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Draft Environment and Social Management Framework

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GLOBAL ENVIRONMENT FACILITY- EFFICIENT AND SUSTAINABLE CITY BUS SERVICES

Environment and Social Management Framework (ESMF)

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Abbreviations

ADB	Asian Development Bank	MoUD	Ministry of Urban Development
AVLS	Automatic Vehicle Locating System	MSW	Municipal Solid Wastes
BCLL	Bhopal City Links Limited	NGO	Non-Governmental Organisation
BDA	Bhopal Development Authority	NH	National Highway
BHEL	Bharat Heavy Electricals Limited	NOx	Nitrous Oxide
BMC	Bhopal Municipal Corporation	NPD	National Project Director
BP	Bank Procedure	NRRP	National Policy on Resettlement and Rehabilitation Policy
BPL	Below Poverty Line	OP	Operational Policy
CBS	City Bus Services	OSD	Officer on Special Duty
CDP	City Development Plan	PAP	Project Affected Persons
CEO	Chief Executive Officer	PD	Project Director
CPA	Capital Project Administration, Bhopal	PH	Potential of Hydrogen
CPCB	Central Pollution Control Board	PIS	Passenger Information System
CRZ	Coastal Regulation Zone	PIU	Project Implementation Unit
CSMC	Central Sanctioning and Monitoring Committee	PMC	Project Management Unit
CSR	Corporate Social Responsibility	PPC	Project Preparatory Consultant
CTU	Chandigarh Transport Undertaking	PPE	Personal Protective Equipment
DDP	District Development Plan	PWD	Public Works Department
DEA	Department of External Affairs	R & B	Roads and Buildings
DPR	Detailed Project Report	R&R	Resettlement and Rehabilitation
DRM	Divisional Railway Managers	RAP	Resettlement Action Plan
EA	Environmental Assessment	RPM	Respirable Particulate Matter
EC	Environmental Clearance	RTI	Right To Information
EMP	Environmental management Plan	SA	Social Assessment
EO	Environmental Officer	SCs	Scheduled Castes
ERP	Enterprise Resource Planning	SCZMA	State Coastal Zone Management Authority
ESCBS	Efficient and Sustainable City Bus Services	SEAC	State Environmental Appraisal Committee
ESMF	Environmental and Social Management Framework	SEIAA	State Environmental Impact Assessment Authority
ESMP	Environmental and Social Management Plan	SLNA	State Level Nodal Agency
ETM	Electronic Ticketing Machine	SO ₂	Sulphur Dioxide
FMCG	Fast Moving Consumer Goods	SO	Social Officer (SO)
GEF	Global Environment Facility	SPCB	State Pollution Control Board
GoI	Government of India	SPM	Suspended Particulate Matter
GPS	Global Positioning System	SPV	Special Purpose Vehicles
HIV	Human Immuno-deficiency Virus	STD	Sexually Transmitted Diseases
IA	Implementing Agency	STs	Scheduled Tribes
ITES	Information Technology Enabled Services	STU	State Transport Undertakings
ITS	Intelligent Transport System	SUTP	Sustainable Urban Transport Project
JCTSL	Jaipur City Transport Services Limited	TA	Technical Assistance
JNN	Jaipur Nagar Nigam	TDS	Total Dissolved Solids
JnNURM	Jawaharlal Nehru National Urban Renewal Mission	TOR	Terms of Reference
MBMC	Mira-Bhayander Municipal Corporation	TSS	Total Suspended Solids
MGD	Million Gallons per Day	UT	Union Territory
MIS	Management Information Systems	WB	World Bank
MLD	Million Litres per Day	WBM	Water Bound Macadam
MOEF	Ministry of Environment and Forests	WFPR	Work Force Participation Rate

1 PROJECT OVERVIEW

1.1 BACKGROUND

Long term sustainability of cities depends on promoting walking, cycling and public transport services. Public Transport carries more people, is less polluting and takes up less road space than the equivalent number of personal vehicles. City bus services can meet the public transport needs of most cities in a cost effective and efficient manner. Structured bus services, which form the essential requisite of meeting the transport demand in urban sectors in Indian cities with more than 0.5 million people, are often deficient.

The poor quality of public transport contribute to traffic congestion, increased air pollution levels and road safety problems on roads in most of the Indian metropolitan cities. Taking forward the initiatives of improvement in public transport under JnNURM and SUTP, Gol through MoUD initiated the project on Efficient & Sustainable City Bus Services (ESCBS) with focus on improvement of Bus Transport infrastructure, fleet management, ITS and improvement in fuel efficiency.

1.2 INTRODUCTION

The proposed project aims to promote environmentally sustainable city bus transport within Indian cities specifically within the demonstration cities of Bhopal, Chandigarh, Jaipur and Mira Bhayander, by providing efficiency and service improvements. The project is designed to complement the ongoing project, Bus Funding Scheme of the Gol under the JnNURM, through additional activities that would help realize its full potential.

The project puts particular emphasis on city bus services and (1) review the policy, regulatory and fiscal environment along with the market structure for public bus services and prepare policy notes for reforms, (2) promote bus service modernization to enhance quality and convenience and therefore help increase ridership through demo pilots in select cities, including better fuel efficiency which has a direct impact on fuel consumption / carbon emissions in public transport use. Following the Bus Funding Scheme Phase 1 in 2009 where 15260 buses were sanctioned to 65 cities, MoUD undertook a second phase of the scheme in 2013 for another 10,000 buses and also sanctioned funds for associated infrastructure such as depots and ITS.

The project comprises a national capacity building component to be implemented by MoUD and three components at the state / city level to support demonstration projects at the city level. The following sections provide an overview of the three components:

Component 1: National / State Level Technical Assistance (TA) on policy, regulatory, fiscal Issues and Capacity Building (GEF US\$ 0.7M, co-finance US\$ 2M)

Review policy, legislative and regulatory constraints to promoting efficient and quality city bus public transport including modernization of State Transport Undertakings (STUs), decentralization to city governments, private sector participation and the taxation burden on public transport vehicles vis-à-vis personal vehicles and develop policy notes to assist nodal government departments at the national and state level to address identified issues;

Conduct workshops to disseminate experience of these cities and propagate the use of fuel conserving practices among STUs and private bus companies; Capacity building initiatives involving development of knowledge materials, training activities, knowledge sharing and cross learning events etc. in cutting edge areas aimed at development of the overall urban bus sector in the country shall form part of this component.

Component 2A: City Demonstration Projects - Capacity Building & Technical Assistance (GEF US\$ 2.1m, co-finance US\$ 0.5m)

The capacity building and technical assistance component is targeted at supporting the modernization efforts of the selected four demonstration cities. This will involve assistance to improve their quality of service through technical assistance in focus areas such as Route rationalization, Greater private participation, improved branding and overall financial sustainability, Driver training and vehicle maintenance, overall financial sustainability and reform implementation. It will also include assistance capacity building through conducting workshops & training events.

Component 2B: City Demonstration Projects - Preparation and Implementation of Demonstration Projects - Physical Improvements (GEF US\$ 6M, co-finance US\$ 79.5 M)

This component shall support physical improvements targeted at modernizing the city bus services in demonstration cities including (i) modern depot equipment for improved maintenance and life of buses, (ii) modern ITS - for vehicle tracking, passenger information systems and automatic fare collection – to make the services more user friendly, (iii) modern MIS - for improved management information systems, inventory management systems, vehicle dispatch and crew scheduling, maintenance management, improved collection, management, analysis, reporting and use of data for more scientific planning – to enable optimal use of facilities.

The total GEF grant proposed for the project is US\$ 10.1 million, which will be complemented with a contribution of US\$ 129.7 million from GOI, State Governments, and Implementing Agencies (IA).

1.3 GEF - SUPPORTABLE CITY BUS SYSTEM PROJECTS

The demonstration projects proposed by the agencies in these cities could be classified into the following areas of Physical and Technical as (i) Depot Modernisation; (ii) ITS (Intelligent Transport System) and Modern Management Information Systems (MIS); (iii) Passenger Information System (PIS); (iv) Project Management Support (v) Training and Capacity Building (vi) Marketing and Branding (vii) Scientific route and service planning and (viii) Bus fuel efficiency. **Table 1-1** presents the types of project in the ESCBS.

Table 1-1: Type of Projects

Items	Jaipur	Mira Bhayander	Bhopal	Chandigarh
Physical				
Modern fare collection system – ETM / Smart Card	-	X	-	X
Modern and well equipped depots – Equipments / solar panels	X	X	X	X
Depot Construction	X	X	-	X

Items	Jaipur	Mira Bhayander	Bhopal	Chandigarh
Modern MIS / ERP	X	-	X	X
ITS – GPS / AVLS and PIS along with modern control room	-	X	-	X
Technical Assistance				
Marketing and branding program	X	X	X	X
Bus fuel efficiency program	X	X	X	X
Training & Capacity building initiatives	X	X	X	X
PPP for bus operations and options for mainstreaming informal transit	X	-	X	-
Study on institutional and funding options for CBS	-	-	-	X
Comprehensive route planning study / Business Plan	X	X	X	X
Project management support	X	X	X	X

2 SITUATION ASSESSMENT-PROJECT CITIES

This section provides an overview of environment and social characteristics of the four project cities. The information has been compiled from secondary sources, including the City Development Plans and other published data sources. The situation assessment has formed basis for identification of critical environmental and social issues, if any, due to the project.

2.1 JAIPUR

Jaipur is a planned city founded on 18 November 1727 by Maharaja Sawai Jai Singh II, the ruler of Amber, the city today has a population of more than 3 million. It is the capital of the State of Rajasthan and is a major business centre with all requisites of a metropolitan city.

Some of the salient environmental and social features of the city with reference to the project is indicated in the paragraphs below.

2.1.1 *Physical Environment*

Jaipur is located at 26.92°N latitude 75.82°E longitude with an average elevation of 431 metres. It is bound in the north by Alwar, in South by Tonk, Ajmer and Sawai Madhopur, Nagaur, Sikar and Ajmer in the west and in east by Dausa district. Jaipur has a semi-arid climate. Although average rain fall is 620 mm, the rainfall is concentrated in the monsoon months between June and September.

Temperatures remain relatively high throughout the year, with the summer months of April to early July having average daily temperatures of around 30°C. During the monsoon months there are frequent, heavy rains and thunderstorms, but flooding is not common. The winter months of November to February are mild and pleasant, with average temperatures in the 15-18°C range and little or no humidity. There are however occasional cold waves that lead to temperatures near freezing.

2.1.2 *Socio-Economic Environment*

2.1.2.1 *Demography and Economy*

The population of Jaipur, as per 2011 Census is 30.73 lakhs. Jaipur is the 10th largest city in India. The overall literacy rate for the district was 76.44%. 87.27% males and 64.63% females were literate. The sex ratio was 898 females per 1,000 males. Ajmer is a low density city with a very high density inner core, with population density of over 60,000 persons / sq.km.

In terms of share of population, 87% of the total population lives in the JNN area, of which 7% lives in the walled city. While the proportion of population living within the JNN has increased (primarily due to expansion in area), the proportion of population in the walled city has declined. This can be regarded as positive phenomena as the walled city is already very densely populated. The Walled City has a spatial extent of only 6.7 sq.km but houses nearly four lakh people.

The main economic drivers of the city are trading, administration and tourism activities and local handicrafts industries. Trade and commerce account for 24% of the workforce followed by household industries with 22%.

Jaipur is a centre for both modern and traditional industries. Several industrial products of FMCG, Petroleum and Petrochemicals processing, construction and building materials especially, marble industry are present in the vicinity of Jaipur. Ancillary products for Railways as laminated leaf springs are manufactured. In addition, handmade paper industry, handicraft household industries are located in and around Jaipur. With the presence of world famous palaces and other paraphernalia of the royalty of Jaipur kingdom, tourism emerged as a major contributor to the city's economy with about 3000 tourists visiting the city every day.

2.1.3 Land use

Prominent occurrence of mixed land uses in the inner city is a key feature. The pattern of growth is a ring and radial pattern with a central nucleus. While the residential developments over the last few decades have been spreading outwards, the commercial activities are still concentrated in and around the inner city.

2.1.4 Access to basic infrastructure

The dynamic population growth in the city emphasizes the need for planning of infrastructure accordingly. The city needs substantial augmentation and improvement of urban infrastructure. The main source of water is ground water, which is fast depleting as a result of growing population pressure. The water quality is also deteriorating due to disposal of sewerage using soak-pits.

The city has a sewerage network covering only 56% of the population. Most of the population resorts to septic tanks. The total sewerage generated is 200 MLD while the capacity of the treatment plant is only 89.5 MLD.

Solid waste collection is available only in selected areas. Only about 45% of waste generated is collected and 50% of the collection points are open storage points. The remaining waste leads to drains and open grounds creating environmental problems.

2.1.5 Road and Transportation

The city has excellent connectivity, by air, road and rail within the State and beyond. The road network consists of National Highways, State Highways and Major & other Roads. The National Highways that pass through the city are: (i) National Highway No. 8 (Delhi - Mumbai) (ii) National Highway No. 11 (Agra - Bikaner) (iii) National Highway No. 12 (Jaipur - Jabalpur).

Jaipur is the headquarters of the North Western Railway Zone of the Indian Railways. Jaipur is a major junction station. The three Broad Gauge routes that pass through the city are: (i) Delhi-Jaipur-Ahmedabad (ii) Sawai Madhopur – Jaipur – Jodhpur and (iii) Agra – Jaipur.

2.1.6 Urban poverty

The city has a total of 183 slums where 31% of its total population reside. The average household size in these slums was just 3.72 members per house. One-third of the women residing in slums worked at home, and those who worked outside lived within a 4km radius of their workplace. Over half of the slum residents lived in kuchcha houses. The average monthly per capita income of each household was around Rs. 671.80. Around 40% of the people in these slums were earning below the national poverty line, and around 45% were below the international poverty line.

2.1.7 Heritage

Jaipur is famous for its rich cultural heritage. There are several heritage buildings and elements of architectural and historical significance. The heritage also comprises of several intangible elements as artefacts, handicrafts, folklore and literature. Jaipur form part of the 'Golden Triangle' tourist circuit of the Indian Tourism map. Heritage resources of Jaipur could be classified as built heritage, natural heritage, and cultural heritage. While several palaces and buildings including the walled city area forms part of the built heritage the natural heritage comprises of several hills, valleys and lakes formed out of its varied topography. Preservation of various practices in the region led to development of a rich cultural heritage that could be looked upon to be unique to the region and is an element of the society that needs to be protected and preserved.

2.2 CHANDIGARH

The City Chandigarh was declared a Union Territory in the year 1966 with joint capital of both the states of Punjab and Haryana. The area of Union Territory of Chandigarh is 114 sq. km. with 22 villages falling in the jurisdiction of Union Territory. Municipal Corporation Chandigarh was formed in the year 1994 (with 20 wards). The functions of original works & maintenance for roads, water supply, sewerage, storm water drainage solid waste Management and fire wing lie with the Municipal Corporation. It is one of the greenest city of India with its 1400 nos. green belts / parks / gardens.

Some of the salient environmental and social features of the city with reference to the project is indicated in the paragraphs below.

2.2.1 Physical Environment

2.2.1.1 Physiography

Chandigarh is located in the foothills of the Shivalik hill ranges in the north, which form a part of the fragile Himalayan ecosystem. River Gaggar flows on the eastern side of the city. The city is located on plain land with a drainage gradient of about 1 per cent at an elevation of 304 to 360 m above MSL. The area is drained by two seasonal rivulets viz Sukhna Choe in the east and Patiala-Ki-Rao Choe in the west. The central Part forms a surface water and has two minor streams.

Chandigarh is characterised by cold dry winter, hot summer and sub tropical monsoon climate. May and June are the hottest months of the year with mean daily minimum & maximum temperatures being about 40⁰ C & 25⁰ C respectively. Southwest monsoons with high intensity showers in late June and July. The weather at that time is hot and humid. The variation in annual rainfall on year-to-year basis is appreciable i.e. 700 mm to 1200 mm. The 20 year average rainfall for Chandigarh is 1100.7 mm. January is the coldest month with mean maximum and minimum temperatures being around 24⁰ C and 1.8⁰ C respectively.

Chandigarh is well connected by road by NH-22 (Ambala — Kalka — Shimla — Kinnaur) and NH 21 (Chandigarh — Leh). Chandigarh railway station lies in the Northern Railway zone of the Indian Railway network and provide connectivity to major Indian cities like Delhi, Mumbai, Kolkata, Visakhapatnam, Jaipur, Lucknow, Bhopal, Indore, Trivandrum and Amritsar. It also links other cities like Ambala, Kollam, Panipat and Kalka. Chandigarh Airport has scheduled

commercial flights to major cities of India including New Delhi, Mumbai, Indore, Jaipur and Srinagar.

