Initial Environmental Examination

June 2018

SRI: SASEC Port Access Elevated Highway Project

Maritime Facilitation Center

Prepared by Road Development Authority, Ministry of Highways and Road Development, Government of Sri Lanka for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 13 April 2018)

Currency unit	–	Sri lanka rupees (Rs/LKR)
LKR1.00	=	$ 0.00642
$1.00	=	Rs. 155.68

ABBREVIATIONS

ABC	-	Aggregate Base Coarse
AC	-	Asphalt Concrete
ADB	-	Asian Development Bank
AEZ	-	Agro-ecological Zones
BAU	-	Business as Usual
BRT	-	Bus Rapid Transit
CBO	-	Community Based Organizations
CEA	-	Central Environmental Authority
DO	-	Dissolved Oxygen
DoF	-	Department of Forest
DOFC	-	Department of Forest Conservation
DSDs	-	Divisional Secretary Divisions
DWLC	-	Department of Wild Life Conservation
EIA	-	Environmental Impact Assessment
EMP	-	Environmental Management Plan
EPL	-	Environmental Protection License
ESDD	-	Environmental and Social Development Division
FBO	-	Farmer Based Organizations
GHG	-	Green House Gas
GoSL	-	Government of Sri Lanka
GRC	-	Grievance Redress Committee
GRM	-	Grievance Redress Mechanism
GSMB	-	Geological Survey and Mines Bureau
IED	-	Independent Evaluation Department
IEE	-	Initial Environmental Examination
LAA	-	Land Acquisition Act
MOHRD	-	Ministry of Highways and Road Development
MRT	-	Metro Rail Transit
NAAQS	-	National Ambient Air Quality Standards
NBRO	-	National Building Research Organization
NCP	-	North Central Province
NEA	-	National Environmental Act
NMVOC	-	Non-Methane Volatile Organic Compounds
NWS&DB	-	National Water Supply and Drainage Board
OPRC	-	Output and Performance - based Road Contract
PIC	-	Project Implementation Consultant
PIU	-	Project Implementation Unit
PRDA	-	Provincial Road Development Authority
PS	-	Pradeshiya Sabha
RDA	-	Road Development Authority
ROW	-	Right of Way
SAPE	-	Survey and Preliminary Engineering
SLS	-	Sri Lanka Standards
TDS	-	Total Suspended Solids

TEEMP	-	Transport Emissions Evaluation Models for projects
TOR	-	Terms of Reference

This initial environmental examination is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

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EXECUTIVE SUMMARY

1. The Road Development Authority will construct a 17-storey Sri Lanka Ports Authority head office building at Lotus Road, Colombo 01, outside of the port boundary, to give way for the construction of 5.3-km toll elevated highway between New Kelani Bridge (NKB) and Galle Face. The Port Area Elevated Highway (PAEH) will run along the centerline of an internal road of Sri Lanka Ports Authority (SLPA) through ramps leading to the port near Ingurukade Junction. The internal port road will also be widened to six lanes to compensate for the lost space due to the elevated structure along the centerline of SLPA internal road. This will require additional land that will require the demolition of 49 buildings, including the SLPA head office.

2. The construction of the new SLPA head office building is one of the components of the Transport Project Preparatory Facility (TPPF) to be funded by the Asian Development Bank. The new building will be called Maritime Facilitation Center (MFC). The project's lot area will be 6,120 m^2 while the footprint will cover 4,476 m^2 of land area. The maximum height of the building will be 96m.

3. The proposed construction and operation of MFC will only generate site-specific impacts, and in most cases, mitigation measures can be easily implemented. No significant, irreversible environmental impacts are expected from the project. As per ADB's Safeguards Policy Statement (SPS), 2009, the proposed project is categorized as B for environment. Hence an Initial Environmental Examination (IEE) is required for the project.

4. The IEE was prepared within the framework of SPS, the National Environmental Act (NEA) of Sri Lanka, and the RDA manual on environmental and social safeguards in road development projects.

5. Anticipated environmental impacts are mainly restricted to the project construction stage and entail building construction-related issues such as noise and vibration, dust, traffic, debris disposal (specifically management of asbestos wastes), and occupational health and safety. During operation, wastewater and solid wastes generation were the identified impacts.

6. Mitigation measures were proposed and detailed in the environment management plan (EMP), which forms part of the IEE. The EMP will be included in the bidding documents and is mandatory for implementation by the contractor.

7. Two FGDs were conducted on 19th and 21st of February 2018 targeting the business community along the Lotus Road and the meetings were arranged with the assistance of Trade Association members of the area. 37 persons who are involved in business activities along the Lotus Road were participated to the FGDs out of that four were women.

8. Grievances from the affected people on social and environmental issues during project implementation will be addressed mainly through the Grievance Redress Mechanism (GRM) which is to be formed using existing local administrative system. Accordingly, grievances will be addressed at three levels depending on the nature and significance of the grievances or complaints.

9. The Environment and Social Safeguard Division (ESSD) of RDA will ensure overall management and implementation of environment safeguards under the project. In addition, both the contractor and CSC will include an Environment Specialist to ensure proper implementation and monitoring of the EMP.

I. INTRODUCTION

A. Background

1. Road based transport is the main landbased transportation mode in Sri Lanka. The current national road network of the country is comprised of around 170 km of expressways (in operation), 4,200 km of “A class” roads and 8,000 km of “B class” roads (source: www.rda.gov.lk) which are under the governance of Road Development Authority (RDA) of Ministry of Highways and Road Development (MOHRD) of Sri Lanka. Southern Expressway (E001) starting from Kottawa of Colombo District serves an expressway facility to reach the Southern Province of Sri Lanka while Colombo - Katunayake Expressway (E003) links the Katunayake Airport to Colombo which is the commercial capital of the country through the expressway network. Outer Circular Highway (E002) provides a ring expressway around the periphery of Colombo city linking E001 and E003. Central Expressway is also proposed to be started from E002 at Kadawatha which will extend the expressway network towards the North Central and Central Provinces of the country. Though the expressway network outer to the Colombo city limit is under improvement, extension of the expressway facility to the centre of the Colombo city is lacking. Therefore, the traffic conveyed through the existing expressways towards the Colombo is struggled to enter the city with the traffic congestions prevailing in the existing roads which negatively affects the transportation efficiency within the Colombo city limit. Therefore, RDA of MOHRD after taking this issue in to consideration, is planning to extend the expressway network to the city centre of Colombo by constructing an elevated highway network within the Colombo city. Port Access Elevated Highway (PAEH) is one of such elevated highways proposed by RDA which connects the Port City of Colombo (A commercial city under construction around Galle face of Colombo) to the E003 through the New Kelani Bridge.

2. As mentioned, the proposed PAEH is an elevated urban expressway of which the objective is to serve a connection to the Colombo Port City from E003 through the New Kelani Bridge currently under construction. The Asian Development Bank (ADB) will provide financial assistance for construction of the PAEH through a loan No. 3425 – SRI under Transport Project Preparatory Facility (TPPF) of RDA.

3. After starting from the New Kelani Bridge at Ingurukade Junction, PAEH is proposed to cross premises of Sri Lanka Ports Authority (SLPA). The PAEH has been decided to run along the centre line of an internal road of the SLPA over an elevated structure while providing an access to the port through ramps near Ingurukade Junction. At the same time the internal port road will also be widen to six lanes status to compensate the lost space due to the elevated structure at the centre line. In order to acquire the required space for the proposed construction within the SLPA premises, 49 buildings including the head office of SLPA and essential workshops will have to be demolished. In addition, SLPA will have to relocate some of its facilities and access in order to minimize disturbances during construction of the PAEH. Therefore, in order to compensate the loss of these facilities to SLPA due to construction of PAEH, RDA has agreed to construct a new work shop complex at Summer hill area and a new head office building at Lotus Road, Colombo 01 prior to start of the construction work of PAEH. The proposed head office of the SLPA will be a 17 storied building which will be constructed by RDA as a sub component of the TPPF funded by ADB. The proposed building is referred as Maritime Facilitation Center (MFC).

4. As per the Safeguards Policy Statement (SPS) of ADB, 2009, TPPF is categorised under the Category B therefore construction of the MFC will also be a category B project. Therefore, in

compliance with the SPS, 2009, an Initial Environmental Examination (IEE) is required for construction of the MFC.

5. This document presents the IEE Report conducted for construction of MFC. This IEE report discusses the possible impacts (beneficial and adverse) that would arise due to proposed construction of the MFC and feasible mitigation measures have been recommended to avoid or minimise the particular adverse impacts. The IEER is prepared by an expert staff of Environmental and Social Development Division (ESDD) of RDA in compliance with the SPS, 2009 while following the Environmental Safeguards Compliance Manual of RDA as a guiding document.

B. Objectives of the proposed project

6. The primary objective of this project is to construct the Maritime Facilitation Center for SLPA in order to compensate the loss of buildings of SLPA due to construction of PAEH within their premises. The project also aims to;

- To provide a single office premises for SLPA to carry out all administrative activities at one place and to facilitate port users to enjoy the service of SLPA in a single building
- To facilitate SLPA to develop Port of Colombo as the premier hub port to transform Sri Lanka into a strategically important economic centre for the region
- To construct the SLPA head office environmentally and socially sustainable manner

C. Objectives of the Initial Environmental Examination

7. This IEE covers construction of the proposed MFC for SLPA at Lotus Road, Colombo 01 while the purpose of this Initial Environmental Examination Report (IEER) is to gather and provide:

(i) Background condition of the following existing environmental and socio-economic settings of the project influential area;
   - Physical Environment (including climate, air quality, soil, surface and ground water quality and hydrology),
   - Biological Environment (habitats of fauna and flora and presence of endemic and threatened species),
   - Social Environment (socio economic profile of the commercial community living in the project influence area, infrastructure facilities and land use etc.)

(ii) Identify potential beneficial and adverse impacts on the existing environment due to construction of the proposed building;

(iii) Propose effective measures to avoid/ minimize or mitigate the project induced adverse impacts while enhancing the beneficial impacts, and;

(iv) Formulate an effective Environmental Management Plan (EMP), so as to sensitize and guide respective Project Implementation Unit (PIU) of RDA and relevant divisions of SLPA in environmental and social safeguards compliance and sensitize and guide respective contractors in environmental and social safeguards compliance during the project period.

D. Approach, Methodology and Personnel Involved

8. This IEE was carried out in compliance with the SPS, 2009 of ADB and RDA manuals on environmental and social safeguards compliance in road development projects were also followed as guiding documents to direct the IEE to be standardised with both ADB and national safeguards requirements.

9. The environmental assessment and report preparation were carried out by trained multidisciplinary team including Hydrologist, Biologist/Ecologist, Chemist, Ecologist, Environmental Officers, Social Impact Awareness officer, Resettlement Assistants and Field Monitoring Assistant (Hydrology) of ESDD, RDA. This core team was supported by assistant staff members of environment and social dimensions. The assessment was guided by Director and Deputy Directors of ESDD and Project Director of TPPF, RDA. SLPA also facilitated the study by providing necessary information.

10. Series of consultation was carried out with SLPA officials in order to gather information over the proposed development, project description and their other requirements.

11. Selected land for the MFC was defined as the project area while an area with 200m radius from the center of the land was selected as the study area for the IEE. The study area was modified as required in order to identify off site impacts such as impacts due to material extraction and disposal of wastes, etc.

12. Field reconnaissance were carried out by the study team during the period from January to March, 2018 to collect baseline data on physical, biological and social environment of the study area.

13. As part of the baseline data collection, air quality, water quality, noise and vibration measurements were also obtained at selected locations within the study area through Central Engineering Consultancy Bureau (CECB). Beira Lake which is located along the Eastern Boundary of the proposed land was selected to obtain water quality while air quality, noise and vibration were measured at the Lotus Road which is along the Western boundary of the land where a line of shops are located along the road. Particular locations of baseline monitoring are presented in the table below and the location map is given in Appendix 1.

Table 1: Locations of baseline monitoring

Code	Environmental Parameter	Location	Coordinates	
			Latitude	Longitude
SWQ	Surface Water quality	Beira Lake Canal	6° 56.126'N	79° 50.854'E
N	Noise	Proposed site for MFC	6° 56.100'N	79° 50.825'E
AQ	Air quality	Proposed site for MFC	6° 56.100'N	79° 50.834'E
V	Vibration	Proposed site for MFC	6° 56.095'N	79° 50.825'E

14. The methodological approach taken for the ecological study is as follows.

15. **Desk studies:** Major habitat types and land use patterns within the project area were identified using 1:50,000 maps published by the Survey Department supplemented by "Google Earth" maps that are available on-line.

16. **Field investigations**: A rapid field study were carried out in the month of March in order to collect baseline information on flora, fauna, their habitats in order to identify specific impacts that may arise due to the project. The study was carried out during the day time. Main interest of the project area was premises for the proposed MFC.

17. Nomenclature for both flora and fauna used in this document is mainly in the accordance with the National Red Data List 2012 of Sri Lanka – Conservation status of the Flora and Fauna (MoE, 2012).

18. Hydrology of the study area was assessed by the study team with the information gathered from stakeholder consultation and secondary information.

19. In compliance with SPS, 2009, public consultation was carried out by the social safeguards staff of ESDD. Two Focus Group Discussions (FGD) targeting the owners of the shops located along the western boundary of the land were conducted to disseminate the project details. In addition a Socio Economic Survey (SES) was also carried out for the shop owners to set up their baseline socio economic status. 73 shops located along the Lotus Road was included for the survey. Furthermore stakeholder consultation was undertaken by the social team of ESDD and Divisional Secretary (DS), Grama Niladari (sub ordinate of the DS and other state agencies such as Colombo Municipal Council (CMC) were consulted with respect to the project.

II. DESCRIPTION OF THE PROJECT

A. Location of the project

20. Proposed site for the MFC of the SLPA is located in Colombo District of Western Province of Sri Lanka. The administrative divisions including Divisional Secretariat (DS) Divisions and Grama Niladari (GN) Divisions (Subordinate of the Divisional Secretary) to which the proposed building falling are given below while the location map is presented in Appendix 2.

Province: Western
District: Colombo
DS Division: Colombo
GN Division: Port
Local Authority: Colombo Municipal Council

21. The project site is accessible from both Lotus Road and Olcott Mawatha (A Road) and surrounded by following developments.

- North – Buildings owned by SLPA
- East – Beira Lake
- South – Olcott Mawatha
- West – Lotus Road

22. Please refer to the location map of Appendix 2.1.

B. Ownership of the project site

23. Proposed project site for construction of the MFC is currently owned by the SLPA and a ware house of SLPA is located within the land.

C. Need for the Project

24. PAEH aims to connect New Kelani Bridge and the Port City of Colombo as an elevated highway across the SLPA premises. Location of the proposed trace for the elevated highway within the SLPA premises will directly affect the buildings of SLPA existing within the proposed Right of Way (ROW) from 0+000 – 1+500, 2+200 – 3+300 and around 4+200. Also it is expected to widen an internal four lane road of the port premises to six lane status as two lanes of the particular road (near the Gate 3 and and under Port commission building) is intend to be used for establishment of the columns of the elevated structure of the PAEH. Widening of the internal road also need to demolish buildings of SLPA. Further, it is noted that some port buildings (such as worker rest rooms and material stores) cannot be operated in isolation without the interconnection with the buildings which are to be demolished therefore they will also have to be relocated. Altogether, construction of the PAEH will demolish 45 existing buildings of the port premises including the head office of SLPA and essential workshops. Location of the buildings to be demolished are shown in Appendix 2.2 and particular building areas and nature of the impact are given in the Appendix 2.3. Loss of these buildings to SLPA will negatively impact the smooth functioning of the SLPA which adversely affect the port operations of the port. Therefore, the economy of the country will also be affected since the Colombo Port serves a key gateway for maritime logistics.

25. On the other hand, SLPA staff is currently scattered over the SLPA premises as well as outside the premises occupying a large area of highly valued lands in Colombo city centre. And organising the staff under a single roof will increase the efficiency of port operations significantly.

26. Therefore in order to compensate the loss of these buildings to the SLPA due to construction of PAEH, RDA has decided to construct a new building for the head office of SLPA (Maritime Facilitation Centre) at Lotus Road, Colombo 01. This will also facilitate smooth functioning of port operations as well as will organize all staff of the SLPA head office under a one roof.

D. Analysis of Alternatives

1. No Project Alternative

27. If the proposed MFC for the SLPA will not be constructed, required space for construction of PAEH will not be made available therefore the objectives of construction of PAEH will not be met. This will negatively affect the transportation efficiency of the Colombo City which is an obstacle to the economy of the country.

2. With Project Alternative

28. With the construction of the head office of SLPA, RDA will be able to construct the PAEH which is a timely required road connection to connect the Colombo city centre to the expressway network. On the other hand, SLPA will be able to concentrate all the staff of the head office under a single roof which will be a positive impact to the port operations as well as the general public who get the service of SLPA. Therefore, construction of the head office for SLPA is a positive move to increase the efficiency of both road and maritime transportation of the country.

E. Magnitude of Operations

1. Proposed improvement

29. As mentioned above, the project aims to construct 17 storied MFC for SLPA.

30. Proposed MFC is entirely for office activities and ancillary activities of the head office of SLPA. The head office will consist of 17 stories of which the ground floor and mezzanine floor are allocated for parking while the 10th floor will be the refugee floor.

31. The extent of the project site is 6120m2 while the foot print of the MFC covers 4476 m2 of land area. The maximum height of the building is 96m. The total building area will be 35,063 m2 including ventilation spaces etc. However, the space available for office activities is 29,609m2. Please refer to the designs attached in Appendix 2.4.

2. Project activities

32. Key project activities as given below will be undertaken under the project during construction and operational phases.

33. **Site clearing and demolition of existing buildings:** Project site shall be cleared to make the land free from obstacles for the proposed development. Here the existing warehouse of SLPA which currently occupy the land shall be demolished using mechanical and manual methods and

denuded matter shall be disposed in a land at Mabima Road which si about 13km away from Colombo Port. Reusable sections of the building such as steel, trusts will be removed from the warehouse safely in order to reuse them. In addition, small office buildings and security huts located in the proposed project site will also be demolished.

34. It is expected that 1.8 ton of steel can be reused while 3400 m^2 of asbestos, 1286 m^3 of concrete and 50 m^3 of bricks removed from existing buildings shall be disposed at approved sites.

