guidelines for the Design of "At Grade Intersections" in Rural and Urban Areas
- IRC: 65 – Recommendations, Practice for Traffic Rotaries


CATEGORY 4: TRANSPORT INFRASTRUCTURE

This category consists of road projects,network improvement,and off-street & on street parking management.

The checklist contains the followings:

Source: www.wikiwand.com

- **Existing Condition –** City Profile, Surveys Conducted, Existing Road Network Characteristics including Intersections and Existing Parking Characteristics (Off Street, On Street and Parking Management)
- **Proposals –**

a) For Network **–**

- Geometric Design – Horizontal and Vertical Alignment, Weaving Length, Entry/Exit Angles etc.
- Pedestrian and Cycle Facilities – Pedestrian pathways, cycle tracks, crossing facilities and cycle parking.
- Road Marking and Signages
- Road Safety
- Design Capacity and Design Period
- ITS – Control Centre, Automatic Traffic Classifier & Counter, Variable Message Signboard, Traffic Signals, Electronic Road Pricing System, Lane Control System etc.

b) For Parking -

- City Policies
- Location and Type of Off-Street Parking – Surface, Multi-Storeyed, Underground etc.
- Zoning for Parking – Delineation of Parking Zones on the basis of users, duration, type of vehicles, pricing etc.
- Management Plan

Note 4: refer following documents and guidelines issued by MoUD and IRC

MoUD (moud.gov.in)–

- Public Transport Accessibility Toolkit
- Service Level Benchmarks in Urban Transport

IRC Codes: IRC: 103 – 2012 – Guidelines for Pedestrian Facilities

- ❖ Proposed Parking Characteristics like Capacity, Accumulation, Volume, Load Duration, Turnover, Composition, Tariff etc.
- ❖ ITS – Parking Guidance & Information System, Smart Payment System, Security System etc.
- ❖ Cost Analysis – Project Cost, Financial Analysis, Financial Structuring & Proposed Phasing etc.
- ❖ Governance – Roles & Responsibilities of agencies/government bodies.

➢ **Benefits –** Sustainable Benefits in terms of society, economy and environment.

CATEGORY 5: URBAN FREIGHT

Urban Freight Planning and Management comprises projection of freight traffic growth; planning for industrial and commercial activities, distribution and storage facilities in the city, location of wholesale markets, direction of city growth etc. It also includes planning for non-motorised freight transport while addressing the issue of the last leg connectivity in freight movement along with freight handling facilities like freight centres (like Freight Villages, Distribution Business Centres, Logistic Centres), Urban Freight Consolidation Centres, Integrated Freight Complex and Truck Terminals.

The checklist contains the followings:

➢ **Existing Condition –** City Profile, Surveys Conducted and Existing Freight Characteristics and Existing Freight Infrastructure such as Goods Terminal, Industrial Area, Service Centre, Parking Provisions, and Circulation etc.

➢ **Proposals –**

- ❖ Freight Traffic Projections
- ❖ Urban Freight Model
- ❖ Urban Freight Management
- ❖ Freight Handling Facilities
- ❖ Cost Analysis – Project Cost, Financial Analysis, Financial Structuring & Proposed Phasing.

Source: www.supplychains.com

- ❖ Governance – Roles & Responsibilities of agencies/government bodies.

➢ **Benefits –** Sustainable Benefits in terms of society, economy and environment.

Note 5: refer Note State of the Art Report Toolkit on Urban Freight Transport Planning and Management


STRUCTURE OF APPRAISAL CRITERIA CHECKLISTS

Appraisal Criteria Checklists has been prepared for each of the fi ve identi fi ed urban transport project categories in the following format

- **Introduction –** Assess the existing city profile and transportation scenarios
- **Proposal –** This includes the details of proposals provided in the project report.
- **Funding** – Assess the sources of fund identified for the projects as well as the amount that would be required to implement the project.
- **Governance** – Appraise the roles and responsibilities of various agencies that would be involved in the planning, development, and operation and management of the project.
- **Sustainable Benefits –** Appraise the sustainability of the project in terms of social, economic and environmental aspects.

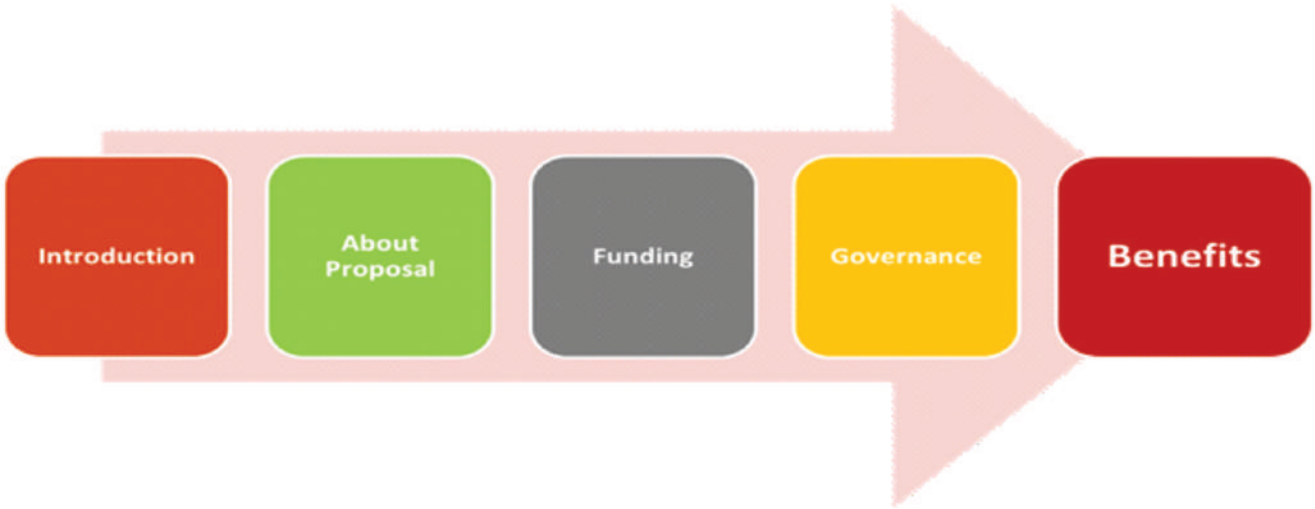


Figure 1: Components of Appraisal Criteria Checklist

STEPS INVOLVED IN STAKEHOLDER CONSULTATIONS

Stakeholder Consultations conducted at various stages to receive valuable inputs in finalising the categories and indicators for evaluation of urban transport projects.

- **Step1:** Expert committee comprising MoUD, academia, consultants, researchers, NGOs, Traffic Police, State Transport Departments, State Transport Corporations and other relevant agencies were set up.

- **Step 2:** Based on the inputs received from expert committee and literature survey both at national and international level, the classification of urban transport projects were divided into five categories namely Transport Planning, Public Transport, Non-Motorised Transport, Transport Infrastructure and Urban Freightand prepared draft indicators.

- **Step 3:** Comments were sought on draft transport indicators from the expert committee for evaluation of each category.

- **Step 4:** The suggestions received were incorporated and the finalised sustainable transport indicators presented atUrban Mobility India (UMI) Conference, 2014 for further feedback

- **Step 5:** Prepared draft report on evaluation criteria checklist for urban transport projects and circulatedthe same it amongst all the expert committee members.

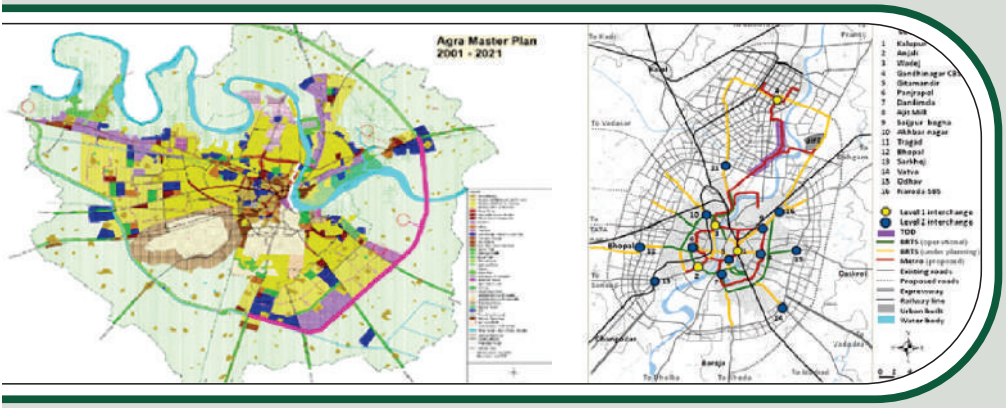
- **Step 6:** Validation workshop organized where all the expert committee members were invited to discuss on the draft evaluation criteria checklist of each category. Based on the feedback, the toolkit has been finalized.


APPRAISAL CRITERIA BASED ON THE PROJECT BENEFITS

The benefi ts of the projects will be appraised under three categories i.e. social; economic and fi nancial; and environmental benefits as per the following indicators

- **Social Indicators:** It includes modal shift to public transport and non-motorised transport, network coverage of public and non-motorised transport, accessibility, reduction in accidents, road security and reduction in motorised traffic on road.
- **Economic Indicators:** It comprises per capita transport infrastructure, share of GDP contributed by transport, staff per bus ratio, travel time and speed, reduction in fuel dependency and land used by transport infrastructure.
- **Environmental Indicators:** The environmental indicators include energy/fuel consumption, reduction in greenhouse gas emissions, emissions per capita (NO2, SO2, SPM and RSPM) and percentage of vehicles on clean fuels.

Category wise detailed appraisal checklist is given in the succeeding section.



Category 1:

Transport Planing

Comprehensive Mobility Plan



Category 1:

Transport Planning
Comprehensive Mobility Plan

I.	TASK 1 – DEFINING THE SCOPE OF CMP				
1.	**Planning Area and Horizon**				
i.	Name of City and State				
ii.	Planning Area/ Site Area (sq. km)				
iii.	Base Year				
iv.	Horizon Year				
v.	Plan Phasing Duration (in years):				
	Immediate				
	Short Term				
	Medium Term				
	Long Term				
2.	**Vision**				
	Vision is in line with sustainable transport system definition i.e. if the vision addresses	Yes	Partial	None	Remarks
i.	Environmental Sustainability and Safety				
	- Reducing Air and Noise Pollution				
ii.	Social Sustainability				
	- Accessibility and Mobility for all socio economic groups, gender, all age group and the disabled.				
	- Affordability				
	- Traffic Safety				
iii.	Economic Sustainability				
	- Integrated Land use Transport Planning				

	- Financial Efficiency and Fuel Efficiency				
	- Reduction in Travel Time and Waiting Time				
3.	**Objective**				
	Key focus area of NUTP i.e. planning for people taken care of i.e. if the objectives of the CMP address the following:			Yes	No
i.	Prioritize mobility for all socio economic groups and gender.				
ii.	Encourage sustainable modes of transport like Improvement of Public Transport, NMT and pedestrian facilities				
iii.	Provide a platform to integrate land use with transport planning				
4.	**Review of Existing Studies/Plans/Reports**				
	Existing Plans/Studies			Yes	No
i.	Perspective Plan/Master Plan				
ii.	City Development Plan				
iii.	Existing Traffic and Transportation Studies				
iv.	DPRs of Transport related Projects				
5.	**Stakeholder Consultation**				
	Consultation			Yes	Yes
i.	Stakeholder Involvement considered while preparing vision for CMP? Involvement/ consultation should be throughout the study.				
ii.	Citizen Involvement considered while preparing vision for CMP? Involvement/consultation should be throughout the study.				
II.	**TASK 2 – DATA COLLECTION AND ANALYSIS OF EXISTING URBAN TRANSPORT AND ENVIRONMENT**				
1.	**Review of City Profile**				
i.	**Socio Economic**				
a.	Current Population (in No.)				
b.	Population Growth Rate (Decadal)				
c.	Population Density (in No.) – Gross Density and Built Up Density				
d.	Average Household Size (in No.)				
e.	Projected Population (Phase Wise)	Immediate	Short Term	Medium	Long Term


f.	Projected Employment (Phase Wise)	Immediate	Short Term		Medium	Long Term
g.	Per Capita Income (in Rs)					
h.	Average Household Income (in Rs)					
i.	Expenditure on Transport (in Rs)					
j.	Investment in Transport Sector – Mention the different categories in which investment has been made	Year 1	Year2	Year 3	Year 4	Year 5
k.	Workforce Participation Rate (WFPR) (in %)			Male	Female	Overall
ii.	**Land Use**					
	Land Use (in %)		Existing Overall	Existing Built up Area	Proposed (as per Master Plan)	
	Residential Area (which should include slums)					
	Commercial Area					
	Public and Semi-Public					
	Recreation					
	Industrial					
	Transportation					
iii.	**Transport Related**					
a.	Number of Registered Vehicles in Year……					
	Two Wheelers					
	Three Wheelers					
	Four Wheelers					
	Taxis					
	Buses					
	Trucks (LCV)(Up to 7.5 tonnes)					
	Trucks (HCV)					
	Any Other					
b.	Average Annual Growth of Vehicle (in %)					
c.	Road Network (in km)			Length	Percentage	
	NH					
	SH					
	Arterial					
	Sub Arterial					
	Collector					

d.	Public Transport						
	Mode	Road Based			Rail Based		
		Bus	BRTS	IPT	Metro	LRT	Sub Urban Rail
	Length (in km)						
	Number of Buses/Coaches/Vehicles						
	Number of Buses/Coaches/Vehicles per 1000 population						
	Infrastructure						
	- Number of Stops/Stations						
	- Kernel Density of Bus Stops						
	- Number of Terminal						
	- Number of Buses per Terminal						
	- Number of Depot						
	- Number of Buses per Depot						
	- Number of Workshop						
	- Number of Buses per Workshop						
	ITS Infrastructure						
	- Total Number of Stations/Terminals having CCTVs						
	- Total Number of Stations/Terminals having PIS						
	- Number of PT vehicles having GPS						
e.	Airport (Number)						
iv.	**Environment and Safety**						
a.	Number of Accidents (mention year)						
	Fatal Accidents						
	Serious Accidents						
	Minor Accidents						
b.	Pollution (Existing)						
	PM2.5 (tonnes)						
	PM10 (tonnes)						
	SO2 (tonnes)						
	NOx (tonnes)						
	CO (tonnes)						
	VOC (tonnes)						
	CO2 (million tonnes and tonnes per capita)						