2.2.2 Environmental Degradation

The city is witnessing a rapid expansion, industrial boom, increased trade opportunities coupled with high population growth rate (decadal rate: 40.30%) accelerated due to migration from neighbouring states as well as from U.P. and Bihar. Chandigarh is beset with increasing urban environmental problems due to the growth of unsustainable economic activities, increase in vehicular transport, in spite of public transport system. The most important issues of concern include air and noise pollution, depleting ground water and contamination of water bodies and lakes, destruction of natural and manmade resources of cultural value and improper management of domestic and industrial effluents. This situation has led to depletion of green cover, groundwater table and rising levels of air and noise pollution.

2.2.3 Socio-Economic Environment

2.2.3.1 Demography and Economy

Chandigarh was planned for a finite population of half-a-million. Chandigarh has now grown beyond its planned capacity. Demographic data indicate that between 1961 and 1971, the population increased by 144.59 percent, one of the highest for urban areas in India. According to 1981 census, it grew by another 75.55 percent, followed by 42.16 percent in 1991 and by 40.33 percent in 2001 (with a total population of 900,635). Present population of Chandigarh as per 2011 census has crossed 1 million mark and stood at 1,055,450.

The union territory has a population density of 9253 persons/sq.km. The sex ratio remains at 818 far below the national average of 943. As per the Census, Literacy rate is around 86%. The workforce participation rate has been estimated to be 38%. The economy of Chandigarh is witnessing a transformation from traditional manufacturing towards a knowledge-based economy. This is primarily due to policies of the Central government/U.T. Administration to promote knowledge sector and tourism through a series of initiatives and programs. Knowledge sector, particularly Information Technology and IT enabled services (ITES) along with the Biotechnology is gaining momentum in the Chandigarh.

2.2.4 Land use

The existing land use (excluding the extension areas of the city) about 65% of area is categorized as residential and commercial and a significant 10% each is assigned towards agriculture and water bodies and forest area respectively. On the other hand the proportion of public and semi public use land constitutes 9% and transportation land constitutes only 1% of the total area. The issues identified in Chandigarh CDP study, were absence of integration of spatial plan with infrastructure and services and; uncontrolled development in the surrounding ULBs and heavy pollution from vehicular traffic.

2.2.5 Access to basic infrastructure

Chandigarh's current estimated demand stands at 110 mgd. However, its availability is merely 69.25 mgd. The estimated ground water extraction that supplements water supply is 20 mgd, which accounts to only around 29% of supply. The water system has high Non-Revenue Water levels averaging to 28%.

The main sewage is running from west to east with inter connection of sewer line from south to north. There is country slope from north to south. The covered population with sewerage is 95% and no pumping is involved because of topography of city. The existing sewerage system covers is overloaded due to the growth of population of twin cities. Only 60% of the sewage generated is treated. The treatment capacities being inadequate result in discharge of untreated sewage into water bodies.

The drainage system in Chandigarh comprises a hierarchy of natural and man-made drains and water bodies that ultimately discharge surface run-off into 'N' choe. Numerous 'N' choe constituting the major storm water drainage system for the area drain the City. The 'N' choes are the major carriers of storm water.

For the purpose of collection removal and storage of Municipal Solid waste, the Corporation has allotted about 1/5 of the city area to private entrepreneurs for providing sanitation services and has engaged 373 Nos. of safaiwalas through outsourcing.

2.2.6 Roads and Transportation

The city has designated its roads as V1, V2, V3, V4, V5, roads. The roads V1 to V3 are under the jurisdiction of Engineering Department of Chandigarh. for its construction and maintenance. The V4 to V6 called internal roads of the sectors are laid in front of the markets and residential houses are maintained by Municipal Corporation. The total road network under the control of Municipal Corporation, Chandigarh is 1250 km (approx.). The roads will have direct impact due to increase in the population requiring the addition alterations as well as widening of the parking area.

2.2.7 Urban poverty

In Chandigarh, more than one fifth of population reside in slums, squatters and other rehabilitated colonies. Their contribution to city's economy has been also been growing over the period. In the absence of developed land and clear policy to address their problems, the poor suffer from many inadequacies in terms of access to basic services, socio- economic needs. It is necessary, therefore, to articulate policies and programmes to mainstream the slum communities with the city, both in terms of infrastructure provision and social and economic development.

2.3 BHOPAL

Bhopal is one of the fastest growing cities in the country. It is known as the City of Lakes for its various natural as well as artificial lakes and is also one of the greenest cities in India. Bhopal is the 16th largest city in India. Some of the salient environmental and social features of the city are presented in the following paragraphs.

2.3.1 Physical Environment

Bhopal is located in the central part of India, and is just north of the upper limit of the Vindhya mountain ranges. It has an average elevation of 500 m. Located on the Malwa plateau, it is higher than the north Indian plains and the land rises towards the Vindhya Range to the south. The city has uneven elevation and has small hills within its boundaries. According to current master plan, the municipality covers 697 sq km.

Bhopal has a humid subtropical climate, with cool, dry winters, a hot summer and a humid monsoon season. Summers start in late March and go on till mid-June, the average temperature being around 30 °C (86 °F), with the peak of summer in May, when the highs regularly exceed 40 °C (104 °F). The monsoon starts in late June and ends in late September. These months see about 40 inches (1020 mm) of precipitation.

2.3.2 Connectivity

Bhopal has been a railroad and highway transportation hub. National Highway 12 passes through Bhopal which connects it to Jabalpur in the East and Jaipur in the West. National Highway 86 connects Bhopal to Sagar in the East to Dewas in the West. State Highway 17 connects the city with Indore. Bhopal lies in the West Central Railway Zone. Considering both North-South and East-West train routes, it is one of the best connected city in India. It houses the Divisional Railway Managers (DRM) head office under Central railways. The Raja Bhoj International Airport is located near the satellite suburb Bairagarh. International flights began operations in 2010 although no schedule services currently run internationally. Domestic services operate to Delhi, Ahmedabad and Mumbai.

2.3.3 Drainage

The natural drainage of the city is provided by three main streams, which are of course, joined by small nallahs and rivulets. On the northeastern side, the drainage is provided by river Halali and on the southeastern side, it is provided by Kaliyasote River. Both these rivers, drains out in Betwa, Halali near Vidisha and Kaliyasote near Bhoipur. On the southwestern side, the drainage is provided by various small nallahs, which drain out in Kolar River, which ultimately joins river Narmada.

2.3.4 Environmental Degradation

One of the critical and most immediate problems faced by Bhopal is the health impact of urban environmental pollution. The reasons being air pollution inadequate water, sanitation, drainage, solid waste services and urban and industrial waste management. There is phenomenal increase in traffic load in the city, which is one of the major causes of pollution in the city. SPM and NOx levels also showed a diurnal variation consistent with traffic variations while, the SO2 levels were generally low. Though the ambient levels of Carbon Mono-oxide could not detected, a large number of vehicles emitting greater than 5% of Carbon Mono- oxide and higher than 7000 ppm of hydrocarbons were detected, the levels being much higher than the standards.

Environmental Problems associated with the different water resources are identified to be; Ground Water Contamination, Chemical pollution, Microbial Contamination, Affecting Human health due to waterborne diseases.

2.3.5 Biological Environment

Bhopal has rich biodiversity by the presence of large lakes especially, Bhoj Wetland within the city and a national park Van Vihar within the city. Several lakes and water bodies numbering more than 35 are identified in the vicinity of the city which are used as drinking water sources and are getting contaminated from anthropogenic uses.

Van Vihar National Park located at the heart of Bhopal is declared a national park in 1983 and it covers an area of about 4.45 km². Although it has the status of a national park, Van Vihar is developed and managed as a modern zoological park. The animals are kept in their near natural habitat.

2.3.6 Socio-Economic Environment

2.3.6.1 Demography and Economy

Bhopal city is the most urbanized districts of the state. As per 2001 census, 80.53% of the district population lives in urban areas, predominantly, in the city. According to the 2011 census the population of the Bhopal city is 1,795,648. The population density is about 410 persons/ha. As per Census, the total effective literacy rate is high at 85.24 per cent.

WFPR of Bhopal is 30% with about 39% of working population engaged in informal sector. In Bhopal most of the households have regular income. Besides being the capital of the state, Bhopal has vast hinterland spread over six districts. Bhopal serves a large geographical area and it has expanded not as a single city but as a discrete townships of the old city and its periphery, BHEL township; T.T Capital Township: Bairagarh (Location of army cantonment); and other new areas.

The service sector is becoming increasingly important provides the majority of employment in Bhopal. The state economic development policy proposes Bhopal to be developed as a center for education. There is a concentration of educational establishments at all levels and a large number of schools, training institutions and colleges have been established in the last few years.

2.3.7 Land use

The Bhopal Development Plan 2005 was planned for projected population of 25 lakhs. The Population of Bhopal was not grown up to the expected growth. As per the statistics of Bhopal Development Plan, the residential area makes up about 47% of the area with commercial area limited to 4%. A sizable portion of the land use i.e., about 15% is under transportation and 12% under public and semi public use.

2.3.8 Access to basic infrastructure

A piped water supply system for the city was first developed in the 1940's for the old city area, which was augmented and expanded to suit demand. The upper lake was the main source of water with a potential yield of 85.5MLD until a major augmentation (135MLD) took place in 1989 with the development of Kolar dam. Ground water is also used as a supplementary source and supplies about 22.5 MLD through 550 motorized tube wells. In addition, there are several privately owned hand pumps, which supplement water requirement. The existing water distribution system has become undersize as a result of increased population density and Municipal area over a period of last years.

Bhopal does not have a planned and full- fledged sewerage system. A large area of the city, has no sewage network, either internal or trunk, and the raw sewage or septic tank outflows are discharged into open drains which flow into the watercourses. Ultimately most of the sewage flows into the upper lake and into the nallahs, which eventually flow into the Patra, Halali, and Betwa River. Bhopal Municipal Corporation (BMC) area has about 210 Km of non-contiguous

underground sewers in different catchments, and covers about 28-30% of city population. BMC has treatment facility of 80 MLD including the BHEL industrial areas. In the remaining areas of the city, large section of population discharge wastewater into open drains or septic tanks. Due to the inadequacy of sanitation facilities, the city is susceptible to environmental and public health risks.

About 550T/day of solid waste is generated in the urban area. Most waste dumped on open land or outside the containers. The BMC reports that 60% of the city area is cleaned and swept daily, 30% twice per week and 10% fortnightly. At present municipal waste is crudely dumped at the Bhanpur village trenching ground, at about road and during the rainy season 16 km from the city. There is no proper access most of the refuse vehicles do not reach the disposal site.

The natural drainage of storm water is reasonably good in Bhopal. In old Bhopal areas, the drainage is provided mainly by Patra nallah which receives flow from number of small channels running across the city. In the New Bhopal area the drainage is provided mainly by katsi nallah, which flows for about 8 km before meeting Shahpura Lake.

2.3.9 Roads and Transportation

The total road length of the city is 1020 km of which 66% is managed by BMC. The other agencies involved in construction and maintenance of the city roads are BDA, PWD, BHEL and CPA. Most of the proposed roads in South Bhopal have been developed except, few which could not be developed due to topographical configurations and site conditions.

Bus and private transport remains the major mode of transport in the city. Bus operations are partially privatised and modernised. While the infrastructure is in nascent stage of development, most of the routes leading to terminals witness high-density land use, which is primarily commercial and public/semi-public by type, inviting high volume of local traffic as well. In terms of capacity, road space utilization and environmental degradation the tempos, mainly operating from the urban fringes to city core, have been found to be quite insufficient. The minibuses and tempos cater nearly 31% and 12% of the intra-city travel demands by mechanical modes.

2.3.10 Urban poverty

The most recent survey conducted by BMC, in Nov 2005 reports 384 slums. 35% of the population in Bhopal is living in the slums. A large number of slums are on, or close to nallah or riverbanks. Many slums have steep slopes, rock outcrops and high water table. The slums are of low to medium density. The slums have a mixture of housing – from pucca (in areas such as Banganga), semi-pucca (where there is brick masonry with mud plaster) to kutcha mud houses and small shacks made of wood/bamboo slats and plastic sheet. Most slums have reasonably good access roads on the periphery, largely asphalt. In the internal areas of the slums there are largely concrete, stone paved, WBM and kutcha roads.

2.3.11 Heritage

Urban image of the city is a collective visual appearance contributed by natural and manmade elements, like Jumerati Gate, Kamala Park, Raj Bhawan, Chowk area, Jama Masjid, Moti Masjid, and Gauhar Mahal etc. The unique feature of Bhopal is its large lake (30.72 sq km) called Bara Talab. Legendary Bhoja Deva (1010-1053 CR) who finds mentioned for his hydraulic engineering in the ancient treatises constructed the lake, making it one of the rare monuments of ancient

India (not protected) in use today. Several fortification of the Nawabs of Bhopal could be seen in and around the city presenting the Afghan and Mohammedan architecture.

2.4 MIRA BHAYANDER

Mira-Bhayander is a suburb of Mumbai city, located to The North of Mumbai administered by Mira-Bhayander Municipal Corporation (MBMC). It is a fast growing township of Maharashtra with a population 10 lakhs, led by the manufacturing sector. Bhayander is divided into two parts by the Mumbai suburban rail line – East and West. Government owned Salt Pans and marsh lands in west Mira – road have restricted the southward spread of Bhayander. Mira - Road is situated on the island of Salcette. A Marshy creek divides Mira road from Mumbai. Some of the salient environmental and social features of the city are presented in the following paragraphs.

2.4.1 Physical Environment

It is located in the northern part of the Konkan region to the west of Sahyadri hill ranges. The whole town is on plain level land. The Vasai creek surrounds the city from east to north followed by the Arabian Sea till the west. The Mumbai city is situated on the south west. To the south is the Sanjay Gandhi National Park and on the South east Thane city. Geographically the city falls in the Deccan lava terrain.

The region has a tropical monsoon climate that borders on a tropical wet and dry climate. Overall climate is equable with high rainfall days and very few days of extreme temperatures. Temperature varies from 22°C to 36°C. In winter temperature is between 12°C to 20°C while summer temperature ranges from 36°C to 41°C. Out of total rainfall, 80% rainfall is experienced during June to October. Average annual rainfall is 2000–2500 mm and humidity is 61-86%, making it a humid per-humid zone. The driest days are in winter while the wettest days are experienced in July.

2.4.2 Connectivity

The western express highway i.e., the NH-8 links the region with Mumbai and West and North West of India. Important cities covered on the NH-8 are Vapi (for Daman & Silvassa), Surat, Baroda, Ahmedabad, Udaipur, Ajmer, Jaipur and Delhi. On the NH-8, just beyond the Ghodbunder area is the Virar-Vasai area. Kashimira is a point falling between Dahisar check naka and Ghodbunder, from which a main road arises that leads to Mira Road, Bhayandar & the coastal villages of Uttan, Gorai, and Manori.

The western railway of the Mumbai suburban railway is the lifeline of the western and extended suburbs of Mumbai. Mira Road & Bhayandar are the railway stations on this line. Mira Road is one station after Dahisar. After Bhayandar is the Vasai (Bassein) creek bridge followed by Naigaon. Slow and fast trains between Churchgate, Dadar, Bandra, Andheri & Borivali and Vasai / Virar operate from Mira Road & Bhayandar stations. The number of trains starting from Bhayandar has considerably increased in recent times after the deployment of four railway tracks between Borivali and Virar making train journeys safer and more comfortable for Mira-Bhayandar and Bhayandar residents.

2.4.3 Drainage

The natural drainage of the city is towards the western coast draining into the Arabian Sea. The land being plain, has drainage and water logging issues during monsoon. The rivulets emerging

from sea have inland channels that have tidal influence and encourage growth of mangroves in the northern and western portions of the city.

2.4.4 Environmental Degradation

The open space and recreational grounds are lungs of the town and they cater active and passive recreation needs of the city. In Mira-Bhayander gardens and open spaces provide recreational areas. Large varieties of trees are planted on road side, in open space and gardens. There are 3 major lakes in the city namely Murdha Ram mandir lake, Uttan Moh lake and Raani Ram Mandir lake. The MBMC had commissioned a detailed and comprehensive survey to assess the current status of the lake in terms of water quality, bio-diversity, and land use pattern and pollution abatement. The observation reveals that the overall water quality in the lake is deteriorating and the water quality of other two smaller lakes Murdha Ram Mandir lake and Uttan Moh lake is quiet poor.

2.4.5 Biological Environment

Mira - Bhayander is located adjacent to Sanjay Gandhi National Park and is blessed with high diversity of the species in the region. There are several salt pans in Mira Bhayander region comprising of 1390 hectare of land, which is nearly 18% of the total municipal area. These salt pans are shallow man made ponds designed to produce salt from sea water. The sea water is fed into large pans and water is drawn out through natural evaporation which allows the salt to be subsequently harvested.

2.4.6 Socio-Economic Environment

2.4.6.1 Demography and Economy

The Mira-Bhayandar Municipal Corporation (MBMC) is a combination of two pre-existing municipalities, Mira-Road and Bhayandar, which joined in 2002. As per 2011 census the population of Mira - Bhayandar is 814,655 with a population density of about 10,260persons/ha. The population in the MBMC grew, according to the census of 2011, with 50% in the past ten years, making it one of the fastest growing cities in India. As per Census, the total effective literacy rate is high at 93.67 per cent.