35. In addition, trees existing within the foot print of the MFC will have to be felled and 10 such trees have been identified during preliminary studies which need to be felled.

36. **Mobilization:** Temporary facilities required for construction activities such as temporary offices, stores, temporary toilets, material stocks, parking areas for vehicles and machines etc… shall be established during mobilization within the project site.

37. **Excavations**: Excavations will be carried out for pilling and top soil will also be removed and approximately 6500 m^3 of excavated material will be resulted from the building area.

38. **Water supply:** It is expected to extract water from pipe born water supply system of National Water Supply and Drainage Board (NWS&DB) for both construction and operation of the MFC.

39. Estimated daily water requirement during construction is about 480m^3 and approximate water requirement during operation is 442m^3/day. Necessary water storage facilities for the MFC will be incorporated to the detailed design.

40. **Energy supply:** Electricity power supply will be obtained from Ceylon Electricity Board (CEB) and there will be a backup power supply through generators. Estimated electricity requirement will be 250 KVA.

41. **Solid waste management:** A solid waste management plan will be prepared and approved by Colombo Municipal Council (CMC) which consists of types and quantities of solid waste to be generated from the MFC and the method of disposal.

42. **Wastewater management:** Wastewater generated during the construction phase is mainly of sewage, water used by the workforce and wastewater from construction activities. It is estimated that approximately 20m^3 of wastewater will be generated per day during the construction phase. Temporary water sealed latrines will be provided for the labour force during the construction phase and emptied as required with the help of CMC.

43. During operational period the wastewater will mainly consist of sewage, water used in wash rooms and wastewater from cafeteria. The estimated quantity of wastewater during the operational phase of the MFC is, 120 m^3/day at full occupancy. It is agreed to connect the sewerage outlets of the MFC to the main sewerage system of CMC during the operational phase. The existing drainage layout of the CMC is presented in Appendix 2.5.

44. **Traffic Management**: Entry and exit of all construction vehicles to the site will be from both Lotus road and Olcott Mawatha. A method statement for traffic management will be obtained from the Contractor and to be approved by the Project Implementation Consultant (PIC) before application.

45. **Labour requirement:** Approximately 150 labourers will be employed during the construction phase for MFC construction and they will be hired from relevant suppliers and therefore labour accommodation will not be required.

3. Material requirement

46. **Concrete:** Ready Mixed Concrete shall be supplied from the concrete batch mixing plan of the contractor using concrete mixer trucks. Mobile pump car or static pump would be used to pump concrete to upper floors.

47. Material requirement for construction of the MFC is given in the table 2 below.

Table 2: Approximate material requirement for the MFC

	Material	Approx. quantity	Source
1	Metal	13,125 m^3	Kahahena, Neluwattudwa, Diddeniya, Meepe
2	Sand	9116 m^3	Approved sand mining sites of Deduru Oya River
3	Cement	7,722,000 kg	Shopping
4	Reinforcement	800 T	Shopping

III. POLICY AND LEGAL FRAMEWORK

A. Legal Framework

1. National Environmental Act and other applicable regulation

48. The National Environment Act (NEA) No. 47 is the key environmental policy framework which is administered through the Central Environment Authority (CEA) of the Ministry of Environment and Renewable Energy (ME&RE). NEA No. 47 was enacted in 1980 and NEA amendment Act No. 56 of 1988 stipulated the regulations for assessing and managing environmental impacts and obtaining the environmental clearance in a timely and systematic manner. It also provides guidelines for environment management, management of natural resources, fisheries, wildlife, forestry, soil conservation, environment quality, environment protection and approval of projects. The environmental clearance process is implemented through the designated Project Approving Agency (PAA) as prescribed by the Minister under section 23 Y of the NEA. The procedure that should be followed for obtaining environmental clearance is described under section 23CC and 32 of the NEA.

49. The environmental clearance process should be initiated by submitting the completed Basic Information Questionnaire (BIQ) to CEA with preliminary information about the project including exact locations of the project components, extent and environmental sensitivity related to project activities. Based on this CEA decides whether the project is a "Prescribed Project"[1] or not and who the PAA will be for administering the IEE or EIA process to obtain environmental clearance if the proposed project is a prescribed project.

50. Regarding building construction projects such as hotels, condominiums etc… CEA obtains the technical assistance of Environmental Consultative Committee (ECC) of Urban Development Authority (UDA) to take the decision and generally UDA is appointed as the PAA for such projects if prescribed.

51. Construction of multi storied office complexes is not a "Prescribed Project" as per the Part 1 of Gazette Notification No. 772/22 of 18th June 1993 published under NEA unless the project area is located in an environmental sensitive area. Therefore, construction of the 17 storied head office of SLPA is also falling to the Non Prescribed Category.

52. While the NEA is the key environmental legislation under GOSL there are a number of other environmental laws and regulations that are applicable to the investment program as given in Table 3 below.

Table 3: Applicable National Laws and Regulations for the Investment Program

Legislation	Relevance and main content	Authorizing Institution
Urban Development Authority (UDA) Law No 41 of 1978 and Urban Development Projects (Special Provisions) Act No 2 of 1980	This law provides for the establishment of an UDA to promote integrated planning and implementation of economic, social and physical development of certain areas as may be declared by the minister to be urban	Urban Development Authority (UDA)

[1] Under the NEA, a prescribed project means that the project requires a full Initial Environmental Examination or Environmental Impact Assessment (EIA) study depending on the TOR issued by CEA for securing the environmental clearance

Legislation	Relevance and main content	Authorizing Institution
	development areas and for matters connected with the relevant project activities. Urban Development Projects (Special Provisions) Act No 2 of 1980 is an act to provide for the declaration of lands urgently required for carrying out urban development projects and to provide for matters connected there with relevant project activities.	
National environmental protection and quality regulations under Extraordinary gazette notification No. 1534/18 and No. 1533/16 of 2008 under NEA section 32 & 23A, 23B	This regulates the discharge and deposit of any kind of waste or emission into the environment and stipulates requirements for an Environmental Protection License (EPL) depending on the project activity. Examples of activities requiring and EPL are: asphalt processing plant, concrete batching plants, treatment plants, sewerage networks, mechanized mining activities etc.	CEA
National Environmental (Protection and Quality) Regulation No. 1 of 1990 published in Gazette Extraordinary No. 595/16 of February, 1990	Provides standards for discharging effluents into inland surface water during proposed project activities.	CEA
National Environmental (Protection and Quality) Regulation published in Gazette Extraordinary No.1534/18 dated 1st of February 2008	Regulates disposal of construction wastes containing asbestos	CEA
National Environmental (Ambient Air Quality) Regulations, 1994, published in Gazette Extraordinary, No. 850/4 of December, 1994 and amendment gazette No. 1562/22 of 2008	Provides standards for emissions to the air during proposed project activities.	CEA
National Environmental (Noise Control) Regulations No.1 of 1996 and its amendments	Regulates maximum allowable noise levels for construction activities during proposed project activities	CEA
National Environmental (Vehicle Horns) Regulations, No. 1 of 2011	Regulates maximum allowable noise emanating from vehicular horns on a highway or road any motor vehicle use during project construction activities	CEA
National Environmental (Municipal Solid Waste) Regulations, No. 1 of 2009	Regulates dumping municipal solid waste along sides of any national highway or at any place other than places designated for such purpose by the relevant local authority during proposed project activities	CEA
Fauna and Flora Protection Act No.2 of 1937 amended in 1993 and 2009	The act specifies that any development activity taking place within one mile from the boundary of a National Reserve declared under the Ordinance requires an EIA/IEE which provide for the protection and conservation of fauna and	Department of Wildlife Conservation

Legislation	Relevance and main content	Authorizing Institution
	flora of Sri Lanka and their habitats; for the prevention of commercial and other misuse of such fauna and flora and their habitats for conservation of biodiversity of Sri Lanka; and to provide for matters connected there with.	
Forest Act No. 34 of 1951	This act is to consolidate and amend the law relating to the conservation, protection and management of forest and forest resources for the control of felling and transport of timber and Forest and for matters connected therewith or incidental thereto.	Department of Forest
Felling of Trees Control Act No. 9 of 1951 as amended through Act No. 30 of 1953	This Act sought to prohibit and control felling of specified trees (mainly intended to stop indiscriminate felling of specified trees) in the country.	Department of Forest Conservation
Water Resources Board Act, No. 29 of 1964 and (Amendment) Act, No. 42 of 1999	The act controls and regulates developments (including conservation and utilization) of water resources; prevention of pollution of rivers, streams and other water resources; formulation of national policies relating to control and use of water resources.	Ministry of Irrigation and Water Resources Management
Soil Conservation Act, No. 25 of 1951 and Amended No. 24 of 1996	This Act makes provisions for the enhancement of productive capacity of soil; to restore degraded land for the prevention and mitigation of soil erosion; for the conservation of soil resources and protection of land against damage by floods, salinity, alkalinity, water logging; and to provide for matters connected therewith or incidental thereto	Department of Agriculture
Explosives Act No. 36 of 1976	To provide control of explosions and regulations of matters connected with explosive activities related with the project.	Ministry Of Defence
Municipal Councils Ordinance No. 29 of 1947, the Urban Councils Ordinance No. 61 of 1939 and the Pradeshiya Sabha Act No. 15 of 1987 as amended in 2010	Regulates and control actions pertaining to socioeconomic developments and methods taking place within the command area relevant to government laws and regulations	Ministry Of Local Government And Provincial Council
Crown Land Ordinance Act No. 1947	An ordinance to make provision for the grant and disposition of crown lands in Sri Lanka; for the management and control of such lands and the foreshore; for the regulation of the use of the water of lakes and public streams; and for other matters incidental to or connected with the matters related to proposed project	Land Commissioners Department
Land development statuette No. 7 of 2002 the western province provincial council, amendment No. 1287/26 of 2003	A statute for regularizing utilization of state lands situated within the western province either by state or the provincial council, for regulating the distributing of the aforesaid lands	Governor Western Province Provincial

Legislation	Relevance and main content	Authorizing Institution
	and lands in possession of the provincial council, for augmenting productivity of lands and for matters connected with or incidental to them this statute is in compliance with the crown lands ordinance no. 08 of 1947 (chapter 454) and the land development ordinance no.19 of 1935 chapter 464 as amended by land development (amendment) acts, no. 16of 1969 no.27 of 1981,no 22 of 1998,no, 22 of 1995 1996. Of divesting of state lands, no. 07 of 1979	Council And Land Commissioners Department
Sri Lanka Land Reclamation and Development Corporation Act 15 of 1968 as amended by Act No 52 of 1982	This act established Sri Lanka Land Reclamation and Development Corporation which grants permission for the public to fill marshy land subject to provision of storm water drainage.	Sri Lanka Land Reclamation and Development Corporation
Town and country planning ordinance No. 13 of 1946 and The Town & Country Planning (Amendment) Act, No. 49 of 2000	This regulates the National Physical Plan with transport as the main component	National Physical Planning Department (NPPD)
Antiquities Ordinance No. 9 of 1940 and amendments	The act regulate activities of projects located in close proximity of any archaeological reserves	Department of Archaeology

53. Under the NEA (No). 47 and some of the laws and regulations listed in Table 3.1 above, there are specific requirements for clearances, permits and licenses required for road projects as listed in Table 4 below.

Table 4: Applicable Approvals required for the Investment Program

Project stage	Approvals	Project Related Activity	Relevant Agency
Pre-Construction Stage Note: Although clearances and approval should be obtained during preconstruction stage it is valid throughout the project cycle. However this should be renewed before expiry date	Preliminary Planning Clearance	Implementation of the project	Urban Development Authority (UDA)
	Environment clearance	Implementation of the project	Central Environment Authority
	Building permit	Construction of the MFC	Colombo Municipal Council (CMC)
	Height clearance	Construction of the MFC	Civil Aviation Authority
	Consent for electricity supply	Electricity supply for the MFC	Ceylon Electricity Board (CEB)
	Consent for water supply	Water supply for the MFC	National Water Supply and Drainage Board (NWS&DB)/CMC
	Fire Department Clearance	Safeguards measures related to fire protection of the MFC	Fire Service Department
	Industrial Mining License (IML)	Operation of quarries, borrow areas and other material extraction sites used for the MFC	Geological Survey and Mines Bureau

Project stage	Approvals	Project Related Activity	Relevant Agency
	Environmental Protection License (EPL)	Operation of material extraction site including operation of asphalt plants, treatment plants, disposal sites for construction debris containing asbestos, etc.	CEA
	Local Government Authority Trade license and machinery permits	Deciding waste and wastewater disposal method and sites, material storage and sites for worker camps and other project stations Trade license should be obtained for asphalt plants, batching plants, quarries etc.	CMC and/or Respective Local Authority
	Explosive Permits	Blasting activities	Ministry of Defence
	Approval for removal of trees	Clearance for construction	Forest department, CEA and local authorities
Construction stage	Approval from relevant state /local agencies for the removal/ temporary disturbances for existing utilities	Excavations, filling	NWSDB for water lines, CEB for Electric cable/poles, Sri Lanka Telecom for land line telephone cables, poles, CMC for drainage, sewer systems etc.
	Approval from Local Authorities	Disposal of demolished material, unsuitable soil etc…	Respective local authority

2. Environmental Protection License (EPL)

54. The Environmental Protection License (EPL) is a regulatory/legal tool under the provisions of the National Environmental Act No: 47 of 1980 amended by Acts No 56 of 1988 and No 53 of 2000. Industries and activities which required an EPL are listed in Gazette Notification No 1533/16 dated 25.01.2008. Industries are classified under 3 lists i.e. List A, B and "C" depending on their pollution potential.

55. Part "A" comprises of 80 significantly high polluting industrial activities and Part "B" comprises of 33 numbers of medium level polluting activities. EPL for industries in lists "A" and “B” have to be obtained from the relevant Provincial Offices or District Offices of the CEA.

56. Part "C" comprises of 25 low polluting industrial activities which have been delegated to Local Government Authorities, namely Municipal Councils, Urban Councils and Pradeshiya Sabhas. EPL for the industries in List "C" has to be obtained from the respective Local Authorities. The Local Authorities carry out issuing of EPLs and related functions such as follow up, monitoring and law enforcement.

57. Objectives of the EPL:

- To prevent or minimize the release of discharges and emissions into the environment from prescribed (industrial) activities in compliance with national discharge and emission standards.

- To develop an approach to pollution control that considers discharges from prescribed (industrial) processes to all media (air, water, land) in the context of the effect on the environment.
- To contain the burden on industry, in particular by providing guidance on pollution control for polluting processes.
- To ensure that the system responds flexibly both to changing pollution abatement technology and to new knowledge such as cleaner production, waste minimization etc

B. Policy Framework

1. ADB Safeguards Policy Statement, 2009

58. ADB's safeguard policy framework consists of three operational policies on the environment, Indigenous People, and involuntary resettlement. All three safeguard policies involve a structured process of impact assessment, planning, and mitigation to address the adverse effects of projects throughout the project cycle. The safeguard policies require that (i) impacts are identified and assessed early in the project cycle; (ii) plans to avoid, minimize, mitigate, or compensate for the potential adverse impacts are developed and implemented; and (iii) affected people are informed and consulted during project preparation and implementation. The policies apply to all ADB-financed projects, including private sector operations, and to all project components.

59. The objective of environment safeguards policy is to ensure the environmental soundness and sustainability of projects and to support the integration of environmental considerations into the project decision-making process.

60. Proposed projects are screened according to type, location, scale, and sensitivity and the magnitude of their potential environmental impacts, including direct, indirect, induced, and cumulative impacts.

61. Projects are classified into the following four categories:

- **Category A**. A proposed project is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An environmental impact assessment (EIA), including an environmental management plan (EMP), is required.
- **Category B.** The proposed project's potential adverse environmental impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination (IEE), including an EMP, is required.
- **Category C.** A proposed project is likely to have minimal or no adverse environmental impacts. An EIA or IEE is not required, although environmental implications need to be reviewed.
- **Category FI.** A proposed project involves the investment of ADB funds to or through a financial intermediary. The financial intermediary must apply and maintain an environmental and social management system unless all of the financial intermediary's business activities have minimal or no environmental impacts or risks.

IV. DESCRIPTION OF EXISTING ENVIRONMENT

A. Existing Environment and Social Elements of the Project area

62. The land area in which the head office of SLPA will be constructed under this project is defined as the project area to describe existing environment of the project.

63. Proposed project area is located within the core area of the Colombo City which is highly urbanized with high rising commercial and office buildings (such as banks, Sri Lanka Customs, Sri Lanka Telecom etc) Colombo port, Colombo Fort Railway Station. Please refer the Location Map given in the Appendix 2.1.

64. The land proposed for construction of the head office is bounded by buildings of SLPA which are currently used as the Document Processing Centre of Colombo Harbor on the North, Lotus road along the West, Olcott road along the Southern boundary and Baire lake canal on its West (Figure 4.3). The land is vested upon the SLPA and mainly occupied by a warehouse which is used by SLPA to temporary store goods to be discarded. This building was constructed in 1960s and covers a significant area of the land proposed for head office. In addition, four small office buildings (used for employees fund section) and two security huts are located around the warehouse.

65. Beira Lake Canal is located along the Eastern boundary of the proposed land and the canal is currently maintained by SLPA. As per the information of SLPA, the canal deserves a 6m reservation and at present a foot path is constructed within the reservation by UDA (Figure 1). There are two entry/exists for the warehouse; one from the Lotus Road and the other from the Olcott Road as shown in the Figure 3. A line of shops is located along the Lotus Road immediately outside to the boundary wall of the land (Figure 2) and these shops facilitate services provided by SLPA such as clearing of goods from the port etc... Lotus Road is also used as a temporary bus parking until they get their turn to enter the route. Therefore the Lotus Road is generally congested with buses and other vehicles.

Figure 1: Beira Lake Canal and the foot path

Figure 2: Shops located along the Lotus Road

Figure 3: Proposed land for the MFC

66. It was mentioned that around 200 – 300 vehicles are entered to the warehouse as well as to the Document Processing Centre of Colombo Harbor however the facilities within the land do not serve the public therefore public is not allowed to enter the land.

67. SLPA officials stated that underground storm water pipes are located across the land to drain the runoff collected in the land to the Beira Lake Canal. Outlets of the pipes are located below the foot path being constructed.