2.	**Traffic Surveys Conducted**
i.	Road Network Inventory
ii.	Speed and Delay in Peak and Off Peak Hour
iii.	Classified Traffic Volume Counts Survey at -
	Outer Cordon Location
	Mid-Block Location
	Screen Line Location
	Roadside Origin-Destination Survey
iv.	Classified Turning Movement Survey at Intersections
v.	Pedestrian Volume Survey
vi.	Parking Survey
	Off Street Locations
	On Street Locations
vii.	Commuter Survey at Public Transport Terminals
viii.	Mass Transport and Intermediate Public Transport (IPT) Passengers Survey
ix.	Vehicle Operators Survey
x.	Household Survey
3.	**Traffic Analysis Zones**
i.	Total Number of Traffic Analysis Zones
ii.	Number of Internal Traffic Analysis Zones
iii.	Number of TAZ per sq. km of study area
4.	**Review of Existing Transport System**
i.	**Road Network Inventory**
a.	**Pedestrian Infrastructure**
i.	Length of Road by Availability of Footpath (in km and %)
	No Footpath
	Footpath on One Side
	Footpath on Both Side

ii.	Availability of Footpath by Width (in km and %)		
	Up to 2 m[1]		
	More than 2 m[1]		
iii.	Number of Pedestrian Crossings		
	Zebra Crossings		
	Foot over Bridges		
	Subways		
b.	**Infrastructure for Bicycles**		
i.	Length of Road by Availability of Cycle Track (in km and %)		
	No Cycle Track		
	Cycle Track on One Side		
	Cycle Track on Both Side		
ii.	Number of Cycle Stands		
c.	**Cycle Rickshaw**		
i.	Fleet Size		
ii.	Average Vehicular Km per Day		
iii.	Average Earning per Day		
iv.	Average Trip Length		
v.	Average Number of Trips per Day/per Rickshaw		
vi.	Average Distance per Day/ per Rickshaw		
d.	**Road Network**		
i.	Distribution of Road Network by Carriageway (in %)		
	Carriageway	Length	Percentage
	Single Lane		
	Double Lane		
	Four Lane Undivided		
	Four Lane Divided		
	Six Lane Divided		
	Six Lane Undivided		
	Eight Lane or More		
ii.	Length of Road by Availability of Street Light (km)		
	No Street Light		
	Street Light on One Side		
	Street Light on Both Side		


iii.	Illumination Level (in %)[2]		
	Roads with equal or more than 30 lux		
	Pedestrian Crossings with equal or more than 50 lux		
	Cycle Track with equal or more than 20 lux		
iv.	Length of Road by Availability of On Street Parking (km)		
	On Street Parking on One Side		
	On Street Parking on Both Side		
v.	Total Number of Intersections		
vi.	Total Number of Signalized Intersections		
ii.	**Road Based Public Transport System**		
	Mode	Public Transport	Para Transit
a.	**Fleet Usage Detail**		
i.	Type of Mode		
ii.	Fleet Size		
iii.	Fleet Utilisation Rate (in %)		
iv.	Average Km per Bus/per Day		
v.	Average Ridership per Day per Bus		
vi.	Occupancy Ratio		
vii.	Fuel Used		
	- Type		
	- Quantity (in litres per day)		
b.	**Route Detail**		
i.	Route Coverage (km)		
	Route Coverage Density (i.e. Bus km/Road Network km)		
ii.	Average Headway		
iii.	Average Route Speed		
iv.	Average Waiting Time		
c.	**Cost and Fare**		
i.	Operation Cost per km (in Rs)		
ii.	Fare Structure (in Rs)		
iii.	Revenue per km (in Rs)		
iv.	Profit/Loss per year (in Rs)		

[2]Urban road Codes

iii.	**Freight Transport**			
a.	**Daily Goods Vehicle Travel**	**Vehicles**	**PCUs**	
	Internal to Internal			
	External (Internal to External, External to Internal, External to External)			
b.	**Amount of Goods carried across the city/region (in tonnes)**			
c.	**Types of Freight Handling Facilities (Yes/No; If Yes, then Number….)**			
i.	Freight Centre/Logistic Park			
Ii	Urban Freight Consolidation Centre			
	Integrated Freight Complex			
	Truck Terminals			
iv.	**Traffic Conditions on Road**			
a.	**Average Speed[3]**			
i.	Average Speed of Private Mode Vehicles (in %)			
	>=30 km/hr			
	25 - 30 km/hr			
	15 - 25 km/hr			
	<15 km/hr			
ii.	Average Speed of Buses on PT Corridor (in %)			
	>=20 km/hr			
	15 - 20 km/hr			
	10 - 15 km/hr			
	<10 km/hr			
b.	**Traffic Volume**			
i.	Peak Hour Traffic per day (in PCU)			
ii.	Off Peak Hour Traffic per Day (in PCU)			
5.	**Study of Existing Travel Behaviour (Household Survey)**			
i.	**Gender Information**			
	Information	Male	Female	Total
a.	Population			
b.	Age			
	Below 20 years			

[3]Service Level Benchmark by MoUD


	20 to 50 years
	> 50 years
c.	Distribution of Trips
	Below 20 years
	20 to 50 years
	> 50 years
d.	Average Trip Length
	Below 20 years
	20 to 50 years
	> 50 years
e.	Per Capita Trip Rate
ii.	**Socio Economic Information**
a.	Percentage of HH within 10 min walking distance of PT/ Para Transit
b.	Population by Educational Qualification (Number)
	No school education
	Primary education (up to 8th)
	Matriculation/up to 12th
	Graduate
	Others (Specify)
c.	Population by Occupation (Number)
	Salaried Employment (Regular Waged)
	Daily Wages Employment (Casual Labour)
	Self Employed (Work in HH Enterprise)
	Domestic Worker at Fixed Rate
	Honorary Worker
	Home Based Paid Work
	Home Based Unpaid Work (House Manager)
	Attending Educational Institute
	Pensioners/ Remittance Recipient
	Unemployed - Due to Disability

	Unemployed - Seeking Work				
	Others - Specify				
d.	Vehicle Ownership				
	Vehicle		Existing		Before Two Years
	Car				
	Motorised Two Wheeler				
	Bicycle				
	Auto-Rickshaw				
	Cycle Rickshaw				
iii.	**Mode Wise Information**				
	Mode	Modal Share (%)	Distribution of Trips (in Number)	Average Trip Length (km)	Average Travel Time (min)
	Car				
	2 Wheeler				
	Bus				
	Auto-Rickshaw				
	Shared Auto				
	Walk				
	Bicycle				
	Cycle Rickshaw				
	Company Bus				
	Taxis				
	Any Other				
iv.	Purpose Wise Information				
	Mode		Distribution of Trips (in Number)	Average Trip Length (km)	Average Travel Time (min)
	Home				
	Work				
	Education				
	Recreation				
	Others				
6.	**Review of Energy and Environment**				
i.	**Energy Balance**				
	Energy Consumption in (million tonnes oil equivalent)				
	Road based Transport				
	Rail based Transport				
	Water based Transport				


ii.	**Fuel Type**				
	Type of Fuel used by Different Modes (%)				
	Vehicle Type	Petrol	Diesel	CNG	Others
	Two Wheelers				
	Three Wheelers				
	Four Wheelers				
	Taxis				
	Buses				
	Trucks (LCV)(Up to 7.5 tonnes)				
	Trucks (HCV)				
7.	**Transport Demand Model (Base Year)**				
i.	**Trip Generation Method Used (Tick)**	Linear Regression Analysis		Category Analysis	Others (mention)
a.	Trip Production Equation				
b.	Trip Attraction Equation				
ii.	**Trip Distribution Method Used (Tick)**	Linear Regression Analysis		Synthetic Methods	Others (mention)
a.	If Growth Factor Methods, then (Tick)				
	- Uniform Factor Method				
	- Average Factor Method				
	- Fratar Method				
	- Furness Method				
b.	If Synthetic Models, then (Tick)				
	- Gravity Model				
	- Tanner Model				
	- Intervening Opportunities Model				
	- Competing Opportunities Model				
c.	Trip Distribution Equation				
iii.	**Traffic Assignment Technique Used (Tick)**				
	- All-or-Nothing Assignment				
	- Multiple Route Assignment				
	- Capacity Restraint Assignment				
	- Diversion Curves				

iv.	**Modal Split Analysis Used (Tick)**
	- Probit Analysis
	- Logit Analysis
	- Discriminant Analysis
a.	Modal Split Equation

III. TASK 3 – BAU SCENARIO AND SUSTAINABLE URBAN TRANSPORT SCENARIO (PROPOSALS)

1. Mobility and Accessibility

i. Modal Share

a. Modal Share (%) by Trip Purpose

Mode	Home		Work		Education		Recreation		Others	
	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario
Car										
2 Wheeler										
Bus										
Auto-Rickshaw										
Shared Auto										
Walk										
Bicycle										
Cycle Rickshaw										
Company Bus										
Taxis										
Any Other										


b.	Modal Shares by Social Groups								
	Mode	Modal Share (%)							
		HIG		MIG		LIG		Slums	
		BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario
	Car								
	2 Wheeler								
	Bus								
	Auto-Rickshaw								
	Shared Auto								
	Walk								
	Bicycle								
	Cycle Rickshaw								
	Company Bus								
	Taxis								
	Any Other								
ii.	**Travel Time**								
a.	**Average Travel Time by Mode**								
	Mode	Average Travel Time (in min)							
		BAU Scenario				Sustainable Scenario			
	Car								
	2 Wheeler								
	Bus								
	Auto-Rickshaw								
	Shared Auto								
	Walk								
	Bicycle								
	Cycle Rickshaw								
	Company Bus								
	Taxis								
	Any Other								

b.	Trip Purpose Wise Average Travel Time Disaggregated by Social Groups							
	Purpose	Average Travel Time (in min)						
		HIG		MIG		LIG		Slums	
		BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario
	Home								
	Work								
	Education								
	Recreation								
	Others								
iii.	**Trip Length**								
a.	Average Trip Length								
	Mode	Average Trip Length (km)							
		BAU Scenario				Sustainable Scenario			
	Car								
	2 Wheeler								
	Bus								
	Auto-Rickshaw								
	Shared Auto								
	Walk								
	Bicycle								
	Cycle Rickshaw								
	Company Bus								
	Taxis								
	Any Other								


b.	Mode wise ATL disaggregated by social groups							
	Mode	Average Trip Length (km)						
		HIG		MIG		LIG		Slums	
		BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario
	Car								
	2 Wheeler								
	Bus								
	Auto-Rickshaw								
	Shared Auto								
	Walk								
	Bicycle								
	Cycle Rickshaw								
	Company Bus								
	Taxis								
	Any Other								
c.	Trip Purpose wise ATL disaggregated by social groups								
	Purpose	Average Travel Time (in min)							
		HIG		MIG		LIG		Slums	
		BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario
	Home								
	Work								
	Education								
	Recreation								
	Others								

iv.	**Passenger Kilometre and Vehicle Kilometre**			
a.	Mode wise PKM and VKM			
	Mode	Passenger Kilometre		Vehicle Kilometre	
		BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario
	Car				
	2 Wheeler				
	Bus				
	Auto-Rickshaw				
	Shared Auto				
	Walk				
	Bicycle				
	Cycle Rickshaw				
	Company Bus				
	Taxis				
	Any Other				
b.	Trip Purpose wise PKM and VKM				
	Mode	Passenger Kilometre		Vehicle Kilometre	
		BAU Scenario	Sustainable Scenario	BAU Scenario	Sustainable Scenario
	Home				
	Work				
	Education				
	Access to Public Transport				
	Access to Auto Rickshaw				
	Shopping				
	Recreation				
	Social Trip				
	Religious Trip				
	Personal Business				
	Others				


2.	**Infrastructure**		
a.	Average Speed on Roads of Different Modes[3]		
	Average Speed of Private Mode Vehicles (in %)	BAU Scenario	Sustainable Scenario
	>=30 km/hr		
	25 - 30 km/hr		
	15 - 25 km/hr		
	<15 km/hr		
	Average Speed of Buses on PT Corridor (in %)	BAU Scenario	Sustainable Scenario
	>=20 km/hr		
	15 - 20 km/hr		
	10 - 15 km/hr		
	<10 km/hr		
b.	Percentage of HH within 10 min walking distance of PT/ Para Transit	BAU Scenario	Sustainable Scenario
c.	Average Number of Interchanges per PT trip	BAU Scenario	Sustainable Scenario
3.	**Safety and Security**		
i.	**Safety**		
a.	Percentage of Roads having Speed Limit >=50 kmph1	BAU Scenario	Sustainable Scenario
b.	Percentage of Roads having Footpath Width >=2 m1		
ii.	**Security**		
a.	Percentage of Road Lighted	BAU Scenario	Sustainable Scenario
b.	Percentage of Footpaths Lighted	BAU Scenario	Sustainable Scenario
4.	**Environmental Aspects**		
i.	**Emissions**		
	GHG Emissions	BAU Scenario	Sustainable Scenario

ii.	**Depletion of Land Resource**			
a.	Per Capita Consumption of Land for Transport Activity	BAU Scenario	Sustainable Scenario	
b.	Land Consumed for Different Transport Activities			
	Transport Activities	BAU Scenario	Sustainable Scenario	
5.	**Economic**			
i.	**Fare Policy**			
a.	Percentage of Subsidies Granted	BAU Scenario	Sustainable Scenario	
b.	Percentage of Population Owning Passes	BAU Scenario	Sustainable Scenario	
IV.	**TASK 4 – DEVELOPMENT OF URBAN MOBILITY PLAN AND PREPARATION OF IMPLEMENTATION PROGRAMME**			
1.	**Phasing of Projects**			
	Strategies - Projects		Phasing	
		Immediate	Short Term	Medium Term	Long Term
i.	**Integrated Land Use and Urban Mobility Plan**				
a.					
b.					
c.					
ii.	**Formulation of the Public Transport Improvement Plan**				
a.					
b.					
c.					
iii.	**Preparation of Road Network Development Plan**				
a.					
b.					
c.					
iv.	**Preparation of NMT Facility Improvement Plan**				
a.					
b.					
c.					


v.	**Freight Movement Plan**						
a.							
b.							
c.							
vi.	**Mobility Management Measures**						
a.							
b.							
c.							
vii.	**Development of Fiscal Measures**						
a.							
b.							
c.							
viii.	**Mobility Improvement Measures and NUTP Objectives**						
a.							
b.							
c.							
2.	**Cost of Implementation**						
	Projects	Phase - Immediate/ Short / Medium / Long	Project Priority	Projects			
			High/ Medium/ Low	Quantity	Unit	Unit Rate (Rs)	Cost (Rs.)
i.							
ii.							
iii.							
V.	**SOCIAL BENEFITS**						
1.	**Increase In -**						
i.	Modal Share (%)						
	Bus						
	Walk						
	Cycle						
ii.	Modal Shift from Various Modes to Bus, Walk and Cycle (%) namely-						
	Modes					Bus	Walk / Cycke
	Car						
	Two Wheeler						
	IPT						

iii.	Total Route Coverage (%) for Bus
iv.	Total Network Coverage (in km) -
	Footpath
	NMT
v.	Average Daily Ridership (PHPDT) for Bus
vi.	Number of
	Pedestrians
	Cyclists
vii.	Accessibility to Bus Stops - % of population within 500 m of Bus Stops
2.	**Reduction/Decrease In -**
i.	Average Number of Private Cars and Two Wheelers on Road per day
ii.	Peak Hour Motorised Traffic per day (in PCU)
iii.	Motorised Vehicle km per Day
iv.	Freight Vehicles during Day Time (%)
v.	Freight Vehicles during Night Time (%)
vi.	Accident due to Freight Vehicles
3.	**Increase in Level of Service (LOS) Of -**
i.	Presence of Organized Public Transport System in Urban Area
ii.	Extent of Supply / Availability of Public Transport
iii.	Service Coverage of Public Transport in the city (Bus route network density)
iv.	Level of Comfort in Public Transport (Crowding)
v.	Percentage Fleet as per Urban Bus Specifications
vi.	Fatality per lakh Population
vii.	Availability of Traffic Surveillance
viii.	Passenger Information System
ix.	Global Positioning System
x.	Integrated Ticketing System
xi.	Street Lighting (Lux)
xii.	Percentage of City Covered with Footpaths (wider than 1.5 m)
xiii.	NMT Coverage (% of Network Covered)
xiv.	NMT Parking Facilities at Interchanges
xv.	Fatality Rate for Pedestrian and NMT
xvi.	Encroachment on NMT roads by Vehicle Parking (%) (for parking)
xvii.	Availability of Paid Parking Spaces (%)
xviii.	Difference in maximum and minimum parking fee in the city
xix.	Fatality Rate per lakh population
xx.	Fatality Rate for Pedestrian and NMT (%)


VI.	ECONOMIC AND FINANCIAL BENEFITS
1.	**Increase In -**
i.	Earning per km (for Bus)
2.	**Reduction/Decrease In -**
i.	Travel Time for Vehicles
ii.	Per Capita Expenditure on Transport (roads, parking and transit)
iii.	Waiting Time for Vehicles at Intersections (for improved junctions)
iv.	Waiting Time for Pedestrian at Signalised Intersection (for improved junctions)
3.	**Increase in Level of Service (LOS) Of -**
i.	Average Waiting Time for Public Transport Users
ii.	Average Speed of Buses in PT Route
iii.	Extent of Non Fare Revenue for PT
iv.	Staff per Bus Ratio
v.	Operating Ratio for PT
vi.	Signalized Intersection Delay
vii.	Average Travel Speed of Personal Vehicles
viii.	Average Travel Speed of Public Transport
VII.	**ENVIRONMENTAL BENEFITS**
1.	**Increase In -**
i.	Percentage Share of Bus on Clean Fuels
ii.	Percentage Share of Goods Vehicles on Clean Fuel
2.	**Reduction/Decrease In -**
i.	GHG Emissions per Capita
ii.	Noise Pollution
iii.	Energy Consumption (in million tonnes oil equivalent)
3.	**Increase in Level of Service (LOS) Of -**
i.	Annual Mean Concentration Range (in µg/m3)
	Nitrogen Dioxide (NO_2)
	Sulphur Dioxide (SO_2)
	Respirable Suspended Particulate Matter (RSPM)(Size less than 10 microns)


Generate
more
interest.