The MBMC is best described as a residential area, inhabited mainly by people working in Mumbai. The city itself has a small industrial development and commercial activities are built around to meet the needs of the resident population.

2.4.7 Land use

The area of Mira-Bhayander Corporation is 79.40 sq.km. It was included in the previous BMRDA development plan the independent development of the plan was sanctioned by the state government as per the government rule dated 14th may1990. Only 26.88 % of the total municipal has been developed and the remaining 73.12% consists of water bodies, marshy land and salt pans, forest and hills, which is undevelopable. Out of the total developed area 54.24% (14.58% of total area) is under residential use. Area under commercial use is 2.5% of the developed area and that under industrial use 6.48%. Roads constitute 16.6% of the developed area.

2.4.8 Access to basic infrastructure

Presently the city water requirement is 147 MLD, which is estimated to increase to 221 MLD by 2021., however, the city receives a total supply of 106 MLD. The share of non-revenue water is 20% of the total water received. The total length of pipe lines of various diameters is approximately 54.5 Km. The area under water distribution network is 90% of the total municipal area. The average water supply duration in city is 2 - 3 hrs per 36 hrs. The per capita supply of water is 90-100 lpcd. Only 15% of the water connections are metered. The city has 30 storage reservoirs.

The total water supply for MBMC is 106 MLD and the waste water generated is 84.8 MLD (80 % of the water supply). Taking into consideration 21 MLD losses actual waste water generated is 68 MLD. In MBMC out of 4 Zones two Zones viz., 2 & 4 are covered partially with underground drainage system. Other zones have septic tank system. There are two STPs of 2.0 MLD & 9.0 MLD capacity respectively in zone 2 & 4. However, out of 68 MLD only 1.2 MLD (1.76%) sewerage is treated. Percentage of households with sewerage connection comprises only 11.62% of the total households. Out of total 98.35% of households have access to individual toilets.

About 426 MT mixed Solid Waste is generated daily. 80% of the total households are covered with daily doorstep collection. Only 25% MSW generated is segregated, that too this segregation is at bulk generator level only. MSW from bulk generators such as fruit markets & vegetable markets is available and collected in segregated form. No Scientific Disposal of Municipal Solid Waste is undertaken in MBMC.

86.35% of total road length have Storm Water Drainage network. The average shortfall in all Zones is 13.65 %. There are about 19 flood prone points in the city and on an average the number of occasion of water logging every year are 3 to 4 times. There are 20 Nallas with a total length of 295.76 km. These nallahs carry storm water as well as domestic waste water.

2.4.9 Urban poverty

There are about 13,182 households living in slum settlement in the city, housing nearly 52,318 population and there are 2625 BPL families in the MBMC

3 PROJECT ADMINISTRATIVE STRUCTURE

3.1 INSTITUTIONAL ARRANGEMENTS

A three-tier management structure is envisaged to enable effective communication and distribution of responsibilities between the three primary stakeholders namely the GoI, State Government and the Implementing Agency. ESCBSP is to be implemented and monitored by the steering and standing committees and the MoUD, GoI through a Project Management Unit (PMU). The project management structure has been envisaged to enable effective communication and distribution of responsibilities amongst different participants of the ESCBSP at all the different levels. The management structure envisaged is shown in **Figure 3-1**.

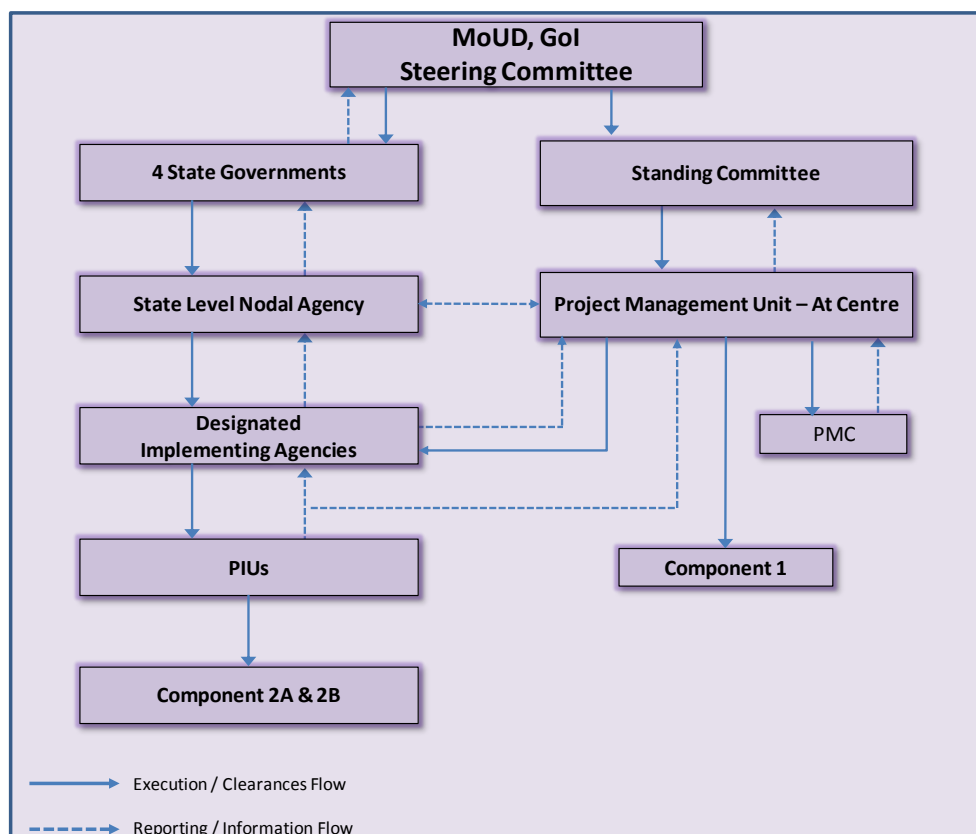


Figure 3-1: Project Management Setup

3.1.1 Steering Committee ESCBSP

A Project Steering Committee under the chairmanship of the Secretary, MoUD, GoI is being constituted and would consist of members from MoEF, DEA, MoUD. Representatives from the World Bank, project cities and respective State governments may be invited to meetings as and when required. The Steering Committee would guide and oversee the work to be taken up under the project.

3.1.2 National Project Director (NPD)

The Ministry of Urban Development (MoUD) is the nodal ministry for implementing the ESCBSP on behalf of the Government of India. A National Project Director (NPD) designated by the MoUD would be the executive head of the ESCBSP.

3.1.3 Standing Committee ESCBSP

A Standing Committee under the chairmanship of the NPD of the National Project Management Unit as designated by the MoUD, GoI is being constituted and would consist of members from PMU, MoUD internal Finance department, Ministry of Road Transport and Highways and the World Bank. The Standing Committee would guide, oversee the work and take decisions for the implementation of Component I of the project. Additionally it shall also appraise the Standing Committee about the progress of work of under the project component.

3.1.4 National Project Management Unit (PMU)

The NPD would be assisted by a National PMU, which will provide technical support for implementing and monitoring the project. The PMU will provide technical assistance to NPD in planning, preparation, procurement, execution, monitoring, evaluation, fund management and reporting required as part of the overall project management responsibility.

3.1.5 State Level Nodal Agency (SLNA)

With regards to JnNURM supported project components, the State Level Nodal Agency (SLNA) will be responsible for reviewing the project proposal and funding request for all the cities selected under this project and forward it to the MoUD, which will then put it up to the Central Sanctioning and Monitoring Committee (CSMC). Once endorsed by CSMC, the request for release of fund will then be sent to MoF which would directly transfer the funds to SLNA, which then in turn passes it on to the IA.

3.1.6 Implementing Agency (IA)

Projects approved by the Steering Committee shall be implemented by the concerned Implementing Agency in each city. The IAs shall be the approving authority for all executive decisions concerning the project at the city level.

As per bus funding guidelines of the JnNURM, all cities availing the scheme shall have to form Special Purpose Vehicles (SPVs) for operation and maintenance of city bus services. The main task of these agencies would be to operate and maintain the city bus services.

3.1.7 Project Implementation Unit (PIU)

Each IA shall constitute a PIU to manage and monitor the day to day work programs and schedules in the various components and subcomponents of the project.

3.2 STAFFING OF PMU AND PIU

For the effective functioning of the PMU and PIU, appropriate technical staff needs to be appointed by the MoUD and the IAs. With regard to the various aspects that need to be considered during project implementation, the required staffing pattern of the PMU and PIU shall be as mentioned in the following sections.

3.2.1 Staffing of PMU

The PMU shall consist of a team of professionals which could either be appointed directly or could be outsourced as a Project Management Consultant (PMC) Service.

The PMU will involve Environmental and Social Safeguard Experts, as part of the PMC, to guide the PIUs setup by the IAs in the respective project cities. The PIUs will also have an Environment and Social Officer nominated to address the environmental and social issues arising in the project design and implementation as per the ESMF and Project EA/SA. Roles and responsibilities of the respective environment and social officers in the PMU are discussed in detail in the sections below.

A PMC shall be selected and appointed by the NPD, PMU for the project term. The terms of reference (TOR) for the PMC are also provided in the project document. The PMC would necessarily involve in its team an environment and resettlement / social officer to design, recommend and implement environment and social safeguard activities as per the regulations of the World Bank, GEF and Government of India. The PMC will also review the monitoring reports and further progress documentation during the implementation of the project to assess their compliance with ESMP prepared for specific project as received from the PIU.

Environmental & Social Experts of PMU: Two officers shall be appointed in the PMU as Environmental & Social Safeguard Experts, are required to oversee the implementation of ESMPs prepared in compliance with the ESMF as well as any other environmental and social provisions as deemed fit for project implementation as per the regulations of the World Bank and Government of India. The Terms of Reference for Environmental and Social Officers to be appointed shall be as indicated in the Boxes below.

PMU'S ENVIRONMENTAL SAFEGUARD EXPERT

The Environmental Safeguard Expert should have a Masters degree or equivalent in Environmental Science, Engineering, Applied Sciences or another relevant field and should be conversant with the Gol and World Bank policies on the subject. A minimum of 5 years of professional experience and experience in implementing atleast one World Bank funded project during the last five years will be necessary. Following are the roles and responsibilities of the expert.

Roles & Responsibilities

- Co-ordinate application, follow up processing and obtain requisite Environmental Clearances required for the project, if required
- Advise PIU for compliance with statutory requirements.
- Develop, organize and deliver training programme for the PIU staff, the contractors and others involved in the project implementation, in collaboration with the Project Director / Environmental Expert of the PIU where exists
- Liaise with various Central Government agencies on environmental and other regulatory matters
- Review environmental performance of the project, Compile periodically environmental monitoring reports submitted by the PIU and provide a summary of the same to the National Project Director for necessary follow-up actions
- Provide support and assistance to the Government Agencies and the World Bank to supervise the implementation of the EMP during the construction as well as operation stages of the project
- Document the good practices in the project on incorporation and integration of environmental issues into engineering design and on implementing measures in the construction and maintenance programs of urban infrastructure projects, and dissemination of the same with the assistance of Environment & Social Officer of PIU

PMU'S SOCIAL SAFEGUARD EXPERT

The Social Safeguard Expert should have a Masters degree or equivalent in Social Science or another relevant field and should be conversant with the Gol and World Bank policies on the subject. A minimum of 5 years of professional experience and experience in implementing atleast one World Bank funded project during the last five years will be necessary. Following are the roles and responsibilities of the expert. Roles & Responsibilities

- Co-ordinate application, follow up processing and obtain requisite clearances for the project, if required
- Advise PIU for compliance with statutory requirements.
- Develop, organize and deliver training programme for the PIU staff, the contractors and others involved in the project implementation, in collaboration with the National Project Director / Environment and Social Officer t of the PIU

- Review and monitor the performance of the project through an assessment of the periodic social monitoring reports submitted by the PIU; provide a summary of the same to the National Project Director, and initiate necessary follow-up actions
- Provide support and assistance to the Government Agencies and the World Bank to supervise the implementation of the RAP during the construction as well as operation stages of the project
- Document the good practices in the project on incorporation and integration of social and resettlement issues into engineering design and on implementing measures in the construction and maintenance programs of urban infrastructure projects, and dissemination of the same with assistance of Environment & Social Officer of PIU

3.2.2 Staffing of PIU

The Project Manager, PIU shall be an appointee of the IA and shall represent the IA. Other professionals could either be appointed by the IA directly or outsourced through a Project Management Consultant's service.

Environmental & Social Officer of PIU: Project Implementation Unit setup for assisting the implementation agency would require an Environment and Social Officer to assist the Environment and Social Safeguard Experts at the Project Management Unit especially for project cities that have potential issues. Based on the severity of the impact and the capacity of the PIU, an Engineer of the IA can be given an additional charge or experts in the field could be hired for overseeing the implementation of ESMF or any other environmental and social provisions as deemed fit for project implementation as per the regulations of the World Bank and Government of India. The Terms of Reference for Environmental and Social Officer shall be as indicated in the Box below.

PIU'S ENVIRONMENTAL & SOCIAL OFFICER

The Implementing Agency shall nominate one/ two officers or appoint experts with relevant experience in infrastructure projects as Environmental and Social Officer to undertake the following responsibilities.

Roles & Responsibilities

- Review the EA / SA Documents prepared by the consultants and ensure adequacy under the World Bank Safeguard policies
- Ensure that the project design and specifications adequately reflect the recommendations of the EIA / SIA
- To ensure the environmental clauses are adequately placed / reflected in the contractors bidding document for implementation of the Environmental management Plan (EMP)
- Co-ordinate application, follow up processing and obtain requisite clearances required for the project, if required
- Prepare compliance reports with statutory requirements.
- Develop, organize and deliver training programme for the PIU staff, the contractors and others involved in the project implementation, in collaboration with the PMU
- Review and approve the Contractor's Implementation Plan for the environmental measures, as per the EIA and any other supplementary environmental studies that may need to be carried out by the PIU
- Liaise with the Contractors and the PIU / State Implementing agency on implementation of the EMP / RAP
- Liaise with various State Government agencies on environmental, resettlement and other regulatory matters
- Continuously interact with the NGOs and Community groups that would be involved in the project
- Establish dialogue with the affected communities and ensure that the environmental concerns and suggestions are incorporated and implemented in the project
- Review the performance of the project through an assessment of the periodic environmental monitoring reports submitted by the consultants; provide a summary of the same to the Project Director, and initiate necessary follow-up actions
- Provide support and assistance to the Government Agencies and the World Bank to supervise the implementation of the EMP / RAP during the construction as well as operation stages of the project

3.3 PROJECT REVIEW AND APPROVAL PROCESS

Project and safeguard documentation for the project components identified for funding in the project cities will be prepared by the IAs with help of consultants hired for the purpose and submitted to the PMU and the World Bank for review. The responsibility of review of the project and safeguard documentation will be assigned to different agencies at different stages of the

project. In project preparation stage a Project Preparatory Consultant (PPC) assists PMU in reviewing the reports while in the Project Implementation Stage, the PMC assists PMU in review and compliance. The **Figure 3-2** provides an overview of the review and approval process envisaged in the project.

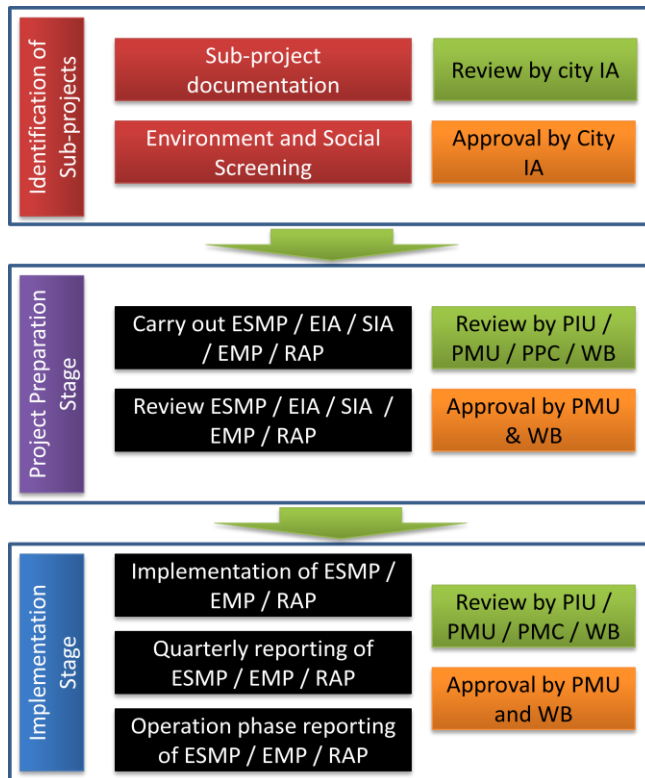


Figure 3-2: Review & Approval Process

With the simultaneous review of the World Bank for compliance with the safeguard provisions, which would be communicated to the PMU and respective IAs / PIU, the documents are to be revised if required. The revised documents would be further reviewed for ascertaining compliance with the ESMF and the several regulatory requirements of the country as well as the World Bank and the GEF.