Figure 4: Warehouse

Figure 5: Temporary bus parking along the Lotus Road

68. Head office of Sri Lanka Telecom (SLT) and Sri Lanka Customs are on the other sides of the Lotus Road and Beira Lake Canal respectively as shown in the figure 3.

B. Existing Physical Environment

1. Climate

69. Climatologically proposed project area of the proposed MFC for SLPA is located within the Low Country Wet zone of Sri Lanka. The climate of the project area can be further categorized in to agro – ecological zones which are categorized based on climate, soil, natural vegetation and land use pattern of an area. The specific Agro-Ecological Zones (AEZ) related to the project area is WL3 and its characteristics are presented in the following Table 4.1. The AEZ nomenclature is alphanumeric where the first upper case letter denotes the climatic condition (W-wet, I-intermediate, D-dry), the second upper case letter indicates elevation (L-low, M-medium, U-upper), the first number describes the moisture regime, and the last lower-case letter indicates the rainfall distribution and other environmental factors where the degree of wetness degrades from letters a to f.

70. The project area generally receives rainfall throughout the year however rainfall peaks are observed around May with the effect of Southwest Monsoon and around September to November when the Second Inter Monsoon is in effect. The rainfall seasons are influenced by monsoon winds passing over the Indian Ocean and the Bay of Bengal (Source: The National Atlas of Sri Lanka, second edition, 2007).

Table 5: Characteristics of Agro Ecological Zones of the project area

Agro-ecological Zone	75% expectancy value of rainfall (mm)	Description		
		Land use	Terrain	Soil groups
WL 3	> 1700	Coconut, Fruit crops, Mixed home gardens, Paddy	Rolling and Undulating	RYP soils with soft and hard laterie, LHG & Regosol soils

Source: The National Atlas of Si Lanka, second edition, 2007

71. Temperature is fairly stable and has a little variation along the region. Annual mean temperature of the project area varies between 25 to 27.5^{0}C and Average Annual Temperature is 27.4 ^{0}C (Source: The National Atlas of Si Lanka, second edition, 2007).

72. Monthly average rainfall and temperature variation in Colombo is presented in Figure 6 below.

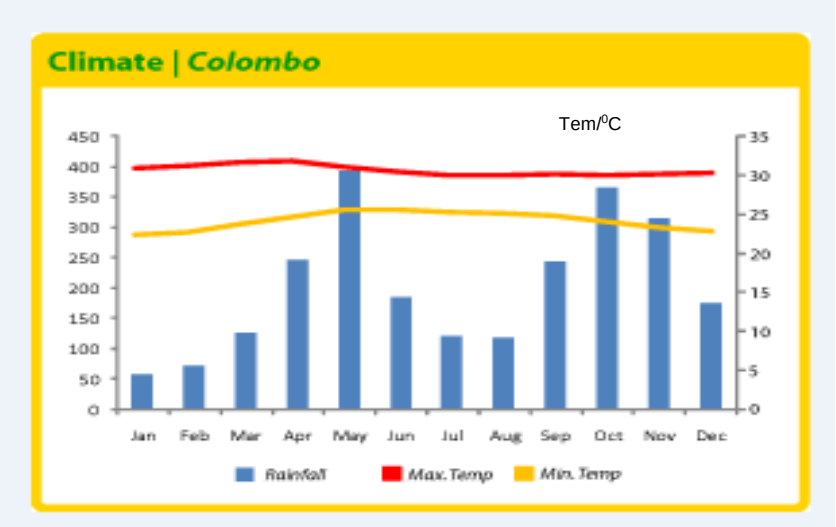


Figure 6: Monthly average rainfall and temperature variation in Colombo
(Source: Department of Meteorology, Sri Lanka)

73. Wind directs towards Northeast with average velocity of 7.2kmph on January and directs towards southwest on July with average velocity of 7.6kmph (Source: The National Atlas of Si Lanka, second edition, 2007).

2. Air Quality

74. The proposed project area is located within the core area of Colombo City which is the commercial capital of Sri Lanka. The surrounding of the project area is congested with transportation hub, head offices of banks, Colombo Port, Sri Lanka Custom, Telecom, retails and whole sale business centers, Colombo World Trade Centre, hotels and many other commercial activities. Therefore, these locations generate significant flow of traffic including public transport vehicles such as buses and trains, private vehicles and good transport vehicles. Therefore, the major source of air pollution of the project area is the emissions from traffic such as road kick-off dust, exhaust fumes generated from the vehicle engines and shipping emissions. Major air pollutants emitted to the atmosphere are Suspended Particulate Matter (SPM), Oxides of Nitrogen (NO_x), Hydrocarbons, Carbon Monoxide (CO), Soot (diesel train exhaust), CO_2, NO_X, SO_x, PM_{10}, CH_4, and CO from ships and tankers. Ambient Air Quality was measured at the proposed site of the MFC by Central Engineering Consultancy Bureau (CECB). Table 6 presents the results of the air quality measurements.

Table 6: Results of ambient air quality measurements

Parameter	Result ($\mu g/m^3$)	Maximum permissible level[2]	
		$\mu g/m^3$	ppm
Particulate Matter (PM_{10}) – 24 hr	59.4	100	
Total Suspended Particulate Matter (TSPM) – 3 hr	142.8	-	-

[2] As given in the Ambient air quality standards published under National Environmental Act

Parameter	Result (µg/m³)	Maximum permissible level[2]	
		µg/m³	ppm
Carbon Monoxide (CO) – 8 hr	0.905	10,000	9
Sulphur Dioxide (SO_2) – 8 hr	36.7	120	0.05
Nitrogen Dioxide (NO_2) – 8 hr (proposed building site)	366.6	150	0.08
Nitrogen Dioxide (NO_2) – 8 hr (proposed elevated highway location)	93.75	150	0.08

3. Existing Noise and Vibration

75. Ambient noise is generally high in the project area and preliminary influenced by sound generated from traffic, train movements, port activities and commercial activities surrounding the area. Day time Existing Noise Level (ENL) and existing ground vibration (in ppv) were measured at the proposed site for MFC by CECB and results are 70.5 L_{Aeq}/dB and 0.25 Hz respectively.

76. Noise and vibration sensitive receptors were also identified within the study area and presented in table 7 bellow. Location map for the noise and vibration sensitive receptors are given in Appendix 4.1.

Table 7: Noise and vibration sensitive receptors located within the study area

Parameter	Sensitive receptor
Noise	Line of shops along the Lotus road and Sri Lanka Telecom, Sri Lanka Customs
Vibration	Line of shops along the Lotus road and Sri Lanka Telecom

4. Existing Hydrology, Surface and Ground Water Resources

77. Beira Lake canal is the only surface water body found within the study area which is located along the Western boundary of the project site. This canal starts from the Beira Lake and ends at the sea at Colombo Bay. Baseline condition of the surface water quality of Beira Lake canal was measured by CECB and results are presented in table 8 below. During the colonial era of the Portuguese and the English, the lake was used as way of transporting goods within the city. At present the lake is highly polluted with pollutants of the surrounding area which has lead eutrophication of the lake and unusual stench is experienced due to algae growth and resulting gasses such as Methane, Hydrogon Sulphite and Ammonia forming in the bottom.

78. Ground water resources were not observed within the study area. Pipe borne water is the major source of drinking and domestic water supply found within the area which is supplied by the National Water Supply and Drainage Board (NWS&DB).

79. Surface hydrology of the project site is mainly oriented towards the Beira Lake Canal and storm water runoff from the site is drained to the canal. In addition, there are underground storm water pipes across the land to drain off storm water from the site to the canal and outlets of such pipes are observed under the foot path located along the canal.

80. Beira Lake Canal is influenced by tides and tidal variation is found to be marginal near to the project site (Public and stakeholder consultation).

Table 8: Results of surface water quality measurement at Beira Lake Canal

Parameter	Unit	Results	Permissible level		WHO standards
			Drinking water[3]	Fish and aquatic life[4]	
pH at 32.2 °c	-	6.8	6.5 – 8.5	6.0 – 8.5	6.5 – 8.5
Electrical Conductivity at 32.2 °c	mS/cm	29.6	ND	ND	No guideline
Turbidity	NTU	32.5	2	ND	< 5
Salinity	ppt	13.9	ND	ND	No guideline
Total Chorine Content	mg/l	0.07	ND	ND	No guideline
BOD	mg/l	130.0	ND	4	No guideline

ND: Not defined

C. Existing Biological Environment

81. The proposed project area mainly consists of urban man-made habitat. The proposed site for the project is not located within any ecologically important reserve declared by Department of Wild Life Conservation (DWLC) or Department of Forest Conservation. The main habitat types present in the project area are the proposed site for the MFC and the Water Body. No threatened or endangered species flora or fauna listed under the National red list 2012 of Sri Lanka of Ministry of Environment which also comply with the Red listed species of IUCN were found during the study within the study area.

82. Within the premises, mainly cultivated exotic tree species are present. These exotic species include few cultivated food crops, fruit plants, timber trees, ornamental plants and many naturalized weeds. This includes; Sri Lanka Almond tree (*Terminalia cattappa*), Avacardo (*Persea americana*), Kos (*Artocarpus heterophyllus*), Teak (*Tectona grandis*), Coconut (*Cocos nucifera*), Mango (*Mangifera indica*), Soursop (*Annona muricata*) and False Asoka (*Polyalthia longifolia*). These trees provide shade, food and roosting sites for animals, absorb dust and add scenic beauty for such an urban environment.

83. Several species of butterflies found during the study which are used to live in urban environments and many of them use weeds and exotic ornamental plants as their larval food plants.

84. Mainly ground associated few urban birds species, which feed on fruit trees, pests or garbage were found within this project area.

85. Aquatic associated birds such as egret, pelicans and kingfishers may also be found to the canal even though such species were not observed during the study. Presence of fish species are also noted in the Beira Lake Canal.

86. Mammal species found during the survey are well adapted species for disturbed urban environment such as dogs, cats and common rats.

87. Please refer Appendix 4.2 for list of flora and fauna observed within the project area.

D. Socio – Economic Environment

[3] Sri Lanka Standard for portable water
[4] Proposed ambient water quality standard for inland waters in Sri Lanka, CEA

1. Population

88. Proposed Project is located in the Colombo district and falls within the administrative divisions of Colombo Divisional Secretariat Division (DSD) and Colombo Fort Grama Niladhari Division (GND).

89. Colombo district is the largest district with regard to population and population density in the country. As per the Department of Census and Statistics data in 2012, population Density of Colombo district is 3438 (persons per km^2). The estimated mid - year population of Colombo district in 2017 is 2,419,000 persons of which 1,187,000 persons are male and 1,232,000 persons are female.

90. The total population in the Colombo Divisional Secretariat Division in 2016 is 336,314 persons, of which 169,373 persons are male and 166,941 persons are female. In terms of ethnicity, 25.0% are Sinhalese, 33.0% are Tamils, 40.1% are Moor, 0.4% are Burgher and 1.5% are belonging to the other ethnic groups.

2. Existing Socioeconomic Condition of the study area

91. Key findings of the socioeconomic survey conducted by social team of the ESDD for the business community located along the Lotus Road are presented below.

3. Gender distribution of the target group

92. Table 9 given below present the shop owners according to the gender composition and out of the 73 shops, 91.8% are belonged to the male owners.

Table 9: Shop owners according to gender composition

Gender	No. of. shops	%
Male	67	91.8
Female	6	8.2
Total	73	100.0

Source: Socioeconomic survey conducted under the study, 2018

4. Ethnicity of the shop owners

93. Out of the total population, 78.1% of shop owners are Sinhalese and 16.4% are Moor as shown in the table 10 below.

Table 10: Shop owners by Ethnicity

Ethnicity	**No. of Persons**	**%**
Sinhalese	57	78.1
Tamil	4	5.5
Moor	12	16.4
Total	**73**	**100.0**

Source: Socioeconomic survey conducted under the study, 2018

5. Building information of the shops

94. As per the Department of Census and Statistics data in 2012, total of households in Fort GN division have permanent type of structures.

95. As per the information collected through socioeconomic sample survey, 61.6% shops are one storied buildings and 38.4% are two storied buildings.

Table 11: Type of Structure

Type of Structure	No. of shops	Percentage
One Storied	45	61.6
Two Storied	28	38.4
Total	**73**	**100**

Source: Socioeconomic survey conducted under the study 2018

6. Education

96. Table 12 below describes the educational attainment of the surveyed population and 33% have at least studied up to G.C.E. Ordinary Level.

Table 12: Educational attainment

Education	Male		Female		Total	
	No. of Persons	%	No. of Persons	%	No. of Persons	%
Can place signature	1	1.5	0	0	1	1.4
Class I-V	1	1.5	1	16.7	2	2.7
Class VI-G.C.E. (O/L)	22	32.8	2	33.3	24	33.0
G.C.E. (O/L) Pass	9	13.4	2	33.3	11	15.0
Up to G C E A/L	21	31.4	1	16.7	22	30.1
G.C.E. (A/L) Pass	9	13.4	0	0.0	9	12.3
Other	4	6.0	0	0.0	4	5.5
Total	**67**	**100.0**	**6**	**100.0**	**73**	**100.0**

Source: Socioeconomic survey conducted under the study 2018

7. Principal economic activities, agricultural pursuits

97. **Livelihood Activities:** Table 13 describes the type of business activities among the surveyed business community.

98.

Table 13: Type of business

Type of the business	No of shops	%
Retail shops	11	15.1
Custom document clearance	17	23.3
Eating house	13	17.8
Communication Centers	12	16.4
Transport service	9	12.3
Opticians	3	4.1
Betting Centre	2	2.7
Saloon	1	1.4
Tailoring	1	1.4
Lottery stall	2	2.7
Other	2	2.7
Total	73	100.0

Source: Socioeconomic survey conducted under the study 2018

99. Out of 73 shops 23.3% are facilitating custom document clearances, 17.8% are eating houses, 16.4% are communication centers and 15.1% are retail shops.

100. Table 14 given below presents the distribution of monthly average income of the shop owners.

Table 14: Monthly average income

Income category	Average monthly income (SLR)	
	No. of HHs	**Percentage**
5,001 – 15000	5	6.8
15,000 – 50000	24	32.9
50,000 – 75000	16	21.9
75,000 – 100,000	12	16.4
More than 100,000	16	21.9
Total	**73**	100.0

Source: Socioeconomic survey conducted under the study 2018

101. According to the table 14, 21.9% shop owners earn more than Rs. 100,000.00 per month from their business.

102. Table 15 show the status of business registration.

Table 15: Status of Business registration

Status of Registration	No	Percentage
Registered	51	70.0
Not registered	22	30.0
Total	73	100.0

Source: Socioeconomic survey conducted under the study 2018

103. On average 70% shops among the surveyed business community have been registered their business. Some of them have registered their business in Colombo Divisional Secretariat and some have registered in Company registrar office in Colombo.

104. Table 16 describes the number of employees occupied and only 28 shop owners have hired workers to operate their business. Among them 53.6% are one worker shops and 17.9% are three worker shops.

Table 16: No. of employees occupied

Number of employees	No of shops	Percentage
1	15	53.6
2	6	21.4
3	5	17.9
Above 3	2	7.1
Total	28	100.0

Source: Socioeconomic survey conducted under the study 2018

105. Details of the shops according to the ownership are given below.

Table 17: Shop ownership

Shop ownership	Shop	Percentage
Self-Owned	20	27.4
Rented	53	72.6
Total	**73**	100.0

Source: Socioeconomic survey conducted under the study 2018

106. Above table shows that 27.4% shops are operated by the shop owners and other 72.6% shops are operated by the renters.

8. Availability of infrastructure facilities

107. Table 18 given below present the availability of electricity and pipe water facilities

Table 18: Availability of electricity and pipe water

Type of Facility	Available	Unavailable
Electricity	82.2	16.4
Pipe water	6.8	91.8

108. Out of 73 surveyed shops, 82.2% of shops have electricity facility and 6.8% of shops have pipe water facility.

9. Transport Facilities

109. **Road Transportation:** Road transport is the dominant mode of transportation in the project area. Lotus road, Sri Baron Mawatha and Olcott Mawatha were observed as feeder roads for the road requirement of the project area. As well as, most people in the project area use these roads for their day to day activities. People mainly use these roads to travel to city centers for public and private sector employments, shopping, selling and marketing. As well as, these roads provide access to Port Authority, Sri Lanka Telecom and other service providing centers in the area.

110. **Rail Transportation:** Colombo Fort and Maradana railway stations are major rail hub in Colombo, Sri Lanka. This railway transport facility is heavily used by a large number of public and private sector employees, school children and other commuters for travelling and transpiration of goods. Current traffic congestion becomes serious during the morning and evening peak period within the urban area of the Colombo city. As well as, Colombo is the center of economic activity in Sri Lanka. The project area is heavily populated and its growing population requires satisfactory modes of transport reducing their dependency on one system of transportation. Railway is the second best alternative available for it.

E. Culturally, historically and archaeologically important places in Project area

111. During the field survey, no archeologically important places were identified within or close to the project area.

F. Compliance with ongoing development projects adjacent to the project area

112. SLPA has already obtained Preliminary Planning Clearance from UDA ensuring the proposed development is in compliance with the Colombo Development Plan of UDA of Ministry

of Megapolis and Western Development (MOM&WD). In addition following infrastructure development projects are also ongoing nearby to the proposed site for the MC which are also implemented under the master plan of Ministry of Megapolis and Western Development.

- Port Access Elevated Highway project proposed by RDA
- New Bridge Construction Project Over Kelani River proposed by RDA
- Colombo Port City Development Project of MOM&WD
- Elevated Highway from New Kelani Bridge to Athurugiriya proposed by RDA
- Light Rail Transits Project of MOM&WD
- Colombo Suburban Railway Project proposed by Sri Lanka Railway
- Light Rapid Transit System implemented by MOM&WD
- Multi Modal Transport Hub (MMTH)-Colombo fort/Pettah implemented by MOM&WD

V. ANTICIPATED ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION MEASURES

113. This chapter describes anticipated impacts on the existing environment and social setup during pre-construction, construction and operational stages of the project. Feasible mitigation measures were designed based on environment best practices to minimize the adverse impacts or manage to acceptable limits while enhancing the beneficial impacts of the project. Impacts identified here are applicable for construction of the MFC for SLPA.

