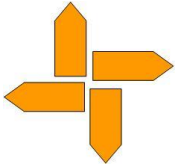


SFG1855



**ROAD DEVELOPMENT AUTHORITY
MINISTRY OF HIGHER EDUCATION AND HIGHWAYS
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA**



**ENVIRONMENT AND SOCIAL MANAGEMENT FRAMEWORK
FOR
TRANSPORT CONNECTIVITY AND ASSET MANAGEMENT PROJECT**

MINISTRY OF HIGHER EDUCATION AND HIGHWAYS

**DRAFT
REVISED ON 05TH JANUARY, 2016**

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Abbreviations

AP	Affected person
BP	Bank Procedures
CBOs	Community Based Organizations
CEB	Ceylon Electricity Board
CE	Chief Engineer
CV	Chief Valve
DS	Divisional Secretary
DSD	Divisional Secretariat Division
EE	Executive Engineer
ESD	Environment & Social Division
GN	Grama Niladhari (Village officer appointed by the government)
GND	Grama Niladhari Division
GoSI	Government of Sri Lanka
GRM	Grievance Redress Mechanism
GRC	Grievance Redress Committee
LAA	Land Acquisition Act
M&E	Monitoring and Evaluation
MoH	Ministry of Highways
MoL	Ministry of Lands
MLD	Member of Land Division
NGOs	Non-Governmental Organizations
NIRP	National Involuntary Resettlement Policy
OP	Operational Policy
OPRC	Output and Performance Based Road Contract
PAPs	Project Affected Persons
PD	Project Director
PMU	Project Management Unit
RDA	Road Development Authority

RE Resident Engineer

ROW Right of Way

Sri Lanka: Transport Connectivity and Asset Management Project

Environment and Social Management Framework

1.0 Background

Sri Lanka's road network is dense and well laid-out providing connectivity to the country's population and centres of economic activity (Map 1). The network's density is among the highest in Asia (table 1.1), as the number of road kilometres per population exceeds the related indicators of densely populated countries in the South East Asian Countries.

Table 1.1: Road Densities of South Asian Countries

Country	Road Density in km/km ²
Sri Lanka	1.50
Bangladesh	1.36
India	0.73
Pakistan	0.32
Nepal	0.06
Butan	0.05

(Source: International Road Federation, World Road Statistics (2001))

However, the present road network standards and conditions are inadequate to meet the rapidly growing freight and passenger traffic. This situation limits the contribution of roads to national development, economic growth, and poverty reduction. To cope with the constraints, the existing road infrastructure must be improved and upgraded.

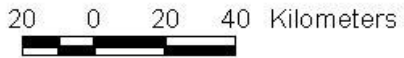
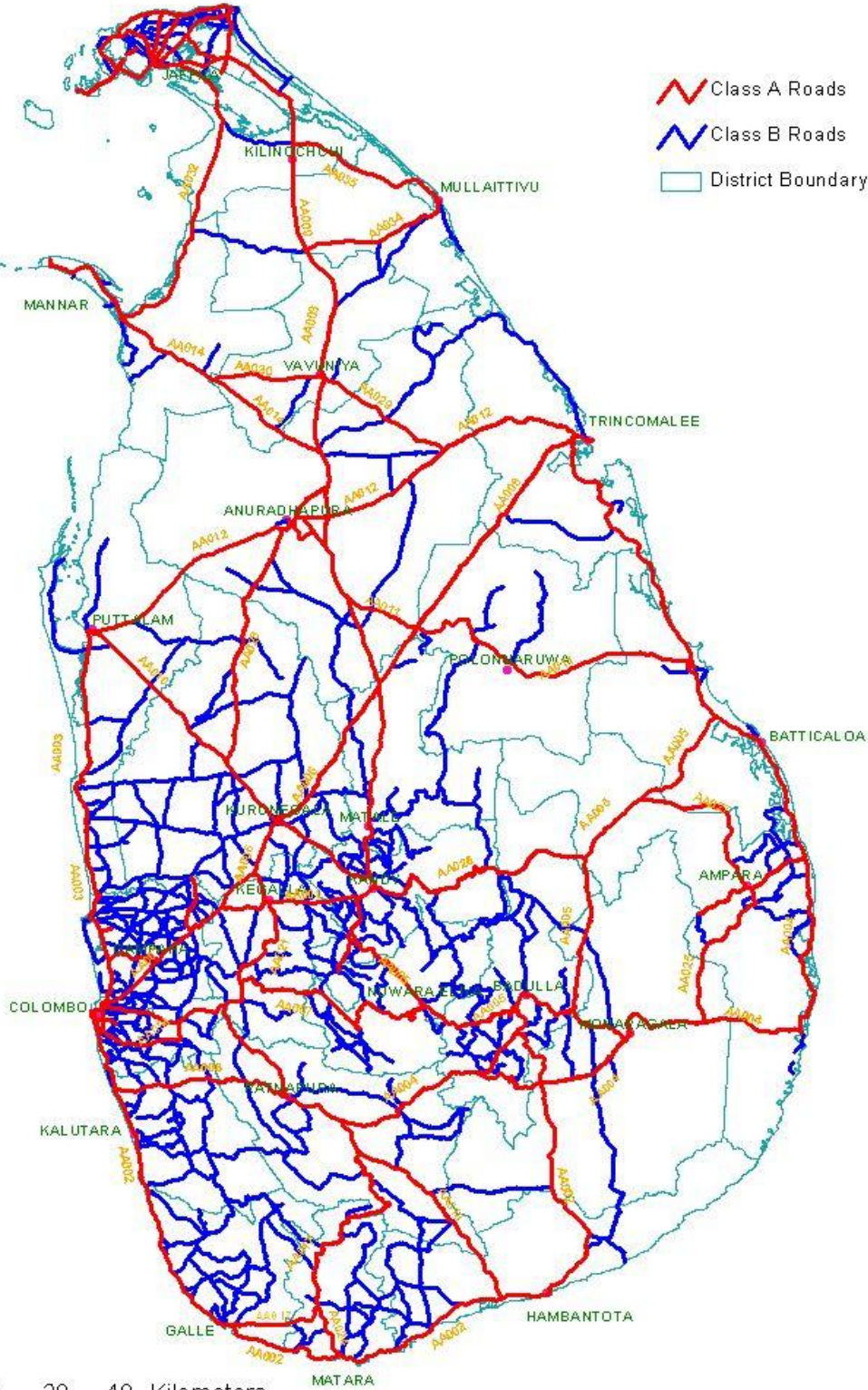
The Road Development Authority of Sri Lanka (RDA) wishes to explore the possibility to apply Output and Performance Based Road Contract (OPRC) format under the worldwide known Design Build Maintain Operate and Transfer methodology (DBMOT), as the basis for their asset management of the nation's most priority road network.