Category 2:

Public Transport

City Bus System & Bus Rapid Transit System

Appraisal Checklist for Urban Transport Project


Category 2:

Public Transport

City Bus System & Bus Rapid Transit System

A. CITY BUS SYSTEM

S.No	Item
I.	**Name of State**
II.	Single City or Cluster of cities (Name)
III.	State Level Nodal Agency (SLNA)
IV.	DPR approved by SLSC (Yes/No) Date, Letter
V.	Notified Planning area for a cluster (Yes/No)
VI.	Provision made in State Budget (Yes/No)
VII.	CMP/CTCS (Yes/No), If yes then year of preparation
VIII.	Master Plan (Yes/No), If yes then year of preparation
IX.	CDP (Yes/No), If yes then year of preparation
X.	Resolution by Municipal Corporation supporting DPR Proposal
	Part A - Introduction
I.	**CITY PROFILE**
1.	**Introduction**
i.	Area (in Sq.km)
ii.	Population (2011 census)
2.	**Socio-Economic Characteristics**
i.	Per capita income
ii.	Average Expenditure on transport
II.	**TRAFFIC & TRANSPORTATION SYSTEM CHARACTERISTICS**
1.	**Transport Network Characteristics**
i.	**Transportation Modes Registered (Latest data Year data)**
	Bus (including Mini Bus)
	IPT

	Car			
	Two Wheeler			
	NMV			
ii.	**Average Annual Growth of Vehicles**			
2.	**Road Network Characteristics**			
i.	Road Network	Length (in km)		Average RoW
	National / State Highways			
	Arterial			
	Sub-arterial			
	Collector			
	Total			
	Part B - City Bus System (Existing/Proposal)			
III.	**SURVEYS CONDUCTED (YES/ NO)**			
i.	Classified Traffic Volume Survey			
ii.	Origin and Destination Survey			
iii.	Occupancy Survey			
iv.	Bus Route Survey			
v.	Bus Stop Survey			
vi.	Willingness to Pay Survey			
vii.	PT Opinion Survey			
viii.	Boarding and Alighting			
ix.	Feeder/Secondary Modes Survey			
IV.	**PUBLIC TRANSPORT CHARACTERISTICS (EXISTING)**			
1.	**Public Transport Modes Present**	**Yes/No**	**KM**	**Avg. Daily Ridership**
	Mass Rapid Transit System (Metro/Mono/Light Rail)			
	Bus Rapid Transit System			
	City Bus System (Numbers)			
	Intermediate Public Transport System (Numbers)			


2.	**City or Cluster Bus System, if any-with Buses as per UBS only (including Buses already in Operation)**						
i.	**Route Details**						
Route No.	Route Description	Existing Buses			New Buses		
		Route Length (in Km)	Existing Headway (in Min)	No. of Buses	Route Length (in Km)	Planned Headway (in Min)	No. of Buses

ii.	**Types of Existing Buses in the City (All Types)**					
	Type of Buses	Floor Height	AC	Non-AC	Avg. Age of Fleet	Fleet Size (in m)

iii.	**Physical Performance**					
	Parameters	Year 1	Year 2	Year 3	Year 4	Year 5
a.	Physical Performance					
	Total No. of buses held					
	Avg. No. of buses on road					
	Fleet Utilization (%)					
	Avg. Age of buses (in years)					
b.	Daily Bus Performance					
	Avg. Km/bus/day					
	Avg. % load factor					
c.	Fuel Performance					
	Avg. km/lts of HSD (KMPL)					
d.	Staff Positioning					
	Total Staff					
	Staff / Bus					

iv.	**Financial Performance**					
	Parameters	Year 1	Year 2	Year 3	Year 4	Year 5
a.	Revenue (in Rs. Lakh)					
	Traffic Revenue					
	Other Revenue					
	Total Revenue					
	Earning per Km					
	Earning per bus per day					
b.	Operational Cost (Rs. In Lakh)					
	Personnel (Salary)					
	Personnel (Over time)					
	Fuel Cost					
	Tyres & Tubes					
	Spare parts & Others					
	Interest					
	Depreciation					
	MV Tax					
	Passenger Tax					
	Other Tax					
	Total Cost					
	Cost per Km					
c.	Operating Ratio					
v.	**Existing Fare Structure**					
a.	Fare Stages (in km)*		Fare for AC services (in Rs.)	Fare for Non-AC (Deluxe) services (in Rs.)	Fare for Ordinary services (in Rs.)	Express service (in Rs.)
	0 – 5					
	5 – 10					
	10 – 15					
	15 – 20					
	Above 20					
b.	Fare Revision mechanism, if any					
	* If different fare stages, please provide the same					


V.	PROPOSED OPERATION PLAN (CITY OR CLUSTER)
1.	**Assessment of Fleet**
i.	**Method 1 - Based on 'Travel Demand Characteristics'**
a.	Population in 2011
b.	Expected decadal population growth in % (2021)
c.	Per Capita Trip Rate (PCTR)
d.	Average Trip Length (in kms)
e.	Total Trips (excluding walk trips)
f.	Desirable PT share in %
g.	Public Transport Trips
h.	Passenger Km
i.	Supply Km
j.	Fleet Required
k.	Existing Fleet
l.	Net additional fleet required = Fleet required (j) - Existing Fleet (k)
ii.	**Method 2 - Based on 'Increased frequency on existing routes'**

S.No.	Route No.	Route Description	Length	Existing Headway	Existing Buses	Revised Headway	Reqd. Buses
					Total Buses Required		
				Net additional fleet required (Total Buses Required - Existing Fleet)			

iii.	**Method 3 - Based on 'New Proposed Routes'**

S.No.	Route No.	Route Description	Length	Headway	Required buses
				Total Buses Required	

2.	**Strategy for Route Rationalization of existing IPT / Para-Transit System**	**Strategy**	**Time line**

3. Category wise distribution of buses		
Type of bus	% of Total Buses	Proposed no. of Buses
i.		
ii.		
iii.		
iv.		
Total Buses Required		

VI. BUS INFRASTRUCTURE

1. Existing Bus Depots / Workshop, if any

Location	Area (acres)	Capacity (No. of Buses)	No. of Routes	Control Room	Inspection Pit (Yes/No)	Painting Facility (Yes/No)	Washing facility (Yes/No)	Main & Admin Staff (Yes/No)

2. Existing Bus Terminals, if any

Location	Area in acres	Capacity (No. of buses)	No. of Routes	Control Room	Main & Admin Staff	No. of Platform

3. Proposed Bus Depots

Location	Area (acres)	Capacity (No. of buses)	No. of Routes	Control Room	Inspection Pit (Yes/No)	Painting Facility (Yes/No)	Washing Facility (Yes/No)	Main & Admin Staff (no)


4.	**Proposed Bus Terminals, if any**						
	Location	Area in acres	Capacity (No. of buses)	No. of Routes	Control Room	Main & Admin Staff	No. of Platform
VII.	**ITS IN CITY BUS**						
1.	**ITS Facilities Available for City Bus System**						
i.	**Area under Control Centre (sq. m/ sq. ft.)**						
ii.	**Location of Control Centre**						
iii.	**Facilities**						
a.	Computers (Numbers)						
b.	Server Details (Storage Capacity in TB)						
c.	Software Details				Existing (Y/N)	Proposed (Y/N)	
	Average Speed Monitoring System						
	Automatic Vehicle Location System						
	Automatic Fare Collection System						
	Fleet Management System						
	Passenger Information System						
	Financial Management System						
	Incidence Management System						
	Performance Management System						
	Any Other						
iv.	**Central Control Centre – Components**				**Existing (Y/N)**	**Proposed (Y/N)**	
	Firewall						
	Core/ Distribution Switch						
	Storage						
	Application Server						
	GBIC Switch						
	Database Server						
	Network Printer						
	Web Portal						
	SMS Facility						

2.	On Bus ITS	Existing (Y/N)	Proposed (Y/N)
i.	Number of Buses		
ii.	Passenger Information System		
	Display Board Details (Nos.)		
	Graphics (Display Size)		
	In- Bus Announcement System (Yes/No)		
iii.	Automatic Vehicle Location System or GPS		
	GPS based Driver Console Units		
iv.	Security Camera Network System		
	Cameras - Numbers/Bus		
	Recording Capacity		
v.	Vehicle Health Monitoring & Diagnostics		
vi.	Automated Fare Collection (Electronic Ticketing Machine (ETM) and On-Board Smart Card Ticketing System)		
	On-Board Pole Mounted Ticketing Machines (Numbers/Bus)		
	On Board Hand Held Ticketing Machines with Smart Card Reader (If yes, Numbers/Bus)		
vii.	Automated Door (Yes/ No)		
viii.	Panic Button		
ix.	Any Other Details		
3.	**ITS Services for the People**	**Existing (Y/N)**	**Proposed (Y/N)**
i.	Real Time Information Dissemination through: (Yes/No)		
	Websites		
	Helpline Number		
	SMS System		
	Smart Phone Application		
	Any Other		
ii.	Multi-Modal Tickets or Smart Cards/ RFID Coins		
iii.	Online/ through Phone/ at Ticket Counter Smart Card Recharging		
iv.	Any Other Details		
VIII.	**ITS IN TERMINALS/ STOPS**		
1.	**Terminals/ Depots – ITS**	**Existing (Y/N)**	**Proposed (Y/N)**
i.	Number of Terminals / Depots		
ii.	Area under Terminals/ Depots		
iii.	Location with Map		


iv.	Capacity (Number of Bays + Number of Parking Spaces for Buses)		
v.	Passenger Information System		
	Real Time Information Boards (No.s/ Bus Bays)		
vi.	Security Camera Network System		
	CCTVs (Nos.)		
	Recording Capacity		
vii.	Ticket Terminal		
	Station Ticket Terminal (No.s)		
viii.	Any Other Details		
2.	**Bus Shelters/ Stops – ITS**	**Existing (Y/N)**	**Proposed (Y/N)**
i.	Number of Bus Shelters/ Stops		
ii.	Location with Map		
iii.	Facilities Available		
iv.	Passenger Information System		
	Real Time Information Display Boards (Numbers)		
v.	Security Camera Network System		
	CCTVs (Nos.)		
vi.	Ticket Terminal		
	Station Ticket Terminal (If Off-Board Ticketing)(Nos.)		
	Flap Gates (Yes/No)		
vii.	Any Other Details		

Part C - Funding

IX.	**COST**								
1.	**For Buses**								
Particulars			Bus Type - I			Bus Type - II			
			1	2	3	4	5	6	
			Cost per Bus	Number	Sub Total (1*2)	Cost per Bus	Number	Sub Total (4*5)	Total Cost (in Lakhs)
i.	A	Basic Cost including Cost of ITS							
ii.	B	Taxes & Duties (State & City Taxes)							

iii.	Total Cost (A+B)		
2.	**Funding Pattern for Bus**		
i.	% of the Project Cost covered under the grant		
ii.	Resource Mobilization		
	Source	% Share	Amount (in Rs. Lakh)
	GOI		
	State Government		
	SRTC / SPV / ULB		
	Total		
iii.	Financial Intermediary for timely payment to manufacturers		
iv.	Mechanism adopted for Fund Transfer (MoUD & State Share) to cities		
3.	**Outcome of Financial Analysis for Bus**		
i.	Total Cost (Rs. In lakhs)		
ii.	ULB Share		
iii.	FIRR		
4.	**Contracting Mechanism for Operation & Maintenance**		
i.	O & M of Buses - In-House / PPP (Provide details)		
	If PPP, Operation Mode		
5.	**For Bus Infrastructure Cost**		
i.	Cost of Depots, Terminals		
	Item	No.	Cost (in Rs. Lakh)
	Depot Up-gradation		
	New Depot Development		
	Terminal Up-gradation		
	New Terminal Development		
	Total Cost		
6.	**Funding Pattern for Bus Infrastructure**		
i.	% of the Project Cost covered under the grant		
ii.	Resource Mobilization		
	Source	% Share	Amount (in Rs. Lakh)
	GOI		
	State Government		
	SRTC / SPV / ULB		
	Total		


iii.	Mechanism adopted for Fund Transfer (MoUD & State Share) to cities		
7.	**Outcome of Financial Analysis for Bus Infrastructure**		
i.	Total Cost (Rs. In lakhs)		
ii.	ULB Share		
iii.	FIRR		
8.	**Contracting Mechanism for Operation & Maintenance**		
i.	O & M of Bus Infrastructure - In-House / PPP (Provide details)		
	If PPP, Operation Mode		
9.	**ITS Facilities Cost**		
	Item		Cost (Rs.in Lakhs)
i.	Central Control Room		
ii.	Installation of ITS facilities at Infrastructure		
	• Terminals		
	• Depots		
	• Bus Stops		
	Total Cost		
10.	**Funding Pattern for ITS Facilities**		
i.	% of the Project Cost covered under the grant		
ii.	Resource Mobilization		
	Source	% Share	Amount (in Rs. Lakh)
	GOI		
	State Government		
	SRTC / SPV / ULB		
	Total		
iii.	Mechanism adopted for Fund Transfer (MoUD & State Share) to cities		
11.	**Outcome of Financial Analysis**		
i.	Total Cost (Rs. In lakhs)		
ii.	ULB Share		
iii.	FIRR		
12.	**Contracting Mechanism for Operation & Maintenance**		
i.	O & M of ITS - In-House / PPP (Provide details)		
	If PPP, Operation Mode		

Part D - Governance	
X.	**GOVERNANCE**
1.	**Existing Institutions and their Role**
i.	
ii.	
iii.	
2.	**Urban Transport Reforms**
i.	Formation of UMTA
ii.	Formation of SPV
iii.	Urban Transport Fund
iv	Advertisement Policy
v.	Parking Policy
vi.	Fare Revision Policy
Part E - Benefits	
XI.	**SOCIAL BENEFITS**
1.	**Increase In -**
i.	Modal Share (%) of Bus
ii.	Modal Shift from Various Modes to Bus (%) namely-
	Car
	Two Wheeler
	IPT
iii.	Average Daily Ridership (PHPDT)
iv.	Total Route Coverage (in %)
v.	Accessibility to Bus Stops - % of population within 500 m of Bus Stops
2.	**Reduction/Decrease In -**
i.	Average Number of Private Cars and Two Wheelers on Road per day
ii.	Peak Hour Traffic per day (in PCU)
3.	**Increase In Level Of Service(LOS) Of -**
i.	Presence of Organized Public Transport System in Urban Area
ii.	Extent of Supply / Availability of Public Transport
iii.	Service Coverage of Public Transport in the city (Bus route network density)
iv.	Level of Comfort in Public Transport (Crowding)
v.	Percentage Fleet as per Urban Bus Specifications
vi.	Fatality per lakh Population
vii.	Availability of Traffic Surveillance
viii.	Passenger Information System
ix.	Global Positioning System
x.	Integrated Ticketing System