A. Pre-construction phase

1. Impacts to utilities

114. Existing underground storm water drainage pipes which are under the foot print of the MFC will have to be shifted prior to the excavations for laying the building foundation. During the study it was noted that no other underground utilities are located within the land. However it will be confirmed the location of any underground utilities with the relevant service providers of water supply, electricity, telecommunication and wastewater systems during the design phase.

115. Initial consultation and consent shall be taken from relevant service providers such as CMC, Ceylon Electricity Board (CEB), National Water Supply and Drainage Board (NWSDB), Sri Lanka Telecom (SLT) well in advance will minimize the impacts. If such utilities are found within the project site which need to be shifted, following mitigation measures shall be implemented to minimize the impacts.

116. Advance notice shall be provided to the users of the relevant service about the time and the duration of the utility disruption to avoid or minimize the difficulties that they will face in the case of sudden disruption of these services. Use of well trained and experienced machinery operators to reduce accidental damage to the public utilities. Substitute sources of utilities during the disruption period shall be provided to conduct the services continuously. Further restoration of the public utilities as soon as possible as directed by the Engineer will help to minimize the impacts.

117. A storm water drainage and management system shall be introduced to the MFC in compliance to the building approval of the CMC therefore loss of underground drainage pipes will be compensated.

2. Wastewater and solid waste management

118. If wastewater drainage system of the MFC will not be properly designed to meet the required capacity and will not be disposed environmentally friendly manner, wastewater will possibly contaminate the Beira Lake Canal which can further pollute the water body. Further disposal of solid waste to the Beira Lake Canal will also further degrade the water quality if proper disposal system is not incorporated to the MFC.

119. As mentioned in the chapter 2.E above, it is agreed that wastewater generated from the MFC will be connected to the main sewerage system of the CMC through a drainage system which is incorporated to the design of the MFC.

120. A solid waste management plan will be prepared and approved by Colombo Municipal Council (CMC) which consists of types and quantities of solid waste to be generated from the

MFC and the method of disposal. A solid waste collecting system will be introduced including waste bins, temporary storages with adequate capacity and dedicated staff to handle solid waste within the MFC. Facilities will be introduced to separate the solid waste in compliance with the requirement of CMC to which solid waste (separated) will be finally handed over.

3. Health and Safety Considerations

121. In order to ensure health and safety of the MFC during the operational period, necessary requirements shall be incorporated to the design of the MFC. This will include a comprehensive health and safety plan covering all aspects of health, hygiene and occupational safety in the building such as: provision of safe drinking and washing water; provision of adequate toilets separate for men and women; medical first aid kits; firefighting equipment including sprinklers and fire escape route on every floor; safe electrical wiring system; appropriate signage; adequate ventilation etc… Further design shall be included a method of avoiding stench of the Beira Lake Canal getting in to the building to ensure the healthiness of the staff.

B. Construction Phase

1. Noise and vibration impacts due to construction activities

122. Since the project area is located within a highly congested environment, high noise and vibration will be significant issues during the construction stage. Inconvenience and stress to the occupants, workers of the Sri Lanka Customs, Sri Lanka Telecom Ltd and public who use the nearby roads, disturbance to the occupants of the Document processing Centre of Colombo Harbor and vendors of Lotus road will be possible if project activities will generate excessive noise and vibration.

123. Pilling activities, clearing and demolishing of existing buildings and structures within the site, cutting, filling, compaction, leveling operation of machineries and vehicles will create nuisance to the surrounding community through creating noise and vibration. The impact will be particularly significant during the day time as the receivers are mainly available near to the project site.

124. Structural damages to buildings, structures and shops located along the Lotus Road and material extraction sites could be resulted due to excessive vibration from construction activities.

125. Regular monitoring of noise and vibration as per the Environmental Monitoring Plan (EMOP), complaints based and activity based monitoring and/or as directed by the Engineer will be carried and Contractor shall strictly comply with the permissible levels specified in the noise & vibration control regulations for all construction activities, vehicles and equipment.

126. Contractor shall equip his heavy construction equipment with exhaust silencers to limit the noise generation from construction equipment (compacters, loaders, vibratos and cranes) not to exceed 75 dB during day time and Contractor shall ensure that noise generated from construction activities at night will not exceed 50 dB.

127. Special approval shall be obtained for construction activities during night time from Central Environmental Authority (CEA).

128. Contractor shall regularly maintain all construction vehicles and machinery to meet the National Emission Standards.

129. A pre-condition crack survey shall be conducted for the shops located along the Lotus road and other buildings within an agreed corridor with the Engineer and crack damages shall be compensated if resulted by the project activities. The survey shall be conducted well in advance to the construction activities including demolition of the warehouse.

130. Further the Contractor shall conduct a survey to explore any historical building/structures within a corridor agreed with the Engineer around the MFC and special precautions shall be taken and frequent monitoring shall be conducted if any historical building found when carrying out project activities which generate vibration.

131. The project site shall be provided with temporary noise barriers to control noise during construction activities.

132. Operating well maintained plants at the site and regular servicing of such plants during the construction period, shutting down and/or throttling down of machine and plant that may be in intermittent use, between work periods and limiting the project activities and vehicular movement during certain periods of day and night will minimize the noise and vibration impacts.

2. Air quality Impacts

133. Air quality deterioration due to emissions of construction activities will be a significant issue for the surrounding environment if the proper mitigation have not been used. Surrounding area is highly congested with commercial and state buildings with differential community consists occupants of Sri Lanka Customs, Sri Lanka Telecom Ltd, Document processing centre of harbor, road vendors of adjacent small shops at Lotus road and public.

134. Nuisance and health impacts to public, occupants, roadside vendors are the possible impacts due to emission of dust and obnoxious gasses from construction activities such as clearing and grubbing, demolition of buildings, material handling and operation of machineries and vehicles etc... In addition, dust emission sources include exposed surfaces, uncovered material transportation activities and stockpiles.

135. Suspended particle matter from dust emissions, gaseous pollutants in the form of Sulphur Dioxide (SO_2), Carbon Monoxide (CO), Oxides of Nitrogen (NO_x) etc. are among the exhausts from plant / machinery involved in construction and related activities.

136. Regular water sprinkling (based on the weather condition) of the construction sites and roads which are used for the transportation of construction materials in regular intervals will control emission of dust. Placement of dust barriers around the project site shall minimize dust spreading to the surrounding.

137. Regular monitoring of air quality at locations as given in the Environmental Monitoring Plan (EMoP) and/or as directed by the Engineer and measures shall be immediately taken if particular results are exceeding the relevant permissible levels. Contractor shall strictly comply with National Emission Standards for all construction vehicles, equipment and material processing plants.

138. Water sprinkling systems shall be fitted to the crushers, concrete batching plants and hot mixed plants and any other dust emitting activity to minimize dust impacts from the construction sites.

3. Impacts on traffic flow and road network

139. Movement of construction vehicles and machineries across the city of Colombo, along Olcott Mawatha and Lotus Road will disturb the existing traffic flow and traffic congestions will be possible. The impact is significant during peak hours such as office times and schooling times.

140. Further the temporary bus parking located along the Lotus road will also be disturbed by the construction vehicles.
141. On the other hand, damages to existing road network will be possible due to transportation of construction material, machinery and equipment.

142. A method statement on traffic management related all project activities shall be prepared by the Contractor and approved by the PIC in advance to commencement of construction activities. Consultation of Sri Lanka Police and CMC is advisable in preparing the method statement.

143. Permit from Local Authorities (LA) shall be obtained to use roads for transportation of construction materials, machinery and equipment etc...The contractor shall ensure that transportation of construction materials by himself and suppliers should not exceed the carrying capacity of the roads. Peak traffic hours shall also be avoided in transporting the material to the site. Regular Maintenance of roads and their restoration which are used for hauling activities for the construction related activities.

4. Disposal of debris of demolished structures and excavated unsuitable soil

144. Demolition of existing buildings will generate denuded matter which will have to be disposed. It is estimated 3400m^2 of asbestos, 1286m^2 of concrete and 50m^2 of bricks will have to be disposed due to demolition of existing buildings. These demolished materials need to be temporary disposed within the site and loaded to transport vehicles, trucks to unload at the land fill sites located at offsite locations. Further 6500m^2 of excavated material will need to be removed from the site due to the construction. Impacts to surface water hydrology, siltation of water bodies, nuisance to public, ecological impacts and soil quality impacts will be possible if such material will be not be disposed in environmentally friendly manner.

145. All debris and residual spoil materials including any left out earthen material, demolished structures shall be disposed only at locations approved by the relevant Local Authority (LA) and SLLRDC (if required by the LA). A disposal site has been identified in Mabima Road which is about 13km away from Colombo Port.

146. Spoil materials (soil, sand, rock etc.) generated during the construction activities shall be utilized wherever found suitable for activities like site leveling, back- filling etc... with prior approval of the Engineer.

147. Suitable dumping grounds/ land fill sites operated with required licenses shall be identified for the disposal of denuded material from structures to be demolished, excavated and discarded material and continuous monitoring shall be carried out to ensure disposal to such sites.
The Contractor will be instructed to prepare a risk management plan specifying the method of handling and disposing the asbestos removed from the warehouse and other buildings since asbestos is recognized as carcinogenic. The risk management plan should include method of disposal, locations (sites selected for disposal of general waste and debris shall not be used for

this purpose) and occupational health and safety of the laborers who handle the asbestos, based on World Bank's Good Practice Note on Asbestos and ILO's Guidelines on Asbestos Further disposal of construction debris containing asbestos is a scheduled waste as per the Gazette Extra Ordinary 1534/18 dated 01.02.2008 for which an approval from CEA will be required.

148. The debris and spoil should be disposed in such a manner that;

- Does not block the waterways and drainage paths
- The disposed materials shall not be washed away by runoff
- Debris shall not be disposed into any agriculture lands, flood prone areas, marshlands, down slopes or any environmental sensitive areas
- Avoid/ Minimize annoyance to general public and road users

5. Health and Safety Impacts

149. Accidental hazards will be possible to the general public along the Lotus Road, Olcott Road, shops along the Lotus Road, occupants of Document Processing Centre and the project staff due to indecent operation of machineries, construction vehicles, falling objects from higher floors, electric hazards, etc… if necessary precautionary measures will not be in place during construction phase. Following mitigation measures will minimize health and safety hazards from project work.

- Contractor shall organize awareness program regarding personal safety of workers, employees, road side vendors and general public at regular time basis.
- Establishment of precautionary measures to reduce the likelihood of accidents (warning signs, barricading, speed limits for material transport vehicles, markings) and night visibility of them shall be ensured.
- Proper safety measures such as installing safety nets will avoid accidental hazards due to falling of construction materials from higher floors. Contractor shall pay special attention of the safety of public along the Lotus road including shops and public along the foot path.
- Providing Personnel Protective Equipment (PPE) for laborers such as protective foot wear, helmets, goggles, eye-shields and clothes to the workers depending on their duty (Mixing concrete, blasting, handling equipment etc…) and monitoring of use of PPEs
- Arranging a first aid unit and transport facilities to take injured people to the nearest hospital.
- Contractor shall place firefighting equipment where necessary
- Use experience and well trained workers for the handling of machinery, equipment and material processing plants

6. Loss of Access

150. Demarcation of the construction site will disturb the access to Document Processing Centre of Sri Lanka Customs and provision of safe passage for both pedestrian and vehicle movement or provision of alternative entrance to the Document Processing Centre will mitigate the impact

7. Extraction and transportation of construction materials

151. Construction materials such as soil, sand and gravel will be obtained from borrow sites and quarries. Extraction and transportation of materials from such sites will cause noise, vibration,

dust, induced slope failure, negative visual impacts, creation of mosquito breeding sites, and damage to private properties and minor roads. Heavy trucks transporting materials to construction sites will cause disturbances to local traffic, damage minor roads, and increase dust and noise nuisance.

152. Quarries and borrow pits operated with a valid approval shall be used for the project and above impacts could be mitigated by adhering to conditions laid down by licensing agencies for such quarries and borrow sites such as Geological Survey and Mines Bureau (GSMB) and CEA under their approval. Material suppliers who are operated with required licenses will only be selected if materials are to be purchased. Keeping provisions for repairing and restoration of all property damages including the roads used for the transportation of construction materials by the contractor in the contract document and use of covers over transported materials to guard against dust blow and water spraying to dampen the gravel surfaces will mitigate the impacts due to transportation of construction material.

8. Handling environmental issues/grievances during construction

153. The Contractor shall appoint a qualified Environmental Manager for implementation of the EMP and also for community liaison to handle public complaints and grievances. The Contractor shall develop a suitable mechanism to receive and address the complaints and grievances. The person who is responsible for receiving complaints shall be easily accessible by the public. The Environmental Manager should promptly investigate and review environmental complaints and implement the appropriate corrective actions. A register consisting of all the complaints made is to be passed to the Engineer within a reasonable time after reception. Action taken by the Environmental Manager on complains must be reported to the Engineer. It is recommended to have a Register at the contractor's site office and Sri Lanka Ports Authority for the affected community to have easy access.

154. Complaints that could not be resolved shall be referred to Grievance Redress Committee (GRC) level 1 at the Grama Niladari level and level 2 at the DS level.

9. Impacts on Biology/Ecology

155. Several urban tree species (around 10) will have to be removed for construction of proposed building. This will cause loss of dust filtering capacity, absorption of gaseous pollutants, loss of shade, loss of scenic value. Also damage to the flora will have a direct impact on fauna that depends on these vegetation such as butterflies and birds.

156. All trees that need to be felled will be marked and handed over to the timber Corporation for cutting and removal.

157. In order to mitigate this impact a compensatory replanting program will be carried out at least 1:3 ratio wherever space is available or at locations near to the project area which can be secured with the help of SLPA and/or CMC. When selecting the species, endemic and threatened species will be given a higher priority.

158. The Beira Lake Canal may be further contaminated, if waste generated due to the project activities such as soil, grease, cement, paints, solid waste and silt add into the water due to the construction activities. Since the project area is located near to the Coastal zone the contaminants can be quickly washed in to the sea. This will cause pollution of the canal and also the marine

environment, and kills aquatic life and adversely affect for the associated fauna inhabiting in the project area.

159. In order to avoid this adverse impact construction waste should be separately collected and disposed in a proper way as approved by the Engineer, without releasing to the water body.

C. Operational Phase

1. Impacts due to wastewater discharge

160. Health and sanitary impacts and further degradation of water quality of Beira Lake Canal will be possible due to leaking of wastewater, sewage from the wastewater system and toilets will be possible as a result of poor maintenance. The wastewater system and toilets shall be periodically maintained and a proper monitoring system will be introduced to the MFC in order to avoid this impact.

2. Impacts due to solid waste

161. Proper implementation of solid waste management system which is approved by CMC which consists of methods for waste reduction, waste separation and recycling etc. with adequate monitoring will reduce the possible impacts due to solid wastes from the MFC.

3. Traffic impacts during operational period

162. Concentration of port activities at a single location will increase the traffic flow towards the MFC which create traffic congestions around the MFC. Proper traffic management plan will be implemented by the Sri Lanka Ports Authority with adequate parking facilities under the coordination of CMC and Colombo - traffic police will help to avoid the impact.

4. Health and safety impacts

163. Hazards due to fire, electric shocks etc… will impact the safety of the users and visitors of the MFC. Implementation of a safety plan including instalment of firefighting equipment, water sprinkling systems for each floor, warning sign boards (for example for high voltage areas) and first aid facilities will minimize the safety impacts during operational phase of the MFC.

D. Positive Impacts of the Project

164. Construction of the MFC for the Sri Lanka Ports Authority will create following positive impacts.

- Construction of the MFC will facilitate employers of the Sri Lanka Ports Authority to concentrate their works into a one location. This will improve their communication facilities and enhance the work efficiency.
- Due to establishment of the MFC, demand for food, transport, accommodation, communication and parking will be increased around the area. This will provide new employment opportunities for the public.

VI. INSTITUTIONAL REQUIREMENTS AND ENVIRONMENTAL MANAGEMENT PLAN AND GRIEVANCE REDRESS MECHANISM

A. Institutional Arrangements

165. The Ministry of Highways and Road Development (MOHRD) is the Executing Agency (EA) for the project on construction of the MFC for SLPA and the secretary to the ministry will be responsible for decisions on overall approvals and operational policies of the project. RDA will be the Implementing Agency (IA). On the other hand, SLPA will be the Client to whom the MFC will be handed over after completion. A Project Implementing Unit (PIU) will be setup headed by a Project Director (PD) who will be responsible for carrying out project activities. The PIU will be responsible for implementing the project. The PD will be assisted by a staff of engineers, environment and social safeguards officers and other administrative staff. The PIU will be assisted by a Project Implementing Consultant (PIC) who will be responsible for reviewing and approving designs and method statements prepared by contractor, supervising civil works of contractor and reviewing and certifying bills submitted by contractor. A team of experts including engineers, quantity surveyors, environment and social safeguards experts will be working in the PIC headed by a Team Leader (TL).

166. Safeguard team of PIU, PIC and the contractor is primarily responsible for safeguards compliance of all activities carried out under the construction of the MFC. The Environmental and Social Development Division (ESDD) of the RDA will also assist the PIU in monitoring of safeguards compliance by the contractor during the construction period.

B. Environmental Management Plan and Monitoring

167. The SPS, 2009 as well as the Environmental Safeguards Manual of RDA, outlines the requirements for an Environmental Management Plan (EMP) which is presented as a matrix developed based on best practices for environmental management. This IEE report includes EMP prepared for construction of MFC which is given in Appendix 6.1. This EMP covers all impacts and mitigation measures identified within the project. However contractor will be responsible for preparation of Site Specific Environmental Management Action Plan (SSEMAP) based on the EMP given in this IEE. SSEMAP is supposed to include site specific impacts related to site specific construction activities and relevant mitigation measures proposed to the particular locations in order to minimize relevant impacts. SSEMAP will be supported by site plans in which proposed mitigation measures are graphically presented. And the PIU will oversee the effectiveness of the implementation with the assistance of the PIC. In addition, ESDD of RDA is also responsible for compliance-based monitoring of implementation of the SSEMAP regularly.