Road Development Authority of Sri Lanka (RDA) under Ministry of Higher Education and Highways (MOHH) is the project implementing agency and the project will be implemented as "Transport Connectivity and Asset Management Project(TCAMP). The project is aimed to support lower transportation cost through sustainable delivery of an efficient national road system that serves the needs of all Sri Lankan population. The overall objective of the WB assistance is to achieve improved and sustainable road transport by enhancing the durability, efficiency and economic impact of the national road network.

Class A & B Roads in National Road Network



-  Class A Roads
-  Class B Roads
-  District Boundary



Map I : Class A and B Roads in National Road Network Sri Lanka

The Government of Sri Lanka (GOSL) has requested financing from the World Bank to assist them to rehabilitate and improve about 286 km of national highway network of Sri Lanka under the OPRC format. (to be decided by GOSL)

The following road sections have been given priority and finalized by the Planning Division of the RDA under this project.

1. Rehabilitation / improvement / maintenance of the national roads, Ja Ela to Puttalam section of Peliyagada Puttalam Road (A03) (Corridor 1- about 128.0 km)
2. Awissawela to Pelmadulla road section of Colombo Ratnapura Wellawaya Betticaloa road (A04) (CRWB) and
3. Pelmadulla Padalangala road section of Pelmadulla - Embilipitiya - Nonagama road (PEN /A018) , totaling to about 158 km. (to be decided by the GoSL).

The initial phase of the project, Bank will finance only the road corridor 1 from Ja-Ela to Puttalam.

The OPRC format, based on Design, Build, Maintenance, Operate and Transfer (DBMOT) methodology, requires the Consultants to prepare a detailed technical and financial analysis for road asset management of the road, involving road rehabilitation/improvement/ upgrading, maintenance (routine and periodic) works as well as management of the road ROW, until handing over to the client. The duration of such contract involving the mentioned civil works and ROW management, is estimated to about 10 years, (for asphalt based paved roads). The sequence of the required civil works will depend of the traffic, environmental and climate conditions, and be decided based on the deterioration of its pavement, providing at all times the required residual life of the pavement. The entire project will be designed under one integral civil works and management operation , using an output based performance contract format, involving the agreed Level of Service (LOS) indicators of quality and quantity nature, , thus making sure that the Contracting Entity- (CE) The Contractor (an Entity involving contractor and consultant) has adequate incentives to maintain his service during the maintenance period given the fact that the majority of funding will be spent on rehabilitation/improvement activities. The “life span of the project”, which governs this concept- asset management, should include a “full cycle” of the road interventions, i.e. between two major road interventions (from rehabilitation to rehabilitation works), providing at all the times the approved Level of Service conditions from user’s point of view and from the road durability aspects (strength and residual life of the pavement). At the end of the project life-span, at the handing over to Employer event, the road conditions will be in accordance to the agreed Level of Service conditions, defined by the contract.

The payments to the Contracting Entity (CE) will be met only if the Level of Service conditions are met and are in accordance to the other conditions of the contract, to be developed under this assignment. The Contracting Entity will undertake majority of the project implementation and operation risks, which otherwise and traditionally, have been vested with Employer. Therefore, the CE will prepare the required detailed designs and other required construction details and shopping drawings, based on detailed field investigations, also to be carried by him, and in accordance to the defined specifications (technical, environmental, social, legal, etc), developed under this assignment. These detailed designs will be then checked and recommended for approval by the Project Monitoring/Supervision Consultant, before actual construction. However, the CE will decide on “when and how” the works will be implemented, thus involving his optimal use of resource and potential innovations. In addition, OPRC are a fixed price contracts, allowing only for the price fluctuations during the life-span of the project.