XII.	**ECONOMIC AND FINANCIAL BENEFITS**
1.	**Increase In -**
i.	Earning per km
2.	**Reduction/Decrease In -**
i.	Travel Time
ii.	Per Capita Expenditure on Transport (roads, parking and transit)
3.	**Increase In Level Of Service(LOS) Of -**
i.	Average Waiting Time for Public Transport Users
ii.	Average Speed of Buses in PT Route
iii.	Extent of Non Fare Revenue
iv.	Staff per Bus Ratio
v.	Operating Ratio
XIII.	**ENVIRONMENTAL BENEFITS**
1.	Increase In -
i.	Percentage Share of Bus on Clean Fuels
2.	**Reduction/Decrease In -**
i.	GHG Emissions per Capita
ii.	Noise Pollution
iii.	Energy Consumption (in million tonnes oil equivalent)
3.	**Increase In Level Of Service(LOS) Of -**
i.	Annual Mean Concentration Range (In µg/M3)
	Nitrogen Dioxide (NO_2)
	Sulphur Dioxide (SO_2)
	Suspended Particulate Matter (SPM)
	Respirable Suspended Particulate Matter (RSPM)(Size less than 10 microns)

B. BUS RAPID TRANSIT SYSTEM

S.No	Item		
I.	Name of State		
II.	Single City or Cluster of cities (Name)		
III.	State Level Nodal Agency (SLNA)		
IV.	DPR approved by SLSC (Yes/No) Date, Letter		
V.	Notified Planning area for a cluster (Yes/No)		
VI.	Provision made in State Budget (Yes/No)		
VII.	CMP/CTCS (Yes/No), If yes then year of preparation		
VIII.	Master Plan (Yes/No), If yes then year of preparation		
IX.	CDP (Yes/No), If yes then year of preparation		
X.	Resolution by Municipal Corporation supporting DPR Proposal		
	Part A – Introduction		
I.	**CITY PROFILE**		
1.	**Area**		
i.	Area (in Sq.km)		
2.	**Socio Economic**		
i.	Current Population (in No)		
ii.	Population Growth Rate (Decadal)		
iii.	Population Density (in persons per sq. km)		
iv.	Projected Population (Horizon Year)		
v.	Per Capita Income (in Rs.)		
vii.	Average Household Income (in Rs.)		
viii.	Expenditure on Transport (in Rs.)		
ix.	Workforce Participation Rate		
3.	**Landuse**		
i.	Land Use (in %)	Existing	Proposed (as per Master Plan
	Residential		
	Commercial		
	Public and Semi-Public		
	Recreation		
	Industrial		
	Transportation		
ii.	Zoning Regulations		


II.	**TRAFFIC & TRANSPORTATION SYSTEM CHARACTERISTICS**		
1.	**Transport Network Characteristics**		
i.	Transportation Modes Registered (Latest data Year data)		
	Bus (including Mini Bus)		
	IPT		
	Car		
	Two Wheeler		
	NMV		
ii.	Average Annual Growth of Vehicles		
2.	**Road Network Characteristics**		
i.	Road Network	Length (in km)	Average RoW
	National / State Highways		
	Arterial		
	Sub-arterial		
	Collector		
	Total		
	Part B - Transport Infrastructure, Traffic and Travel Characteristics & BRTS		
III.	**SURVEYS CONDUCTED (YES/ NO)**		
i.	Road Network Inventory		
ii.	Speed and Delay		
iii.	Classified Traffic Volume Survey		
iv.	Origin and Destination Survey		
v.	Occupancy Survey		
vi.	Bus Route Survey		
vii.	Bus Stop Survey		
viii.	Willingness to Pay Survey		
x.	PT Opinion Survey		
xii.	Boarding and Alighting		
xiii.	Feeder/Secondary Modes Survey		
IV.	**TRANSPORT INFRASTRUCTURE**		
1.	**Distribution of Road Network by Carriageway (in %)**	**Length (in km)**	**Average RoW**
	Single Lane		
	Double Lane		
	Four Lane Undivided		
	Four Lane Divided		
	Six Lane Divided		

	Six Lane Undivided		
	Eight Lane or More		
2.	**Number of Flyovers, Underpasses, ROBs and RUBs**		
	Flyovers		
	Underpasses		
	Rail over Bridge		
	Rail under Bridge		
	Number of Railway Level Crossings		
	Number of Bridges		
3.	**Road Network Pattern (Yes/No)**		
	Radial		
	Linear		
	Grid Iron		
	Ring Radial		
	Any Other		
4.	**Road Network Issues**		
5.	**Major Transportation Nodes**		
i.	Railway Station		
	Name of Railway Station	Area	Average Traffic Handled
ii.	Inter-State Bus Terminal		
	Name of ISBT	Area	Capacity
iii.	Airport		
	Name of Airport	Area	
6.	**Pedestrian Facilities**		
i.	Length of Road by Availability of Footpath (km)		
	No Footpath		
	Footpath on One Side		
	Footpath on Both Sides		
ii.	Availability of Footpath by Width (km)		
	Upto 1.8 m		
	More than 1.8 m		
iii.	Number of Pedestrian Facilities		
	Zebra Crossings		


	Foot over Bridge
	Subways
iv.	Length of Road by Availability of Cycle Track (km)
	No Cycle Track
	Cycle Track on One Side
	Cycle Track on Both Sides
v.	Number of Cycle Stands
vi.	Number of Pelican Signals
7.	**Traffic Management**
i.	Intersections
	Total Number of Intersections
	Total Number of Signalised Intersections
ii.	Parking Management
	Length of Road having On Street Parking (km)
	Length of Road having On Street Paid Parking (km)
V.	**TRAFFIC CHARACTERISTICS**
1.	**Traffic Composition (%)**
	Walk
	2-Wheeler
	Car
	Auto
	Bus
	Cycle
	Other Modes
2.	**Speed and Delay**
	Average Travel Speed of Private Mode Vehicle
	Average Speed of Buses on PT Corridor
3.	**Traffic Volume**
	Peak Hour Traffic per day (in PCU)
	Off Peak Hour Traffic per day (in PCU)
4.	**Average Trip Length**
	Average Trip Length Public Transport Modes (in km)
	Average Trip Length Private Vehicle Trips (in km)

5.	**Traffic Safety**					
i.	Number of Accidents (mention year)					
	Fatal Accidents					
	Injurious Accidents					
6.	**Public Transport**					
i.	Fleet Usage Detail					
a.	Type of Mode					
b.	Fleet Size					
c.	Fleet Utilisation Rate (in %)					
d.	Average Km per Bus/Vehicle per Day					
e.	Average Ridership per Day per Bus					
f.	Occupancy Ratio					
g.	Fuel Used					
	- Type					
	- Quantity (in litres per day)					
ii.	**Route Detail**					
a.	Route Coverage (km)					
b.	Total Number of Routes					
c.	Total Number of Stops					
d.	Average Headway					
e.	Average Route Speed					
f.	Average Waiting Time					
iii.	**Cost and Fare**					
a.	Operation Cost per km (in Rs)					
b.	Fare Structure (in Rs)					
c.	Revenue per km (in Rs)					
d.	Profit/Loss per year (in Rs)					
7.	**Intermediate Public Transport**					
i.	**Fleet Usage Detail**					
a.	Type of Mode	Number	Average Daily Ridership	Number of Routes	Route Length	Shared/ Personal
VI.	**TRAVEL CHARACTERISTICS**					
1.	Mode Share					
	Modal Share (in %)					
	Walk					
	2-Wheeler					


	Car		
	Auto		
	Bus		
	Cycle		
	Other Modes		
2.	**Per Capita Trip Rate**		
3.	**Average Trip Length**		
	Walk		
	2-Wheeler		
	Car		
	Auto		
	Bus		
	Cycle		
	Other Modes		
4.	**Trips by Purpose**		
	Purpose	Number of Trips	Percentage of Trips
	Home		
	Work		
	Education		
	Recreation		
	Others		
5.	**Travel Demand Analysis**		
	Model Framework		
	Model Calibration		
	Travel Demand Patterns		
	Future Travel Demand		
VII.	**SYSTEM DESIGN - NETWORK AND ROADWAY**		
1.	**Route Details**		
i.	Total Route Length of Proposed BRTS Corridor		
ii.	Existing Right of Way along Proposed Corridor		
iii.	Number of Routes		

iv.	BRTS Route Detail							
	Route No.	Route Description	Existing			Post BRTS		
			Route Length	Existing Headway	Number of Buses	Route Length	Existing Headway	Number of Buses
v.	Number of Lanes in Proposed BRTS Corridor							
vi.	Number of Junctions along BRTS corridor							
2.	**Bus Stops**							
i.	Number of Bus Stops			Eisting			Proposed	
ii.	Average Distance of Bus Stops from Junctions							
iii.	Average Distance between two Bus Stops							
3.	**Fleet**							
i.	Fleet Size			Eisting			Proposed	
ii.	Vehicle Utilization per Day			Eisting			Proposed	
4.	**Average Speed (Existing & Proposed)**							
5.	**Land Ownership of the Corridor**							
6.	**Roadway Design**							
i.	Roadway and Service Design Concept							
ii.	Median vs. Side Lanes (Yes/ No)							
iii.	Open vs. Closed (Yes/No)							
iv.	System Exclusive vs. Mixed System (Yes/No)							
7.	**NMV and Pedestrian**							
i.	Average Number of Pedestrian and NMV Trips per day along proposed corridor							
ii.	NMV and Pedestrian Facilities							
8.	**Street Light**							


VIII.	SYSTEM DESIGN – VEHICLES								
1.	**Bus Types and Detailed Specifications for BRTS**								
	Type of Buses	Floor Height	AC /Non AC	Avg. Age of Fleet	Fleet Size (in m)	Other Specifications			
2.	**System Procurement**								
3.	**Integration of BRTS with Other Transit Services**								
	Physical Integration								
	Ticket Integration								
4.	**Fare Collection Mechanism**								
IX.	SYSTEM DESIGN - FEEDER NETWORK AND INFRASTRUCTURE								
1.	**Feeder Network**								
	Type of Feeder Mode								
	Number of Feeder Mode Units								
2.	**Parking for Para Transit Facilities**								
	Type of IPT Mode	Number of Location	Area						
3.	**Provisions for Hawkers and Vendors**								
	Number of Locations								
	Number of Vending Units per Location								
	Area under Vending								
X.	BUS INFRASTRUCTURE								
1.	**Existing Bus Depots / Workshop, if any**								
	Location	Area (acres)	Capacity (No. of Buses)	No. of Routes	Control Room	Inspection Pit (Yes/No)	Painting Facility (Yes/No)	Washing facility (Yes/No)	Main & Admin Staff (Yes/No)

2.	Existing Bus Terminals, if any						
	Location	Area in acres	Capacity (No. of buses)	No. of Routes	Control Room	Main & Admin Staff	No. of Platform

3.	Proposed Bus Depots								
	Location	Area (acres)	Capacity (No. of buses)	No. of Routes	Control Room	Inspection Pit (Yes/No)	Painting Facility (Yes/No)	Washing facility (Yes/No)	Main & Admin staff (no)

4.	Proposed Bus Terminals, if any						
	Location	Area in acres	Capacity (No. of buses)	No. of Routes	Control Room	Main & Admin Staff	No. of Platform

XI.	ITS IN CITY BUS		
1.	ITS Facilities Available for City Bus System		
i.	Area under Control Centre (sq. m/ sq. ft.)		
ii.	Location of Control Centre		
iii.	Facilities		
a.	Computers (Numbers)		
b.	Server Details (Storage Capacity in TB)		
c.	Software Details	Existing (Y/N)	Proposed (Y/N)
	Average Speed Monitoring System		
	Automatic Vehicle Location System		
	Automatic Fare Collection System		
	Fleet Management System		
	Passenger Information System		
	Financial Management System		
	Incidence Management System		


	Performance Management System		
	Any Other		
iv.	**Central Control Centre – Components**	**Existing (Y/N)**	**Proposed (Y/N)**
	Firewall		
	Core/ Distribution Switch		
	Storage		
	Application Server		
	GBIC Switch		
	Database Server		
	Network Printer		
	Web Portal		
	SMS Facility		
2.	**On Bus ITS**		
i.	Number of Buses		
ii.	Passenger Information System		
	Display Board Details (Nos.)		
	Graphics (Display Size)		
	In- Bus Announcement System		
iii.	Automatic Vehicle Location System or GPS		
	GPS based Driver Console Units		
iv.	Security Camera Network System		
	Cameras - Numbers/Bus		
	Recording Capacity		
v.	Vehicle Health Monitoring & Diagnostics		
vi.	Automated Fare Collection (Electronic Ticketing Machine (ETM) and On-Board Smart Card Ticketing System)		
	On-Board Pole Mounted Ticketing Machines (Numbers/Bus)		
	On Board Hand Held Ticketing Machines with Smart Card Reader (If yes, Numbers/Bus)		
vii.	Automated Door (Yes/ No)		
viii.	Panic Button		
ix.	Any Other Details		
3.	**ITS Services for the People**	**Existing (Y/N)**	**Proposed (Y/N)**
i.	Real Time Information Dissemination through: (Yes/No)		
	Websites		
	Helpline Number		

	SMS System		
	Smart Phone Application		
	Any Other		
ii.	Multi-Modal Tickets or Smart Cards/ RFID Coins		
iii.	Online/ through Phone/ at Ticket Counter Smart Card Recharging		
iv.	Any Other Details		
XII.	**ITS IN TERMINALS/ STOPS**		
1.	**Terminals/ Depots – ITS**	**Existing (Y/N)**	**Proposed (Y/N)**
i.	Number of Terminals / Depots		
ii.	Area under Terminals/ Depots		
iii.	Location with Map		
iv.	Capacity (Number of Bays + Number of Parking Spaces for Buses)		
v.	Passenger Information System		
	Real Time Information Boards (No.s/ Bus Bays)		
vi.	Security Camera Network System		
	CCTVs (Nos.)		
	Recording Capacity		
vii.	Ticket Terminal		
	Station Ticket Terminal (No.s)		
viii.	Any Other Details		
2.	**Bus Shelters/ Stops – ITS**	**Existing (Y/N)**	**Proposed (Y/N)**
i.	Number of Bus Shelters/ Stops		
ii.	Location with Map		
iii.	Facilities Available		
iv.	Passenger Information System		
	Real Time Information Display Boards (Numbers)		
v.	Security Camera Network System		
	CCTVs (Nos.)		
vi.	Ticket Terminal		
	Station Ticket Terminal (If Off-Board Ticketing)(No.s)		
	Flap Gates (Yes/No)		
vii.	Any Other Details		


Part C - Funding									
XIII.	**COST**								
1.	**For Buses**								
	Particulars		Bus Type - I			Bus Type - II			
			1	2	3	4	5	6	
			Cost per Bus	Number	Sub Total (1*2)	Cost per Bus	Number	Sub Total (4*5)	Total Cost (in Lakhs)
i.	A	Basic Cost including Cost of ITS							
ii.	B	Taxes & Duties (State & City Taxes)							
iii.		Total Cost (A+B)							
2.	**Funding Pattern for Bus**								
i.	% of the Project Cost covered under the grant								
ii.	Resource Mobilization								
	Source				% Share		Amount (in Rs. Lakh)		
	GOI								
	State Government								
	SRTC / SPV / ULB								
	Total								
iii.	Financial Intermediary for timely payment to manufacturers								
iv.	Mechanism adopted for Fund Transfer (MoUD & State Share) to cities								
3.	**Outcome of Financial Analysis for Bus**								
i.	Total Cost (Rs. In lakhs)								
ii.	ULB Share								
iii.	FIRR								
4.	**Contracting Mechanism for Operation & Maintenance**								
i.	O & M of Buses - In-House / PPP (Provide details)								
	If PPP, Operation Mode								