168. In addition there will be an Environmental Monitoring Plan (EMOP) based on the project cycle to monitor EMP implementation by measuring environmental parameters. During the pre-construction phase baseline data on air, water quality, noise and vibration levels will need to be collected. This data will provide baseline information on the existing conditions which could be used to compare the changes in quality levels during construction and operational phases. Such a comparison will reflect how effective the EMP is and help to revise it to rectify any shortcomings that will cause any adverse impacts. Appendix 6.2 presents the EMOP prepared for the project.

169. All costs for implementing the mitigation measures as specified in the EMP must be included in the Bill of Quantities (BOQ) bill item under Bill No.1. The contractor shall implement the EMP through the budget allocated for the EMP in the BOQ. In general, 0.25% of the total

project price is allocated for implementation of the EMP. Meanwhile approximate cost of implementation of the EMOP for the MFC will be US$ 4465.00 (Please refer to the Appendix 6.2).

170. Furthermore the contractor will also be responsible for updating/modifying the EMP and EMOP if there are any significant changes in the project site, activities, conditions, engineering design or if any unpredicted impact will arise with the approval of PIC.

C. Grievance Redress Mechanism

171. Grievances from the affected people on social and environmental issues during project implementation will be addressed mainly through the Grievance Redress Mechanism (GRM) which is to be formed using existing local administrative system. Accordingly, grievances will be addressed at three levels depending on the nature and significance of the grievances or complaints. The first will be at the grass roots level where complaints will be directly received and addressed by the contractor, PIC or PIU representatives on site. Grievances which are simple but still cannot be addressed at the grass roots level will be addressed at the Grama Niladhari (GN) level. More complex grievances which cannot be addressed at the GN level will be addressed at the Divisional Secretariat (DS) level. There will be a Grievance Redress Committee (GRC) at the GN and DS levels.

172. At the GN level the GRC members will be:

Grama Niladari of the area	Chairman
Representative of PIU	Secretary
Representative of Supervision Consultant	Member
Representative of Contractor	Member
A community member/religious leader	Member
Woman representative from the local community	Member

173. At the DS Level GRC members will be:

Divisional Secretary of the area	Chairman
Representative of PIU	Secretary
Grama Niladari	Member
Representative of Supervision Consultant	Member
Representative of Contractor	Member
Representative of a social organization (NGO/CBO) of the area	Member
A community member/religious leader	Member
Woman representative from the local community	Member

174. To make the GRM process gender responsive the GRC will include one woman member to represent the local community women. Further when grievances or complaints are submitted to the GRC, both women and men complainants will be treated equally and necessary measures will be taken to address the grievance in the best way possible.

175. Recommended steps with timeline on the operation of the GRM is provided in Figure 6.1. In addition, a contact person will be designated to receive complaints within the PIU to help address all concerns and grievances of the local communities and affected parties. Contact details of this person will be provided in the project information display board that will be placed at the project site.

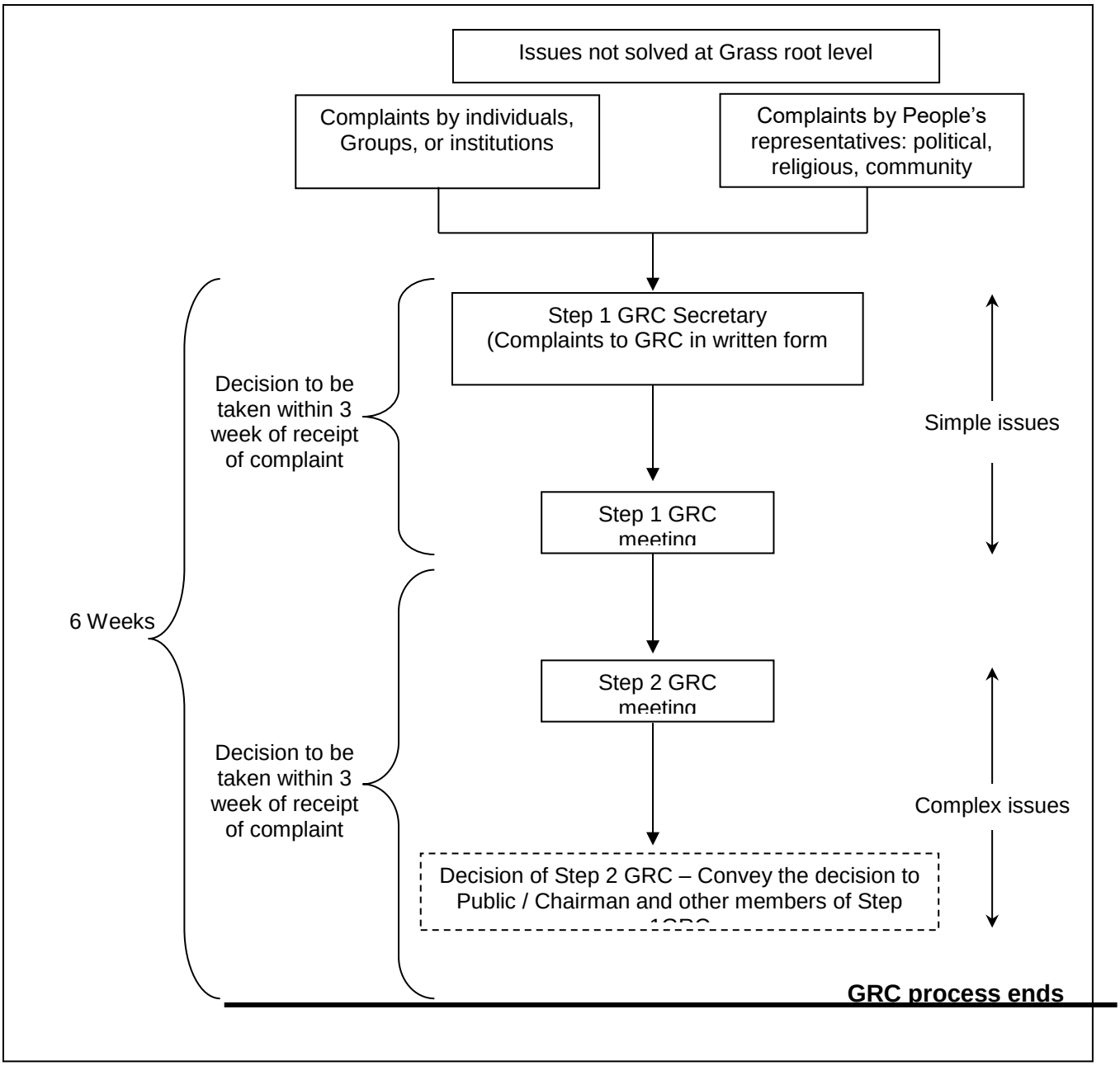
176. Under the GRM, project affected people may resort to legal redress at any stage and the legal redress can run parallel to the GRM. Project-affected people can also submit complaints to

ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-financed projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures

177. The flow chart of the GRM is presented in the succeeding Figure 7.

178. For this project, the contractor will be required to establish an information centre at project site for receiving and addressing complaints or grievances and forwarding them to the PIU and PIC as necessary.

Figure 7: GRM process



VII. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

A. Public and stakeholder consultation

179. This helps to understand viewpoints of stakeholders and to respond to their concerns and suggestions during the early stages of the project, thereby incorporating valuable suggestions to the designs and reducing objections to the project. Public consultations and two Focus Group Discussions (FGD) were conducted to obtain the perception of community about the project and environmental and social problems prevailing in the project area. Details of public consultations are given in Appendix 7.1.

Figure 9: Consultation with Colombo Divisional Secretary

Figure 8: Consultation with Grama Niladhari – Colombo Fort division

180. Two FGDs were conducted on 19th and 21st of February 2018 targeting the business community along the Lotus Road and the meetings were arranged with the assistance of Trade Association members of the area. 37 persons who are involved in business activities along the Lotus Road were participated to the FGDs out of that four were women.

Table 19: Summary of Key points discussed in FGDs with photographs

Location	Key points	Photographs
No, 68, Lotus Mawata, Colombo 01.	• Here most of the shops are doing Custom document clearance work. Therefore this place is ideal them to carry out their work as SLPA and Custom office are closer to here. • During the construction period our building will be cracked due to the vibration. RDA should compensate us for such damages. • During the construction period environment and social issues will arise. Therefore, public should have a proper place to forward such issues to get solutions. • Time to time RDA should carry out awareness program and discussions with us regarding the project activities.	

Location	Key points	Photographs
	• When demolishing the old warehouse building dust will be arisen. Therefore dust barriers installed before demolishing the building.	
No. 24, Lotus Road, Colombo 01	• This is a development project to the Colombo city as well as for the entire country. Therefore we like this development project. • It is good if you can carry out this project without affecting to our business. • During the construction period traffic congestion will be increased due to the construction vehicles. Construction work will create vibration impacts to our shops. • Here, there are about 110 shops. It is good if you can develop these shops with better facilities. • We think after opening of the MFC, our business will be improved.	

B. Disclosure of information

181. According to the requirements of the ADB SPS, for environment category B project roads the respective draft IEE will be disclosed before the Management Review Meeting (MRM) or equivalent meeting or approval of the respective project, if there is no MRM. Signboards with project information including details on nature of construction works, road length, construction period, name of contractor, contract sum and contact information for reporting complaints or grievances will be posted in three languages (Sinhala, Tamil and English) for rural roads. For the construction of the MFC, there will be sign boards on period of works and contact information for reporting complaints or grievances in three languages.

182. During project implementation annual environmental monitoring reports will be prepared and submitted to ADB for disclosure on the ADB website.

VIII. CONCLUSION AND RECOMMENDATIONS

183. This Initial Environmental Examination has discussed various aspects of the proposed project on construction of the MFC for SLPA to be implemented by RDA under ADB financing.

184. As discussed, a 17-storied building for the MFC will be constructed by RDA in order to compensate demolition of buildings within the port premises due to construction of PAEH. The MFC will be constructed within the land belonged to SLPA located at Lotus Road, Colombo 01 and all construction activities will be restricted to the available land.

185. A line of shops located along the Lotus Road, head office of Sri Lanka Telecom, Sri Lanka Customs and Beira Lake Canal are the environmental and social sensitive receptors located within the study area for project induced impacts. The project site is not located within any protected site, forest areas and the proposed site is not affected by natural disasters such as floods or landslides.

186. There will not be any direct social impacts as the project will not cause acquisition of lands and indirect impacts will include air quality impacts, excessive noise and vibration, safety issues etc which are temporary in nature. Indirect impacts to environmental and social set up of the project area will be minimized with effective mitigation measures as given in the chapter 5 of the report and EMP.

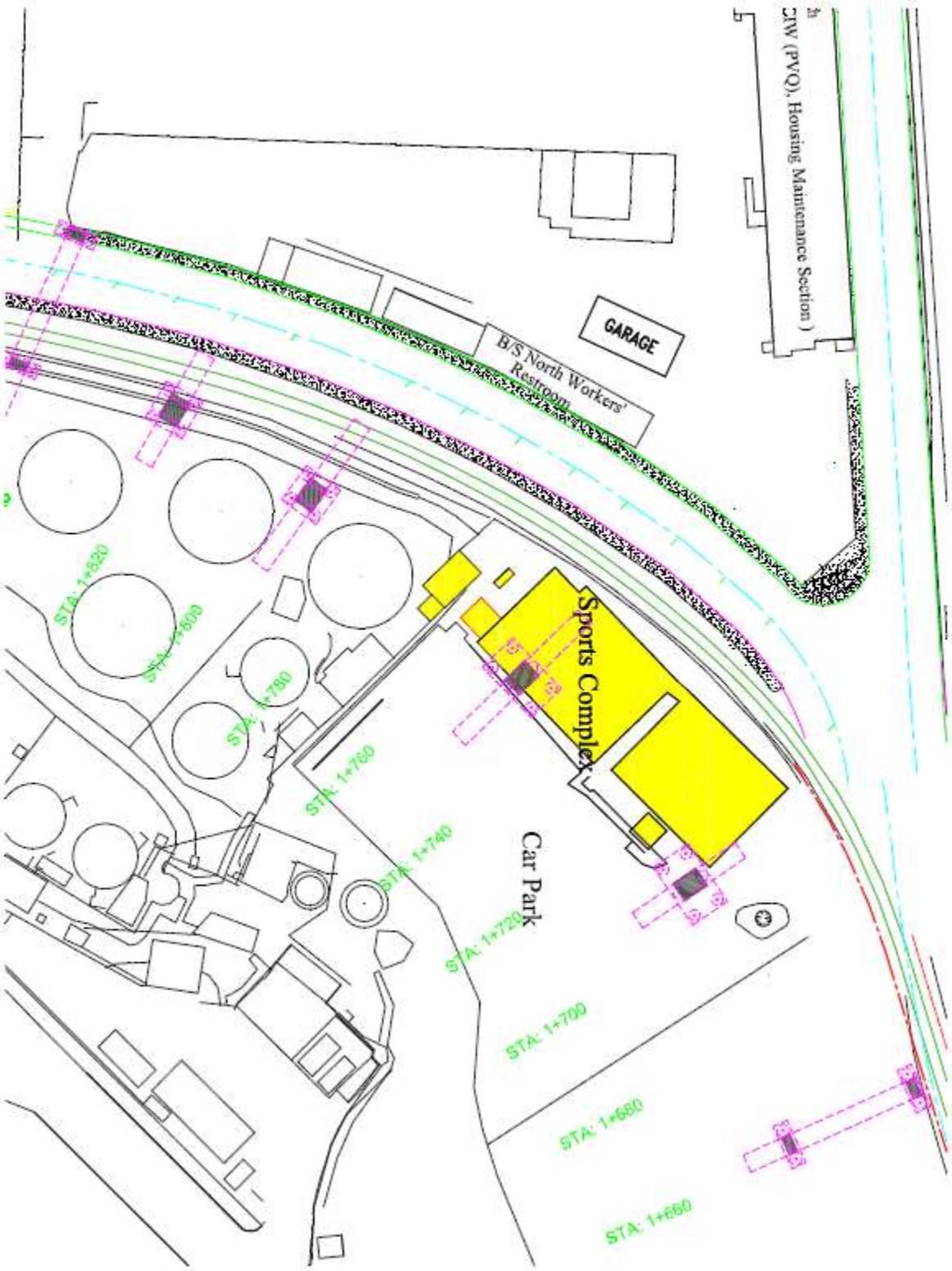
187. An EMP and EMOP have been prepared as part of this report. These are required to be updated and incorporated in to tender documents and converted into contract specific documents before the commencement of construction activities.

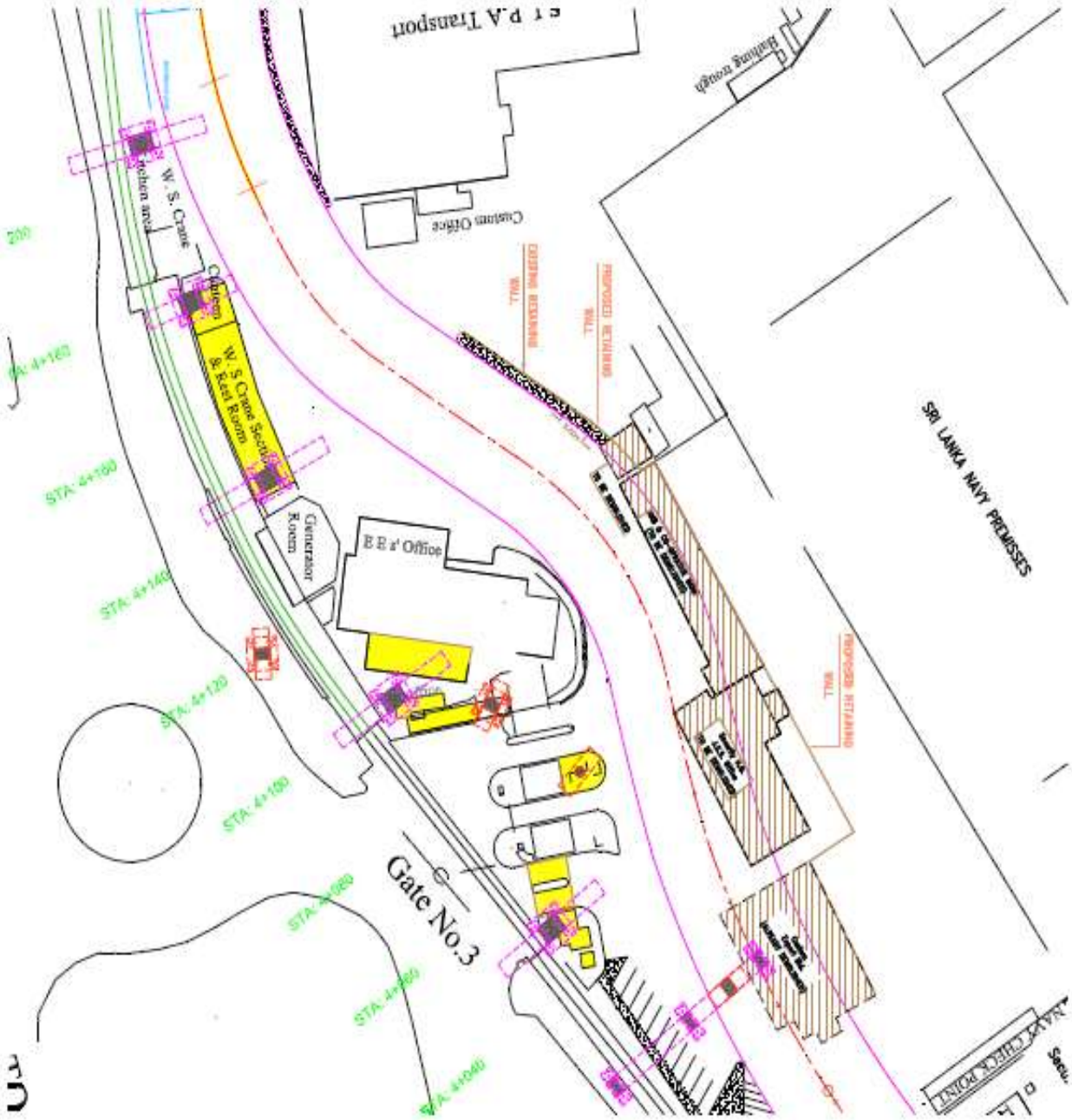
188. Construction of the MFC for SLPA will facilitate the construction of PAEH which will be a positive impact to the expressway network of the country. On the other hand, SLPA will be able concentrate all its activities under one roof which will increase their work efficiency thereby will improve efficiency of the port activities and ultimately both projects will facilitate the socio - economic development of the country.