In order to ensure compliance with the World Bank’s environmental and social safeguard policies and the relevant provisions under the National Environmental Act (NEA) and associated regulations, as well as other relevant legislation and policies linked to road works, an Environmental Assessment for each proposed OPRC roads have to be undertaken.

The sections of national roads selected through the National Road Sector Master Plan (NRPM) which has been developed based on the needs of transport sector for a period of 10 years from 2007 to 2017.

In addition to rehabilitation, improvement and maintenance, the pavement of certain road sections will be upgraded to Asphalt Concrete (AC) from the present pavement of DBST (Double Bitumen Surface Treatment) or Penetration Macadam (PM) surface.

Projects and Programs financed with International Development Association (IDA) resources need to comply with WB Operational Policies (OP). Therefore, sub-projects and components eligible for funding under this project will be required to satisfy the World Bank’s safeguard policies, in addition to conformity with environmental and social legislations of the GOSL.

1.1 Types of activities related to road rehabilitation, improvement and upgrading projects

Following works are typical for any road rehabilitation, improvement and upgrading project;

- Improve the existing road with proper two lane and four lane facility,
- Improve the existing pavement with AC,
- Improve the horizontal alignment at selected locations to reduce acute curves in order to provide safe driving conditions,
- Widen, repair or reconstruct damaged culverts and bridges and construct new cross drainage structures at locations where road will be placed on new embankments,

- Remove any irregularities that are on the existing vertical profile,
- Provide cycle lanes, pedestrian footpaths, bus bays, separate bus lanes and rest bays where necessary,

The above activities will lead to; a) Improve the vehicle operating speeds while ensuring safety of road users and, b) Reduce travel time and vehicle operating cost of vehicles above road sections.

2.0 Purpose of an Environmental and Social Management Framework (ESMF)

It is anticipated that environmental and social issues and impacts would be minimal for road rehabilitation and maintenance projects such as OPRC. However, if there are improvements such as widening lanes and shoulders, adding extra lanes in steep inclines, etc. depending on the road locality, there may be possible impacts to the environment and people where the existing roads are running through or closer to forested areas, wetlands, settlements, business premises, etc. There may also be social impacts in terms of loss of land and other assets/ infrastructure /livelihood located on the land, particularly if the Right Of Way (ROW) is insufficient to meet the design needs.

Purpose of the Environmental and Social Management Framework (ESMF) is to provide guiding principles for assessment and management of environmental and social aspects of all physical works targeted under this project. It will help to; a) systematically identify, predict, and evaluate beneficial and adverse environmental and social impacts of road rehabilitation, improvement and upgrading activities, b) designing enhancement measures for beneficial impacts, and c) implement mitigating measures for adverse impacts.

The ESMF will serve as a template to undertake appropriate environmental and social analysis of sub-projects under this project. It will be made available for public review and comment in appropriate locations in Sri Lanka and in IDA's Public Information Center in accordance with BP 17.50 requirements of disclosure. Detailed EAs for individual sub-projects will be carried out (in accordance with the ESMF) by the implementing agency and will be reviewed and cleared by the designated Project Approving Agency (PAA), as applicable, under prevailing national environmental legislation in Sri Lanka and by IDA prior to the approval of disbursement of funds. Similarly, specific social safeguards requirements such as Social Impact Assessments will be prepared and approved prior to project activities takes place.

3.0 Environmental and Social Safeguards Policies and their Implementation

3.1 National Policies, legislative and regulatory considerations

National Environmental Act (NEA) No 47 of 1980, and its' amendment Act No. 56 of 1988 and Act No. 53 of 2000

Under provisions of Part IV C of the NEA No. 47 of 1980 as stipulated in Gazette (Extra Ordinary) No. 772/22 dated June 24, 1993 GOSL made Environmental Assessment (EA) a legal requirement for a range of development projects. The list of projects requiring an EIA/ IEE is prescribed in the above Gazette notification. In addition, the Gazette notification includes a list of line ministries and agencies that are designated as Project Approving Agencies (PAA). The PAA's are responsible for the administration of the EIA process under NEA. Further amendments to the NEA stipulated environmental approvals for material extraction, emissions, noise and vibration levels. These regulations will also have a bearing on this development project.

According to provisions of the NEA regulations, the only prescribed project type under the Transport and Highways Sector relevant to the proposed project requiring an EA is the construction of national and provincial highways involving a length exceeding 10 Km.

In addition, other prescribed projects requiring environmental assessments, listed in the same regulations relevant to the proposed project include;

- I. Reclamation of land, wetland area exceeding 4 hectares;
- II. Conversion of forests covering an area exceeding 1 hectare into non forest uses;
- III. Involuntary resettlement exceeding 100 families, other than resettlement effected under emergency situations;
- IV. Extraction of timber covering land areas exceeding 5 hectares;
- V. Clearing of land areas exceeding 50 hectares;
- VI. Inland deep mining and mineral extraction involving a depth exceeding 25 meters;
- VII. Inland surface mining of cumulative areas exceeding 10 hectares;

- VIII. Mechanized mining and quarrying operations of aggregate, marble, limestone, silica, quartz, and decorative stone within 1 kilometer of any residential or commercial areas; and

All projects and undertakings irrespective of their magnitude, if located partly or wholly within 100 meters from the boundaries of or within any area declared under the National Heritage Wilderness Act; the Forest Ordinance; 60 meters from a river or stream bank and having a width of 25 meters or more at any point of its course; any archeological reserve, ancient or protected monument as defined or declared under the Antiquities Ordinance (Chapter 188); any areas declared under the Botanical Gardens Ordinance; and within 100 meters from the boundaries of or within any areas declared as a Sanctuary under the Fauna and Flora Protection Ordinance.