With the review outputs communicated to the respective cities for the revision of reports, it is expected that they would be complying with the comments provided. With the compliance of the reports in the project preparation stage, approval shall be sought from PMU and World Bank.

Implementation of the project ESMP / EMP / RAP would be undertaken by the Contractor and reviewed periodically by the PIU.

Periodic review of the safeguards implementation will be reported to the PMU and WB for compliance monitoring. The PIU approves the actions of contractor on implementation of the safeguard documentation and is further ratified by the PMU to report to the World Bank.

3.4 SAFEGUARD PROVISIONS BUILT INTO THE SUB-PROJECT CYCLE

PIU needs to ensure that the project documentation i.e., DPR contains provisions for environmental management complying with the ESMF and an EIA as required according to the project requirements.

Towards implementation of the measures indicated in the project EIA / EMP, the PIU shall ensure implementation of the safeguard provisions in the project through the contractors. It shall be ensured that necessary institutional arrangements as suggested in the EIA / ESMF applicable for the sub-projects are implemented.

3.5 PARTICIPATION / CONSULTATION FRAMEWORK AND INFORMATION DISCLOSURE

3.5.1 Participation / Consultation Framework

The Participation Framework envisages involvement of all the stakeholders at each stage of project planning and implementation. The PIU will be responsible for ensuring participation of the community at sub-project level. Involvement of the community is not limited to interactions with the community but also disclosing relevant information pertaining to the project tasks. Community participation shall be undertaken at the project planning and implementation stages:

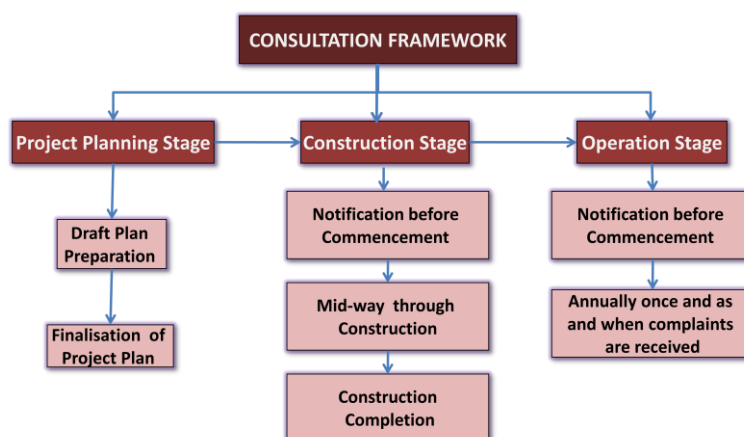


Figure 3-3: Consultation Framework

- **Planning Stage** – for disseminating information pertaining to the project, work schedule and the procedures involved; finalisation of project components with identification of impacts, entitled persons, mitigation measures and Grievance Redressal; and
- **Implementation Stage** –
 - Construction Stage- for addressing temporary impacts during construction and monitoring for transparency in the project implementation and Grievance Redressal, if any.
 - Operation Stage - for notifying commencement of project after completion of construction works and to address any grievances received during the project operation.

3.5.2 Project Planning Stage

Planning stage is intended to be an interactive process with the community atleast in two stages. Initially while finalizing the best fit alternative to a sub-project and second at the finalisation of the detailed designs. Dissemination of project information to the community and relevant stakeholders is to be carried out by the PIU towards increasing their awareness and their roles and responsibilities. The community at large shall be made aware of the project alternatives and necessary feedback is to be obtained. This would be joint responsibility of the consultants, undertaking the design in case consultations are not carried out by the PIU and the PIU itself. Proceedings of these public meetings should be documented for addressal of queries arising out of the Right to Information Act, 2005.

Consultations with Project Affected Persons and their profiling are mandatory as per the requirements of preparing a RAP. This needs to be done in the form of socio-economic and census surveys as part of the detailed designs. Consultations with respect to environmental and cultural aspects are to be carried out as part of the Environmental Impact Assessments / Preliminary Impact Analysis studies for all alternatives and the selected alternative sub-project option.

3.5.3 Implementation Stage – Construction and Operation

Consultations as part of the implementation stage would be direct interactions of the IAs with the PAPs, if any. These would comprise consultations towards relocation of the PAPs and cultural properties and towards addressal of impacts on environmental resources as water bodies, trees etc.

Consultations and information dissemination is to be undertaken to let the relevant stakeholders be informed of the progress during the implementation of the ESMP provisions and project updates at least one at the start, one during construction stage and one before initiating the operation. Implementation stage also involves redressal of grievances related to environmental and social aspects as well as relocation of common property resources. These would usually be one to one meeting of PAP or community representatives with the grievance redressal committees established for the project. Such consultation and information dissemination activities can be continued as part of the overall communication plan of the respective city.

3.5.4 Information Disclosure

Information disclosure procedures are mandated to provide citizen centric information as well as all documentation necessary for addressing any queries under Right to Information Act that came into effect from October 2005. A computer based information management systems shall be employed to disseminate information pertaining to the project on the MoUD's and various IA's website. Disclosure of information will enhance governance and accountability specifically with respect to strengthening of monitoring indicators to help MoUD and the World Bank monitor compliance with the agreements and assess impact on outcomes.

As a part of this Information Disclosure Policy, all documents shall be made available to the public in accordance with relevant provisions of the RTI Act, except when otherwise warranted by legal requirements. A designated Information Officer shall be responsible for ensuring timely and complete dissemination in accordance with this policy. Information shall be provided in a timely and regular manner to all stakeholders, affected parties, and the general public. Access by the public to information and documentation held or generated by MoUD and IAs will facilitate the transparency, accountability, and legitimacy as well as operations overseen by them.

The mechanism of information dissemination should be simple and be accessible to all. Two of the important means that can be followed include briefing material and organization of community consultation sessions. The briefing material (all to be prepared in local language) can be in the form of a) brochures (including project information, details of project impacts and entitlements including compensation and assistance to be given to the PAPs, if applicable) kept in the IAs office; b) posters to be displayed at prominent locations; and c) leaflets distributed in the city. Consultation meetings should also be organized at regular intervals by the PIUs to acquaint the PAPs to the:

- Timeline and progress of the project;
- Information on ESMP implementation; and
- To seek opinion and consensus of the community for common and cultural property relocation

3.5.5 Information to be disclosed

The **Table 3-1** specifies the type of additional project information and its frequency of dissemination. In addition to the information specified in the table, the following information shall also be displayed / disseminated, wherever applicable:

- Project specific information need to be made available at each construction site through public information kiosk
- Project Information brochures shall be made available at all the construction sites as well as the office of IAs and the office of Engineer in charge
- Reports and publications, as deemed fit, shall be expressly prepared for public dissemination e.g., vernacular versions of the EIAs, ESMPs, RAPs as applicable along with English versions, Executive summary of the project documents in local language.

Table 3-1: Information to be Disclosed

Topic	Documents to be disclosed	Time frame & Frequency	Suggested Media(s)
Resettlement and other social impacts	Information regarding impacts and entitlements, ESMP and RAP (if applicable) in local language.	Once at the start of the project and as and when demanded by those directly affected by the project.	Through one-to-one contact with the affected Stakeholders. List of PAPs (if any) with impacts and entitlements to be pasted in the office and website of MoUD / Implementing Agencies along with list of participants of the consultations
	Grievance redressal process.	Continuous process throughout the project cycle.	World Bank's Infoshop / MoUD / PMU / IA's website. One to one contact with directly affected persons.
Public Consultation	Minutes of Formal Public Consultation Meetings, public advertisements for the consultations, attendance list, and summary of key issues discussed	Within two weeks of meeting	MoUD / PMU / IA's website and office
Environment Management	Environment Assessment Report along with Hindi / local language translation of Executive Summary & Environment and Social Management Plans along with Hindi/local language translation of Key Actions	Prior to awarding works and to remain on website until end of Defect Liability Period	MoUD / PMU / IA's website and office

The Participation / consultation framework and information disclosure prepared for the ESCBS is applicable for all cities considered under the project. In case of project cities where detailed EA and SA are not required, project DPR along with the ESMP integrated into the DPR will be disclosed. While in rest of the cities, the provisions of EA, SA, EMP and RAP will be disclosed as per the framework.

3.6 SUMMARY OF CONSULTATIONS UNDERTAKEN

The PPC has undertaken visits to the project cities. The details of the city visits have been given in the table below. The consultations undertaken below provided an understanding of the environmental and social issues that are likely in the project cities with the implementation of the

project components. The minutes of meetings held with the City Representatives at their respective cities are presented in the **Annex-1**.

Table 3-2: Schedule of Meetings held with City Representatives

Short listed City	Introductory Meeting Date	City Representatives	Consultant's Representative
Jaipur	25.3.2014	<ul style="list-style-type: none"> Mr. Jagroop Singh Yadav, Managing Director, Jaipur City Transport Services Limited Ms. Preeti Mathur, OSD, Jaipur City Transport Services Limited 	Mugdha Shekhar
Mira-Bhayandar	26.3.2014	<ul style="list-style-type: none"> Mr Bharat Shitole, Asst. Commissioner, Mira-Bhayandar Municipal Corporation Dr. Dipak D. Sawant, Deputy Transport Manager, Mira-Bhayandar Municipal Corporation Mr Dhani Ghave, Town Planner 	Satish Kr Damodara, and Mugdha Shekhar
Chandigarh	27.3.2014	<ul style="list-style-type: none"> Mr K.K. Sharma, Advisor to Governor, Chandigarh Administration Mr Sarvjit Singh, Secretary, Finance, Chandigarh Administration Mr. T. P. S. Phoolka, Director, Chandigarh Transport Undertaking Mr. S. P. Parmar, General Manager, Chandigarh Transport Undertaking 	Satish Kr Damodara, and Mugdha Shekhar
Bhopal	29.3.2014	<ul style="list-style-type: none"> Mr. Chandramouli Shukla, CEO, Bhopal City Links Limited 	Satish Kr Damodara, and Mugdha Shekhar
Jaipur	15.4.2014 – 16.4.2014	<ul style="list-style-type: none"> Ms. Preeti Mathur, OSD, Jaipur City Transport Services Limited Mr. Naval, Advisor, Jaipur City Transport Services Limited 	Imtiyaz Ahmed, A.S.Lakra, B.M.Kohli, Rajeev Kumar, Satish Kr Damodara and Mugdha Shekhar

Environmental aspects such as waste management being undertaken in and around the existing depots, worker safety and PPE usage have been noted. The discharge of vehicle wash water, disposal of spent oil, disposal of spent tyres etc., have also been noted in the consultation visits. The social aspects as any likely resettlement, gender issues, facilities available for women employees and for women passengers are identified.

4 SCREENING PROCESS, IMPACT & RISK APPROACH

4.1 SCREENING OF SUB-PROJECTS

4.1.1 Screening process

All project components or sub-projects to be implemented under the proposed project will be first subject to an environmental/social screening in order to prevent execution of projects with significant negative environmental impacts. The purpose of “environmental/social screening” is to get a preliminary idea about the degree and extent potential environmental impacts of a particular sub-project, which would subsequently be used to assess the need for further environmental/social assessment.

Screening shall be undertaken to categorise the sub-projects into:

- **Type 1** – The sub-projects that would involve land acquisition and/or significant social impacts. These sub-projects would need to be excluded from further consideration in the project.
- **Type 2** – The sub-projects that require a full review and are likely to involve environmental impacts and impacts on non-titleholders that would require a EIA / SIA and project specific EMP / RAP.
- **Type 3** – The sub-projects that would require limited review involving generic environmental and social impacts that could be addressed through a generic ESMP.

While the screening is conducted for sub-projects in all the four current project cities presently, any candidate cities and further candidate sites that would be included in the project would also need to undergo the screening process mentioned herein. The sub-project components listed below could be excluded from screening as they do not have any impacts on the environmental and social aspects of the project irrespective of their location or intensity of activity related to the urban areas considered. Screening is to be carried out for rest of the project components.

- Modern fare collection system – ETM / Smart Card
- Modern MIS / ERP
- Technical Assistance
- Marketing and branding program
- Bus fuel efficiency program
- Training & Capacity building initiatives
- PPP for bus operations and options for mainstreaming informal transit
- Study on institutional and funding options for CBS
- ITS / MIS component
- Comprehensive route planning study / Business Plan

The project components of Depot construction, construction activities involved in providing control rooms for ITS component and installation of equipments / solar panels may cause construction related impacts in the area with implementation of these sub-projects. These components when seen in light of the site conditions associated with the activities involved in the project, will enable recognising the likely impacts on environment and social aspects of the project area.

4.1.2 Screening Outcome

Screening for identification of environmental and social impacts for sub-project has been undertaken to ascertain the significance of environmental and social impacts.

The environmental/social screening involved:

- (i) reconnaissance of the sub-project areas and their surroundings;
- (ii) identification of the major sub-project activities, and
- (iii) preliminary assessment of the impacts of these activities on the ecological, physic-chemical and socio-economic environment of the sub-project surrounding areas

While environmental impacts identified are preliminary in nature, potential for occurrence has to be ascertained during further stages of project design and implementation. The various sub-projects that have been categorised as per the categories mentioned above are indicated in the **Table 4-1**.

The magnitude of impacts based on the reconnaissance visits carried out, the nature of project activities and project vicinity, is worked out qualitatively based on perception as Low (L), Medium (M) and High (H). The magnitude is also indicated in the **Table 4-1**.

Table 4-1: Screening of Sub-Projects

City	Component	Sub-Project Category	Environmental impacts							Resettlement impacts					
			No impacts	Construction impacts					Cultural resources ¹	Sensitive areas	No impacts	LA Impacts	Structures / Assets	CPR ²	Non-titleholder impacts
				Air	Noise	Water	Soil	Ecology							
Bhopal	Modern and well equipped depots – Equipments / solar panels	Type – 3			L						√				
Chandigarh	Modern and well equipped depots – Equipments / solar panels	Type – 3			L						√				
	ITS – GPS / AVLS and PIS along with modern control room				L						√				
Jaipur	Depot construction	Type – 2		M	M	M	M				√				
	Modern and well equipped depots – Equipments / solar panels	Type – 3			L						√				
Mira - Bhayander	Depot construction	Type – 2		M	M	M	M	M		L	√				
	ITS – GPS / AVLS and PIS along with modern control room	Type – 3			L						√				
	Modern and well equipped depots – Equipments / solar panels				L						√				

Though no impacts linked to LA and R&R have been identified with respect to the sub projects screened currently, the likelihood for sub projects with impacts on non-titleholders cannot be ruled out. In situations where impacts on non-title holders are anticipated, an Entitlement Framework has been prepared as part of this ESMF to address the impacts.

Legend:

Type – 1	Projects with Land acquisition and/or significant impacts on environmental and social aspects
Type – 2	Projects with environmental impacts and impact on non-titleholders but does not involve land acquisition
Type – 3	Projects with only generic construction impacts and no R&R impacts

Note: There are no Type – 1 candidate sub projects that exist in the GEF-ESCBS that need to be excluded. However, in future identification of any additional candidate sites if undertaken, would need to be screened for the exclusion criteria

¹ No cultural properties are identified in the project sites proposed for development. Likelihood of chance finds though exists, needs to be addressed through the OP / BP 4.11, Physical Cultural Resources and provisions of the ESMF on chance find cultural properties will be applied.

² Common Property Resources refers to community assets as place of congregation, community halls, social facilities etc.,

4.2 SUB-PROJECT MANAGEMENT FRAMEWORK

This ESMF lays down the principles and guidelines for addressal of environment and social safeguard impacts due to the implementation of the ESCBS in the selected cities, to be taken up as part of the Component 2 of the project.

The key objectives of the ESMF are to:

- Provide a framework for the integration of social and environmental aspects at all stages of the project planning, design, execution and operation of various sub-components
- Ensuring positive social and environmental impacts of sub-projects and avoid/minimize and manage any potential adverse impacts

In line with the requirements of the World Bank, the Bank's environmental and social safeguards policies shall be applied to all projects to be taken up under GEF-ESCBS. The framework identifies based on the project screening carried out as per the previous section, the type of projects that are required to undergo rigorous EA / SA and the projects that could have environmental and social impacts that could be addressed through an ESMP prepared based on the ESMF. The ESMF identifies the potential impacts in the project cities due to the planning, design, implementation and operation of the projects and outlines the management measures required for an effective addressal of the same. The adoption of this framework shall ensure that the projects meet the national and state level environmental and social requirements and are also consistent with the applicable safeguards policies and provisions of the World Bank.

The ESMF is to be applied at all stages of project (as indicated in the flow chart, **Figure 4-1**) as in identification of sub-projects, screening and up to implementation and operation stage. The framework encourages participatory approach to preparation of sub-projects in respective cities.