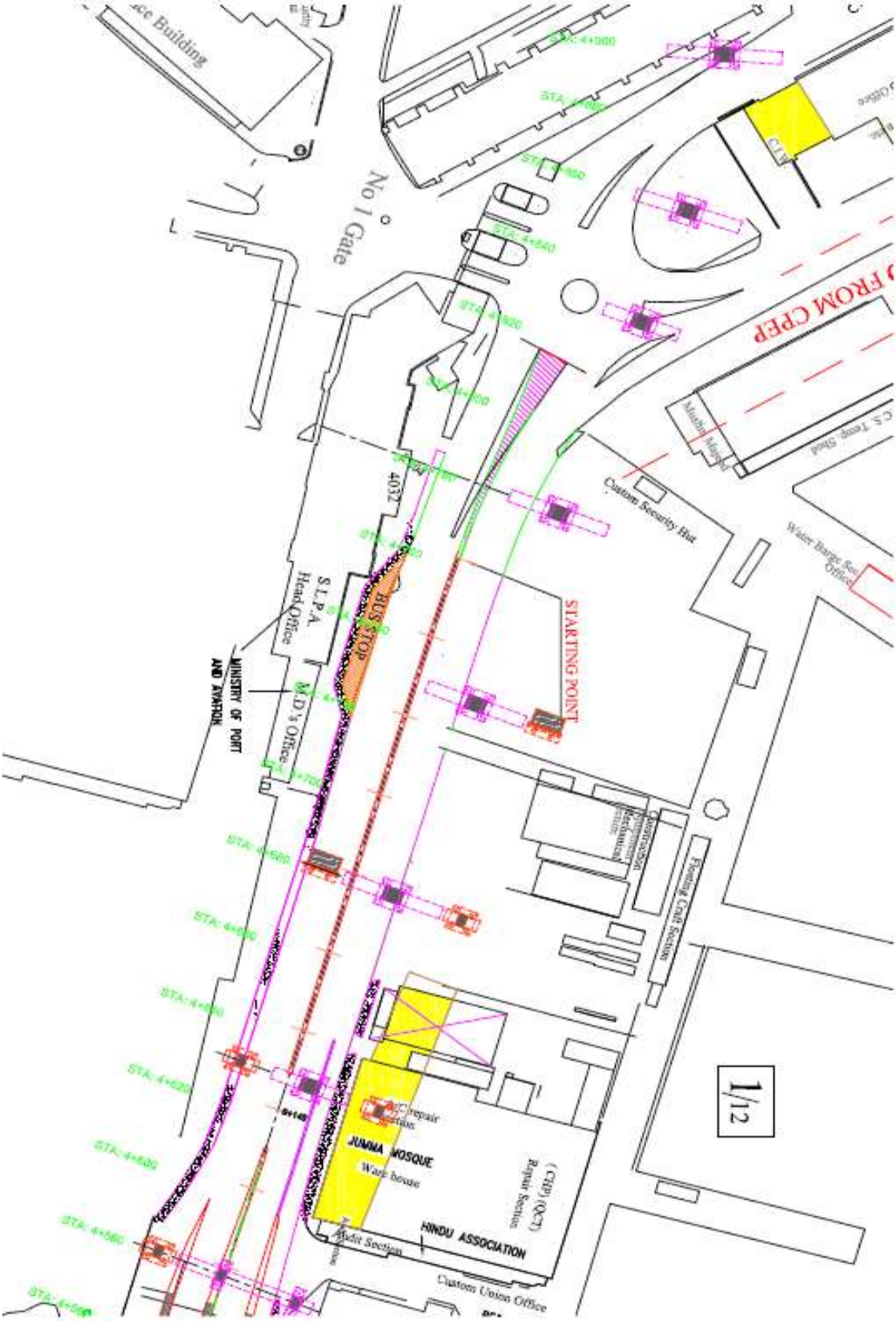
APPENDIX 1: LOCATION MAP OF BASELINE MONITORING

APPENDIX 2: LOCATION MAP OF THE PROJECT SITE

APPENDIX 3: LOCATION OF THE BUILDINGS TO BE DEMOLISHED



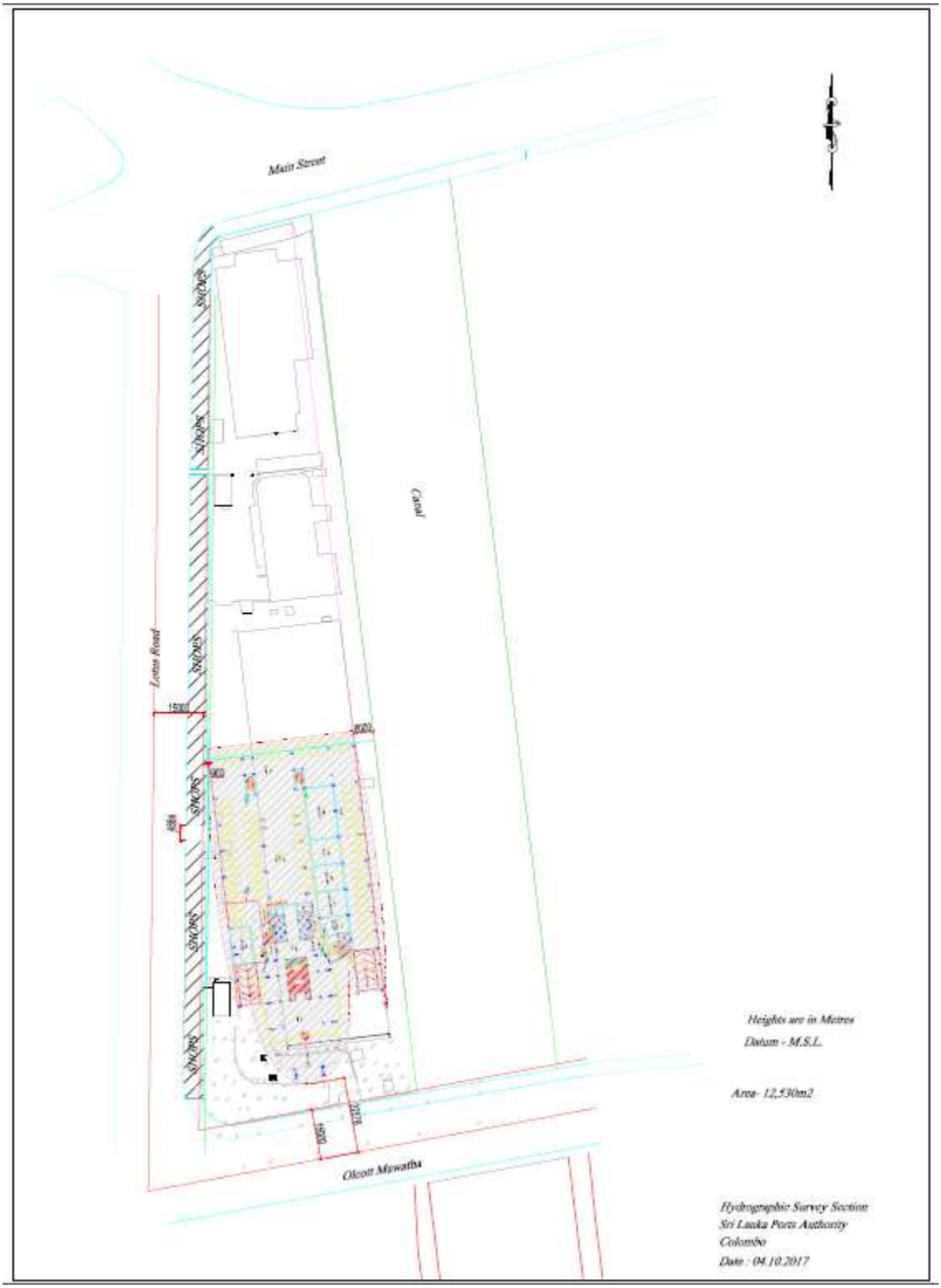

W. S. Crane
W. S Crane Section & Rest Room
Generator Room
E E s' Office
Gate No.3
SRI LANKA NAVY PREMISES
STA: 4+160
STA: 4+140
STA: 4+120
STA: 4+100
STA: 4+080
STA: 4+060
STA: 4+040

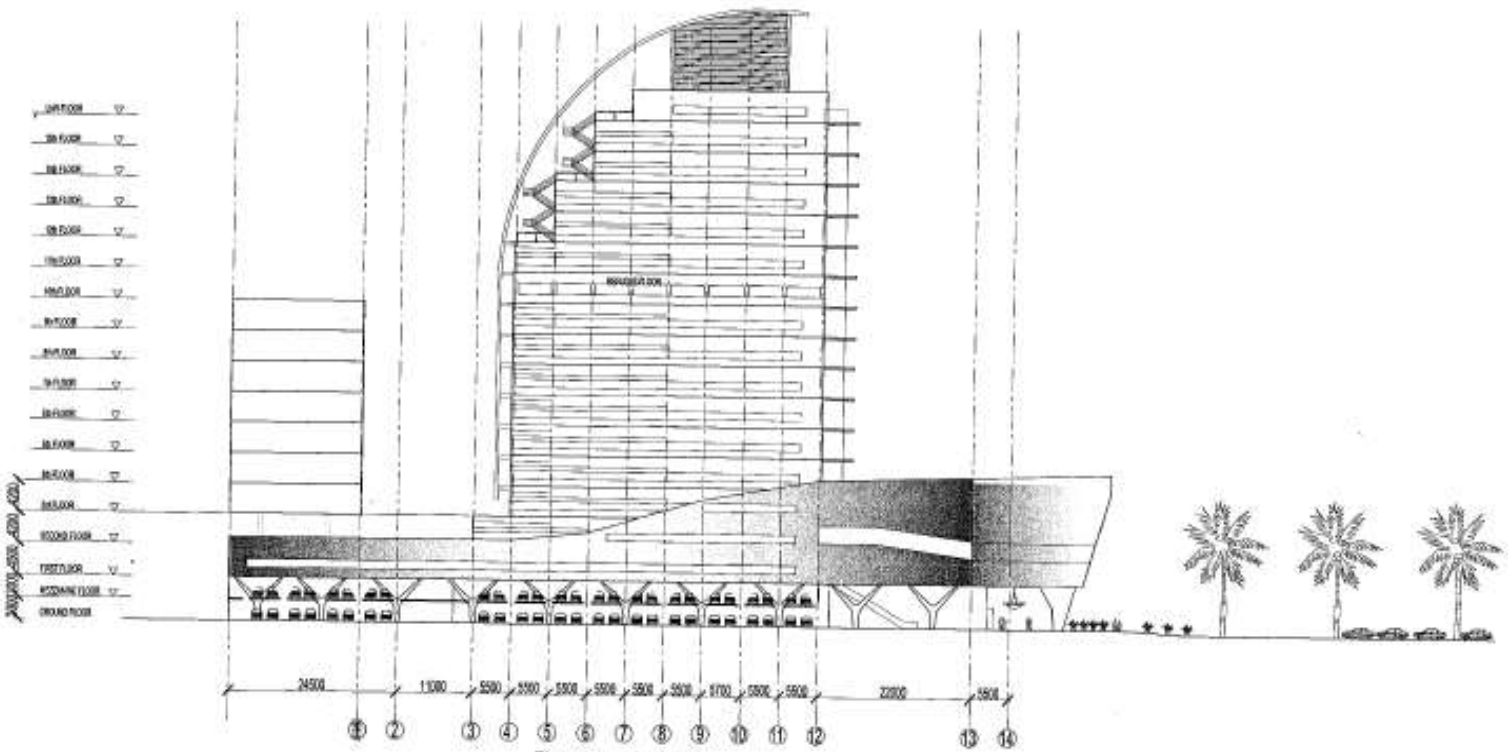

No 1 Gate
FROM CPEP
Custom Security Hut
Water Barge Sec Office
S.L.P.A. Head Office
BUS STOP
STARTING POINT
MINISTRY OF PORT AND AVIATION
M.D's Office
Fishing Craft Section
JUMMA MOSQUE
Ware house
HINDU ASSOCIATION
Custom Union Office
Audit Section
Repair Section
1/12

APPENDIX 4: LIST OF BUILDINGS TO BE DEMOLISHED

Se. No	Chainge	Building Name	Area of Building (m^2)	No. of floors	Demolishing Status	Remarks
Buildings						
1	1+720	Sport complex including rest room and water tank	1006	G	Full	with 3 story Height
2	2+220	Shrine/ Buddha Statue	75	G		Special action required
3	3+400	Audit Section	1400	G+1	Full	
4	3+400	Rest Room	37	G	Full	
5	3+400	Tire Stores	150	G	Full	
6	3+400	Water supply Tank	12	G	Full	
7	3+400	Wash Room/Toilets	35	G	Full	
8	3+484	C.I.W. Stores -A	112	G	Full	
9		C.I.W. Stores -B	183	G	Full	
10	3+520	F.P.C. Worker Rest	175	G	Full	
11	3+540	Stress Bed works Carpentry shop and Rest Room	285	G	Full	
12	3+560	Stress Bed Office	210	G+1	Full	
13	3+560	Stress Bed Office-Garage	80	G	Full	
14	3+570	Stress Bed -Rest Room	50	G	Full	
15	3+600	Main Stores	6150	G+2	Full	
16	3+720	WS Boiler shop (works)	480	G+1	Full	
17	3+830	Security Managers Office & Clock repair section	640	G+1	Full	
18	3+830					
19	3+830	Latrine/ Stores	150	G	Full	
20	3+831	Security Garage	40	G	Full	
21	3+950	4/5 Security Section	2000	G+2	Full	
22	4+060	Gate No. 03	50	G	Partially	
23	4+100	Post Office/milk bar	175	G+1	Partially	
24	4+160	W.S. Crane Section & Rest Room	620	G+1	Full	
25	4+190	EWC Bank Building	162	G+2	Full	
26	4+470	Guard Hut	32	G	Full	
27	4+600	Custom Warehouse	210	G	Partially	
28	4+640	A/C Repair Section	507	G	Partially	
29	4+680	Forklift Repair Section/ Construction Equipment Repair Section	2652	G	Partially	
30	4+880	Chairman Office Building	150	G+1	Partially	
Sub Total			**17,828**			
Workshops						
1	3+680 - 3+900	Machine shop	1,850	G	Full	
2		Fitting Shop	1,325	G	Full	
3		Black Smith Shop	1,475	G	Full	
4		Steel Fabrication -Unit 1	1,840	G	Full	
5		Steel Fabrication -Unit 2	1,240	G	Full	
6		Foundry Building	315	G	Full	
7		Furnace Building	50	G	Full	
8		Boiler Shop – Field 1	240	G	Full	
9		Boiler Shop – Field 2	800	G	Full	
10		Chain Testing Section*	350	G	Full	
11		Crane Repair Section	1,000	G	Full	
Sub Total			**10,485**			
Total Area			**28,313**			