Considering the scope of activities supported under this project, the most likely PAA's would be the CEA, Ministry of Highways or Ministry of Provincial Councils and Local Government. The CEA will formally decide on the PAA depending on the scope and location of the project on a case by case basis.

According to GOSL procedure, all development activities require environmental clearance. In order to obtain such clearance, the project proponent has to fill in a Basic Environmental Information Questionnaire. The questionnaire requires information from the project proponent to enable the CEA to determine the level of environmental analysis required prior to providing approval for the project. Upon reviewing the questionnaire, the CEA determines whether the project requires an Initial Environmental Examination (IEE), or an Environmental Impact Assessment (EIA), or whether no further environmental analysis is required, depending on the nature of the potential impacts.

- **Coast Conservation Act No. 57 of 1981**

A project or any development activity that falls within the "Coastal zone" as stipulated in the Coast Conservation Act (CCA) will have to obtain approval/ permit from the Coast Conservation Department (CCD).

- **Fauna and Flora Protection Ordinance (FFPO) No.2 of 1937 (amended in 1993)**
Implemented by the Department of Wildlife Conservation, this act specifies that any development activity that takes place within one mile of the boundary of a National Reserve declared under the Ordinance require an EIA/IEE. The FFPO follows a similar process as the NEA in conducting scoping, setting the ToR, preparation of EA, review of EA and public consultation and disclosure. The decision of project approval or disapproval is finally granted by the Director of the Department of Wildlife Conservation.

- **Provincial Environmental Act (PEA) of 1991 implemented by the North Western Provincial Council for areas coming under the North Western Province**

Environmental Assessments are required for prescribed projects that have been gazetted in Gazette Extraordinary 1020/21 of 27th March, 1998. It specifies two lists of project types (a) where EIA/IEE is mandatory and (b) where the EA can be requested if the PAA decides so. The scoping process is similar to that of the NEA and will be headed by one of the two listed PAAs; (a) Provincial Environmental Authority and (b) Provincial Ministry of Fisheries and Aquaculture. Representation of the CEA and the Ministry of Environment in the scoping committee is a mandatory requirement. Setting up of the Terms of Reference (ToR), preparation of the EA, review and public disclosure and consultation, granting of the project decision are the same as specified in the NEA.

- **Land Acquisition Act (LAA) No.09 of 1950 as Amended**

Land Acquisition Act No.09 of 1950 is the principal Act that is used for public purposes. The Act is based on the doctrine of Eminent Domain, though it was amended several times, last ammendment being in 1986, there was no attempt to change the principles outlined in the Act on compensation until regulations pertaining to payment of compensation passed in Parliament in 2008 and made public by the Government Gazzette No. 1596/12 dated 07th April 2009, which is applicable for the acquisition where intention of acquisition has been published under Land Acquisition Act, (Sec.02 of LAA) on or after 17th March 2009.The NGOs and other pressure groups played a significant role to influence the legislators to pass these regulations though it fell sort of ammending the relevant clauses of the Act . Nevertheless the regulations are a part of the Act and recognized by law.

. The main feature of the regulations is that the provisions have been made for the payment of Market Value for the portion of the land that is acquired if the acquired land as an entity realize a value lower than the Market value of the land if it is sold as whole parcel.Replacement cost for structures is another salient feature of the approved regulations.Payment of disturbances and other expenses are categorized under 12 sub headings,(Annexure 03).The operational procedures of the LAA are laid down in detail and under it claimants are paid only the depreciated value for structures which often led to difficulties in resettling affected people. Under LAA, any aggrieved party on the valuation determined by the Department of Valuation can appeal to the Land Acquisition Review Board, and if not satisfied with the decision of the LARB, an appeal can be made to the Supreme Court.But past expereince is that the Review Board, and legal procedures are time consuming and the increase of compensation have been very much to the dissatisfaction of the affected due to procedural and other constraints. Since introduction of new compensation package contained in the government gazette NO.1596/12 dated 07th April 2009,the appeals to LARB has decreased appreciably iin the case of road development projects. The orders made by the Minister of Land and land development under LAA and made operative by Government Gazette No.1837/47 22nd November 2013 for selected 18 road projects appear to be an improvement on the regulations made in 2009 where Land Acquisition and Resettlement Committee (LARC)

and Super LARC had been empowered to decide on certain categories of entitlements and ex-gratia payments but payments for disturbances and expenses for attending inquiries, shifting, re fixing cost of fixtures and fittings etc. have been dropped.

The law discourages unnecessary acquisition and land acquired for one purpose cannot be used for another purpose and should be returned to the original owner subject to certain requirements under the Act.