5.	**For Bus Infrastructure Cost**		
i.	Cost of Depots, Terminals		
	Item	No.	Cost (Rs. in Lakh)
	Depot Up-gradation		
	New Depot Development		
	Terminal Up-gradation		
	New Terminal Development		
	Total Cost		
6.	**Funding Pattern for Bus Infrastructure**		
i.	% of the Project Cost covered under the grant		
ii.	Resource Mobilization		
	Source	% Share	Amont (in Rs. Lakh)
	GOI		
	State Government		
	SRTC / SPV / ULB		
	Total		
iii.	Mechanism adopted for Fund Transfer (MoUD & State Share) to cities		
7.	**Outcome of Financial Analysis for Bus Infrastructure**		
i.	Total Cost (Rs. In lakhs)		
ii.	ULB Share		
iii.	FIRR		
8.	**Contracting Mechanism for Operation & Maintenance**		
i.	O & M of Bus Infrastructure - In-House / PPP (Provide details)		
	If PPP, Operation Mode		
9.	**ITS Facilities Cost**		
	Item		Cost (Rs.in Lakhs)
i.	Central Control Room		
ii.	Installation of ITS facilities at Infrastructure • Terminals • Depots • Bus Stops		
	Total Cost		
10.	**Funding Pattern for ITS Facilities**		
i.	% of the Project Cost covered under the grant		


ii.	Resource Mobilization		
	Source	% Share	Amont (in Rs. Lakh)
	GOI		
	State Government		
	SRTC / SPV / ULB		
	Total		
iii.	Mechanism adopted for Fund Transfer (MoUD & State Share) to cities		
11.	**Outcome of Financial Analysis**		
i.	Total Cost (Rs. In lakhs)		
ii.	ULB Share		
iii.	FIRR		
12.	**Contracting Mechanism for Operation & Maintenance**		
i.	O & M of ITS - In-House / PPP (Provide details)		
	If PPP, Operation Mode		
	Part D - Governance		
XIV.	**GOVERNANCE**		
1.	**Existing Institutions and their Role**		
i.			
ii.			
iii.			
2.	**Urban Transport Reforms**		
i.	Formation of UMTA		
ii.	Formation of SPV		
iii.	Urban Transport Fund		
iv	Advertisement Policy		
v.	Parking Policy		
vi.	Fare Revision Policy		
	Part E - Benefits		
XV.	**SOCIAL BENEFITS**		
1.	**Increase In -**		
i.	Modal Share (%) of Bus		
ii.	Modal Shift from Various Modes to Bus (%) namely-		
	Car		
	Two Wheeler		
	IPT		

iii.	Average Daily Ridership (PHPDT)
iv.	Total Route Coverage (in %)
v.	Accessibility to Bus Stops - % of population within 500 m of Bus Stops
2.	**Reduction/Decrease In -**
i.	Average Number of Private Cars and Two Wheelers on Road per day
ii.	Peak Hour Traffic per day (in PCU)
3.	**Increase In Level Of Service(LOS) Of -**
i.	Presence of Organized Public Transport System in Urban Area
ii.	Extent of Supply / Availability of Public Transport
iii.	Service Coverage of Public Transport in the city (Bus route network density)
iv.	Level of Comfort in Public Transport (Crowding)
v.	Percentage Fleet as per Urban Bus Specifications
vi.	Fatality per lakh Population
vii.	Availability of Traffic Surveillance
viii.	Passenger Information System
ix.	Global Positioning System
x.	Integrated Ticketing System
XVI.	**ECONOMIC AND FINANCIAL BENEFITS**
1.	**Increase In -**
i.	Earning per km
2.	**Reduction/Decrease In -**
i.	Travel Time
ii.	Per Capita Expenditure on Transport (roads, parking and transit)
3.	**Increase In Level Of Service(LOS) Of -**
i.	Average Waiting Time for Public Transport Users
ii.	Average Speed of Buses in PT Route
iii.	Extent of Non-Fare Revenue
iv.	Staff per Bus Ratio
v.	Operating Ratio
XVII.	**ENVIRONMENTAL BENEFITS**
1.	**Increase In -**
i.	Percentage Share of Bus on Clean Fuels


2.	**Reduction/Decrease In -**
i.	GHG Emissions per Capita
ii.	Noise Pollution
iii.	Energy Consumption (in million tonnes oil equivalent)
3.	**Increase In Level Of Service(LOS) Of -**
i.	Annual Mean Concentration Range (in µg/m3)
	Nitrogen Dioxide (NO_2)
	Sulphur Dioxide (SO_2)
	Suspended Particulate Matter (SPM)
	Respirable Suspended Particulate Matter (RSPM)(Size less than 10 microns)

Category 3:

Non-Motorized –

Walk, Cycle, FOB/Subway & Footpath



Category 3:

Non-Motorized Transport – Walk, Cycle, FOB/Subway & Footpath

	Item
I.	Name of State
II.	Single City or Cluster of cities (Name)
III.	State Level Nodal Agency (SLNA)
IV.	DPR approved by SLSC (Yes/No) Date, Letter
V.	Notified Planning area for a cluster (Yes/No)
VI.	Provision made in State Budget (Yes/No)
VII.	CMP/CTCS (Yes/No), If yes then year of preparation
VIII.	Master Plan (Yes/No), If yes then year of preparation
IX.	CDP (Yes/No), If yes then year of preparation
X.	Resolution by Municipal Corporation supporting DPR Proposal
	Part A - Introduction
I.	**CITY PROFILE**
1.	**Introduction**
i.	Area (in Sq.km)
ii.	Population (2011 census)
2.	**Socio-Economic Characteristics**
i.	Per capita income
ii.	Average Expenditure on transport
II.	**TRAFFIC & TRANSPORTATION SYSTEM CHARACTERISTICS**
1.	**Transport Network Characteristics**
i.	Transportation Modes Registered (Latest data Year data)
	Bus (including Mini Bus)
	IPT
	Car

	Two Wheeler			
	NMV			
	Cycles			
	Rickshaws			
	Others			
ii.	Average Annual Growth of Vehicles			
2.	**Road Network Characteristics**			
i.	Road Network		Length (in km)	Average RoW
	National / State Highways			
	Arterial			
	Sub-arterial			
	Collector			
	Total			
3.	**Travel Characteristics**			
i.	Per Capita Trip Rate (PCTR)			
ii.	Modes	Modal Share (%)	Average Trip Length (km)	Average Trip Time (min)
	Walk			
	2-Wheeler			
	Car			
	Auto			
	Bus			
	Cycle			
	Cycle Rickshaw			
	Other Modes			
	Part B - Non Motorised Transport (Existing/Proposal)			
III.	**SURVEYS CONDUCTED (YES/ NO)**			
i.	Reconnaissance Survey			
ii.	Road Inventory Survey			
iii.	Pedestrian Count Survey			
iv.	O D Survey			
v.	Classified Turning Volume Count at Junctions			
vi.	Cyclist Count Survey			
vii.	Opinion Survey			
viii.	Willingness to Shift Survey			


IV.	NON-MOTORISED TRANSPORT - WALK (EXISTING)						
1.	Footpath (km)						
i.	Type of Roads			No Footpath	Footpath on Left Side	Footpath on Right Side	Footpath on Both Sides
	Arterial						
	Sub-Arterial						
	Collector						
ii.	Percentage of City Covered by Footpath[3]			<25	25-50	50-75	>75
iii.	Availability of Footpath by Width (km)[3]			Up to 1.8 m		> 1.8 m	
iv.	Availability of Footpath by Kerb Height (mm)[4]			<100mm	100mm-300mm		>300mm
v.	Availability of Footpath by Pavement Type (km)[4]			Concrete/Interlocking Blocks/Pavers Blocks/Tar/ Asphalt		Tiles	Unpaved Surface
vi.	Clear Height above Footpath[5]			>= 2.2 m		<2.2 m	
vii.	Percentage of Footpath under Encroachment due to-						
	Vehicle Parking						
	Utilities						
	Trees						
	Street Vendors						
	Garbage Disposal						
	Others						
viii.	Pedestrian Flow (in persons per hour)						
ix.	Existing LOS of Footpath (Tick)[5]	A	B	C	D	E	F
x.	If Footpath Independent of Cycle Track (Yes/ No)						
xi.	Pedestrian Zones(Yes/No)						
xii.	Availability of Footpath by Street Lighting (km)			No Street Light	Street Light on Left Side	Street Light on Right Side	Street Light on Both Sides
xiii.	Percentage of Street Light by Different Lux Levels[4]			<10 lux	10-20 lux		>20 lux

[4] MoUD Toolkit on Public Transport Accessibility
[5] IRC Code: 103-2012

xiv.	Spacing of Street Light Poles[4]	0-20 m		20-40m	>40 m
xv.	Height of Pedestrian Lighting[5]	>= 4 m		<4m	
xvi.	Disability Friendly Infrastructure (Yes/No)				
	Tactile Flooring				
	Audible Signal				
	Railing				
	Ramps				
2.	**Crossing Facilities**				
i.	Total Number of Existing Crossing Facilities				
	Zebra Crossing				
	Pelican Crossing				
	Puffin Crossing				
	Toucan Crossing				
	Subways				
	Foot over Bridges				
ii.	Average Distance between two Consecutive Crossing Facilities (Number of Crossings)[4]	(500 - 700) m		(700 - 1000) m	>1000 m
iii.	Percentage of Signalised Intersection Delay[3]	<25	25-50	50-75	>=75
iv.	Are the crosswalks wider than 2 m? (Yes / No)				
v.	Average Persons per hour Crossing the Road				
vi.	Clear Markings for Pedestrians (Yes/ No)				
vii.	Signages for Pedestrian (Yes/No)				
viii.	Lux Level of Street Lighting at Crosswalks				
3.	**Safety**				
i.	Percentage of Pedestrian in Road Injuries	<=20	20-40	40-60	>60
ii.	Percentage of Pedestrian in Road Fatalities[3]	<=20	20-40	40-60	>60
V.	**NON-MOTORISED TRANSPORT - WALK (PROPOSED)**				
1.	**Footpath (km)**				
i.	Length of Footpath (km)				
	Type of Roads	No Footpath	Footpath on Left Side	Footpath on Right Side	Footpath on Both Sides
	Arterial				


	Sub-Arterial			
	Collector			
ii.	Pedestrian Flow (in persons per hour)			
iii.	Availability of Footpath by Pavement Type (km)	Concrete/Interlocking Blocks/Pavers Blocks/Tar/ Asphalt	Tiles	Unpaved Surface
iv.	Availability of Footpath by Width (km)[3]	Up to 1.8 m	> 1.8 m	
v.	Availability of Footpath by Height (mm)[4]	<100mm	100mm-300mm	>300mm
vi.	If Footpath Independent of Cycle Track (Yes/No)			
vii.	Pedestrian Zones (Yes/No)			
viii.	Clear Height above Footpath[5]	>= 2.2 m	<2.2 m	
ix.	Availability of Footpath by Street Lighting (km)	Street Light on Left Side	Street Light on Right Side	Street Light on Both Sides
x.	Percentage of Street Light by Different Lux Levels[2]	<10 lux	10-20 lux	>20 lux
	Spacing of Street Light Poles[4]	0-20 m	20-40m	>40 m
	Height of Pedestrian Lighting[5]	>= 4 m	<4m	
xi.	Disability Friendly Infrastructure (Yes/No)			
	Tactile Flooring			
	Audible Signal			
	Railing			
	Ramps			
2.	**Crossing Facilities**			
i.	Total Number of Existing Crossing Facilities			
	Zebra Crossing			
	Pelican Crossing			
	Puffin Crossing			
	Toucan Crossing			
	Subways			
	Foot over Bridges			

ii.	Average Distance between two Consecutive Crossing Facilities (Number of Crossings)[4]	(500 - 700) m		(700 - 1000) m	>1000 m
iii.	Width of Crosswalks				
iv.	Average Persons per hour Crossing the Road				
v.	Clear Markings for Pedestrians (Yes/No)				
vi.	Signages for Pedestrian (Yes/No)				
vii.	Lux Level Street Lighting at Crosswalks				
VI.	**NON-MOTORISED TRANSPORT - CYCLE (EXISTING)**				
1.	**Cycle Track (km)**				
i.	Length of Cycle Track (km)				
	Type of Roads	No Cycle Track	Cycle Track on Left Side	Cycle Track on Right Side	Cycle Track on Both Sides
	Arterial				
	Sub-Arterial				
	Collector				
ii.	Percentage of City Covered by Cycle Track[3]	<15	15-25	25-50	>=50
iii.	Availability of Cycle Track by Width (km)[4]	<1.5 m	1.5-1.7 m		1.7-5.0 m
iv.	Availability of Cycle Track by Height (mm)[4]	<100mm	100mm-300mm		>300mm
v.	Availability of Cycle Track by Pavement Type (km)	Concrete/Tar/Asphalt		Tiles	Unpaved Surface
vi	Percentage of Cycle Track under Encroachment due to-				
	Vehicle Parking				
	Utilities				
	Trees				
	Street Vendors				
	Garbage Disposal				
	Others				
vii.	Traffic Flow (in cycles per hour)				
viii.	Nature of Cycle Track (Yes/No)				
	Elevated over the Carriageway				
	Continuous Cycle Track				
	Shaded with Trees				


ix.	Exclusive Bicycle Lane (Yes/No)				
x.	Availability of Cycle Track by Street Lighting (km)	No Street Light	Street Light on Left Side	Street Light on Right Side	Street Light on Both Sides
xi.	Percentage of Street Light by Different Lux Levels[4]	<10 lux	10-20 lux		>20 lux
xii.	Spacing of Street Light Poles (Number of Street Lights)[4]	0-20 m	20-40m		>40 m
2.	**Crossing Facilities**				
i.	Total Number of Existing Crossing Facilities				
	Zebra Crossing				
	Pelican Crossing				
	Puffin Crossing				
	Toucan Crossing				
	Subways				
	Foot over Bridges				
ii.	Average Distance between two Consecutive Crossing Facilities (Number of Crossings)[4]	(500 - 700) m	(700 - 1000) m		>1000 m
iii.	Cycle Markings - Regulatory, Warning and Direction Signs (Yes/ No)				
iv.	Regulations to avoid Motor Vehicles from using Cycle Tracks (Yes/ No)				
3.	**Safety**				
i.	Percentage of Cyclists in Road Injuries	<=20	20-40	40-60	>60
ii.	Percentage of Cyclists in Road Fatalities[3]	<=20	20-40	40-60	>60
4.	**Parking**				
i.	Parking Facilities at Interchanges and PT Stops (Yes/ No)				
ii.	Percentage of Availability of Parking Facility within[4]	within 250 m of PT stops	between 250-500 m of the station		within 500 m of station

iii.	Number of Cycle Stands				
iv.	Average Distance between Cycle Stands				
5.	**ITS - For Public Bicycle Sharing Scheme**				
i.	Facilities (Yes/No) - For Public Bicycle Sharing Scheme				
	Control Centre				
	Customer Service				
ii.	ITS System (in numbers) - For Public Bicycle Sharing Scheme				
	Touch Screen Display				
	GPS Tracking				
	Card Reader(Debit/Credit Card)				
	Mobility Card Reader				
	RFID-Reader Printer				
VII.	**NON-MOTORISED TRANSPORT - CYCLE (PROPOSED)**				
1.	**Cycle Track (km)**				
i.	Length of Cycle Track (km)				
	Type of Roads	No Cycle Track	Cycle Track on Left Side	Cycle Track on Right Side	Cycle Track on Both Sides
	Arterial				
	Sub-Arterial				
	Collector				
ii.	Percentage of City Covered by Cycle Track[3]	<15	15-25	25-50	>=50
iii.	Availability of Cycle Track by Width (km)[2]	<1.5 m	1.5-1.7 m		1.7-5.0 m
iv.	Availability of Cycle Track by Height (mm)4	<100mm	100mm-300mm		>300mm
v.	Availability of Cycle Track by Pavement Type (km)[4]	Concrete/Tar/Asphalt		Tiles	Unpaved Surface
vi.	Traffic Flow (in cycles per hour)				
vii.	Exclusive Bicycle Lane (Yes/ No)				
viii.	Availability of Cycle Track by Street Lighting (km)	Street Light on Left Side	Street Light on Right Side	Street Light on Both Sides	
ix.	Percentage of Street Light by Different Lux Levels[4]	<10 lux	10-20 lux		>20 lux