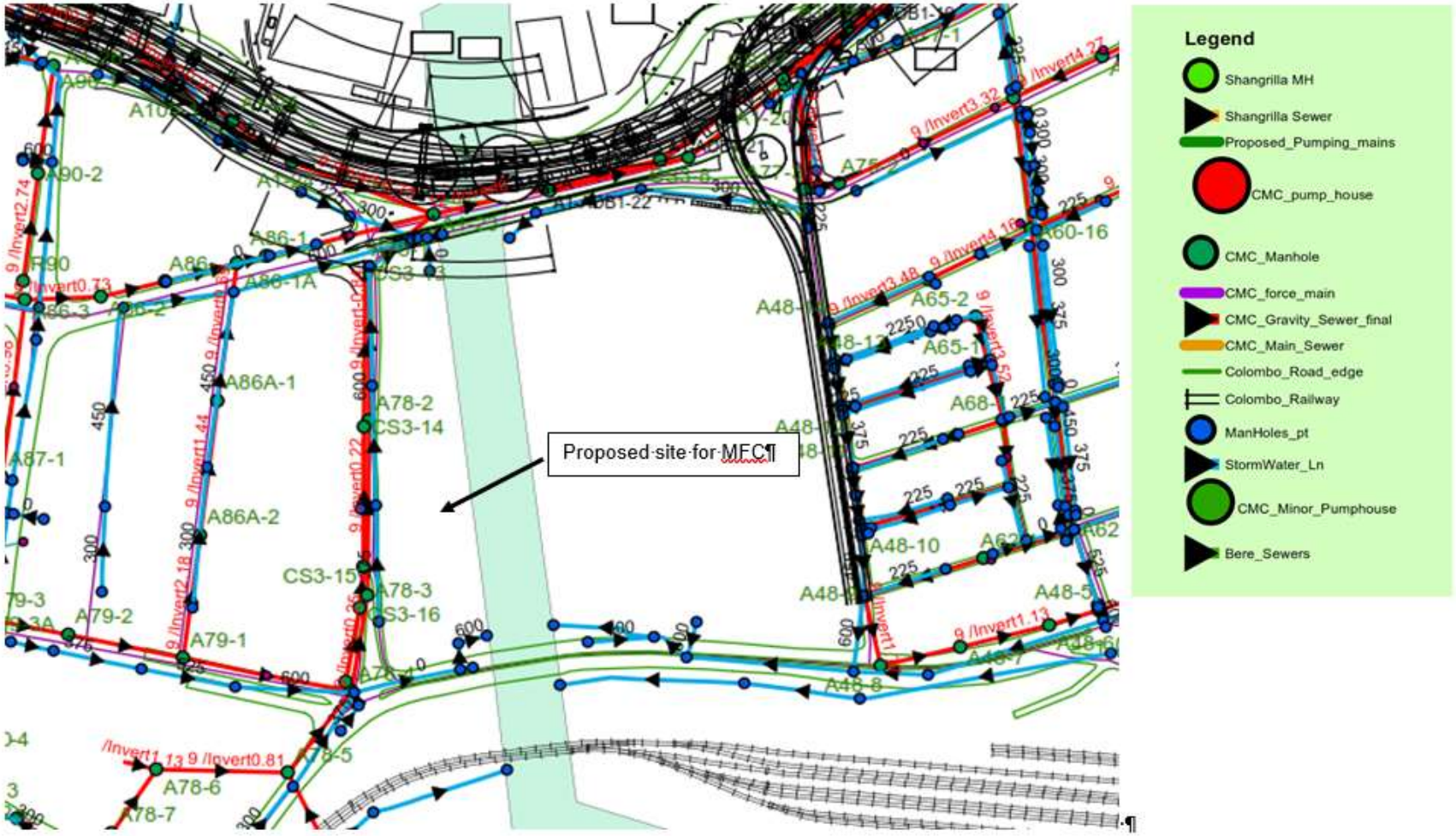
APPENDIX 5: DESIGNS OF THE BUILDING





ELEVATION option 02

APPENDIX 6: LAYOUT OF THE DRAINAGE NETWORK OF CMC



APPENDIX 7: LOCATION MAP FOR THE NOISE AND VIBRATION SENSITIVE RECEPTORS

APPENDIX 8: LIST OF FLORA AND FAUNA OBSERVED

List of flora

Family	Species	English name	Distribution status	Conservation status Redlist 2012
Amaranthaceae	*Amaranthus viridis*		Native	LC
Amaranthaceae	*Aerva lanata*		Native	LC
Anacardiaceae	*Mangifera indica*	Mango	Exotic	
Anacardiaceae	*Spondias dulcis*	June Pulm	Exotic	
Annonaceae	*Anona muricata*	Soursop	Exotic	
Annonaceae	*Polyalthia longifolia*	False asoka	Exotic	
Arecaceae	*Cocos nucifera*		Exotic	
Caricaceae	*Carica papaya*	Papaw	Exotic	
Combretaceae	*Terminalia catappa*	Sri Lankan Almond tree	Exotic	
Compositae	*Tridax procumbens*		Exotic	
Elaeocarpaceae	*Elaeocarpus serratus*	Ceylon olive	Native	LC
Euphorbiaceae	*Ricinus communis*	Castor bean tree		
Euphorbiaceae	*Acalypha indica*	Indian acalypha	Natice	LC
Fabaceae	*Peltophorum pterocarpum*	Yellow flame tree		
Fabaceae	*Mimosa pudica*	Touch-me-not	Exotic	
Lamiaceae	*Tectona grandis*	Teak	Exotic	
Lauraceae	*Persea americana*	Avacardo	Exotic	
Moraceae	*Artocarpus heterophyllus*	Jack	Exotic	
Moraceae	*Ficus racemosa*	Attikka	Native	LC
Moringaceae	*Moringa oleifera*	Drumstick tree	Exotic	
Rutaceae	*Aegle marmelos*	Stone Apple	Native	
Rutaceae	*Murraya koenigii*	Curry tree	Native	LC
Sapindaceae	*Nephelium lappaceum*	Hairy lychee	Exotic	
Muntingiaceae	*Muntingia calabura*	Jamaica Cherry tree	Exotic	
Myrtaceae	*Psidium guajava*	Guava	Exotic	
Oxalidaceae	*Averrhoa bilimbi*	Cucumber tree	Exotic	
Asteraceae	*Vernonia cinerea*	Monarakudumbiya	Native	
Apocynaceae	*Tabernaemontana divaricata*	Wathusudda	Exotic	
Apocynaceae	*Plumaria rubra*	Templetree	Exotic	
Sapindaceae	*Filicium decipiens*	Fern tree	Native	
Apocynaceae	*Cathyranthus roseus*	Rose periwinkle	Exotic	
Nyctaginaceae	*Bougainvillea spectabilis*	Bougainvillea	Exotic	
Solanaceae	*Lycopersicon esculentum*	Tomato	Exotic	
Amaranthaceae	*Spinacia oleracea*	Spinach	Exotic	
Moringaceae	*Moringa oleifera*	Drumstick	Exotic	
Passifloraceae	*Passiflora foetida*	Wild Water Melon	Exotic	
Verbinaceaea	*Lantana camera*	Tickbery	Exotic	

List of fauna

Family	Species	English name	Conservation status _Redlist 2012
Felidae	*Felis Domesticus*	Cat	
Canidae	*Canis familiaris*	Dog	
Muridae	*Ratuus ratuus*	Rat	
Corvidae	*Corvus splendens*	Common crow	LC
Timalidae	*Turdoides affinis*	Yellow billed babbler	LC
Ramphastidae	*Megalaima zeylanica*	Brown Headed Barbet	
Sturnidae	*Acridotheres tristis*	Common Myna	LC
Sylviidae	*Orthotomus sutorius*	Common Tailorbirds	LC
Columbidae	*Streptopelia chinensis*	Spotted Dove	
Lyceanidae	*Eurema hecabe simulate*	The Common grass yellow	
Pieridae	*Appias albina daranda*	The Common Albatross	LC
Pieridae	*Leptosia nina*	Psyche	

APPENDIX 9: ENVIRONMENTAL MANAGEMENT PLAN

This Environmental Management Plan (EMP) is the summarized matrix of all likely impacts that may occur during preconstruction, construction and operational activities of construction of proposed MFC for SLPA which is to be implemented under Transport Project Preparatory Facility (TPPF) of RDA with the financial assistance of Asian Development Bank (ADB). This EMP is prepared based on all anticipated impacts that are identified in the main report of the Initial Environmental Examination (IEE) conducted for the said project during each phases of the project, their locations where they shall possibly be occurred and mitigation measures to minimise the particular impacts at particular locations and responsible agencies for implementation.

Primary responsibility of implementing the mitigation measures specified in the EMP is admitted by TPPF of RDA. However as the EMP forms part of the Contract, the prescriptions detailed in the EMP are mandatory in nature and also contractually binding with the parties stated in the EMP. With the assistance of the Project Implementation Consultant (PIC)/Engineer appointed by the Employer the (Port Access Elevated Highway Project, Road Development Authority) shall monitor the compliance of EMP by the Contractor.

The Contractor is advised to carefully consider the relevant EMP requirements stated under item “Pre-construction and design phase” and “Construction phase” when preparing the proposal. In case the Contractor fails to implement the EMP recommendations after informing in writing, the PIC shall take whatever actions it is deemed necessary to ensure that the EMP is properly implemented. If the Contractor still fails to comply with EMP requirements, the PIC shall impose a penalty and take actions to arrange appropriate remedial measures to rectify the impact through a third party and cost shall be recovered from the Contractor.

The Contractor through an appointed dedicated Environmental Manager shall assist the Engineer to discharge his duties as required in the EMP implementation by (a) maintaining up to date records on actions taken by the Contractor with regard to implementation of EMP recommendations (b) timely submission of reports, information and data to the Employer through Engineer, (c) participating in the meetings convened by the Engineer and (d) any other assistance requested by the Engineer.

	Construction activity	**Anticipated impacts**	**Mitigation Action**	**Approximate location**	**Monitoring Indicator (MI), Performance Indicator (PI)**	**Mitigation Cost**	**Institutional responsibility**	
							Implementation	**Supervision**
1.	**Pre-construction/design phase**							
1.1	Removal of utilities	Inconvenience to the public due to uninformed interruption of utility services Unnecessary damages/accidental damages to utility lines when shifting and safety	Initial consultation and consent shall be taken from relevant service providers such as CMC, Ceylon Electricity Board (CEB), National Water Supply and Drainage Board (NWSDB), Sri Lanka Telecom (SLT) well in advance will minimize the impacts. If such utilities are found within the project site which need to be shifted, following mitigation	Proposed building site	MI: Consultation of the relevant service provider and awareness of the public	Cost estimated by the line agencies/ Cost of utility shifting under the BOQ	Contractor	PIC, PIU and line agencies (CMC, SLLRDC, CEB/ NWSDB/SLT), CSRP of SLR

	Construction activity	Anticipated impacts	Mitigation Action	Approximate location	Monitoring Indicator (MI), Performance Indicator (PI)	Mitigation Cost	Institutional responsibility	
							Implementation	Supervision
		of the labourers and the public Interruptions to storm water runoff	measures shall be implemented to minimize the impacts. Advance notice shall be provided to the users of the relevant service about the time and the duration of the utility disruption to avoid or minimize the difficulties that they will face in the case of sudden disruption of these services. Use of well trained and experienced machinery operators to reduce accidental damage to the public utilities. Substitute sources of utilities during the disruption period shall be provided to conduct the services continuously. Further restoration of the public utilities as soon as possible as directed by the Engineer will help to minimize the impacts. A storm water drainage and management system shall be introduced to the building in compliance to the building approval of the CMC therefore loss of underground drainage pipes will be compensated.		PI: shifting the utilities as agreed within the given time period			
1.2	Wastewater and solid waste management	Further degradation of Beira Lake Canal and surrounding due to improper disposal of wastewater and solid waste during operational stage	Wastewater generated from the MFC shall be connected to the main sewerage system of the CMC through a drainage system which is incorporated to the design of the MFC. A solid waste management plan will be prepared and approved by Colombo Municipal Council (CMC) which consists of types and quantities of solid waste to be generated from the MFC and the method of disposal. A solid waste collecting system will be introduced including waste bins, temporary storages with adequate capacity and dedicated staff to handle solid waste within the MFC. Facilities will be introduced to separate the solid	MFC	MI: Estimation of wastewater and solid waste generation and submission of the proposal to design wastewater drainage system and solid waste collection system	Design cost	Contractor	PIC and PIU

	Construction activity	Anticipated impacts	Mitigation Action	Approximate location	Monitoring Indicator (MI), Performance Indicator (PI)	Mitigation Cost	Institutional responsibility	
							Implementation	Supervision
			waste in compliance with the requirement of CMC to which solid waste (separated) will be finally handed over. These requirements shall be addressed in the design of the MFC.		PI: Incorporation to the design			
1.3	Health and safety considerations	Health and safety issues during operational phase of the MFC	In order to ensure health and safety of the MFC during the operational period, necessary requirements shall be incorporated to the design of the MFC. This will include a comprehensive health and safety plan covering all aspects of health, hygiene and occupational safety in the building such as: provision of safe drinking and washing water; provision of adequate toilets separate for men and women; medical first aid kits; firefighting equipment including sprinklers and fire escape route on every floor; safe electrical wiring system; appropriate signage; adequate ventilation etc… Further design shall be included a method of avoiding stench of the Beira Lake Canal getting in to the building to ensure the healthiness of the staff	MFC	MI: Submission of proposal to address health and safety issues in the design PI: in corporation to the design	Design cost	Contractor	PIC, PIU
2.	**Construction phase**							
2.1	Noise and vibration impacts due to construction activities	Inconvenience and stress to the occupants, workers of the Sri Lanka Customs, Sri Lanka Telecom Ltd and public who use the nearby roads, disturbance to the occupants of the Document processing Centre of Colombo Harbor and vendors of Lotus road will be possible if project activities will generate	Regular monitoring of noise and vibration as per the Environmental Monitoring Plan (EMOP), complaints based and activity based monitoring and/or as directed by the Engineer will be carried and Contractor shall strictly comply with the permissible levels specified in the noise & vibration control regulations for all construction activities, vehicles and equipment. Contractor shall equip his heavy construction equipment with exhaust silencers to limit the noise generation from construction equipment	In and around the proposed building site with special attention to line of shops along the Lotus Road, Sri Lanka Telecom, Sri Lanka Customs	MI: Preparation of the method statement to carry out monitoring and survey activities PI: Carrying out measurements and surveys as	Within Contract Price	Contractor	PIU, PIC

	Construction activity	Anticipated impacts	Mitigation Action	Approximate location	Monitoring Indicator (MI), Performance Indicator (PI)	Mitigation Cost	Institutional responsibility	
							Implementation	Supervision
		excessive noise and vibration. Structural damages to buildings, structures and shops located along the Lotus Road and material extraction sites due to excessive vibration from construction activities	(compacters, loaders, vibratos and cranes) not to exceed 75 dB during day time and Contractor shall ensure that noise generated from construction activities at night will not exceed 50 dB. Special approval shall be obtained for construction activities during night time from Central Environmental Authority (CEA). Contractor shall regularly maintain all construction vehicles and machinery to meet the National Emission Standards. A pre-condition crack survey shall be conducted for the shops located along the Lotus road and other buildings within an agreed corridor with the Engineer and crack damages shall be compensated if resulted by the project activities. Further the Contractor shall conduct a survey to explore any historical building/structures within a corridor agreed with the Engineer around the MFC and special precautions shall be taken and frequent monitoring shall be conducted if any historical building found when carrying out project activities which generate vibration. The project site shall be provided with temporary noise barriers to control noise during construction activities. Operating well maintained plants at the site and regular servicing of such plants during the construction period, shutting down and/or throttling down of machine and plant that may be in intermittent use, between work periods and limiting the project activities and vehicular movement during certain periods of day and night will minimize the noise and vibration impacts		specified in the method statement			

	Construction activity	Anticipated impacts	Mitigation Action	Approximate location	Monitoring Indicator (MI), Performance Indicator (PI)	Mitigation Cost	Institutional responsibility	
							Implementation	Supervision
2.2	Air quality Impacts	Nuisance and health impacts to public, occupants, roadside vendors are the possible impacts due to emission of dust and obnoxious gasses from construction activities such as clearing and grubbing, demolition of buildings, material handling and operation of machineries and vehicles etc... In addition, dust emission sources include exposed surfaces, uncovered material transportation activities and stockpiles.	Regular water sprinkling (based on the weather condition) of the construction sites and roads which are used for the transportation of construction materials in regular intervals will control emission of dust. Placement of dust barriers around the project site shall minimize dust spreading to the surrounding. Regular monitoring of air quality at locations as given in the Environmental Monitoring Plan (EMoP) and/or as directed by the Engineer and measures shall be immediately taken if particular results are exceeding the relevant permissible levels. Contractor shall strictly comply with National Emission Standards for all construction vehicles, equipment and material processing plants. Water sprinkling systems shall be fitted to the crushers, concrete batching plants and hot mixed plants and any other dust emitting activity to minimize dust impacts from the construction sites.	In and around the proposed building site with special attention to line of shops along the Lotus Road, Sri Lanka Telecom, Sri Lanka Customs	MI: Carrying out measurements as given in the EMOP and establishment of dust control mechanisms PI: Comparison of results with relevant standards	Within Contract Price	Contractor	PIU, PIC
2.3	Impacts on traffic flow and road network	Movement of construction vehicles and machineries across the city of Colombo, along Olcott Mawatha and Lotus Road will disturb the existing traffic flow and traffic congestions will be possible. The impact is significant during peak hours such as office times and schooling times. Further the temporary bus parking located along the Lotus road will also be	A method statement on traffic management related all project activities shall be prepared by the Contractor and approved by the PIC in advance to commencement of construction activities. Consultation of Sri Lanka Police and CMC is advisable in preparing the method statement. Permit from Local Authorities (LA) shall be obtained to use roads for transportation of construction materials, machinery and equipment etc...The contractor shall ensure that transportation of construction materials by himself and suppliers should not exceed the carrying capacity of the	Lotus road, Olcott Road, material transportation roads and other	MI: Preparation of the method statement on traffic management PI: obtaining permits from LAs for material transportation, restoration of damaged roads as	Within Contract Price	Contractor	PIU, PIC

	Construction activity	Anticipated impacts	Mitigation Action	Approximate location	Monitoring Indicator (MI), Performance Indicator (PI)	Mitigation Cost	Institutional responsibility	
							Implementation	Supervision
		disturbed by the construction vehicles. On the other hand, damages to existing road network will be possible due to transportation of construction material, machinery and equipment	roads. Peak traffic hours shall also be avoided in transporting the material to the site. Regular Maintenance of roads and their restoration which are used for hauling activities for the construction related activities.		agreed with LAs			
2.4	Disposal of debris of demolished structures and excavated unsuitable soil	Impacts to surface water hydrology, siltation of water bodies, nuisance to public, ecological impacts and soil quality impacts	All debris and residual spoil materials including any left out earthen material, demolished structures shall be disposed only at locations approved by the relevant Local Authority (LA) and SLLRDC (if required by the LA). A disposal site has been identified in Mabima Road which is about 13km away from Colombo Port. Spoil materials (soil, sand, rock etc…) generated during the construction activities shall be utilized wherever found suitable for activities like site leveling, back- filling etc... with prior approval of the Engineer. Suitable dumping grounds/ land fill sites operated with required licenses shall be identified for the disposal of denuded material from structures to be demolished, excavated and discarded material and continuous monitoring shall be carried out to ensure disposal to such sites. The Contractor is responsible for preparation of a separate method statement specifying the method of handling and disposing the asbestos removed from the warehouse and other buildings since asbestos is recognized as carcinogenic. The method statement should include method of disposal, locations (sites selected for disposal of	Proposed building site and all disposal sites	MI: Selection of disposal sites with the relevant approvals, preparation of method statement for disposal of asbestos and obtaining a separate approval from CEA PI: Dumping of unsuitable material to the relevant disposal site	Within Contract Price	Contractor	PIU, PIC

	Construction activity	Anticipated impacts	Mitigation Action	Approximate location	Monitoring Indicator (MI), Performance Indicator (PI)	Mitigation Cost	Institutional responsibility	
							Implementation	Supervision
			general waste and debris shall not be used for this purpose) and occupational health and safety of the laborers who handle the asbestos. Construction debris containing asbestos shall not be disposed to the selected site without the approval from CEA.					
2.5	Health and Safety Impacts	Accidental hazards will be possible to the general public along the Lotus Road, Olcott Road, shops along the Lotus Road, occupants of Document Processing Centre and the project staff due to indecent operation of machineries, construction vehicles, falling objects from higher floors, electric hazards, etc…	Contractor shall organize awareness program regarding personal safety of workers, employees, road side vendors and general public at regular time basis. Establishment of precautionary measures to reduce the likelihood of accidents (warning signs, barricading, speed limits for material transport vehicles, markings) and night visibility of them shall be ensured. Proper safety measures such as installing safety nets will avoid accidental hazards due to falling of construction materials from higher floors. Contractor shall pay special attention of the safety of public along the Lotus road including shops and public along the foot path. Providing Personnel Protective Equipment (PPE) for laborers such as protective foot wear, helmets, goggles, eye-shields and clothes to the workers depending on their duty (Mixing concrete, blasting, handling equipment etc…) and monitoring of use of PPEs Arranging a first aid unit and transport facilities to take injured people to the nearest hospital. Contractor shall place firefighting equipment where necessary and water sprinkling systems to each floor to manage fire in the building.	Project sites	MI: Organizing awareness programs as required, preparation of a method statement on health and safety PI: establishment of safety precaution such as nets etc… wearing of PPE by working staff all the time, availability of first aid facilities, fire fighting equipment	Within Contract Price	Contractor	PIU, PIC