- **Land Development Ordinance (1935)**

This ordinance deal with the alienation of Crown (state) land for development purposes. Land alienated to the peasants settled in colonization schemes were done under the Land Development Ordinance. Permit holders are expected to adhere to prescribed requirements in the permit. Subsequently most of these land lots were converted to almost free holds under, Swarna Bhoomi and other progrmmes that followed. By virtue of this ordinance and its subsequent amendments, households that occupy crown land illegally may request permission from the Divisional Secretary to be regularized their occupation on the land. Encroachers who have occupied and developed land are considered for regularization unless the land does not fall within the category of reserved land.

- **State Land Ordinance No 8 of 1947 –**

Section (b) of the ordinance explains the state land grants which can be made on request and the rents to be obtained for the grants.

- **Road Development Authority Act No. 73 of 1981-**

The Road Development Authority Act (1981) provides for the establishment of the RDA and specifies the powers; Section 22 deals with land acquisition for road development as a "public purpose" and provides for the acquisition by, and transfers to, the RDA of immovable or moveable property within any declared road development area.

- **Thoroughfare Ordinance (40 of 2008)**

Salient features of the above Act are:

It empowers the Highways Authority to establish Road Network Development Advisory Council and District Road Development Coordinating Committees.

- Prevent unauthorized constructions within the road reservations.
- Construct new roads divert roads.
- Acquire lands vested in a local authority for widening and construction of roads.
- Make special grants under the Crown land Ordinance. Power of authority to alienate lands.
- Purchase lands for resettlement sites.

- The power to purchase land by the Highways Authority would accelerate the process of resettlement, Officers are authorized to pay compensation for the damages caused to properties.
- In totality this act promotes the construction of new roads and improvement to existing roads in a more accelerated phase due to build in mechanisms to acquisition of land, payment of compensation and resettlement speedily.

- **Mahaweli Authority Act of 1977 –**

Under the Mahaweli Authority Act of 1977, with in the area declared under the Act, all matters pertaining to the administration of land, falls within the Mahaweli Authority.

- **Forest Ordinances Amended –**

Land declared as forest land is administered by the Department of Forest Conservation. They have no authority to release land on long term lease. They can release land only on renewable annual permits, still land within conservation and strict reserves would not be released for other activities by the Department of Forest Conservation. Land required for public purposes should be released by the DFC when requested by the relevant PMUs, after satisfying the conditions laid down in the NEA for prescribed projects.

- **Vihara (temple) and Devalagam Ordinance –**

Any construction within a land belonging to a temple or devalaya, in the event of an acquisition should be paid to the Commissioner General of Buddhist Affairs on behalf of the temple and trustees on behalf of the devalayas even if the construction had been done by a third party..The Prescriptive Ordinance does not apply to Temple and Devalagam lands.

- **Mines and Minerals Act No. 32 of 1992**

The Geological Survey and Mines Bureau was established under the Mines and Minerals act to regulate the exploration of mines and minerals, transportation, processing, trading in or export of minerals.

- **National Involuntary Resettlement Policy (NIRP)**

The LAA and subsequent regulations enacted by parliament in 2008, only provides for compensation for land and structures and loss of income for some categories. It does not require project executing agencies to address key resettlement issues such as exploring alternative project options that avoid or minimize impacts on people, compensating those who do not have title to, but are currently using and dependent on land, or implementation of income restoration measures aimed at the social and economic rehabilitation of displaced/affected persons. It does not deal adequately with the impacts on those occupiers of lands who are not legal owners but lands they have occupied being taken for development purposes.

To ensure that displaced /affected persons are treated in a fair and equitable manner, and to particularly ensure that people are not impoverished or suffer unduly as a result

of public or private project implementation, Sri Lanka has adopted a national policy to protect the rights of all people affected by development projects. To remedy the current gaps in the LAA in addressing key resettlement issues, the Cabinet of Ministers approved on 16 May 2001, the National Policy on Involuntary Resettlement (NIRP) and enunciated its adoption to all development induced resettlement. The Ministry of Lands has the institutional responsibility for implementing the NIRP. The newly adopted policy, principled on human and ethical considerations entails the payment of resettlement value (replacement cost) and arranges for their resettlement and where necessary even their rehabilitation. Even though NIRP is not in the statute book, the policy is adopted by the GOSL for projects funded by ADB, WB and Japanese Bank for International Cooperation after its adoption in 2001. The NIRP was first implemented to address the issues of APs in STDP. Now the policy applies to all projects where private land is acquired for public purposes. The rules enacted in parliament under LAA in 2008 to pay compensation for structures and land at replacement cost and payment of other entitlements to the APs was to give legitimacy to the provisions of the NIRP. Any public official who contravene the NIRP is subject to disciplinary action by the heads of respective organizations. It is an issue that can be raised at parliamentary select committee by a member of parliament on behalf of APs or inquired by the Ombudsman of Parliament., Human Rights Commission or by courts of Law. In fact the highest courts in Sri Lanka have recognized that NIRP could be treated as an obligation of the state towards the affected. **Case of RDA vs. Mundy** is a good example. LARB which is the legal body under the LAA to review the appeals against compensation issues often referred the applicants back to LARC in the past, subsequently there were hardly any appeals directed to LARB by the APs. The practice had been in the past to follow the policies of ADB, WB and JBIC and other relevant donors when there exists an ambiguity between donor policy and NIRP/LAA. At close examination it appears that the NIRP and donors policies particularly that of WB and ADB are at congruent in most of the issues. Contravention of provisions of the RAP which is prepared based on NIRP and donor policies could invite sanctions from the donors too.