2.	**Crossing Facilities**			
i.	Total Number of Existing Crossing Facilities			
	Zebra Crossing			
	Pelican Crossing			
	Puffin Crossing			
	Toucan Crossing			
	Subways			
	Foot over Bridges			
ii.	Average Distance between two Consecutive Crossing Facilities (Number of Crossings)[2]	(500 - 700) m	(700 - 1000) m	>1000 m
iii.	Cycle Markings - Regulatory, Warning and Direction Signs (Yes/No)			
iv.	Regulations to avoid Motor Vehicles from using Cycle Tracks (Yes/No)			
3.	**Parking**			
i.	Parking Facilities at Interchanges and PT Stops (Yes/No)			
ii.	Percentage of Availability of Parking Facility within[4]	within 250 m of PT stops	between 250-500 m of the station	within 500 m of station
iii.	Number of Cycle Stands			
iv.	Average Distance between Cycle Stands			
4.	**ITS - For Public Bicycle Sharing Scheme**			
i.	Facilities (Yes/No) - For Public Bicycle Sharing Scheme			
	Control Centre			
	Customer Service			
ii.	ITS System (in numbers) - For Public Bicycle Sharing Scheme			
	Touch Screen Display			
	GPS Tracking			
	Card Reader(Debit/Credit Card)			
	Mobility Card Reader			
	RFID-Reader Printer			
VIII.	**FOOT OVER BRIDGE**			
1.	**Geometric Design**			
i.	Location			
ii.	Length of FOB excluding Approach Stairs (in m)			

iii.	Clear Width of Footway (in m)				
iv.	Clear Height of Footway (in m)				
v.	Vertical Clearance (in m)				
vi.	Minimum Clear Width of Approach Stair (in m)				
vii.	Tread of Step (in mm)				
viii.	No. of Mid Landing				
ix.	Minimum Landing Length (in m)				
x.	Capacity of Foot over Bridge (persons per hour)				
2.	**Projections**				
i.	Design Period				
ii.	Peak Hour Traffic Volume (PCU per hour)				
iii.	Volume Capacity Ratio				
IX.	**PEDESTRIAN SUBWAY**				
1.	**Geometric Design**				
i.	Location				
ii.	Clear Width of Box (in m)				
iii.	Clear Height of Box (in m)				
iv.	Length of Pedestrian Subway (in m)				
v.	Minimum Depth of Earth Cushion (in m from the Road Formation Level)(in m)				
vi.	Number of Entry/Exit				
vii.	Minimum Width of Stair (in m)				
viii.	Rise of Step (in mm)				
ix.	Tread of Step (in mm)				
x.	No. of Mid Landing				
xi.	Minimum Landing Length (in m)				
xii.	Capacity of Footpath (persons per hour)				
2.	**Projections**				
i.	Design Period				
ii.	Peak Hour Traffic Volume (PCU per hour)				
iii.	Volume Capacity Ratio				
	Part C - Funding				
X.	**COST**				
1.	**Financial Planning and Cost Estimates - NMT Improvement**				
i.	Items	Unit Cost(Rs)	Quantity (No/Km)	Total Cost (Rs)	% of Total Cost
	Footpath/Cycle Track				
	FOB				
	Subways				


	Signals/Crossings				
ii.	Entire Project (Rs)				
iii.	Revenue from Different Sources				
iv.	FIRR				
v.	EIRR				
vi.	Assumptions Made				
vii.	Financial Structuring of the Project				
viii.	Proposed Phasing of Entire Project				
2.	**Financial Planning and Cost Estimates - Public Bicycle Sharing Scheme**				
i.	Capital Cost				
	Items	Unit Cost (Rs)	Quantity	Total cost (Rs)	% of total cost
	Docks				
	Installation				
	Cycles				
	Cycle track				
	Terminal				
	Software				
	Stations -Manned Kiosk				
	Station Infrastructure				
	Control Centre				
	Redistribution vehicles				
	User verification device				
	spare parts				
	Access cards				
	Website				
ii.	Entire Project (Rs)				
iii.	Revenue from Different Sources				
iv.	FIRR				
v.	EIRR				
vi.	Assumptions Made				
vii.	Financial Structuring of the Project				
viii.	Proposed Phasing of Entire Project				
	Part D - Governance				
XI.	**GOVERNANCE**				
1.	**Existing Institutions and their Role**				
i.					
ii.					
iii.					

Part E - Benefits	
XII.	**SOCIAL BENEFITS**
1.	**Increase In -**
i.	Modal Share (%)
	Walk
	Cycle
ii.	Modal Shift from Various Modes to Walk (%) namely-
	Car
	2 -Wheeler
	IPT
iii.	Modal Shift from Various Modes to Cycle (%) namely-
	Car
	2 -Wheeler
	IPT
iv.	Total Network Coverage (km)
	Footpath
	Cycle Track
v.	Number of Pedestrians
vi.	Number of Cyclists
2.	**Reduction/Decrease In -**
i.	Vehicle km per day
3.	**Increase In Level Of Service(LOS) Of -**
i.	Street Lighting (Lux)
ii.	Percentage of City Covered with Footpaths (wider than 1.5 m)
iii.	NMT Coverage (% of Network Covered)
iv.	NMT Parking Facilities at Interchanges
v.	Fatality Rate for Pedestrian and NMT
XIII.	**ECONOMIC AND FINANCIAL BENEFITS**
1.	**Reduction/Decrease In -**
i.	Fuel Dependency
ii.	Waiting Time for Pedestrians at Intersections
2.	**Increase In Level Of Service(LOS) Of -**
i.	Signalized Intersection Delay


XIV.	ENVIRONMENTAL BENEFITS
1.	**Reduction/Decrease In -**
i.	GHG Emissions per Capita
ii.	Noise Pollution
iii.	Energy Consumption
2.	**Increase In Level Of Service(LOS) Of -**
i.	Annual Mean Concentration Range (in $\mu g/m^3$)
	Nitrogen Dioxide (NO_2)
	Sulphur Dioxide (SO_2)
	Suspended Particulate Matter (SPM)
	Respirable Suspended Particulate Matter (RSPM) (Size less than 10 microns)

Category 4:

Transport Infrastructure –

Network Improvement - ITS, Intersection, Mid Block, Roundabout, Interchange

Parking – Off Street & On Street



Category 4:

Transport Infrastructure –

Network Improvement - Its, Intersection, Mid Block, Roundabout, Interchange

Parking – Off Street & On Street

A. NETWORK IMPROVEMENT

S.No	Item
I.	Name of State
II.	Name of City
III.	State Level Nodal Agency (SLNA)
IV.	DPR approved by SLSC (Yes/No) Date, Letter
V.	Notified Planning area for a cluster (Yes/No)
VI.	Provision made in State Budget (Yes/No)
VII.	CMP/CTCS (Yes/No), If yes then year of preparation
VIII.	Master Plan (Yes/No), If yes then year of preparation
IX.	CDP (Yes/No), If yes then year of preparation
X.	Resolution by Municipal Corporation supporting DPR Proposal
	Part A - Introduction
I.	**CITY PROFILE**
1.	**Introduction**
i.	Area (in Sq.km)
ii.	Population (2011 census)
2.	**Socio-Economic Characteristics**
i.	Per capita income
ii.	Average Expenditure on transport
II.	**TRAFFIC & TRANSPORTATION SYSTEM CHARACTERISTICS**
1.	**Transport Network Characteristics**
i.	**Transportation Modes Registered (Latest data Year data)**
	Bus (including Mini Bus)
	IPT

	Car		
	Two Wheeler		
	NMV		
	Cycles		
	Rickshaws		
	Others		
ii.	**Average Annual Growth of Vehicles**		
2.	**Road Network Characteristics**		
i.	Road Network	Length (in km)	Average RoW
	National / State Highways		
	Arterial		
	Sub-arterial		
	Collector		
	Total		
	Part B - Transport Infrastructure (Mid-Block, Intersection, Round About, Interchange)		
III.	**SURVEYS CONDUCTED (YES/ NO)**		
i.	Reconnaissance Survey		
ii.	Road Inventory Survey		
iii.	O D Survey		
iv.	Classified Traffic Volume Count Survey at Major Intersections and Mid Blocks		
v.	Turning Moment Count Survey		
vi.	Speed and Delay Survey		
vii.	Parking Survey		
viii.	Activity Survey		
ix.	Pedestrian Count Survey		
x.	Topographic Survey		
IV.	**TYPE OF PROJECT**		
1.	**Project Involves (Tick)**		
	Mid-Block Improvement		
	Intersections Improvement		
	Round About Construction		
	Grade Separation Construction		
	Others (Specify)		
2.	**Mid-Block Improvement**	**Existing**	**Proposed**
i.	**Introduction**		
a.	Section: From ____To____		


b.	Type of Road (Tick below)
	Arterial
	Sub Arterial
	Collector
	Access Roads
c.	Length of the Stretch
d.	Right of Way
e.	Number of Lanes
f.	Width of Lanes
g.	Median (Yes/No; If Yes, then width)
ii.	**Horizontal Alignment Details**
a.	Super-Elevation at Horizontal Curve
b.	Radius of Horizontal Curve
c.	Length of Curve
iii.	**Vertical Alignment Details**
a.	Curve Type (Summit or Valley)
b.	Vertical Curve Length
c.	Grade % (In and Out)
iv.	**Other Alignment Details**
a.	Camber or Cross fall
b.	Gradient
v.	**Safe Stopping Distance**
vi.	**Pedestrian and Cycle Facilities**
a.	Footpath (Yes/No; If Yes, then width)
	On Right Side
	On Left Side
b.	Gradient of Footpath
c.	Capacity of Footpaths (persons per hour)
d.	Cycle Track (Yes/No; If Yes, then width)
	On Right Side
	On Left Side
e.	Gradient of Cycle Track
f.	Capacity of Cycle Track (cycles per hour)
vii.	**Pedestrian Crossings in the Stretch (Yes/No; If Yes, then type)**
	At Grade Crossing / Zebra Crossing
	Subway
	Foot over Bridge

viii.	**Kerbs (Tick)**
	Barrier Type
	Semi-Barrier Type
	Mountable Type
ix.	**On Street Parking (Yes/No; If Yes, then-)**
a.	Width of Parking
	On Right Side
	On Left Side
b.	Parking Configuration to Kerb Line (Tick)
	Parallel
	Angular
	Perpendicular
c.	Legality of Parking (Tick)
	Authorised
	Unauthorised
x.	**Service Road (Yes/No; If Yes, then width)**
	On Right Side
	On Left Side
xi.	**Street Lighting (Yes/No; If Yes, on which side -)**
	On Right Side
	On Left Side
	On Median
xii.	**Land use along the Stretch (in %)**
	Residential
	Commercial/Retail
	Public/Semi Public
	Industrial
	Others
xiii.	**Bus Bays (Yes/No; If Yes, then -)**
	Number of Bus Bays along the Stretch
	Distance of Bus Bay from nearest Intersection
	Length of Recess for Bus Stop
	Depth of Recess for Bus Stop
	Entry Taper (in ratio)
	Exit Taper (in ratio)
xiv.	**Lay-Byes (Yes/No; If Yes, then -)**
	Presence of Lay-Byes (Yes/No; If Yes, then)
	Width of Lay Bye (m)


	Length of Lay Bye (m)
	Entry Taper Length (m)
	Exit Taper Length (m)
xv.	**Road Markings (Yes/No; If Yes, then the type -)**
a.	**Carriageway Markings**
	Centre Line
	Traffic Lane Lines
	No Overtaking Lane Lines
	Pavement Edge Lines
	Carriageway Width Reduction Transition Markings
	Obstruction Approach Markings
	Stop Lines
	Pedestrian Crossings
	Cyclist Crossings
	Route Direction Arrows
	Word Messages
	Markings at approaches to intersections
	Parking Space Limits
	Bus Stops
b.	**Object Markings**
	Objects within the Carriageway
	Kerb Marking for Visibility
	Kerb Marking for Parking Restrictions
	Objects adjacent to the Carriageway
xvi.	**Signages (Yes/No; If Yes, then the type -)**
	Regulatory Signage
	Cautionary/Warning Signs
	Informative/Guide Signs
xvii.	**Existing Traffic Condition**
a.	Peak Hour Traffic Volume in PCU/hr.
b.	Existing LOS
c.	Travel Speed (km/hr.)
d.	Peak Hour Traffic Composition (in %)
	Car
	Two Wheeler
	Bus
	Auto Rickshaw
	Shared Auto

	Bicycle		
	Cycle Rickshaw		
	Company Bus		
	Taxis		
	Any Other		
xviii.	**Proposed Traffic Condition**		
a.	Design Period		
b.	Projected Peak Hour Traffic Volume in PCU/hr		
c.	Designed for LOS		
d.	Design Speed		
3.	**Intersection Improvement**	**Existing**	**Proposed**
i.	**Introduction**		
a.	Name of Intersection		
b.	Number of Intersecting Legs		
	Three Legged		
	Four Legged		
	Multi Legged (If Yes, then how many?)		
c.	Junction Type		
	Arterial to Arterial		
	Arterial to Collector		
	Collector to Collector		
	Others (Mention)		
d.	Number of Lanes on each leg		
	Leg 1		
	Leg 2		
	Leg 3		
	Leg 4		
ii.	Intersection Design		
a.	Radius of Curves at Intersection		
b.	Design Vehicle for the Intersection		
c.	Width of Lanes at Intersections		
d.	Width of Carriageway at Entry and Exit		
e.	Minimum Visibility along Major Road (m)		


iii.	**Types of Auxiliary Lanes Proposed (Yes/No; If Yes then type)**
	Storage Lanes/Right Turning Lanes
	Speed Change Lanes
a.	Storage Lanes
	Length of Right Turning Lane including 30 - 45 m taper (in m)
	Design Speed for Storage Lanes
b.	Speed Change Lanes
	Traffic Volume in the Acceleration Lane
	Acceleration Length (m) for entrance curve design speed (kmph)
	Design Speed for Acceleration Lane
	Traffic Volume in the Deceleration Lane
	Deceleration Length (m) for design speed of exit curve
iv.	**Safe Stopping Sight Distance of Intersections (m)**
v.	**Traffic Islands**
a.	Islands based on Location (Yes/No)
	Corner/Directional Islands
	Centre/Divisional Islands
b.	Islands based on Type (Yes/No)
	Raised Island outlined by kerbs
	Island delineated by pavement marking, buttons or raised rumble strips placed on all paved areas
	Non Paved Areas formed by the pavement edge supplemented by delineations or a mounded earth treatment beyond the pavement edge
vi.	**Kerbs (Yes/No)**
	Barrier Type
	Semi-Barrier Type
	Mountable Type
	Intersection Capacity (PCUs per Hour)
vii.	**Pedestrian and Cycle Facilities at each Leg**
a.	Footpath (Yes/No; If Yes, then width)
	On Right Side
	On Left Side
b.	Gradient of Footpath
c.	Capacity of Footpaths (persons per hour)

d.	Cycle Track (Yes/No; If Yes, then width)
	On Right Side
	On Left Side
e.	Gradient of Cycle Track
f.	Capacity of Cycle Track (cycles per hour)
g.	Pedestrian Crossings in the Intersection (Yes/No)
h.	If Yes, then, Number of persons crossing the road per hour
viii.	**Street Lighting Availability (Yes/No)**
ix.	**Road Markings (Yes/No; If Yes, then the type -)**
a.	**Carriageway Markings (Tick)**
	Centre Line
	Traffic Lane Lines
	No Overtaking Lane Lines
	Pavement Edge Lines
	Carriageway Width Reduction Transition Markings
	Obstruction Approach Markings
	Stop Lines
	Pedestrian Crossings
	Cyclist Crossings
	Route Direction Arrows
	Word Messages
	Markings at approaches to intersections
	Parking Space Limits
b.	**Object Markings (Tick)**
	Objects within the Carriageway
	Kerb Marking for Visibility
	Kerb Marking for Parking Restrictions
	Objects adjacent to the Carriageway
x.	**Signages (Yes/No; If Yes, then the type -)**
	Regulatory Signage
	Cautionary/Warning Signs
	Informative/Guide Signs
xi.	**Reflectors (Yes/No)**
xii.	**Railings at Intersections (Yes/No)**
xiii.	**Signalised Intersection (Yes/No)**