The proposed sub projects currently under GEF-ESCBS do not envisage triggering of significant environmental / social impacts, i.e. projects with potential to trigger impacts on environmentally sensitive areas, or large scale resettlement activities are not anticipated. In overall project scope of ESCBS depot construction is involved in the cities of Mira Bhayander, Chandigarh and Jaipur. Though construction of these depots is through counterpart funding, the ESMF addresses impacts likely from this activity. These projects shall be subjected to necessary environmental and social assessments, as mandated by the Gol / state governments and conforming to the safeguard policies of the World Bank Environmental and Social Safeguard requirements. If any of the projects fall under CRZ, irrespective of the prior EC clearance, these projects have to obtain clearance from the State Coastal Zone Management Authority.

Application of ESMF to the sub-projects enable preparation of a standardized environmental and social assessment documents for appraisal and implementation. Screening exercise will be undertaken by examining each project component as per the Checklist of items listed in **Annex – 2**. A checklist of items that are required for conformance to the provisions of the ESMF is presented in **Annex – 3**. This shall enable identification of environmental social impacts that have to be addressed in the DPRs or EA / SA.

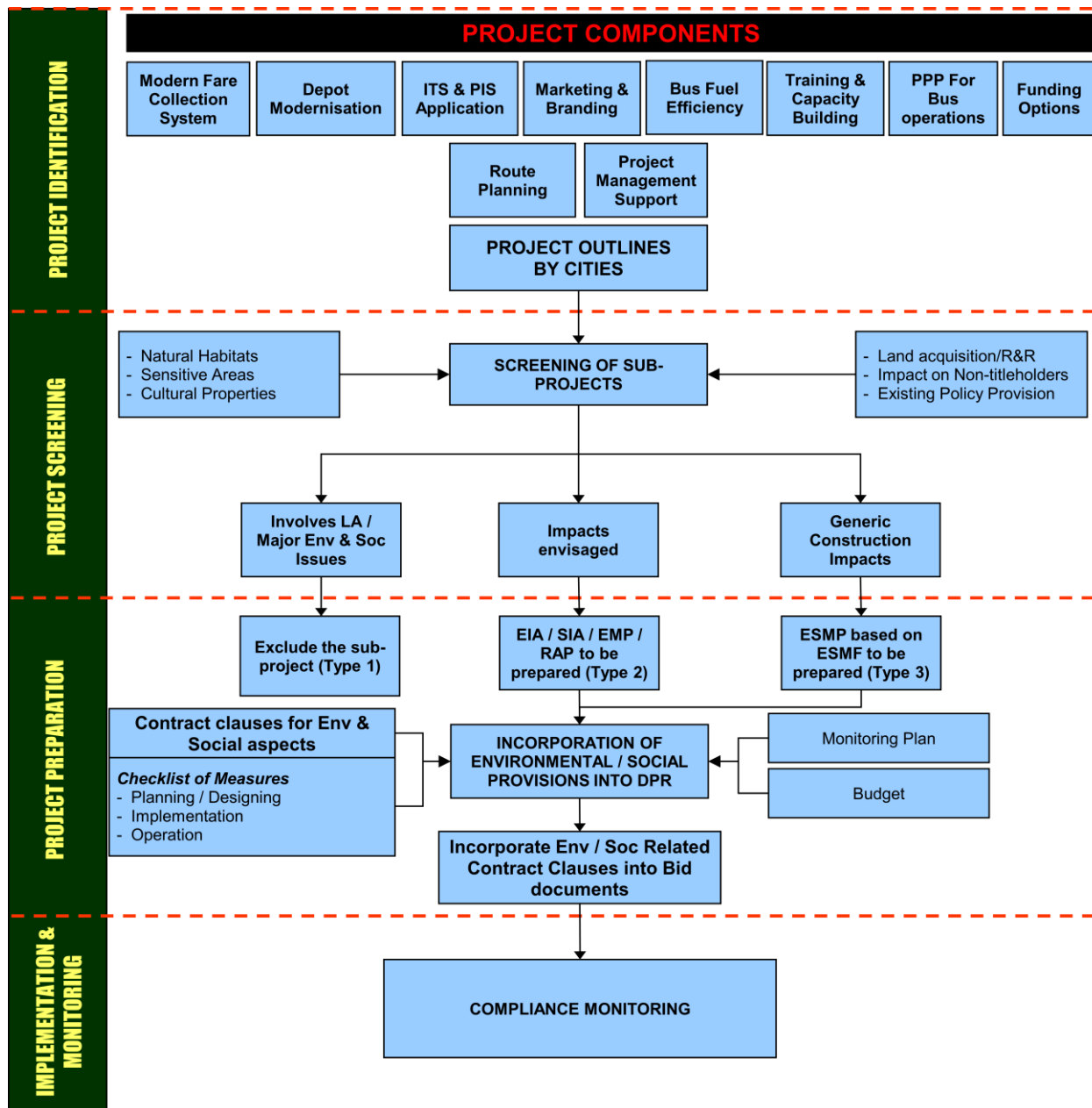


Figure 4-1: Sub-Project Management Framework

4.2.1 Environmental Impact Assessment and ESMP / EMP Implementation Process

EIA would be required for the sub-projects that fall in the category of projects identified as per the MoEF EIA Notification, 2006. In the identified project cities, the component of Depot Construction would require an EIA under the Building Construction i.e., Category 8B if the covered area exceeds 20,000 Sq m. As per the conceptual design of the depot if any of the depots need an EIA, the project proponent will need to submit the Form I and Form 1A along with the project pre-feasibility report to the SEIAA. The SEIAA after conducting the scoping based on the information submitted will provide the ToR for conduct of an EIA.

Upon receipt of the ToR from SEIAA, the EIA is to be carried out in line with the requirements of the ToR and the guidelines stipulated by the Ministry of Environment and Forests (MoEF), Government of India, for environmental impact assessment of Building & Construction Projects.

Other clearances as CRZ if required should be submitted to the State Coastal Regulation Zone. The process for obtaining Prior Environment Clearance for this type of projects is indicated in the **Figure 4-2** below.

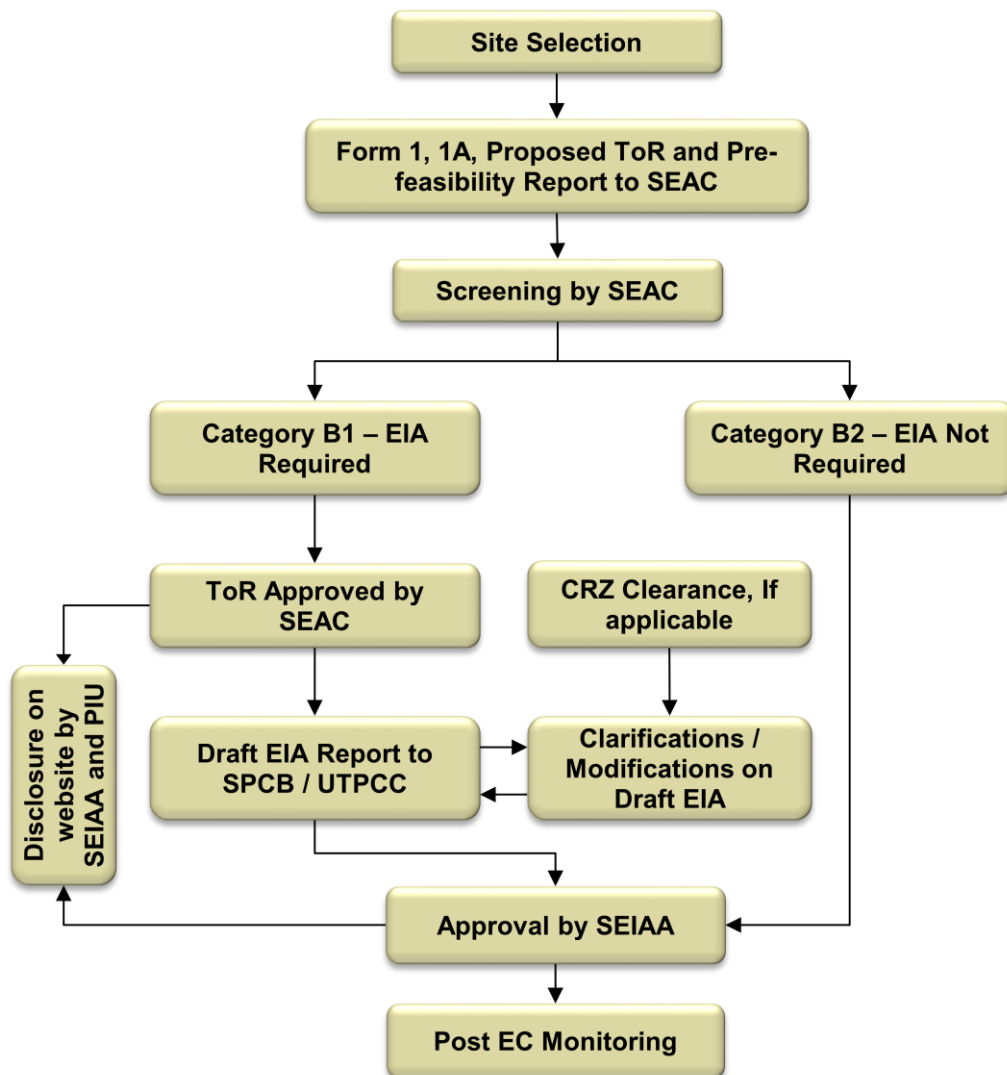


Figure 4-2: Prior EC Process

The Environmental Impact Assessment should in general include the following as per the Guidelines from the MoEF on the building construction projects.

- Introduction
- Project Description
- Description of the Environment
- Anticipated Environmental Impacts & Mitigation Measures
- Analysis of Alternatives (Technology and site)
- Environmental Monitoring Programme
- Additional Studies
- Project Benefits
- Environmental Management Plan
- Summary & Conclusion
- Disclosure of Consultants engaged

As directed by the MoEF, the following key issues have to be addressed in the EIAs prepared by the project proponents:

- Brief Description of the Project in terms of location and surroundings
- Environmental Impacts on Project Land and its surrounding developments and vice-versa.
- Water Balance Chart with a view to promote waste water treatment, recycle, reuse and water conservation.
- Waste Water Treatment and its details including target standards.
- Alterations in the natural slope and drainage pattern and their environmental impacts on the surroundings.
- Ground water potential of the site and likely impacts of the project.
- Solid Waste Management during construction and post construction phases.
- Air Quality and Noise Levels; likely impacts of the project during construction and operational phases.
- Energy requirements with a view to minimize power consumption and promote use of renewal energy sources.
- Traffic Circulation System and connectivity with a view to ensure adequate parking, conflict free movements, Energy efficient Public Transport
- Green Belt / Green cover and the Landscape Plan
- Disaster / Risk Assessment and Management Plan.
- Socio Economic Impacts of the project and CSR.
- EMP during construction and operational phases.
- Any other related parameter of the project which may have any other specific impact on environmental sustainability and ecology

The EMP should include a monitoring plan for the construction and operation stages of the project to ensure compliance with the Prior EC where applicable and also to ensure there are no adverse impacts on the air, noise or water quality due to implementation of the project interventions. The locations of monitoring should be decided during the preparation of EIA as per the site conditions and its sensitivity. The criteria to determine whether monitoring is required in the sub-project are as indicated below.

- Location of sensitive receptors as habitation areas, educational institutions, religious places adjacent to the area of construction activity would require environmental monitoring
- Sub-projects that require preparation of an EIA / EMP will involve environmental monitoring in project preparation, construction and operation stages

The monitoring framework provided in the ESMF is to be adapted to address the project requirements during the conduct of further EIA / EMP / ESMP as required.

4.2.2 Social Impact Assessment and R & R Implementation Process

The SIA and Resettlement Action Plan for the project shall be prepared based on the baseline information of the project area, assessment of impacts due to the proposed project, minimization of impacts through alternative design options and continued consultation process. The social impact assessment will be carried out, if required after undertaking reconnaissance survey and project impact screening. The first stage of the SIA process will be undertaking census survey of the project area to identify all persons impacted.

To undertake census survey a ‘cut-off date’ has to be decided. As per the World Bank guidelines the ‘cut-off date’ is the date the census survey of the project affected persons begins. The cut-off date could also be the date the project area was delineated, prior to the census, provided that there has been an effective public dissemination of information on the area delineated, and systematic and continuous dissemination subsequent to the delineation to prevent further population influx.

Persons are provided compensation only if they occupy the project area prior to the cut-off date established and persons who encroach on the area after the cut-off date are not entitled to compensation or any other form of resettlement assistance.

Consultations with stakeholder groups should be an integral part of the project preparation process and in the preparation of RAP. The specific stages at which consultations have to be carried have been identified and provided in **Annex 4**.

The methodology for social impact assessment and R & R implementation is presented in **Figure 4-3**.

4.3 NATIONAL REGULATORY SYSTEM

This section discusses the policies, legislations and procedures for environmental and social impact assessment at the national and state levels. Further, an overview of the applicable environmental and social safeguards policies of the World Bank has also been presented. As is evident from the section below, there are no substantial differences in principle between the two set of policies and operational procedures applicable. This framework addresses the gaps to ensure conformity to the WB safeguard policies while adhering to the national and state level policies.

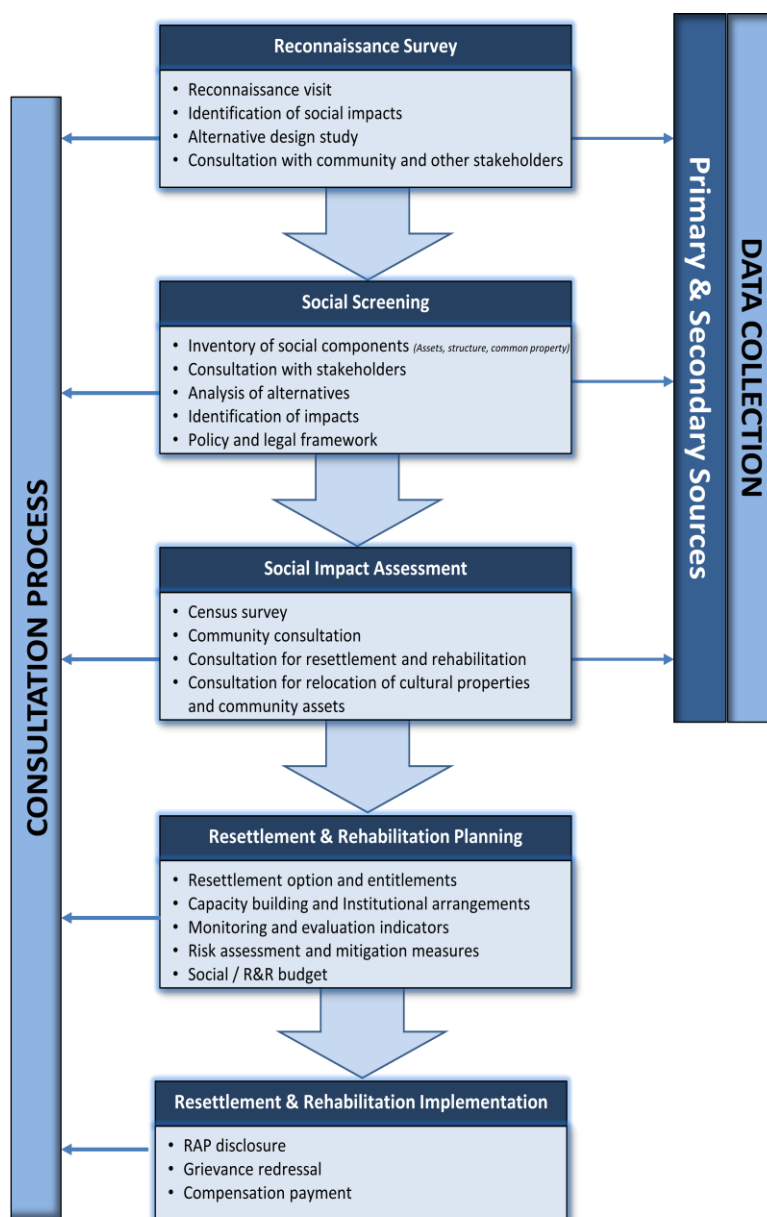


Figure 4-3: SIA and R & R Sub-Project Framework

4.3.1 Environmental Impact Assessment Requirements

As per section 3 of EIA Notification S.O. 1533 dated 14th September 2006, the Central Government forms a State Level Environment Impact Assessment Authority. All projects and activities are broadly categorized into two categories as Category A and B. The projects which have been classified as Category 'A' project are those having potential impacts on human health and natural and manmade resources. Those projects require prior environmental clearance from the central government in the Ministry of Environment and Forests (MoEF).