NIRP emphasizes that Involuntary resettlement should be avoided or reduced as much as possible by reviewing alternatives to the project as well as alternatives within the project.

- Where involuntary resettlement is unavoidable, affected people should be assisted to re-establish themselves and improve their quality of life.
- Gender equality and equity should be ensured and adhered to throughout the policy.
- Affected persons should be fully involved in the selection of relocation sites, livelihood compensation and development options at the earliest opportunity.

- Replacement land should be an option for compensation in the case of loss of land; in the absence of replacement land cash compensation should be an option for all affected persons
- Compensation for loss of land, structures, other assets and income should be based on full replacement cost and should be paid promptly. This should include transaction costs.
- Resettlement should be planned and implemented with full participation of the provincial and local authorities.
- To assist those affected to be economically and socially integrated into the host communities; participatory measures should be designed and implemented.
- Common property resources and community and public services should be provided to affected people.
- Resettlement should be planned as a development activity for the affected people.
- Affected persons who do not have documented title to land should receive fair and just treatment.
- Vulnerable groups should be identified and given appropriate assistance to substantially improve their living standards.
- Project Executing Agencies should bear the full costs of compensation and resettlement.
- The adoption of NIRP in its entirety will make it possible to conform fully to the Bank policies. The RDA has a special unit called the Environment and Social Unit to assist it in dealing with APs and it is experienced in such work.

3.2 World Bank policies on environment and social safeguards

- **OP/BP 4.01 Environmental Assessment (EA)**

Projects financed with IDA resources normally need to comply with World Bank Operational Policies. World Bank OP 4.01 requires Environmental Assessment (EA) of projects proposed for Bank financing to help ensure that these projects are environmentally sound and sustainable. EA is a process whose breadth, depth and type of analysis depend on the nature, scale and potential for environmental impacts of the proposed project.

Considering the work involved and resultant environmental repercussions in road resurfacing and upgrading and/or provision of drainage in non-sensitive environments, this project can be treated as Category B.

World Bank OP 4.01 is very clear that for a project in Category B proposed for financing under an IDA Credit, the developer must consult project affected groups and local non-governmental organizations (NGOs) about the project's environmental aspects and take their views into account in the design and implementation. The EA should particularly incorporate such comments to improve social acceptability and environmental

sustainability. Such consultations should be initiated as early as possible, in the Project cycle and it is mandatory that consultations are undertaken after the draft EA is prepared. In addition, the RDA and contractor are expected to consult with stakeholders throughout project implementation as necessary to address EMP related issues that affect them. The OP 4.01 also highlights the importance of analyzing alternative designs, technologies and operational strategies systematically in terms of their potential environmental impacts in order to select the most environmentally friendly and economically viable option.

- **OP/BP 4.10 Indigenous Peoples Policy**

Key objectives of the Indigenous Peoples policy are to: (i) ensure that indigenous people affected by World Bank funded projects have a voice in project design and implementation; (ii) ensure that adverse impacts on indigenous peoples are avoided, minimized or mitigated; and (iii) ensure that benefits intended for indigenous peoples are culturally appropriate. The policy is triggered when there are indigenous peoples in the project area and there are likely potential adverse impacts on the intended beneficiaries of these groups. When this policy is triggered an Indigenous Peoples Development Plan is to be prepared to mitigate the potential adverse impacts or maximize the positive benefits of the project interventions. Social Assessment carried out for the road sections reveal that there are no indigenous people living in the project areas. Hence, preparation of IPPs may not require.

- **OP/BP 4.11 Physical Cultural Resources**

This policy addresses physical cultural resources, which are defined as movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, pale-ontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or under water. Their cultural interest may be at the local, provincial or national level, or within the international community.

The Bank assists countries to avoid or mitigate adverse impacts on physical cultural resources from development projects that it finances. The impacts on physical cultural resources resulting from project activities, including mitigating measures, may not contravene either the borrowers' national legislation, or its obligations under relevant international environmental treaties and agreements. The Bank adheres to the following project financing policies:

- The Bank finances only those projects that are sited and designed so as to prevent significant damages to non-replicable cultural property. This policy

pertains to any project where the Bank is involved, irrespective of whether the Bank is itself financing the part of the project that may affect cultural property.

- Deviation from this policy may be justified only where expected project benefits are great, and the loss of or damage to cultural property is judged by competent authorities to be unavoidable, minor, or otherwise acceptable. The Bank also requires a discussion with specific details for their justification in the documents.

Furthermore, should any other site get identified the Project will do the following: Whenever chance finds are made during the construction of the roads, the contractor will immediately inform the project execution agency which will, in turn, inform the government department concerned with cultural property.

- The project execution agency will be responsible for securing the artefacts from theft, pilferage and damage until the responsibility is taken over by the relevant authorities.
- Failure to report a chance find immediately by the contractor will result in cancellation of the contract and punishment according to the relevant laws.
- These conditions and procedures regarding chance finds will be included as standard provisions in the construction document in details and made available for IDA review and other interested persons and entities.