xiv.	**Existing Traffic Condition**
a.	Intersection Capacity per Hour (PCU/hr.)
b.	Peak Hour Traffic Volume on each leg in PCU/hr.
	Leg 1
	Leg 2
	Leg 3
	Leg 4
	Leg 5
c.	Observed Delay during peak hour
	Leg 1
	Leg 2
	Leg 3
	Leg 4
	Leg 5
d.	Travel Speed (km/hr.)
	Leg 1
	Leg 2
	Leg 3
	Leg 4
	Leg 5
e.	Existing LOS
f.	Peak Hour Traffic Composition (in %)
	Car
	Two Wheeler
	Bus
	Auto Rickshaw
	Bicycle
	Cycle Rickshaw
	Company Bus
	Taxis
	Any Other
g.	Queue Length (m)
xv.	**Proposed Traffic Condition**
a.	Design Period
b.	Design Turning Speed (kmph)
c.	Minimum Radius for Turning Speed

d.	Design Speed (kmph)		
e.	Design Traffic Volume (in PCUs)		
f.	Proposed LOS		
4.	**Round About**	**Existing**	**Proposed**
i.	**Introduction**		
a.	Name of Round About		
b.	Number of Intersecting Legs		
	Three Legged		
	Four Legged		
	Multi Legged (If Yes, then how many?)		
c.	Junction Type		
	Arterial to Arterial		
	Arterial to Collector		
	Collector to Collector		
	Others (Mention)		
d.	Shape of Rotary Island		
	Circular		
	Squarish with rounded edges		
	Elliptical, Elongated, Oval or Rectangular		
	Complex intersection with many approaches		
ii.	**Round About Design (For all Legs)**		
	Radius of Curve at Entry (in m)		
	Weaving Length		
	Weaving Section Width		
	Non Weaving Section Width		
	Entry Angles		
	Exit Angles		
	Camber		
	Super- Elevation		
	Width of Carriageway at Entry and Exit		
	Minimum Visibility along all legs (m)		
iii.	**Safe Stopping Sight Distance of Intersections (m) at all legs**		
iv.	**Traffic Islands**		
a.	Are there channelizing islands at the entries and exits? (Yes/No)		
b.	Radius of Central Island (in m)		


c.	Curbs along Channelizing and Central Islands (Yes/No; If yes, then type of curb -
	Vertical
	Mountable
d.	Curb Height (mm)
v.	**Pedestrian and Cycle Facilities at each Leg**
a.	Footpath (Yes/No; If Yes, then width)
	On Right Side
	On Left Side
b.	Gradient of Footpath
c.	Capacity of Footpaths (persons per hour)
d.	Cycle Track (Yes/No; If Yes, then width)
	On Right Side
	On Left Side
e.	Gradient of Cycle Track
f.	Capacity of Cycle Track (cycles per hour)
g.	Pedestrian Crossings in the Intersection (Yes/No)
h.	If Yes, then, Number of persons crossing the road per hour
vi.	**Street Lighting Availability (Yes/No)**
vii.	**Road Markings (Yes/No; If Yes, then the type -)**
a.	**Carriageway Markings (Tick)**
	Centre Line
	Traffic Lane Lines
	No Overtaking Lane Lines
	Pavement Edge Lines
	Carriageway Width Reduction Transition Markings
	Obstruction Approach Markings
	Stop Lines
	Pedestrian Crossings
	Cyclist Crossings
	Route Direction Arrows
	Word Messages
	Markings at approaches to intersections
	Parking Space Limits
b.	**Object Markings (Tick)**
	Objects within the Carriageway

	Kerb Marking for Visibility		
	Kerb Marking for Parking Restrictions		
	Objects adjacent to the Carriageway		
viii.	**Signages (Yes/No; If Yes, then the type -)**		
	Regulatory Signage		
	Cautionary/Warning Signs		
	Informative/Guide Signs		
ix.	**Signalised Intersection (Yes/No)**		
x.	**Existing Traffic Condition**		
a.	Intersection Capacity per Hour (PCU/hr.)		
b.	Travel Speed in Round About (km/hr.)		
c.	Existing LOS		
d.	Peak Hour Traffic Composition (in %)		
	Car		
	Two Wheeler		
	Bus		
	Auto Rickshaw		
	Bicycle		
	Cycle Rickshaw		
	Company Bus		
	Taxis		
	Any Other		
xi.	**Proposed Traffic Condition**		
a.	Design Period		
b.	Design Speed (kmph)		
c.	Design Traffic Volume (in PCUs)		
d.	Proposed LOS		
5.	**Interchange**	**Existing**	**Proposed**
i.	Introduction		
a.	Location		
b.	Number of Intersecting Legs		
	Three Legged		
	Four Legged		
	Multi Legged (If Yes, then how many?)		
c.	Junction Type		
	Arterial to Arterial		


	Arterial to Collector
	Collector to Collector
	Others (Mention)
ii.	**Interchange Type (Tick)**
	Trumpet
	Diamond
	Full Cloverleaf
	Partial Cloverleaf
	Rotary
	Directional
	Others (Mention)
iii.	**Interchange Design**
a.	Design Speed of the major intersecting urban highway
b.	Design Speed of the Ramp (km/hour)
c.	Radius of Curvature (m)
d.	Stopping Sight Distance (m)
e.	For Loop Ramps if provided -
	Design Speed of the Ramp (km/hour)
	Radius of Curvature (m)
	Stopping Sight Distance (m)
f.	Length of Vertical Curve for safe stopping sight distance (m)
	Summit Curve
	Valley Curve
g.	Absolute Minimum Length of Vertical Curve (m)
h.	Median if provided (in m)
i.	Length of Acceleration Lane (m)
j.	Length of Deceleration Lane (m)
k.	Length of Weaving Section (m)
l.	Interchange Spacing (Crossroad to Crossroad)
m.	Spacing between successive entrances and exits
iv.	**Safe Stopping Sight Distance**
v.	**Pedestrian and Cycle Facilities at each Leg**
a.	Footpath (Yes/No; If Yes, then width)
	On Right Side
	On Left Side

b.	Gradient of Footpath
c.	Capacity of Footpaths (persons per hour)
d.	Cycle Track (Yes/No; If Yes, then width)
	On Right Side
	On Left Side
e.	Gradient of Cycle Track
f.	Capacity of Cycle Track (cycles per hour)
vi.	**Street Lighting Availability (Yes/No)**
vii.	**Road Markings (Yes/No; If Yes, then the type -)**
a.	**Carriageway Markings (Tick)**
	Centre Line
	Traffic Lane Lines
	No Overtaking Lane Lines
	Pavement Edge Lines
	Carriageway Width Reduction Transition Markings
	Obstruction Approach Markings
	Stop Lines
	Pedestrian Crossings
	Cyclist Crossings
	Route Direction Arrows
	Word Messages
	Markings at approaches to intersections
	Parking Space Limits
b.	**Object Markings (Tick)**
	Objects within the Carriageway
	Kerb Marking for Visibility
	Kerb Marking for Parking Restrictions
	Objects adjacent to the Carriageway
viii.	**Signages (Yes/No; If Yes, then the type -)**
	Regulatory Signage
	Cautionary/Warning Signs
	Informative/Guide Signs
ix.	**Existing Traffic Condition**
a.	Interchange Capacity (PCU/hr.)
b.	Travel Speed (km/hr.)
c.	Existing LOS
x.	**Proposed Traffic Condition**
a.	Design Period


b.	Design Speed (kmph)				
c.	Design Traffic Volume (in PCUs)				
d.	Proposed LOS				
V.	**ITS in Network**				
i	**ITS Centre**				
ii	**Automatic Traffic Classifier and Counter (ATCC)**				
a.	Total Number of ATCC Installed				
b.	Total Number of ATCC Installed in different hierarchy of road				
	Sub-arterial				
	Collector				
	Others				
c.	Type of Traffic Counters (Yes/No) and Number				
	Ultra Sonic Type				
	Loop-Coil Type				
	Image Processing Type				
d.	Average Interval between two Traffic Counters				
iii.	**CCTV Cameras**				
a.	Number of CCTV Camera Installed at Junctions				
iv.	**Variable Message Signboard (VMS)**				
a.	Number of VMS Installed				
v.	**Signal System**				
a.	Number of Traffic Signals				
b.	Number of Pedestrian Signals				
c.	Average Interval between two Pedestrian Signals				
vi.	**Electronic Road Pricing System**				
a.	Number of Electronic Road Pricing Gantries				
vii.	**Lane Control System (Yes/No)**				
viii.	**Parking System**				
	Part C - Funding				
VI.	**COST**				
1.	**Financial Planning and Cost Estimates**				
	Items	**Unit Cost (Rs)**	**Quantity**	**Total Cost (Rs)**	**% of Total Cost**
i.	Mid-Block Improvement				
	Junction Improvement				

	Round About
	Interchanges
ii.	Entire Project (Rs)
iii.	Revenue from Different Sources
iv.	EIRR
v.	Assumptions Made
vi.	Financial Structuring of the Project
vii.	Proposed Phasing of Entire Project
	Part D - Governance
VII.	**GOVERNANCE**
1.	**Institution** **Role and Responsibilities**
	Government
	Implementing Agency
	Private Operator
	Part E - Benefits
VIII.	**SOCIAL BENEFITS**
1.	**Increase In Level Of Service(LOS) Of -**
i.	Fatality rate per lakh population
ii.	Fatality rate for pedestrian and NMT (%)
IX.	**ECONOMIC BENEFITS**
1.	**Reduction/Decrease In -**
i.	Waiting Time for Vehicles at Intersections (for improved junctions
ii.	Travel Time
iii.	Average Waiting Time for Pedestrian at Signalised Intersection (for improved junctions)
2.	**Increase In Level Of Service(LOS) Of -**
i.	Average travel speed of personal vehicles
ii.	Average travel speed of public transport
X.	**ENVIRONMENTAL BENEFITS**
1.	**Reduction/Decrease In -**
i.	GHG Emissions per Capita
ii.	Noise Pollution
iii.	Energy Consumption (in million tonnes oil equivalent)
2.	**Increase In Level Of Service(LOS) Of -**
	Annual Mean Concentration Range (in $\mu g/m^3$) of NO_2, SO_2, SPM, RSPM


B. PARKING

S.No	Item
I.	Name of State
II.	Name of City
III.	State Level Nodal Agency (SLNA)
IV.	DPR approved by SLSC (Yes/No) Date, Letter
V.	Notified Planning area for a cluster (Yes/No)
VI.	Provision made in State Budget (Yes/No)
VII.	CMP/CTCS (Yes/No), If yes then year of preparation
VIII.	Master Plan (Yes/No), If yes then year of preparation
IX.	CDP (Yes/No), If yes then year of preparation
X.	Resolution by Municipal Corporation supporting DPR Proposal
	Part A - Introduction
I.	**CITY PROFILE**
1.	**Introduction**
i.	Area (in Sq.km)
ii.	Population (2011 census)
2.	**Socio-Economic Characteristics**
i.	Per capita income
ii.	Average Expenditure on transport
II.	**TRAFFIC & TRANSPORTATION SYSTEM CHARACTERISTICS**
1.	**Transport Network Characteristics**
i.	Transportation Modes Registered (Latest data Year data)
	Bus (including Mini Bus)
	IPT
	Car
	Two Wheeler
	NMV
ii.	Average Annual Growth of Vehicles

2.	**Road Network Characteristics**		
i.	**Road Network**	**Length (in km)**	**Average RoW**
	National / State Highways		
	Arterial		
	Sub-arterial		
	Collector		
	Total		
	Part B - Parking (Existing/Proposal)		
III.	**SURVEYS CONDUCTED (YES/ NO)**		
i.	Reconnaissance Survey		
ii.	Road Inventory Survey		
iii.	O D Survey		
iv.	Parking Survey		
IV.	**PARKING (EXISTING)**		
1.	**Existing Parking Provision**		
i.	**Use Zones having Parking Problems (Area in sq. m)**		
	CBD Area / Commercial Establishments		
	Bus Terminals		
	Railway Terminals		
	Institutional Establishments		
ii.	**On street Parking**		
a.	On street Parking based on Ownership (km)		
	Public		
	Private		
	Informal		
b.	On street Parking based on Pricing (km)		
	Paid		
	Unpaid		
c.	Parking Configuration to Kerb Line (Length in km)		
	Parallel		
	Angular		
	Perpendicular		
	Haphazard		
d.	Loss of Road Capacity owing to parking (PCU/hr.)		
e.	Availability of Signages/ Markings (Yes/No)		
f.	Existence of Parking Restrictions (Yes/No)		


2.	**Existing Parking Characteristics**
a.	Parking Accumulation
	Total
	Peak
b.	Parking Volume (vehicles per day)
c.	Parking Load (vehicle hour)
d.	Parking Duration (number of vehicles parked for _ hours)
	Up to 2 hours
	Up to 4 hours
	Up to 8 hours
	More than 8 hours
e.	Parking Index
f.	Parking Turnover
g.	Composition of Parked Vehicles
	Car
	Two Wheeler
	Auto
	Cycle
	Rickshaw
	Tempo
	Truck
	Others
h.	Existing Parking Tariff
	For Off-street Parking
	For On street Parking
V.	**PROPOSED PARKING MANAGEMENT PLAN**
1.	**Delineation of Parking Zones in CBD Area/ Transport Hubson the basis of users (Yes/No)**
	Passenger Loading / Unloading
	Commercial Loading / Unloading
	Disabled Persons Parking Zone
2.	**Delineation of Parking Zones in the City (Yes/No)**
i	On the Basis of Parking Restrictions (Yes/No; If Yes, provide details)
	No Parking Zone
	No Parking during certain hours of the day
	24 X 7 Parking
ii.	On the Basis of Parking Duration (Yes/No; If Yes, provide details)
	Pick and Drop

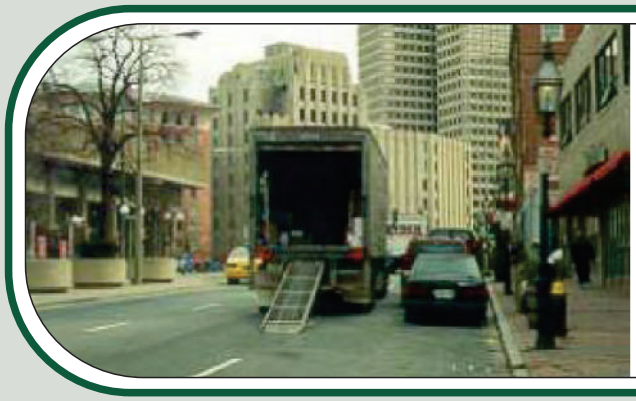
	Short Term Parking
	Mid Term Parking
	Long Term Parking
iii.	On the Basis of Parking Pricing (Yes/No; If Yes, provide details)
iv.	On the Basis of Vehicle Size
3.	**Parking Provision near Transport Hubs/ Commercial Establishments/ Institutional Areas (Yes/No)**
i.	For Private Vehicles
	Area
	Capacity
ii.	For Auto-Rickshaws
	Area
	Capacity
iii.	For Cycle Rickshaws
	Area
	Capacity
iv.	Proposed Off-street Parking
	Numbers
	Area
	Capacity
v.	Is Parking Prohibited near _ (Yes/No)
	Intersections
	Crosswalks
	Footpaths
VI.	**PROPOSED OFF STREET PARKING**
1.	Type of Parking
i.	Location
ii.	Type of Proposed Off-street Parking
	Surface Car Parks
	Multi-storey Car Parks
	Roof Parks
	Mechanical Car Park
	Underground Car Park
iii.	Area under Parking
iv.	Total Built up Area for multi-storeyed parking
v.	Number of Stories
vi.	Types of Vehicles to be parked