The projects categorized as Category 'B' projects require prior environmental clearance from the State / Union territory Environment Impact Assessment Authority (SEIAA). The SEIAA's decisions are based on the recommendations of a State or Union territory level Expert Appraisal Committee (SEAC) as to be constituted for in this notification³. Categories of projects mentioned in the notification are not included in the ESCBSP and hence, none of the project interventions as part of the ESCBSP trigger the environmental impact assessment / screening requirements as per the GoI regulations. If any of these categories of sub-projects are included in ESCBSP, the stages of prior environmental clearance as per the MoEF EIA Notification of September 2006 should be adhered to.

4.3.2 Environmental Regulations

In order to understand the extent of the environmental and social assessment for the proposed improvement works, applicable laws, legislation and policies have been reviewed. A summary of environmental legislations / regulations relevant to the project are presented in the **Table 4-2**.

Table 4-2: Applicability of Environment Related Acts

Policy/Act/Rule	Year	Purpose	Responsible Institution	Applicability
Environment (Protection) Act.	1986	To protect and improve the overall environment	MoEF	Applicable for all cities
Notification on Environment Impact Assessment of Development projects (and amendments)	2006 2009 2011	To provide environmental clearance to new development activities following environmental impact assessment.	MoEF	Applicable for cities where building construction of more than 20,000 sq m is involved
Wildlife Protection Act	1972	To protect wild animals and birds through the creation of National Parks and Sanctuaries	MoEF	Applicable for sub-projects in Mira Bhayander where Sanjay Gandhi National Park is within 10 km radius of the project sites
Coastal Regulation Zone (CRZ) notification	2011	To provide for protection of the fragile coastal belt, through development controls and regulations	SCZMA	Not Applicable at present as none of the sites are falling in CRZ. Would be applicable if any of candidate sites in the sub-projects in Mira Bhayander fall in CRZ.
Water (Prevention and Control of Pollution) Act (and subsequent amendments)	1974	To provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water.	CPCB	Applicable for all cities as per the EPA, 1986
Air (Prevention and Control of Pollution) Act	1981	To provide for the prevention, control and	CPCB	Applicable as per the EPA, 1986

³ In the absence of a duly constituted SEIAA or SEAC, a Category 'B' project is treated as a Category 'A' project.

Policy/Act/Rule	Year	Purpose	Responsible Institution	Applicability
(and subsequent amendments)		abatement of air pollution, and for the establishment of Boards to carry out these purposes.		
Noise Pollution (Regulation and Control) rules 2000	2001	Noise pollution regulation and controls	CPCB	Applicable for all cities as per the EPA, 1986
Central Motor Vehicle Act & Central Motor Vehicle Rules	1988 1989	To control vehicular air and noise pollution. To regulate development of the transport sector, check and control vehicular air and noise pollution.	R & B, PWD, Transportation Department of respective states	Applicable for all the vehicles used for construction purposes
The Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act	2010	To amend the Ancient Monuments and Archaeological Sites and Remains Act, 1958, including declaration of regulated and prohibited areas around the monuments.	Department of Archaeology, of respective states, National Monuments authority	Not applicable unless any Chance Find archaeological properties are identified during the construction stage.
Forest (Conservation) Act	1980 with amendments in 1988	An Act to stop large-scale diversion of forestland for non-forest use.	MoEF, Department of Forests, of respective states	Not applicable as none of the sub-projects are located in forest areas
Hazardous Wastes (Management and Handling) Rules	1989	Rules framed under the Environment Protection Act, 1986. These rules aim at controlling the generation, storage and import of hazardous chemicals.	MoEF	Applicable for all cities as the project involves handling of waste oils and their disposal
Chemical Accidents (Emergency Planning, Preparedness and Response) Rules	1996	Rules framed under the Environment Protection Act, 1986 for preparedness and response, during operation of on-site and Off-site Emergency Plans during chemical disaster	MoEF, Crisis groups in State and Districts	Applicable for all cities as the project involves handling and usage of chemicals

Other applicable legislations of the Government of India are indicated below and detailed in **Annex-5**.

- The Buildings and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996
- Petroleum Act, 1934; and
- The Factories Act, 1948

4.3.3 Social Impact Assessment Requirements

At the central level, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 and the National Resettlement and Rehabilitation Policy, 2007 are the applicable policies. Sub-projects conceived under ESCBSP currently do not involve any land acquisition or relocation of squatters and encroachers nor does it envisage large scale social and resettlement impacts as per the project screening outcome discussed in section 4.1.2 and Table 4.1. However, in the event of such impacts occurring in the project area, entitlement framework suggested as part of the ESMF will need to be adhered to.

The policies are briefly presented below and section wise details are presented in the **Annex 5**.

4.3.4 The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013

The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 is a legislation that regulates land acquisition and provides laid down rules for granting compensation, rehabilitation and resettlement to the affected persons. The Act has provisions to provide fair compensation to those whose land is taken away, brings transparency to the process of acquisition of land to set up factories or buildings, infrastructural projects and assures rehabilitation of those affected. The highlights of the Act are as below and section wise details of the Act are indicated in the **Annex 5**.

- The Act provides for land acquisition as well as rehabilitation and resettlement. It replaces the Land Acquisition Act, 1894.
- The process for land acquisition involves a Social Impact Assessment survey, preliminary notification stating the intent for acquisition, a declaration of acquisition, and compensation to be given within a certain time. All acquisitions require rehabilitation and resettlement are to be provided to the people affected by the acquisition
- Compensation for the owners of the acquired land shall be four times the market value in case of rural areas and twice in case of urban areas.
- In case of acquisition of land for use by private companies or public private partnerships, consent of 80 percent of the displaced people will be required. Purchase of large pieces of land by private companies will require provision of rehabilitation and resettlement.
- The provisions of this Act shall not apply to acquisitions under 16 existing legislations including the Special Economic Zones Act, 2005, the Atomic Energy Act, 1962, the Railways Act, 1989, etc.

4.3.5 National Policy on Resettlement and Rehabilitation Policy (NRRP, 2007)

The policy is applicable to projects that are likely to physically displace 400 families or more en masse in plain areas and 200 families or more en masse in tribal or hilly areas, DDP blocks, or areas mentioned in Schedule V and Schedule VI of the Constitution of India. The objectives of the Policy are indicated below and the section wise details of the act are presented in the **Annex-5**:

- To minimize displacement and to promote as far as possible, non-displacing or least displacing alternatives;
- To ensure adequate rehabilitation package and expeditious implementation of the rehabilitation process with the active participation of displaced persons;
- To ensure that special care is taken for protecting the rights of, and ensuring affirmative state action for weaker segments of society, especially members of SCs and STs and to create obligations on the state for their treatment with concern and sensitivity;
- To provide a better standard of living to displaced families;
- To integrate rehabilitation concerns into the development planning and implementation process; and
- Where displacement is on account of land acquisition, to facilitate harmonious relationship between the requiring body and displaced persons through mutual cooperation

4.3.6 The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013

The Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 is based on the Vishaka Guidelines that were stipulated by the Supreme Court of India, in Vishakha and others v State of Rajasthan case in 1997, regarding sexual harassment at workplace. The court stated that these guidelines were to be implemented until legislation is passed to deal with the issue. The court decided that the consideration of "International Conventions and norms are significant for the purpose of interpretation of the guarantee of gender equality, right to work with human dignity in Articles 14, 15 19(1)(g) and 21 of the Constitution and the safeguards against sexual harassment implicit therein."

The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 is a legislative act in India that seeks to protect women from sexual harassment at their place of work. The Act came into force from 9 December 2013 and would be required to adhere to at the depot sites and PIUs. The details of the Act have been given in **Annex 5**.

4.3.7 The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014

This is an Act to protect the rights of urban street vendors and to regulate street vending activities and for matters connected therewith or incidental thereto. The Act aims to protect the livelihood rights of street vendors as well as regulate street vending through demarcation of vending zones, conditions for and restrictions on street vending. As per the Act 'Street Vendors' mean a person engaged in vending of articles, goods, wares, food items or merchandise of everyday use or offering services to the general public, in a street, lane, side walk, footpath, pavement, public park or any other public place or private area from a temporary built up structure or by moving from place to place and includes hawker, peddler, squatter and all other synonymous terms which may be local or region specific; and the words 'street vending' with their grammatical variations and cognate expressions, shall be construed accordingly. The details of the Act have been given in **Annex 5**.

4.4 RESETTLEMENT POLICIES - STATES

All the cities considered are in states that have had previous experience in undertaking projects involving land acquisition thereby entailing Resettlement and Rehabilitation measures. Entitlement frameworks have been formulated (based on World Bank/ADB/State policies) and implemented or are in the process of implementation. **Table 4-3** gives the sectors in which the states have such experience.

Table 4-3: Entitlement Framework-State Sector of Experience

States / UT	Sector of Experience
Rajasthan	Urban Infrastructure
Madhya Pradesh	Roads
Chandigarh	Housing
Maharashtra	Urban Transport

Other applicable state Acts and their provisions like Slum development, vendor's policy along with applicable R & R policies have been discussed in **Annex 5**. However, the entitlement frameworks prepared for these states need to be adapted to the current project initiatives.

The present project demands specific attention to urban- social issues as all projects are in cities. The entitlement frameworks prepared for each of the states address most of the social impacts. These include:

- Loss of livelihood;
- Impacts on vulnerable groups including women; and
- Impacts on community properties.

4.5 ANTICIPATED IMPACTS AND ENTITLEMENT FRAMEWORK FOR THE ESCBSP

The Entitlement Framework for the Project has been drafted keeping in view perceived social impacts as listed below:

- Impacts on non-titleholder – encroacher and squatters both residential and commercial;
- Impact on livelihood of informal sector/ vendors etc.
- Impacts on vulnerable groups including women; and
- Impacts on community properties.

The entitlements for each of the above mentioned impact categories have been provided for in Entitlement Framework for the project. The Framework has also drawn from the provisions of each of the policies mentioned above. The Framework is described in the **Table 4-4** .

Table 4-4: Entitlement Framework for ESCBSP

Category		Type of Loss	Unit of Entitlement	Entitlement	Details
A	Non-Titleholders	Encroachers	Household		<ul style="list-style-type: none"> • Will receive no compensation for land but assistance for shifting assets to the vulnerable groups (SC, ST, Women Headed Households and poor). Such assistance shall be given only to residential and commercial properties; • Encroachers will be notified a time in which to remove their assets; • Right to salvage materials from the demolished structure.
		Squatters	Household	Assistance	<ul style="list-style-type: none"> • Right to salvage materials from the demolished structure • Shifting assistance of Rs. 10,000 for each displaced family. • Additional lump sum assistance of Rs. 10,000 per household to vulnerable groups such as – female headed households, households with disabled family members, households below poverty line, scheduled tribe and scheduled caste households etc.
B	Informal Business	Mobile and ambulatory vendors and Kiosks	Household	Assistance	<p>To be provided assistance as per the Street Vendor's Act, 2014:</p> <ul style="list-style-type: none"> • <i>Provided with a certificate to vend</i> • <i>Relocation/eviction shall be carried out by giving 30days notice</i> • <i>Relocated to a defined</i>

Category		Type of Loss	Unit of Entitlement	Entitlement	Details
					<i>vending zone.</i>
C	Community infrastructure, cohesion and amenities	Common property resources	Community	Conservation, protection, compensatory replacement	<ul style="list-style-type: none"> The common property resources and the community infrastructure shall be relocated in consultation with the community
D	Disruption	Temporary construction related impacts	Household	Assistance may be considered in special cases.	<ul style="list-style-type: none"> Access to be maintained and when disruption occurs, losses can be substantiated, “assistance” will be considered for business losses.

4.6 THE WORLD BANK’S SAFEGUARD POLICIES

The World Bank’s Operational Policies (OP) includes guidance on Environmental Assessment requirements. The Bank’s Safeguard Policies, ten of them, is meant to ensure that operations of the Bank do not lead to adverse impacts or cause any harm. The Safeguard Policies are lumped into Environment, Rural Development, Social Development and International Law. The following four out of the ten are relevant for considerations under the ESMF. These are as indicated below and elaborated in **Annex – 6**.

- Environmental Assessment (OP 4.01);
- Involuntary Resettlement (OP/BP 4.12);
- Physical Cultural Resources (OP/BP 4.11)
- Natural Habitats (OP / BP 4.04)

4.7 IMPLICATIONS FOR GEF – ESCBS

With exception to the provision of depots at Chandigarh and Mira Bhayander, all other sub-projects in the GEF-ESCBS do not require prior environmental clearance from the State / Central Environmental Appraisal Committee as the sub- projects do not fall under any of the requirements suggested as per the Schedule for the MoEF Notification on Environmental Impact Assessment dated 14th September 2006. However, the World Bank policies of Environmental Assessment, Cultural Properties and Involuntary Resettlement will be applicable in sub-projects involving civil construction activities and removal of squatters / encroachers.

With respect to the built-up area as suggested in the EIA notification dt. 14th September, 2006 under Category 8A, if the built up area of the depots planned at any project city exceeds 20,000 sq. m then the sub project mandates Environmental Clearance from the concern State Environmental Impact Assessment Authority (SEIAA). The depot construction will require an Environmental Assessment and Management Plan in line with the provisions of this framework.

For other sub-projects the addressal of environmental impacts shall be through conformance to the checklist of environmental provision in the DPR Preparation. Integration of environmental management measures in the DPR preparation (**Annex-10**) shall be through inclusion of contract clauses in the tender documents during pre-construction / construction or post construction stage for identified management measures. In case of operation stage, the Operations Manual including ESMF is to be followed as a guideline and activities relevant to the project component are to be formulated and implemented by the Implementing Agency.

4.8 GAPS IN REGULATORY SYSTEM

The environmental and social impacts that are likely in the project are to be addressed in accordance with the applicable policies, guidelines and legislations in force in the country and in accordance with the World Bank Guidelines. A critical review of legislative support available for addressing the identified impacts in the project indicates a comprehensive legal regulatory system that exists in India. With reference to the gaps between the World Bank guidelines and regulatory system the Gap Table is presented below (**Table 4-5**).

Table 4-5: Gap Table

Sl. No.	Environmental / Social Aspects	Addressal through WB Safeguards	National Legislation	Gap Identification
1.	Protection of Natural Resources	<ul style="list-style-type: none"> Environmental Assessment (OP 4.01); Natural Habitats (OP / BP 4.04) 	<ul style="list-style-type: none"> Forest (Conservation) Act, 1980 as amended in 1988 Wild Life Protection Act, 1972 CRZ Regulation of MoEF, 2011 	Location of projects in Mira Bhayander is closer to CRZ and Wild life sanctuary. The WB safeguards provide for protection of natural resources of natural habitats but have generic approach towards coastal zone protection. This is addressed through the national regulation on CRZ. Hence, no gaps in legislations are identified.
2.	Protection of Cultural Resources	<ul style="list-style-type: none"> Physical Cultural Resources (OP/BP 4.11) 	<ul style="list-style-type: none"> Ancient Monuments and Archaeo-logical sites and Remains (Amendment and Validation) Act, 2010 	While WB Safeguards provide for demarcation of the precincts, the National Legislation provides for demarcation of prohibited area (100 m around the Archaeological Property) and regulated area (200 m around the Archaeological Property). The specific provisions of the national legislations effectively address issue of protection of Cultural Resources and hence, no gaps in legislations are identified.
3.	Air, Noise and Water Pollution	<ul style="list-style-type: none"> Environmental Assessment (OP 4.01); 	<ul style="list-style-type: none"> The Environment (Protection) Act, 1986 Water (Prevention and Control of Pollution) Act, 1974 as amended in 1978 and 1988 Noise Pollution (Regulation and Control) Rules, 2000 	While the World Bank safeguards provide for control of the pollution on environmental elements through appropriate measures, the national legislations provide for effective implementation of the measures through the indicated acts. Together, the safeguards and legislations complement to address the environmental pollution. Hence, no gaps in legislations are identified.
4.	Accident and Hazard Prevention	<ul style="list-style-type: none"> Environmental Assessment (OP 4.01); 	<ul style="list-style-type: none"> Hazardous Wastes (Management and Handling) Rules, 1989 Chemical Accidents 	World Bank safeguards generically address through the OP 4.01. Specific guidance and implementation is through the national legislations, which effectively addresses the issue. Hence, no gaps in legislations for addressal of the issue are identified.

Sl. No.	Environmental / Social Aspects	Addressal through WB Safeguards	National Legislation	Gap Identification
			(Emergency Planning, Preparedness and Response) Rules, 1996	
5	Resettlement	<ul style="list-style-type: none"> Involuntary Resettlement (OP/BP 4.12); 	<ul style="list-style-type: none"> National Policy on Resettlement and Rehabilitation Policy (NRRP, 2007) The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 	Both the WB Safeguards and National legislations are complemented by the state level legislative support for addressing the resettlement impacts and hence no gaps are identified in this aspect.

5 FRAMEWORK ESMP

5.1 APPLICATION OF ESMP

Screening provides an overview of sub-projects that are likely to involve impacts and those that have no / minimal impacts, thus providing inputs to consider further requirement of environment and social assessments followed by preparation of Environmental and Social Management Plan (ESMP). Screening shall also determine the category of the sub-project and the manner of application of the ESMP.