- **OP/BP 4.12 Involuntary Resettlement Policy**

Involuntary resettlement policy applies where a project may cause physical and economic displacement require to compensate people for loss of land, other assets, livelihood, or standard of living. The WB operational policies seek to avoid where feasible or minimize involuntary resettlement, exploring all viable alternative project designs. Resettlement planning has the objectives of providing displaced persons with a standard of living equal to, if not better than, their pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher. The required measures to address the impacts resulting from involuntary taking of land. If project has significant impacts or physical displacement over 200 persons, a full Resettlement Action plan (RAP) is required to ensure that the displaced persons are informed about their options and rights pertaining to resettlement; consulted on and provided with technically and economically feasible resettlement alternatives and provided compensation at full replacement cost. Where the impacts include physical relocation the RAP includes measures to ensure that the displaced persons are provided moving allowances and provided with residential housing. Where impacts on the entire displaced population are minor, or fewer than 200 people are displaced, an abbreviated resettlement plan may be agreed with the borrower. Impacts are considered "minor" if the affected people are not physically displaced and less than 10 per cent of their productive assets are lost. Under TCAMP.

4.0 Environmental Assessments and Mitigation Measures

Road specific environmental assessments (EA) and social impact assessments (SIA) should be conducted before commencement of each sub-project (during detail design). Such approach will provide more specific information on the environment and socio-economic profile along a given road section. It will also generate project specific impacts on environment and society and help to formulate mitigation measures. However, this ESMF will outline all possible impacts to the environment and society on a generic basis.

Different types of baseline data on environmental characteristics, socio-economic baseline information and project affected persons information may be necessary for formulating detailed EAs/ SIAs. Therefore it is necessary undertake collection of baseline data on environmental characteristics and a socioeconomic study of the project area and project affected persons.

TOR for road specific EA and SIA is attached as annex 5.

4.1 Potential environmental issues and impacts

The purpose of this section of the report is to identify the possible environmental and social impacts and issues that could arise as a result of the proposed project activities. The nature and scale of impacts(a 500m belt to the both side of the road considered as the impact zone) will be determined by the type of interventions undertaken by the project to assist the road sector, which focuses on rehabilitation, improvement and upgrading the existing road section through resurfacing and provision of drainage. The section also discusses environmental and social issues that may arise during periodic maintenance of the rehabilitated and improved roads.

Impacts and issues of any road development project could be distinguished between physical, biological/ ecological and social environments. These impacts could be significant or non-significant, positive or negative, direct or indirect and could be immediate or long term impacts.

As stated previously this project is categorized as a category B project in which the impacts are mostly non-significant and manageable. Some of the iimpacts to physical and ecological environment during construction phase are as follows:

1. Adverse impacts on soil at construction and material extraction sites and yard could occur due to; Loss of productive top soil due to site preparation work, Soil erosion caused by clearing & grubbing operations which removes the vegetative cover on the roadway and in the immediate surroundings, Soil erosion caused by

mining and quarrying operations, Soil erosion caused by temporary diversions of water ways, Contamination of soil by heavy metals & chemicals discharged by construction vehicles and from material storage sites, Erosion of uncovered temporary stock piles and soil dumps.

2. Impacts on surface and ground water sources occur due to following activities;

Adverse impacts	Siltation of waterways due to modifications to surface water flow and drainage patterns,	Short term (during construction)
	Flooding of local areas due to re-channelization of waterways intersected by the road,	Short term (during construction)
	Impacts of impoundment, channel deepening and filling,	Long term
	Degradation of surface water quality due to equipment and material piling on the site,	Short term (during construction)
	Degradation of water quality due to waste water from worker camps,	Short term (during construction)
	Degradation of water quality in water bodies in the vicinity of quarry and borrow sites	Short term (during construction) Long term
	Reduction in groundwater recharge due to road drainage and excavation, especially in dry areas.	
Beneficial impacts	Improvement of surface water quality due to better run off management	Long term

3. Ambient air quality within construction sites, material extraction sites and yards will be affected due to following operations;
 Operation of construction vehicles and plants (AC plant and concrete batching plants) that emit obnoxious gases
 Exposure of soil surface due to excavation, clearing of surface vegetation which generates dust
 Mining operations of metal and gravel for construction material will emit dust and other particulate matter
 Improper storage of chemicals that could emit fumes of stored chemicals

4. Impacts on Eco-systems, Fauna and Flora could occur due to following operations and activities;
 Clearing of roadside vegetation for construction activities may lead to disturbance to natural habitats (wetlands, forestry areas, lagoons, etc)
 Clearing of surface vegetation in quarry sites and burrow sites may lead to the loss of land/ natural habitats
 Loss of fauna and flora in the road site due to construction works
 Disturbance to animal migration routes and patterns

Pouching and hunting of animals by workers
Disturbance to animal migration routes and patterns
Changes to aquatic eco-systems due to siltation of waterways, changes to speed and volume of water flow
Contamination of biota by emissions to air, water and soil during construction and material extraction works
Loss of standing crops, fruit trees and commercially valuable trees due to construction works close to home gardens, chena lands and paddy fields

5. Increased noise nuisance and vibration issues to public living close to construction areas and quarries

Following adverse impacts could occur after construction has been completed and during operational stage where periodic maintenance of the rehabilitated road and road furniture;

1. Flooding of road and surrounding areas due to blocking of culverts and other drainage structures
2. Threats of modification of previously pristine areas by humans as a direct result of improved accessibility
3. Road safety issues of road users
4. Encroachment in to new ROW

As indicated, rehabilitation of roads will have minimal amount of on-site environmental impacts. Disturbances to land, interference to soil stability and the hydrology in the area will be minimal. Impacts on air quality and noise levels during project operational stage will depend on the projected traffic flow increases and the anticipated reduction in traffic congestion both due to improved road conditions.