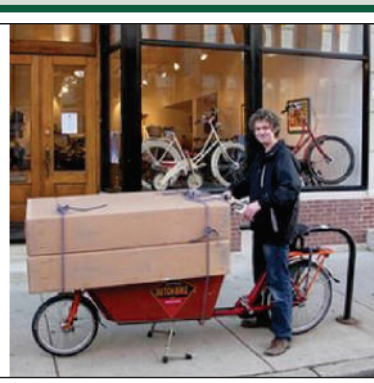

2.	**Parking Characteristics**				
i.	Capacity (ECS)				
ii.	Parking Accumulation				
	Total				
	Peak				
iii.	Parking Volume (vehicles per day)				
iv.	Parking Load (vehicle hour)				
v.	Parking Rates				
	Up to 2 hours				
	Up to 4 hours				
	Up to 8 hours				
	More than 8 hours				
vi.	Parking Index				
vii.	Parking Turnover				
viii.	Number of Entries and Exits				
VII.	**ITS IN PARKING**				
1.	**ITS Facilities (Systems and Devices)**				
i.	**Parking Guidance and Information System for the city (Yes/No)**				
a.	Number of VMS Display Boards				
b.	Type of Vehicle Detection Technology (Yes/No)				
c.	Vehicle Detection Sensors				
d.	Video Image Processing				
ii.	**Smart Payment System (Yes/No)**				
a.	Number of Parking Meters at designated parking sites				
b.	Smart Card Usage (Yes/No)				
iii.	**Security and Security System**				
a.	Number of CCTVs				
b.	Fire Alarm Provision				
	Part C - Funding				
VIII.	**COST**				
1.	**Financial Planning and Cost Estimates**				
	Items	**Unit Cost (Rs)**	**Quantity**	**Total Cost (Rs)**	**% of Total Cost**
a.	Parking Infrastructure				
b.	Entire Project (Rs)				
c.	Revenue from Different Sources				
d.	FIRR				
e.	EIRR				

f.	Assumptions Made	
g.	Financial Structuring of the Project	
h.	Proposed Phasing of Entire Project	
	Part D - Governance	
IX.	**GOVERNANCE**	
1.	**Institution**	**Role and Responsibilities**
	Government	
	Implementing Agency	
	Private Operator	
	Part E - Benefits	
X.	**SOCIAL BENEFITS**	
1.	**Increase In Level Of Service (LOS) -**	
i.	Encroachment on NMT roads by Vehicle parking (%) (for parking)	
ii.	Availability of Paid Parking Spaces (%)	
iii.	Difference in maximum and minimum parking fee in the city	
XI.	**ECONOMIC BENEFITS**	
1.	**Increase in -**	
	Revenue	
	EIRR	
	NPV	
2.	**Reduction/Decrease in -**	
	Reduction in Waiting Time for Vehicles	
	Reduction in Travel Time	

Category 5

Urban Freight







Category 5:

Urban Freight

S.No	Item
I.	Name of State
II.	Name of City
III.	State Level Nodal Agency (SLNA)
IV.	DPR approved by SLSC (Yes/No) Date, Letter
V.	Notified Planning area for a cluster (Yes/No)
VI.	Provision made in State Budget (Yes/No)
VII.	CMP/CTCS (Yes/No), If yes then year of preparation
VIII.	Master Plan (Yes/No), If yes then year of preparation
IX.	CDP (Yes/No), If yes then year of preparation
X.	Resolution by Municipal Corporation supporting DPR Proposal
	Part A - Introduction
I.	**CITY PROFILE**
1.	**Introduction**
i.	Area (in Sq.km)
ii.	Population (2011 census)
2.	**Socio-Economic Characteristics**
i.	Per capita income
ii.	Average Expenditure on transport
II.	**TRAFFIC & TRANSPORTATION SYSTEM CHARACTERISTICS**
1.	**Transport Network Characteristics**
i.	Transportation Modes Registered (Latest data Year data)
	Bus (including Mini Bus)
	IPT
	Car

	Two Wheeler		
	NMV		
ii.	Average Annual Growth of Vehicles		
2.	**Road Network Characteristics**		
i.	Road Network	Length (in km)	Average RoW
	National / State Highways		
	Arterial		
	Sub-arterial		
	Collector		
	Total		
	Part B - Urban Freight (Existing/Proposed)		
III.	**SURVEYS CONDUCTED (YES/ NO)**		
i.	Establishment Survey		
ii.	Vehicle Observation Survey		
iii.	Parking Survey		
iv.	Driver Survey		
v.	Commodity Flow Survey		
vi.	Roadside Interview Survey		
vii.	Vehicle Trip Diaries		
viii.	GPS Survey		
ix.	Freight Operator Survey		
x.	Supplier Survey		
IV.	**URBAN FREIGHT (EXISTING)**		
1.	**Daily Goods Flow in the city (in Vehicles and Tonnes)**		
	Intercity Inbound		
	Intercity Outbound		
	Intra-City Flows		
2.	**Mode Wise Average Trip Length -**		
	LCV/Tempo		
	2 Axle Trucks		
	3 Axle Trucks		
	Multi Axle Vehicles (MAV)		
3.	**Trip Length Frequency (% of Trips)**		
	Below 50 km		
	50 to 100 km		
	100 to 150 km		


		More than once in a day	Daily	Weekly	Occasionally
	150 to 200 km				
	200 to 300 km				
	300 to 500 km				
	More than 500 km				
4.	**Trip Frequency Distribution of Goods Traffic**				
	LCV/Tempo				
	2 Axle Trucks				
	3 Axle Trucks				
	Multi Axle Vehicles (MAV)				
5.	**Commodity Share of Goods Vehicle Traffic at Outer Cordon Locations (in %)**				
	Food grains				
	Fruits and Vegetables				
	Household Goods				
	Chemical and Fertilizers				
	Petroleum				
	Building Materials				
	Textiles				
	Ores/Minerals				
	Timber				
	Manufacturing Goods				
	Others				
6.	**Mode wise Pay Load (in T)**				
	LCV/Tempo				
	2 Axle Trucks				
	3 Axle Trucks				
	Multi Axle Vehicles (MAV)				
7.	**Number of Goods Vehicle Trips Produced/Attracted in the city**				
8.	**Amount of Goods carried across the city (in tonnes)**				
	Food grains				
	Fruits and Vegetables				
	Household Goods				
	Chemical and Fertilizers				
	Petroleum				
	Building Materials				

	Textiles
	Ores/Minerals
	Timber
	Manufacturing Goods
	Others
9.	**Types of Goods Terminal In the City like**
	Port
	Railway Yards
	Truck Terminals
	Major Truck Parking Areas
	Oil Depots
	Container Depots
	Container Warehousing Corporation
	Food Corporation of India
	Industrial Areas
10.	**Number of Truck Terminals in the City**
11.	**Road Side Truck Bays**
	Road Stretch (km)
	Number of trucks per day
12.	**Truck Terminal Details**
i.	Location
ii.	Area
iii.	Activities (Truck Parking Facility, Transit and Transhipment of goods of trucks)
iv.	Amount of Goods Handled daily (in tons)
v.	Inflow of Trucks per Day (Number)
vi.	Outflow of Trucks per Day (Number)
vii.	Components of Truck Terminal (Yes/No; If Yes, then Numbers/Capacity) -
	Transport Agencies
	Circulation
	Parking Space (Area and Number of Trucks)
	Open Space
	Petrol Pump
	Service Centre
	Go downs
	Weigh Bridge
	Administrative Offices
	Fire Stations, Post Office and Dispensary


	Bank, Bus Station, Electric Sub-Station
	Cold Storage
	Spare Parts Shop
13.	**Total Commodity Handled by Terminal (can be done on the basis of type of commodities)**
i.	Inflow
ii.	Outflow
iii.	Overall
14.	**Truck Parking Areas**
i.	Location
ii.	Area
iii.	Capacity
15.	**Truck Parking in Commercial Areas like Mandis/Retail Markets**
i.	Location
ii.	Type of Commodities
iii.	Loading and Unloading Spaces
iv.	Parking Provision for Hand Carts/ LCVs/Tempos/Other Goods Vehicles
16.	**Truck Parking in Industrial Areas**
i.	Location
ii.	Type of Commodities
iii.	Loading and Unloading Spaces
iv.	Parking Provision for Hand Carts/ LCVs/Tempos/Other Goods Vehicles
v.	Godowns
17.	**Railway Yards**
	Commodities Handled
	Transit Sheds/Platforms used as Godowns/Storage Spaces (Area)
	Approach Road Conditions
	Office Space
	Goods brought in (Mode and From)
	Goods sent (Mode and From)
	Number of Road based Vehicles using the yard per month
	Activities Performed (Loading/Unloading)
18.	**Oil Depots**
	Storage Space
	Collection/Distribution of liquid petroleum products

	Terminal Areas			
	Parking Space (area)			
	Number of trucks per day			
19.	**FCI Godowns**			
	Storage Space			
	Commodities Handled			
	Monthly trucks - Loading and Unloading Goods			
	Commodities Handled			
20.	**Inflow of Goods (tonnage)**			
21.	**Growth Rate of Goods Traffic (%)**			
22.	**Average Pay Load**			
	Commodity	**Tonnes**	**Vehicles**	**Pay Load**
23.	**Distance**			
	Distance	**Tonnes**		**% of Tonnes**
	Below 50 km			
	50 to 100 km			
	100 to 150 km			
	150 to 200 km			
	200 to 300 km			
	300 to 500 km			
	More than 500 km			
V.	**PROPOSED URBAN FREIGHT PLANNING AND MANAGEMENT**			
1.	**Projections**			
i.	Estimated Daily Goods Vehicle Travel (in Vehicles and PCUs)			
	Internal (I-I)			
	External (I-E, E-I, and E-E)			
	Total			
ii.	External Travel Demand: Morning Peak Period (Vehicle Trips)			
2.	**Type of Urban Freight Model (Tick)**			
	Commodity based Model			
	Truck Trip based Model			
	Other Approaches			
	Simple Growth Factor Model			
	Regression Analysis Approach			


3.	**Freight Handling Facilities Proposed**
i.	**Freight Handling Facilities (Tick)**
	Freight Centres (like Freight Villages, Distribution Business Centres, Logistic Centres)
	Urban Freight Consolidation Centres (UCC)
	Integrated Freight Complex
ii.	**Freight Centre/ Logistic Park**
a.	Distance of Logistic Park from (in km)
	Railway Station
	Airport
	National and State Highways
	City Centre
b.	Type of Park (Tick)
	Road Based only
	Road - Rail Based
c.	Provisions
	Warehouse (No. and Area)
	Cold Storage (No. and Area)
	Container Freight Station (Area)
	CFS Components (Yes/No)
	Office Block for Customs, Shipping Agents, Administrative Staff)(Area)
	Storage for Valuable Cargo
	Bank
	Computer and Server Room
	Other
	Container Yard
	Container Yard Capacity
	Paved Yard
	Open Yard
d.	Plant and Machinery (No.s)
	Forklift
	Weigh Bridge
	Reach Stackers
	Pallet Trolleys
	Conveyors

iii.	**Integrated Freight Complex**
a.	Area
b.	Land Use Break Up in %
	Wholesale Market
	Warehouses
	Booking Agencies
	Commercial & Public Semi Public
	Utilities and Services
	Service Industry
	Parking
	Circulation
	Others
iv.	**Truck Terminal Details**
a.	Location
b.	Area
c.	Activities (Truck Parking Facility, Transit and Transhipment of goods of trucks)
d.	Amount of Goods Handled daily (in tons)
e.	Inflow of Trucks per Day (Number)
f.	Outflow of Trucks per Day (Number)
g.	Components of Truck Terminal (Yes/No; If Yes, then Numbers/Capacity)
h.	Land Use Break Up in %
	Transport Operations(Office, Godown, Loading/ Unloading)
	Service Industry (Petrol Pump, Service Area, Weigh Bridge)
	Public/Semi-Public (Post Office, Police Post etc)
	Commercial
	Parking
	Open Spaces
	Circulation
	Others
4.	**Urban Freight Management**
i.	Designated Specific Route (Yes/No, If Yes, length)
ii.	Length of the Route (km)
iii.	Truck Traffic Lane Width (m)


iv.	Landuse Break Up along the Route (in %)				
	Residential				
	Commercial				
	Industrial				
	Others				
v.	Traffic Signs				
	STOP				
	GIVE AWAY				
vi.	Designated Hazardous Load Route (Yes/No, If Yes, then km))				
vii.	Designated High Productivity Vehicle Route (Yes/No, If Yes, then km))				
viii.	Ban on Trucks on certain routes at certain times (Yes/No), If Yes, then length of route and timings				
ix.	Prohibition of Heavy Vehicles in certain areas				
x.	Exclusive Lanes for Trucks/Trucks and Other High Occupancy Vehicles				
xi.	One Way Streets				
xii.	Reversible Traffic Lanes				
xiii.	Intersection Channelization				
xiv.	Improved Direction Signs and Variable Message Signs				
xv.	Speed Limits				
xvi.	Street Lighting				
xv.	Median Barriers				
xvi.	Designated Loading/Unloading Zones in Retail and Commercial areas				
xvii.	Area Wide Loading and Unloading Restrictions on the kerbside				
xviii.	Designated Parking for Trucks waiting for long hours				
	Part C - Funding				
VI.	**Cost**				
1.	**Financial Planning and Cost Estimates**				
	Items	**Unit Cost (Rs)**	**Quantity (Total)**	**Total cost (Rs)**	**% of Total cost**
i.	Freight Infrastructure				
	Logistic Park				
	Integrated Freight Complex				
	Truck Terminals				

ii.	Entire Project (Rs)	
iii.	Revenue from Different Sources	
iv.	EIRR	
v.	Assumptions Made	
vi.	Financial Structuring of the Project	
vii.	Proposed Phasing of Entire Project	
	Part D - Governance	
VII.	**GOVERNANCE**	
1.	**Institution**	**Role and Responsibilities**
	Government	
	Implementing Agency	
	Private Operator	
	Part E - Benefits	
VIII.	**SOCIAL BENEFITS**	
1.	**Reduction/Decrease In -**	
	Freight Vehicles during Day Time (%)	
	Freight Vehicles during Night Time (%)	
	Accident due to Freight Vehicles	
IX.	**ENVIRONMENTAL BENEFITS**	
1.	**Increase In -**	
	Percentage Share of Goods Vehicles on Clean Fuel	
	GHG Emissions	
	Noise Pollution	
	Energy Consumption	



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Toolkit

Appraisal Checklist for Urban Transport Project's:

It aims at helping the State/ULBs/parastatal officials in apprasing the urban transport projects as follows:

1. ***Transport Planning:*** It involves mobility plans for cities and urban agglomerations like Comprehensive Mobility Plans, Comprehensive Traffic and Transportation Study, and Regional Transportation Plan.
2. ***Public Transport***: This category involves appreciating the role of existing public transport system and selection of system technologies and their planning, operations and management. IT would include City Bus System and Bus Rapid Transit System (BRTS) projects and allied infrastructure like Bus Stations, Bus Terminals, Transit Centres, Depots and Workshops, Control Centres, ITS for City Bus System and BRTS. Also, it would include planning for feeder services, multimodal integration and institutional reforms
3. ***Non Motorized Transport***: This category involves NMT facility improvement plan. The sub components of NMT Improvement Plan includes provision of clear walkable footpath throughout the city, cycle tracks, streetlights, cycle stands and NMT designed signals at all junctions. It also includes planning for pedestrian crossing facilities like at-grade crossings, foot over bridge and subways.
4. ***Transport infrastructure***: consists of road projects which are to be developed, strengthened, upgraded and interconnected. It includes network improvement and expansion projects. It would also include off-street parking projects and on street parking management.
5. ***Urban Freight***: It comprises of projection of freight traffic growth; assessing and planning for industrial and commercial activities distribution and storage facilities in the city, location of wholesale markets, direction of city growth etc. It also includes planning for non-motorised freight transport while addressing the issue of the last leg connectivity in freight movement.

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