Type 1 – The sub-projects that would involve land acquisition and/or significant social impacts. These sub-projects would need to be excluded from further consideration in the project.

Type 2 – The sub-projects that require a full review and are likely to involve environmental impacts and impacts on non-titleholders that would require an EIA / SIA and project specific EMP / RAP.

Type 3 – The sub-projects that would require limited review involving generic environmental and social impacts that could be addressed through a generic ESMP.

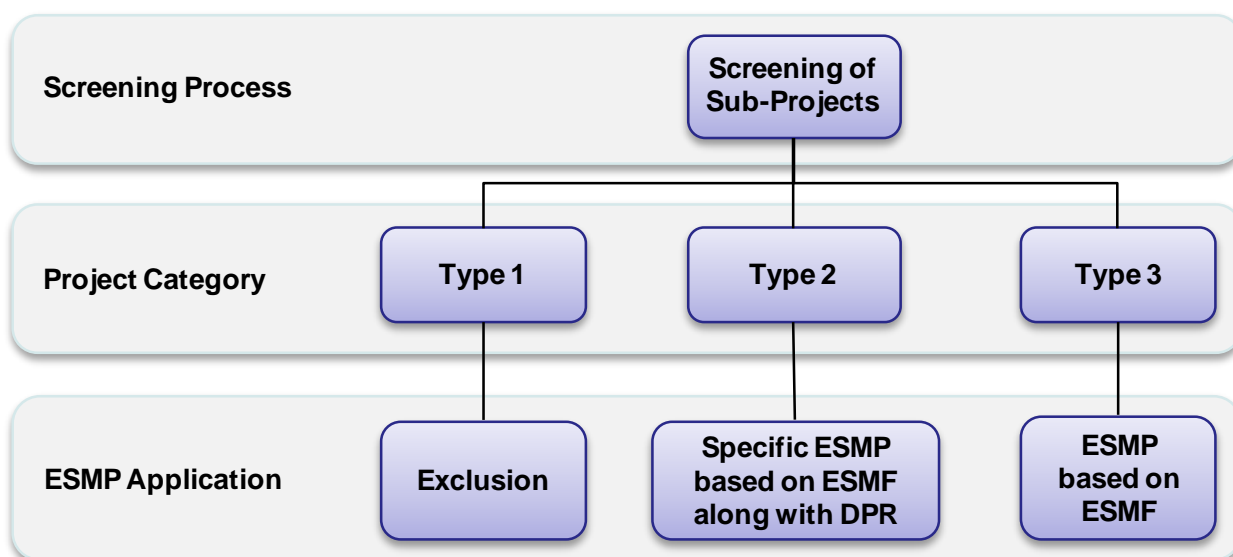


Figure 5-1: Project Categorisation

5.2 ENVIRONMENTAL AND SOCIAL IMPACTS

No major impacts are anticipated from the activities involved in undertaking the project components other than minor construction impacts associated with the erection of equipment and construction of Depots. Some of these impacts however would be of varying intensity, though minor, with respect to the location of the components.

The Impacts being analysed are associated with site selection and project location on environment related impacts as there would be no impacts on communities. In case of impacts associated with construction of depots, except in case of Mira Bhayander, only generic construction impacts limited to air pollution and noise impacts are anticipated. However, in case any of the components are likely to involve construction works, during the course of the ESMF implementation, the following paragraphs indicate the likely impacts.

5.2.1 Impacts from Activities during Construction Stage

Impacts resulting from pre-construction and construction activities including site clearance, earthworks, civil works, etc are identified in this section. Pre-construction and construction impacts arise due to dismantling of existing facilities if any, use of heavy construction machinery, spillage / disposal of construction debris, runoff from construction site, inadequate or inappropriate drainage of the construction site, inadequate safety measures etc. These are some of the direct impacts of construction in the project area.

In addition to the above, there are few indirect impacts or impacts that result from construction activities though not causing the impacts, support to cause the impacts. Some of these impacts include, generation of vectors and vector borne diseases, spread of STD / HIV amongst the construction workers and within the community in the vicinity of construction activities etc. The above environmental impacts are generic in nature occurring along all the project activities where civil works are involved. Impacts that are specific to the construction activities in a project intervention are presented below.

- Safety of labour working in the construction sites as well as working with construction equipments as hot mix plants, batching plants, cranes etc., especially in cities where depot construction works are being undertaken as in Chandigarh, Jaipur and Mira Bhayander.
- Contamination of runoff from road with construction material as sand / cement / silt from stacked excavated earth
- Construction activities elevate the air pollution and noise pollution in the project area temporarily. Air pollution is due to generation of noxious gases emanating from asphalt plants, construction equipment, crushers etc., while noise pollution is due to operation of various types of construction equipment
- Runoff from stacked construction waste entering the water bodies and existing drainage systems causing clogging of drain outlets as well as the drains themselves

Project interventions as procurement of vehicle fleets, traffic signal prioritization, ITS, provision of signage etc., involve minimal construction activities and hence, environmental and social benefits from these activities will outweigh any minimal impacts that may occur. In case of depot construction in Mira Bhayander, the location of proposed depots being close to CRZ and Mangrove areas, further assessment of construction impacts is recommended. Accordingly the social and environment impact assessments for the depot facilities should be completed at the earliest. The typical TOR / Scope of the Environmental Assessment, Social Assessment and RAP are given in the **Annex – 7, 8 and 9** respectively.

5.2.2 Impacts Perceived During Operation Stage

These are the Impacts associated with the operation and maintenance of the infrastructure built in the project. The project interventions are conceived to provide maximum benefits to the community with the implementation of the project. The project interventions as could be judged from the discussion so far involve environmental and resettlement impacts during pre-construction and construction stages of the project and appropriate mitigation and management measures would be undertaken to avoid the same.

Negative environmental / social impacts in the operation stage would mostly be limited to air and noise pollution at the depots. Overall improvement in environmental quality is anticipated in the operation stage. With the no project scenario, use of private motorised transport would emit

greater emissions due to higher number of start and stop cycles as well as higher idling of engines. Project interventions are anticipated to reduce the negative impacts while enhancing positive environmental impacts. The extent of improvement of air quality and likely pollution from the previously low traffic routes close to bus depots need to be assessed through appropriate air and noise modeling especially in Mira Bhayander. Implementation of ITS and traffic signal prioritization interventions would also aid in better management of traffic leading to improvements in air and noise quality. Most of the impacts associated with the operation stage will be related to Waste Management and disposal. There need to be appropriate measures undertaken for mitigation of the associated impacts as indicated in the below paragraphs.

5.3 PLANNING AND IMPLEMENTATION OF MITIGATION MEASURES

5.3.1 Planning of mitigation measures

Planning for mitigation and management measures for **Type 2** sub-projects shall be integrated along with the preparation of Detailed Project Reports (DPR) for these sub-projects. Environmental and social impacts assessed during the DPR stage shall be minimised through design modifications. Mitigation and management measures for unavoidable environmental and social impacts shall be planned and included as part of the DPR recommendations.

Standard Environmental and Social Mitigation and Management measures for **Type 3** sub-projects are presented in **Annex - 10**. These will be applied based on the nature of interventions proposed under each sub-project.

While none of the projects involve land acquisition but may involve minor resettlement impacts on squatters and encroachers in case of depot construction, which are of Type 2 sub-projects. A resettlement plan addressing the impacts on the squatters and encroachers will need to be prepared. In addition, any candidate site presently not in the project list or any other project city if considered as part of the project and if it involves resettlement impacts, a resettlement plan needs to be prepared. The grievance and monitoring mechanism for resettlement aspects is indicated in the below paragraphs.

5.3.2 Implementation of mitigation measures

Implementation of mitigation measures shall be monitored with the help of proposed monitoring plan containing monitoring indicators and implementation schedule. The monitoring plan so prepared in the DPR stage needs to be ensured that it caters to all stages of project implementation. Necessary budgetary provisions for all these measures need to be included as part of the DPR.

The PMC at the PMU shall review the sub-project DPRs and their suggested mitigation, management and monitoring measures. The PMC recommendations shall be shared with the PIUs for final approval of the mitigation measures. The PMC shall ensure that relevant contract clauses are introduced in the contract document to ensure implementation of suggested mitigation measures.

Implementation of the mitigation and management measures are the responsibility of the sub-project contractor. The PIUs shall ensure compliance of the recommended mitigation measures in the sub-project DPRs. PIU shall monitor and supervise whether the contractor is adhering to the relevant safeguard clauses of the contract. In case of presence of R&R impacts in the sub-

project, it will be ensured that the project affected persons are compensated, resettled and / or rehabilitated as per the provisions of the project entitlement framework prior to initiation of civil works. This shall be ensured by the PIU's environmental and social officer and certified for start of civil works.

5.4 CONTRACT CLAUSES FOR SAFEGUARD MEASURES

Environmental and social mitigation and management measures shall be included as part of the specifications and incorporated in the contract clauses of bidding documents to ensure implementation. Apart from the provisions under “General Specification” and “Particular Specification” for different sub-project components, the following special environmental clauses shall be included in the Tender Document under General/Particular Specification. To perform the work the contractor must hire at least one environment, health and safety supervisor for each subproject.

The following clauses are aimed at ensuring that the Contractor carries out his responsibility of implementing the ESMP and other health and safety measures.

Environmental Management Plan (EMP): The Contractor shall carry out all mitigation and enhancement measures (including those related to mitigation of air/noise/water pollution; drainage/traffic congestion) as specified in the Environmental Management Plan (EMP), annexed to this Contract.

Temporary Works: The Contractor shall make sure that all equipment and safeguards required for the construction work such as temporary stair, ladder, ramp, scaffold, hoist, run away, barricade, chute, lift, etc. are substantially constructed and erected, so as not to create any unsafe situation for the workmen using them or the workmen and general public passing under, on or near them.

Health and Safety: All contractors shall be responsible to:

1. Maintain standards of Health and Safety towards all of his employees not less than those laid down by the national standards or statutory regulations.
2. Ensure that all of its workers entering the worksite comply with the Occupational Health and Safety Guidelines. The Contractor shall provide all appropriate protective clothing and equipment for the work to be done and ensure its proper use. Where required, the contractor shall provide safety nets, belts, harnesses and lines. The “safety directives for work equipment” and “safety directives for protective gears”, as specified in the Occupational Health and Safety Guidelines shall be followed.
3. Provide and maintain in prominent and well-marked positions all necessary first-aid equipment, medical supplies and other related facilities. A sufficient number of trained personnel will be required to be available at all times to render first aid.
4. Provide or ensure that appropriate safety and/or health signs are in place at their work sites where hazards cannot be avoided or reduced.
5. Ensure that the construction vehicular traffic and movement of equipment is undertaken considering the safety of residents along the access roads. Prepare traffic management plans for ensuring safety of the residents and allow necessary cross over points for local traffic to avoid conflict points and accidents. At points of unavoidable conflicts and blind curves, safety during construction should be ensured through flagmen
6. Report to the Engineer promptly and in writing particulars of any accident or unusual or unforeseen occurrences on the site, whether these are likely to affect progress of the work or not.
7. Undertake Safety Orientation prior to working at the work-site.

8. Unless otherwise agreed to in writing by the PIU Project Contact Person, supply all necessary equipment and tools, including but is not limited to ladders, scuffles, man-lifts, forklifts, and others required in completing the work.
9. Ensure that all equipment and tools used on the work-site are in good working condition, properly maintained.
10. Ensure that equipment is operated only by those workers who have been properly trained and are skilled in the operation of the equipment.
11. Have available for reference, a manufacturer's operating manual for all the equipment and tools brought to the work-site.
12. Use appropriate authorization to facilitate access to the project site as permitted.
13. Ensure good accommodation, water supply and sanitation facilities for all workers.

Disposal and Pollution:

1. The Contractor shall not dispose any waste, rubbish or offensive matter in any place not approved by the Engineer or Statutory Authority having jurisdiction. The Contractor shall not discharge into any watercourse oil, solids, noxious or floating materials.
2. The Contractor shall take all reasonable precautions to keep public or private roads clean of any spillage or droppings from his vehicles or equipment. Any spillage or droppings which accrue shall be cleaned without delay to the satisfaction of the Engineer.
3. The Contractor shall construct sanitary latrine or septic tank system or install portable cabin toilet for disposal of human waste in the site office and temporary labour sheds for workers / employees; the Contractor shall provide waste bins / cans for collection of solid waste at appropriate locations (as directed by the Engineer), and ensure proper transfer / disposal of solid waste.

Cultural Properties

1. In case of identification of any cultural properties or artefacts during excavation of the sites for construction of depots and other civil works involved, the work has to be immediately stopped and Dept of Archaeology as well as the District Authorities have to be immediately informed. Further works should be undertaken only with the clearance from Dept., of Archaeology of the respective states only after NOC from the authorities.

5.4.1 Performance Indicators of Safeguard measures

During the implementation and operation stages of the project, key performance indicators of environmental and social safeguard measures are to be monitored to provide inputs for assessing the extent of expected outcomes achieved in the planning, construction and operation stages of the project as indicated in the Column "Timescales". These have been detailed out in **Annex-10**. The Performance Indicators for assessing the ESMF Compliance during the project preparation period are indicated as below:

- **Percent compliance** with the checklist provided in Annex-2. The percent compliance could be assessed by quantifying through a simple count of the addressed and non-addressed criteria listed
- **No. Of Consultations** with stakeholders conducted during the project preparation period.
- **Budget for ESMP Implementation** – The ESMF provided a minimum budget required for meeting the general management measures likely to be encountered. The DPR should include budget for any specific measures based on the site criteria to address the issues. Adequacy of the budget should be ascertained to implement the ESMP in the project implementation period

Assessing the ESMP / EMPs prepared across various PIUs in the project with the above indicators should be able to provide adequate basis for comparison and evaluation across the PIUs in the project.

5.5 MONITORING AND REPORTING SYSTEM

PIUs will be responsible for compliance monitoring and reporting to the PMU at the centre. An officer in PIU shall be designated as the Environment & Social Safeguards officer to ensure compliance of the project activities with the World Bank safeguards as well as oversee implementation of environment and social provisions as per the ESMF, EMP and RAP where applicable.

The objectives of Monitoring and Evaluation include:

- Project management and timely completion;
- Successful completion of Environmental management, R&R activities identified in the EMP and R&R plan as per the implementation schedule;
- Compliance with the Environmental policy, R&R policy and entitlement framework.

The safeguards officer shall play a key role in reporting the progress of implementation as well as compliance to the PIU, PMU and the World Bank.

Reporting system recommended in the **Annex – 11** shall be adopted with due modifications specific to the project. The reports to be given are detailed in **Table 5-1** for R&R activities and **Table 5-2** for environmental management.

Table 5-1: Mechanism for Monitoring of R&R activities

S. No.	Format No.	Format Name	Frequency of Reporting	Responsible Agency	Monitoring Agency
1	1 and 2	Progress on Census and Socio-Economic Survey	One time, immediately post screening	Environment and Social Officer, PIU	PIU
2	3 and 4	Verification of Squatters and Encroachers	One time	Environment and Social Officer, PIU	PIU
3	5	Distribution of Entitlements and Assurances	Before initiating civil works	Environment and Social Officer, PIU	PIU
4	6	Community Consultations	As soon as conducted at Pre-construction, construction and Post-construction Stage	Environment and Social Officer, PIU	PIU
5	7	Progress of Grievance Redressal	Monthly	Environment and Social Officer, PIU	PIU

Table 5-2: Mechanism for Monitoring Environmental Management

S. No.	Format No.	Attributes	Stage	Parameters to be Monitored	Location	Frequency	Standard	Applicability	Responsibility
1	1	Air Quality at Sensitive Receptors	Design, Construction and Operation stages	SPM & RPM	Along sensitive areas and peripheral residential areas	Thrice a year (once in each season except monsoons) for the entire	National Ambient Air Quality Standards, 2009, CPCB, India.	All projects involving depot construction works	Contractor

S. No.	Format No.	Attributes	Stage	Parameters to be Monitored	Location	Frequency	Standard	Applicability	Responsibility
						construction period			
2	1	Noise Levels at Sensitive Receptors	Design, Construction and Operation stages	Equivalent Day & Night Time Noise Levels	Along sensitive areas and peripheral residential areas	Thrice a year (once in each season except monsoons) for the entire construction period	The Noise Pollution (Regulation and Control) Rules, 2000	All projects involving depot construction works	Contractor
3	1	Surface Water Quality Rivers in the vicinity of project areas	DPR & Construction Stage	TDS, TSS, pH, Hardness	Upstream and downstream of Material Stockyards	Twice a year (pre monsoon and post monsoon) for the entire period of construction	IS: 2296-1982; IS:10500-1991 with amendments	All projects involving depot construction works	Contractor
4	2	Survival Rate of Plantation	Operation Stage	Survival Rate of Proposed plantation	Where plantation is carried out	Twice a year till the trees reach a minimum height of 2 m	-	For all Project interventions involving tree cutting	PIU

The threshold limits as indicated in the standards column, **Table 5-2** will need to be followed for ascertaining the pollution levels. The respective DPRs have to present the ambient pollution levels in the project area to establish the baseline levels relevant to the site of construction.