	Construction activity	Anticipated impacts	Mitigation Action	Approximate location	Monitoring Indicator (MI), Performance Indicator (PI)	Mitigation Cost	Institutional responsibility	
							Implementation	Supervision
			Use experience and well trained workers for the handling of machinery, equipment and material processing plants					
2.6	Loss of Access	Disturbance of the access to Document Processing Centre of Sri Lanka Customs	Provision of safe passage for both pedestrian and vehicle movement or provision of alternative entrance to the Document Processing Centre	In and around the proposed building site	MI: Identification of safe passages for pedestrians and vehicles PI: establishment of safe passages for pedestrians and vehicles	Within Contract Price	Contractor	PIU, PIC
2.7	Extraction and transportation of construction materials	Noise, vibration, dust, induced slope failure, negative visual impacts, creation of mosquito breeding sites, and damage to private properties and minor roads. Heavy trucks transporting materials to construction sites will cause disturbances to local traffic, damage minor roads, and increase dust and noise nuisance	Quarries and borrow pits operated with a valid approval shall be used for the project and above impacts could be mitigated by adhering to conditions laid down by licensing agencies for such quarries and borrow sites such as Geological Survey and Mines Bureau (GSMB) and CEA under their approval. Material suppliers who are operated with required licenses will only be selected if material are to be purchased. Keeping provisions for repairing and restoration of all property damages including the roads used for the transportation of construction materials by the contractor in the contract document and use of covers over transported materials to guard against dust blow and water spraying to dampen the gravel surfaces will mitigate the impacts due to transportation of construction material	All project sites including material extraction sites, routes of material transportation	MI: Selection of material sources with approvals PI: extraction of material at selected sites and renew the licenses when required	Within Contract Price	Contractor	PIU, PIC

	Construction activity	Anticipated impacts	Mitigation Action	Approximate location	Monitoring Indicator (MI), Performance Indicator (PI)	Mitigation Cost	Institutional responsibility	
							Implementation	Supervision
2.8	Handling environmental issues/grievances during construction	Lack of response to public complaints	The Contractor shall appoint a qualified Environmental Manager for implementation of the EMP and also for community liaison to handle public complaints and grievances. The Contractor shall develop a suitable mechanism to receive and address the complaints and grievances. The person who is responsible for receiving complaints shall be easily accessible by the public. The Environmental Manager should promptly investigate and review environmental complaints and implement the appropriate corrective actions. A register consisting of all the complaints made is to be passed to the Engineer within a reasonable time after reception. Action taken by the Environmental Manager on complains must be reported to the Engineer. It is recommended to have a Register at the contractor's site office and Sri Lanka Ports Authority for the affected community to have easy access. Complaints that could not be resolved shall be referred to Grievance Redress Committee (GRC) level 1 at the Grama Niladari level and level 2 at the DS level.	All project sites	MI: Appointment of the Environmental manager, availability of the complaints register, formation of GRCs PI: Number of complaints recorded in the register within a month, number of complaints put forward to GRC	Within Contract Price	Contractor	PIU, PIC
2.9	Impacts on Biology/Ecology	Removal of trees within the foot print of the proposed building (Approx. 10 tress), further contamination of the Beira Lake Canal by construction wastes which negatively affect aquatic life	All trees that need to be felled will be marked and handed over to the Timber Corporation for cutting and removal. Compensatory replanting program shall be carried out at least 1:3 ratio wherever space is available or at locations near to the project area which can be secured with the help of SLPA and/or CMC. When selecting the species, endemic and threatened species will be given a higher priority.	All project sites	MI: Identification of trees to be felled, identification of locations for tree replanting and species PI: felling of threes and handing over to the Timber	Within Contract Price	Contractor	PIU, PIC

	Construction activity	Anticipated impacts	Mitigation Action	Approximate location	Monitoring Indicator (MI), Performance Indicator (PI)	Mitigation Cost	Institutional responsibility	
							Implementation	Supervision
			Implementation of measures as given in 2.4 above shall be applied to mitigate the impacts to the Beira Lake Canal.		Corporation, Replanting of trees as required			
3	**Operational Phase**							
3.1	Impacts due to wastewater discharge	Health and sanitary impacts will be possible due to leaking of wastewater, sewage from the wastewater system and toilets	The wastewater system and toilets shall be periodically maintained and a proper monitoring system will be introduced to the building in order to avoid this impact	All project sites	MI: Establishment of the monitoring system PI: Checklist of regular monitoring	Operational cost	SLPA	SLPA
3.2	Impacts due to solid waste	Waste collection, health and sanitary impacts, aesthetic impacts	Proper implementation of solid waste management system which is approved by CMC which consists of methods for waste reduction, waste separation and recycling etc… with adequate monitoring will reduce the possible impacts due to solid wastes from the building	All project sites	MI: Availability of separate bins to dispose categorized waste PI: Dumping of waste to the given bins	Operational cost	SLPA	SLPA
3.3	Traffic impacts during operational period	Concentration of port activities at a single location will increase the traffic flow towards the building which create traffic congestions around the building	Proper traffic management plan will be implemented by the Sri Lanka Ports Authority with adequate parking facilities under the coordination of CMC and Colombo - traffic police will help to avoid the impact	All project sites	MI: Preparation of the traffic management plan PI: occurrence of traffic congestions	Operational cost	SLPA	SLPA
3.4	Health and safety impacts	Hazards due to fire, electric shocks etc…	Implementation of a safety plan including instalment of firefighting equipment, water sprinklers for each floor, warning sign boards (for example for high voltage areas) and first aid facilities will minimize the safety impacts during operational phase of the building	All project sites	MI: Preparation of the safety plan PI: availability of firefighting equipment,	Operational cost	SLPA	SLPA

	Construction activity	Anticipated impacts	Mitigation Action	Approximate location	Monitoring Indicator (MI), Performance Indicator (PI)	Mitigation Cost	Institutional responsibility	
							Implementation	Supervision
					water sprinklers etc…			

APPENDIX 10: ENVIRONMENTAL MONITORING PLAN

Environmental component	Project Stage	Parameters to be Monitored	Location	Frequency	Standards	Rate (Rs.)	Cost (Rs.)	Implementation and Supervision
Air Quality	Before construction stage	SPM, PM10, NO2,CO,SO2, CO2	1. Selected location at the construction site (AQ) 2. Selected quarry sites and crusher plants (If any) 3. Selected burrow sites (If any) 4. Selected concrete batching plants (If any)	Once	NAAQS of Sri Lanka	Per sample 40,000	40,000.00	Contractor PIU PIC
	Construction stage	SPM, PM10, NO2,CO,SO2, CO2	1. Selected location at the construction site (AQ) 2. Selected quarry sites and crusher plants (If any) 3. Selected burrow sites (If any) 4. Selected concrete batching plants (If any)	Construction - 4 times/Year for 2 Years (however, additional measurements may need to be taken in case there are complaints of deterioration of air quality)	NAAQS of Sri Lanka	Per sample 40,000	320,000.00	Contractor, RDA and Port Authority / PIU through PIC
	Operational stage	SPM, PM10, NO2, CO,SO2, CO2	1. Selected location at the construction site (AQ) 2. Selected quarry sites and crusher plants (If any) 3. Selected burrow sites (If any) 4. Selected concrete batching plants (If any)	Once a year for 5 years	NAAQS of Sri Lanka	Per sample 40,000		Contractor RDA and Port Authority / PIU through PIC
Water Quality	Before construction stage	Temperature, pH, Electrical Conductivity, DO, BOD5, TSS, Turbidity, Salinity, Total Coliform count	1. Beira Lake Canal (SWQ 1) 2. Beira Lake Canal (SWQ 2)	Once	CEA Water Quality Regulation	Per sample 10,000	20,000.00	Contractor RDA and Port Authority / PIU through PIC
	Construction stage	Temperature, pH, Electrical Conductivity, DO, BOD5, TSS, Turbidity, Salinity, Total Coliform count	1. Beira Lake Canal (SWQ 1) 2. Beira Lake Canal (AWQ 2)	Construction – 4 times/Year for 2 Years	CEA Water Quality Regulations	Per sample 10,000	160,000.00	Contractor RDA and Port Authority / PIU through PIC

Environmental component	Project Stage	Parameters to be Monitored	Location	Frequency	Standards	Rate (Rs.)	Cost (Rs.)	Implementation and Supervision
	Operational stage	Temperature, pH, Electrical Conductivity, DO, BOD5, TSS, Turbidity, Salinity, Total Coliform count	1. Beira Lake Canal (SWQ 1) 2. Beira Lake Canal (SWQ 2)	Once a year for 5 years	CEA Water Quality Regulations	Per sample 10,000		Contractor RDA and Port Authority / PIU through PIC
Noise and Vibration Noise and vibration	Before construction stage	Leq10 and Leq 50 values	1. Selected location at the construction site for noise (N) 2. Selected location at the construction site for vibration (V) 3. Selected quarry sites and crusher plants (If any) 4. Selected burrow sites (If any) 5. Selected concrete batching plants (If any)	Once	CEA Regulations on ambient noise levels and permissible ground vibration levels	Per sample 10,000	10,000.00	Contractor RDA and Port Authority / PIU through PIC
	Construction	Leq10 and Leq 50 values	1. Selected location at the construction site (N) 2. Selected location at the construction site (V) 3. Selected quarry sites and crusher plants (If any) 4. Selected burrow sites (If any) 5. Selected concrete batching plants (If any)	Construction - 4 times/Year for 2 Years (however, additional measurements may need to be taken in case there are complaints of high noise and vibration levels).	CEA Regulations on ambient noise levels and permissible ground vibration levels	Per sample 10,000	160,000.00	Contractor RDA and Port Authority / PIU through PIC
	Operational stage	Leq10 and Leq 50 values	1. Selected location at the construction site (N) 2. Selected location at the construction site (V) 3. Selected quarry sites and crusher plants (If any) 4. Selected burrow sites (If any) 5. Selected concrete batching plants (If any)	Once a year for 5 years	CEA Regulations on ambient noise levels and permissible ground vibration levels	Per sample 10,000		Contractor RDA and Port Authority / PIU through PIC

Environmental component	Project Stage	Parameters to be Monitored	Location	Frequency	Standards	Rate (Rs.)	Cost (Rs.)	Implementation and Supervision
Flora	Before construction stage	No. of trees to be removed	Land available within the proposed construction site	Once	-	As per the BOQ		Contractor RDA and Port Authority / PIU through PIC
	Construction stage	No. of trees replanted	Land available within the proposed construction site	2 visits/ year for 2years	No. and Diversity of species replanted	As per the BOQ		Contractor RDA and Port Authority / PIU through PIC
	Operational stage	Survival of trees and number of trees planted to replace dead plants	Land available within the proposed construction site	Once a year for 5 years	Percentage of survival	NA		Contractor RDA and Port Authority / PIU through PIC
Waste disposal	Before construction stage	• Submission of the list of disposal sites selected for the project and their locations to the PIC		Once	-	-		Contractor RDA and Port Authority / PIU through PIC
	Construction phase and operational phase	• Submission of the list of disposal sites used for the project and their locations to the engineer • Submission of approvals obtained for such sites to the engineer • Submission of progress of disposal of all debris and spoil from the site to approved sites by the site engineer to the engineer • Submission of number of disposal sites restored after completion to the engineer		Once a month during construction and once in six months during maintenance period	-	-		Contractor RDA and Port Authority / PIU through PIC
Dust Generation	Construction phase	Submission of; • Construction activities and their locations in the proposed land • Number of bowsers allocated for water sprinkling including for roads used to transport material • Frequency and locations of water sprinkling • Public complaints regarding dust issues to the PIC Presence of; • Appropriate dust control measures (approved by PIC) at material storage yards • Using covers on trucks transporting material		Once a month	-	-		Contractor RDA and Port Authority / PIU through PIC

Environmental component	Project Stage	Parameters to be Monitored	Location	Frequency	Standards	Rate (Rs.)	Cost (Rs.)	Implementation and Supervision
Occupational safety	Construction phase and operational phase	Submission of; • Number of labor occupied in the project • List of PPE supplied to laborers (in appropriate sizes) • Record from Field Supervisors on use of PPE • Frequency of conducting tool box meetings and attendance of laborers to the engineer • Method of supplying sanitary facilities, drinking water and waste disposal system		Once a month during construction and once in six months during maintenance period	Road safety manual of RDA	-		Contractor RDA and Port Authority / PIU through PIC
Public safety	Construction phase and maintenance phase	Submission of; • Construction activities in the site • List of safety precautions such as safety nets, placing sign boards, barricading, direction boards, use of flag men and blinkers applied for the project based on the construction activities and their locations to the engineer		Once a month during construction and once in six months during maintenance period	Road safety manual of RDA	-		Contractor RDA and Port Authority / PIU through PIC
Total							710,000.00 (US$ 4465.40)	

APPENDIX 11: PUBLIC CONSULTATION AND THEIR VIEWS

Consultation carried out with Stakeholders and Public during the Preparation of the IEE and Involuntary Resettlement and Due diligence report for proposed MFC for SLPA

Name	Sex	Designation /Address	Consultation
Ms. M.A.S Kanchana Gunawardhana	Female	Assistant Divisional sectary, Colombo Divisional secretariat	According to my opinion, only minimum impacts will be occurred for the public around the project area by this project. Mostly, impacts such as vibration, dust and noise will arise during the construction period. RDA should take necessary actions to mitigate these impacts. The surrounding people will not oppose for the project because their houses and other properties not affecting. Anyway, this is an essential project for the improvement of the Colombo city.
Ms.DLM Manel	Female	Gramaniladhari, Colombo Fort	This project is located in a government land belong to Sri Lanka Port Authority and any private properties will not be affected. RDA should take necessary action to reduce all social and environment issues that will arise during the construction period. However, this is a development project to the Colombo city as well as for the entire country. I like this development project.
Mr. Susantha Abeysiriwardene	Male	Chief Engineer (Planning & Development) SL Ports Authority Colombo 01	SLPA is an affected party because of this construction project. RDA and SLPA agreed not to demolish the present office building until new building is constructed. During the construction period there should be a traffic management plan. Environment impacts can be occurred by this project. RDA should take necessary action to minimize those impacts. This project will be very helpful for the SLPA to carry out transaction smoothly in future.
Mr.P.K. Wimalaratne	Male	Businessman No. 02/03, Lotus Rd, Colombo 01.	I am the owner of this shop. Here I am operating three small hotels. My average monthly income is about RS50000. I have registered this business in Colombo Municipal council. During the construction period dust, noise and vibration issues will arise. Construction laborers and other project staff will come to our shop, so our income will be increased. During the operational period Port Authority staff and general public will come to our shop.
Mr.T.N.M. Kumara	Male	Businessman No. 18, 19,20, Lotus Rd, Colombo 01	I am the owner this business. Here I am operating two retail shops and one book shop. I have registered this business in Colombo Municipal Council. It is good to carry out this development project without affecting to our business. Due to operation of construction vehicles, road network around the project area will be congested with vehicles. RDA should have a proper plan to mitigate this impact.

Name	Sex	Designation /Address	Consultation
Mr.K. Piyatilaka	Male	Businessman No. 06, Lotus Rd, Colombo 01	I am operating a betting shop here. Shop is open from 8.30am to 6.00pm. I hope my income will be increased after opening of this office building. During the construction period dust, noise and vibration issues will arise. RDA should take necessary actions to mitigate these impacts.
Mr. M. Miraj	Male	Businessman No. 03, Lotus Rd, Colombo 01	I have a communication and open on weekdays Saturdays. Weekdays I have good income but on weekends not much. I have registered my business in year 2011. I hope after opening of this new office building my income will be increased and traffic congestion will be increased specially on Lotus road.
Mr. Mohamod Jaseel	Male	Businessman No. 35, Lotus Rd, Colombo 01	I am a renter and operating this communication centre from year 2017. I have not employed any other person only myself. My daily profit is about Rs 1200. I think no any adverse impact happen to my business by this project. after opening of this new office building my income will be increased.
Mr.S.A.P.P. Kumara	Male	Businessman No. 98, Lotus Road, Colombo 01.	I am running a customs clearing agent business for import & export items. I open on all weekdays & Saturday. I don't think that I will get much effect from the constructing that building behind my office. I think after opening of new office building my business will be increased. During the construction period noise, vibration, dust and traffic issues will be increased. Old structures around the area will be get effected by the vibration.
Mr. G.M. Jayantha	Male	Businessman No.72, Lotus Road, Colombo 01.	I am running a tea shop. I have a income about 800/- per day. Open on all weekdays from 8.00am to 10.00 pm. During the construction period my shop get effects from the vibration. I hope noise and vibration will be increased and it will effect health problems.
Mr. M. Irsad Hussain	Male	Businessman No. 27/28, Lotus Road, Colombo 01	This development is good. We afraid of cracking walls when construction is started.
Mr. R.H.R. Sanjuwa	Male	Businessman No. 554/27/2, Masatiyayawatta, Kadawatha	I am doing this business for 17 years as a customs house agent. Our business hours are 24 hours on week days. Saturday and Sunday, there is no business, because these days are holidays for custom department of Ports Authority. This place is more convenience for our business. We are satisfied to develop infrastructure facilities in our country. Therefore we give our support to start this project.
Mr.Samarasinghe	Male	Businessman 9, Lotus Rd, Colombo 01	We like for this development project, because after opening of this new office, our business will be increased.
Mr.Chaminda Edirisooriya	Male	Businessman 93, Lotus Road, Colombo 01	This shop is more than 35 years old and of aged building which belongs to the CMC. We do here container clearance documentary works of the Ports Authority. significant impacts will not be occurred his business as shop is located out of the construction site. Due to operation of construction

Name	Sex	Designation /Address	Consultation
			vehicles, road network around the project area will be congested with vehicles. Country development is good. So we support this development project.
Mr. H.G. Indrani	Male	Businessman 15/A, Lotus Road, Colombo 01	I am doing this business since 40 years. During the construction period dust, noise and vibration will arise.
Mr. Barin	Male	Businessman No.94, Lotus Road, Colombo 01	This development project is very good. After opening of this office building many customers may come to my shop to get photo copies and buy stationeries. However, during construction period dust, noise and vibration issues will arise.