5.6 GRIEVANCE REDRESSAL MECHANISM

Grievance redressal mechanism is an important aspect in projects involving land development. The redressal of grievance is important to avoid unnecessary legal delays and cost overrun of the project. Also, this is a forum for people to express their dissatisfaction over environmental pollution from construction or operation activities, compensation and R&R provisions.

The current proposed projects in the 4 cities do not envisage any land acquisition impacts. Impact on environment and social aspects are also limited in nature and quantum. Assessment of the current situation of grievance redressal in the selected IAs has revealed that there is a sound system in place in all the four. Therefore it is proposed to continue with the existing grievances redressal mechanisms of the IAs.

However, incase of new projects that may involve high environment and social impacts, a Grievance Redressal Committee (GRC) shall be constituted within the PIU to monitor and review the progress of implementation of the EMP / ESMP and rehabilitation and resettlement plan for the affected families. The GRC shall also carry out post implementation environmental and social audits wherever EMP / ESMP / resettlement activities are to be undertaken. The committee shall include the following members:

- Heads of the IAs as the Chairman

- Environment and Social officer of the PIU;
- Environment and Social officers of the PMU;
- A representative of a voluntary organization;
- Representative/s of the affected community (or communities)

The functions of the Grievance Redressal Committee shall be:

- to publicize within the city the list of affected persons, if any and the functioning of the grievance redressal procedure established hereby;
- to publicise the contact numbers of consumer cell, helpline and complaint cell at locations of high visibility to provide grievances of any environment pollution, cleanliness of operational areas, safety and accidents;
- to evaluate grievances from affected persons concerning the application of the Entitlement Policy;
- to recommend to the Environment and Social Officer, PIU as the case may be, solutions to such grievances from community and affected persons as applicable;
- to communicate the decisions to the complainants & claimants;
- to hear appeals from persons, households or groups who, not being affected persons, believe that they are qualified to be recognized as affected persons, to recommend to the PIU whether such persons should be recognized as affected persons, and to communicate the decision of the PIU in this regard to the Claimants;
- To ensure that all notices, forms, and other documentation required by Claimants are made available in local language.

Project Cities	Current Grievance / Complaints Redressal Mechanism
Mira-Bhayandar	<ul style="list-style-type: none"> a) Complaints register is maintained; it is sent to respective departments or to Commissioner; First level of resolution is at department level, Commissioner intervenes if required b) Online registration of grievances through the Municipal Corporation's website c) In addition to this the Commissioner holds public meeting on Mondays and Thursdays for grievance redressal
Chandigarh	<ul style="list-style-type: none"> a) Helpline phone and fax numbers and email ids have been given on the IAs website, which could be used to register complaints. b) Complaints can be made directly to the Director of CTU.
Bhopal	<ul style="list-style-type: none"> a) Online registration of grievances through BCLL website b) Complainants can telephone the BCLL through helpline phone number shared on the website.
Jaipur	<ul style="list-style-type: none"> a) Complaints register is maintained; it is sent to respective departments; First level of resolution is at department level, the OSD or MD intervene if required b) People can contact directly by calling up the Toll free helpline phone number

The suggested Grievance Redressal Mechanism devised is applicable to all the project cities considered under the ESCBS.

5.6.1 Estimated Cost

In view of the environmental and social management measures suggested above to be implemented necessary budgetary provisions should be made in the DPRs for the individual projects. Budget for each of the project should include the environmental management costs other than the good engineering practices, cost of environmental and resettlement monitoring. Currently, all PIUs except in Jaipur intend to designate an officer of the PIU to take additional responsibility of monitoring Environment and Social Management Plan. PIU in Jaipur intends to hire additional person to address the environment and social issues as part of the PIU.

The additional manpower cost will however be borne by the JCTSL through their departmental arrangements as being done in case of other staff hired for the PIU. Hence, no additional budget for remuneration of the environment and social experts of PIU is considered in any of the project cities. Details of cost estimates are provided in **Table 5-3**.

Table 5-3: Block Cost Estimates for Environment and Social Management as per ESMF

Item	Units	Unit Rate	Nos.	Jaipur	Mira Bhayander	Bhopal	Chandigarh
A. Environmental Monitoring							
1. Air	No. of Samples	12,000.00	72.00		864,000.00		
2. Noise	No. of Samples	5,000.00	9.00		45,000.00		
3. Water	No. of Samples	10,000.00	20.00		200,000.00		
4. Ecology	LS				300,000.00		
B. Environmental Management	Monthly LS	20,000.00	6 months in Bhopal and 12.00 months in rest of the cities	240,000.00	240,000.00	120,000.00	240,000.00
C. RAP Budget	No. of PAP (Assumed)	100,000	-NIL-				
D. R&R Monitoring	Monthly LS	70,000.00	-NIL-				
E. Training / Capacity Building	No. of Trainees	20,000.00	5.00	100,000.00	100,000.00	100,000.00	100,000.00
Total, INR				340,000.00	1,749,000.00	220,000.00	340,000.00
ESMF Total Budget, INR				2,649,000.00			

A precautionary budget provision for environmental monitoring is proposed in Mira Bhayander as the designs for the depots are under preparation. In case of any of the depots in the city, are located close to creeks and near habitations, environmental monitoring and ecology should be studied. Rest of the depot sites in the cities currently in the ESCBS are not close to habitations that may cause environmental pollution. Hence, it is not proposed to undertake monitoring in these cities. For any other candidate sites or cities that may be considered in the project, or if any of the depots require a Prior Environmental Clearance from the SEIAA, the minimum provisions of environmental monitoring as in case of Mira Bhayander will need to be followed. The provisions for ecological studies in the candidate sites or cities may accordingly be decided and presented in the EMP / ESMP as applicable after assessing the requirement in line with the ESMF.

6 CAPACITY BUILDING

6.1 EXISTING CHARACTERISTICS OF THE IMPLEMENTING AGENCIES

The ESCBSP shall be implemented through different types of Implementing Agencies (IAs) in the 4 project cities. As mentioned in chapter 3, all cities availing the bus funding scheme under the JnNURM have to form Special Purpose Vehicles (SPVs) for operation and maintenance of city bus services. Jaipur and Bhopal have formed a SPV to operate the city bus service but in Mira-Bhayandar it is currently undertaken by the Municipal Corporation and in Chandigarh the Transport Undertaking is performing the task. The nature of the 4 IAs and their mandate has been given in Table 6-1.

Table 6-1: Characteristics of the Implementing Project Agencies

S. No.	Project Cities	Name of Implementing Agencies	Nature of Implementing Agencies	Mandate
1.	Mira-Bhayandar	Mira- Bhayandar Municipal Corporation	Municipal Corporation with a Transport Department	Undertake various tasks as identified under the 12 th Schedule under Article 243-W of the 74 th Constitutional Amendment Act including urban transport
2.	Chandigarh	Chandigarh Transport Undertaking	Transport Undertaking	To operate and maintain city and regional bus services
3.	Bhopal	Bhopal City Link Limited (BCLL)	SPV for Bus Operations	To operate and maintain city bus services
4.	Jaipur	Jaipur City Transport Services Ltd. (JCTSL)	SPV for Bus Operations	To operate and maintain city bus services
5.	Ministry of Urban Development		Project Management Unit at the National Level at MoUD	To supervise project implementation under the ESCBSP.

6.2 CURRENT TECHNICAL CAPACITY OF THE IMPLEMENTING AGENCIES

The current technical capacity of the IAs in the 4 project cities ranges from being very limited to non- existent with respect to undertaking environment and social impact assessment and to implement safeguard measures. The current situation has been shown in the **Table 6-2**.

Table 6-2: Current Technical Capacity of the IAs

S. No.	Project Cities	Staff involved in planning and implementation of Environment and Social Issues	Experience of Environment Impact Assessment	Experience of Environmental Safeguard Implementation	Experience of Social Impact Assessment	Experience of Social Environmental Safeguard Implementation
1.	Mira-Bhayandar	Has an environment wing under the Public Works Deptt.	Nil	Limited Capability	Limited; Has undertaken removal of encroachers, squatters however, do not undertake any consultation before clearance or give monetary compensation.	Encroachment removal and slum rehabilitation

S. No.	Project Cities	Staff involved in planning and implementation of Environment and Social Issues	Experience of Environment Impact Assessment	Experience of Environmental Safeguard Implementation	Experience of Social Impact Assessment	Experience of Social Environmental Safeguard Implementation
2.	Chandigarh	NIL	NIL	NIL	NIL; Land for development of depots is made available to the CTU through inter- government agency transfer.	NIL; Its undertaken by the Chandigarh Housing Board
3.	Bhopal	One staff	Limited Capability	NIL	NIL; Land for development of depots is made available by Bhopal Municipal Corporation (BMC)	NIL; Its undertaken by BMC
4.	Jaipur	NIL	NIL	NIL	NIL; Land for development of depots is made available to JCTSL free from encumbrance either by the Municipal Corporation or Development Authority	NIL; Responsibility is of the agency acquiring the land and not JSCTSL

6.3 STAFF REQUIREMENT OF THE IA FOR ESMF IMPLEMENTATION

Based on the situation assessment, the technical capacity enhancement requirement has been detailed in Table 6-3.

Table 6-3: Staff Requirement Assessment for the IAs

S. No.	Project Cities	Staff Requirement	Type of Staff to be provided	Skill Requirements of the staff*
1.	Mira- Bhayandar	Environment and Social experts at the PIU	Designate one officer as Environment and Social officer in the PIU team; PMC team with environment and social expert to supervise project implementation	Minimum 5 years of experience with post graduation in relevant fields; Experience in atleast one World Bank funded project is desirable.
2.	Chandigarh	Environment and Social experts at the PIU	Designate one officer as Environment and Social officer in the PIU team;	Minimum 5 years of experience with post graduation in relevant fields; Experience in atleast one World Bank funded project is desirable.
3.	Bhopal	Environment and Social experts at the PIU	Designate one officer as Environment and Social officer in the PIU team;	Minimum 5 years of experience with post graduation in relevant fields; Experience in atleast one World Bank funded project is desirable.
4.	Jaipur	Environment and Social experts at the PIU	Appoint one Environment and Social officer in the PIU team;	Minimum 5 years of experience with post graduation in relevant fields; Experience in atleast one World Bank funded project is

S. No.	Project Cities	Staff Requirement	Type of Staff to be provided	Skill Requirements of the staff*
				desirable.

* Detailed Terms of Reference of the PIU staff to be as discussed in Chapter 3.

6.4 TRAINING NEEDS ASSESSMENT

The Environmental and Social Officers involved in the project need to be provided the basic training required for environmental awareness followed by specific aspects of Bus Sector Projects along with Environmental implications in the project. The training should cover basic principles of environmental assessment and management; mitigation plans and programmes, implementation techniques, monitoring methods and tools. Specific issues of Urban Environmental Management would need to be undertaken in separate sessions. Typical modules that should be present for the training session are:

- Sensitization of the project implementing agencies on environment and social aspects
- Introduction to Environment, Social and Resettlement Aspects
- Environment, social and resettlement Considerations in Urban Transport Projects with special reference to Bus Transport
- Review of EA/EMP & SIA/RAP and Integration into Design
- Improved co-ordination within Nodal Departments
- Special Issues in ESCBS
- Role during construction
- Monitoring & Reporting System

Target groups for training would be the environment and social officers of PMU and PIU for all the sessions and engineers / planners / managers for orientation sessions. The training sessions should be followed with site visits to have a 'hands on' approach to the program. While all the modules suggested are applicable for Chandigarh, Jaipur and Mira Bhayander, only selected modules are suggested for Bhopal, given the limited intervention in terms of construction activities. Suggested modules for the training sessions the mode of training and duration is presented in **Table 6-4**.

Table 6-4: Suggested Training Modules for Environment and Social Management

Programme	Description	Participants	Form of Training	Duration/ Location	Training Conducting Agency
A. Project Planning and Preparation Stage					
Sensitization Workshop	<p>Introduction to Environment:</p> <ul style="list-style-type: none"> • Basic Concept of environment • Environmental Regulations and Statutory requirements as per Government of India and World Bank <p>Introduction to Social and</p>	Superintending Engineers of Implementing Agency and Project Director (PD) of all cities and Environmental Officer (EO) of the PMU	Workshop	½ Working Day	Environmental & Social Specialists of Design consultant / external agency engaged for capacity building

Programme	Description	Participants	Form of Training	Duration/ Location	Training Conducting Agency
	Resettlement Aspects <ul style="list-style-type: none"> • Basic Concepts • Policy, legal and other Statutory requirements as per Government of India and World Bank 				
Session I					
Module I	Introduction to Environment: <ul style="list-style-type: none"> • Basic Concept of environment • Environmental Regulations and Statutory requirements as per Government of India and World Bank Introduction to Social and Resettlement Aspects: <ul style="list-style-type: none"> • Basic Concepts • Policy, legal and other Statutory requirements as per Government of India and World Bank 	Engineers of Implementing agency, PMU and PIU (Technical Unit including the EO & SO) of all cities	Lecture	¼ Working Day	Environmental & Social Specialists of Design consultant / external agency engaged for capacity building
Module II	Environmental Considerations in Urban Development Projects: <ul style="list-style-type: none"> • Environmental components affected by urban development in construction and operation stages • Activities causing pollution during construction and operation stages • Environmental Management Good Practices in Urban Infrastructure Projects Social & Resettlement Considerations in Urban Development Projects: <ul style="list-style-type: none"> • Social and Resettlement aspects arising during construction and operation stages • Social and Resettlement Good Practices in Urban Infrastructure Projects 	Engineers of Implementing agency, PMU and PIU (Technical Unit including the EO & SO) of all cities	Workshop	¼ Working Day	Environmental Specialist of Design consultant / external agency engaged for capacity building
Module III	Review of EIA and its Integration into Designs: <ul style="list-style-type: none"> • EIA Methodology • Environmental Provisions in 	Engineers of Implementing agency, PMU and PIU (Technical Unit	Lecture and Field Visit	½ Working Day	Environmental & Social Specialists of Design

Programme	Description	Participants	Form of Training	Duration/ Location	Training Conducting Agency
	<p>ESCBS</p> <ul style="list-style-type: none"> Implementation Arrangements Methodology of Assessment of Pollution Monitoring Methodology for site selection of borrow areas, waste disposal areas etc. <p>Review of SIA/RAP and its Integration into Designs:</p> <ul style="list-style-type: none"> SIA/RAP Methodology Entitlements Implementation Arrangements Methodology of Assessment of Affected Properties Methodology for compensation, resettlement site selection etc. 	including the EO & SO) of Mira Bhayander, Jaipur and Chandigarh			consultant / external agency engaged for capacity building
Module IV	<p>Improved Co-ordination with other Departments:</p> <ul style="list-style-type: none"> Overview of ESCBS Environmental & Social Impacts Statutory Permissions – Procedural Requirements Co-operation & Co-ordination with other Departments 	Engineers of Implementing agency, PMU and PIU (Technical Unit including the EO & SO) of Jaipur, Mira Bhayander and Chandigarh	Lecture / Interactive Sessions	½ Working Day	Environmental & Social Specialists of Design consultant / external agency engaged for capacity building
Module V	<p>Special Issues in ESCBS:</p> <ul style="list-style-type: none"> Cultural properties in urban areas Squatters and encroachers Protection of Water bodies Protection of roadside plantations Statutory Permissions – Procedural Requirements Consultation and Counseling 	Engineers of Implementing agency, PMU and PIU (Technical Unit including the EO & SO) of Jaipur, Mira Bhayander and Chandigarh	Lecture	½ Working Day	Environmental & Social Specialists of Design consultant / external agency engaged for capacity building
B. Project Implementation Stage					
Session II					
Module VI	<p>Role during Construction</p> <ul style="list-style-type: none"> Roles and Responsibilities of 	Engineers of Implementing agency,	Lecture / Interactive	½ Working Day	Environmental & Social

Programme	Description	Participants	Form of Training	Duration/ Location	Training Conducting Agency
	officials/ contractors/ consultants towards protection of environment and resettlement <ul style="list-style-type: none"> • Implementation Arrangements • Monitoring mechanisms 	PMU and PIU (Technical Unit including the EO & SO) of all cities	Sessions		Specialists of Design consultant / external agency engaged for capacity building
Module VII	Monitoring and Reporting System	Engineers of Implementing agency, PMU and PIU (Technical Unit including the EO & SO) of Jaipur, Mira Bhayander and Chandigarh	Lecture / Interactive Sessions	½ Working Day	Environmental & Social Specialists of Design consultant / external agency engaged for capacity building

* Cost estimates for training has been given as part of the ESMF implementation budget in chapter 5