Issues and impacts identified will be mitigated through actions stipulated in table 4.1. Provincial offices of RDA will execute these mitigation measures through respective Chief Engineers and Executive Engineers. ESD of RDA will monitor the effectiveness of implementation of the selected mitigation measures.

4.2 Mitigation measures for potential environmental issues and impacts

Impacts and issues relating to the development works discussed in the previous section could be avoided/ minimized by adopting various mitigation measures that could be applied during the preconstruction, construction and operation phases of the project. Below table outlines the impacts/ issues and possible mitigation measures that could be adopted to avoid/ minimize the impacts on physical, biological and social environments.

Table 4.1: Possible impacts and issues and mitigation measures

Environmental Issues		Protection and preventive measures
1.0 Advance Works		
1.1	Land Acquisition	
	1.1.1	Removal of structures built within the existing road reservation
	(a)	Providing labour to shift and restore the structures outside the new road corridor.
	(b)	Possible livelihood restoration measures for affected persons should be considered in line with Environmental and Social Safeguard Policies of World Bank, National Involuntary Resettlement Policy (NIRP) and concession arrangements made by Ministry of Highways and Road Development for compensating project affected persons
	1.1.2	Acquisition of private/ state land for adjustments to road alignment
	(a)	Compensation based on the Land Acquisition Act (LAA), National Involuntary Resettlement Policy (NIRP) and concession arrangements made by Ministry of Highways and Road Development for compensating project affected private lands that may need to be acquired for road construction.
	(b)	Consent of Department of Forest (DoF), Department of Wildlife Conservation (DWLC), for releasing forest land that may need to be acquired due to minor adjustment to alignment within such areas.
	(c)	Identification of wildlife transition locations should be carried out in order to avoid any impacts such as potential of collision and run over of animals and disturbance to their natural movement.
	(b)	RDA should obtain prior consent from DoF and DWLC for the construction works near lands belonging to these institutes.
1.2	Road sections near archaeological sites	
	(a)	Prior consultation and consent should be taken from Department of Archaeology for proposed construction works close to archaeological sites.
1.3	Identification of utility supply lines that may need to be shifted	
	(a)	Prior consultation and consent should be taken from relevant service provider if sections of utility lines need to be shifted due to design requirements or shift in alignment.
1.4	Design for culverts and bridges	
	(a)	RDA should obtain prior consent from relevant authorities such as Department of Irrigation, Department of Agrarian services, etc., for any proposed construction works on reservoir embankments, irrigation canals etc.
	(b)	Designs for bridges should conform to the requirements of the "Bridge Design Manual" of RDA considering a flood return period of 100 years. For culverts appropriate designs should be considered to allow sheath flow or cross drainage without any blocking.
2.0 Construction Phase		
2.1	Earthwork and Soil Conservation	
	2.1.1	Disposal of Debris and Spoil
	(a)	All debris and residual spoil material including any left earth shall be disposed only at locations approved by the engineer for such purpose and subjected to the clauses 2.1.1.b and 2.1.1.c.
	(b)	If directed by the engineer the contractor shall obtain the approval from the relevant Local Authority (LA) such as Pradeshiya sabha, Municipal Council and other government agencies (as required) for disposal and spoil at the

Environmental Issues	Protection and preventive measures	
		specified location.
	(c)	The debris and spoil shall be disposed in such a manner that; (i) waterways and drainage paths are not blocked (ii) the disposed material should not be washed away by runoff and (iii) should not be a nuisance to the public
	(d)	If directed by the Engineer the debris and residual spoil material including any left earth shall be used, to refill the borrow areas as directed by the engineer, subjected to laying of topsoil as per EMAP clause 2.1.2.
	(e)	If consented by the engineer, contractor can dispose the debris and spoil as a filling material provided that the contractor can ensure that such material is used for legally acceptable purposes with disposed in an environmentally acceptable manner.
	2.1.2	Conservation and reuse of top soil
	(a)	Top soil of the agricultural areas and any other productive areas where it has to be removed for the purpose of this project shall be stripped to a specified depth of 150mm and stored in stockpiles of height not exceeding 2m, if directed by the engineer. If the contractor is in any doubt on whether to conserve the topsoil or not for any given area he shall obtain the direction from the engineer in writing
	(b)	Removed top soil could be used as a productive soil when replanting/establishing road side vegetation
	(c)	Such stockpiled topsoil must be returned to cover the areas including cut slopes where the topsoil has been removed due to project activities. Residual topsoil must be distributed on adjoining/proximate barren areas as identified by the engineer in a layer of thickness of 75mm – 150mm.
	(d)	Topsoil thus stockpiled for reuse shall not be surcharged or over burdened. As far as possible multiple handling of topsoil stockpiles should be kept to a minimum.
	2.1.3	Protection of Ground Cover and Vegetation
	(a)	Construction vehicle, machinery and equipment shall be used and stationed only in the areas of work and in any other area designated/ approved by the engineer. Entry and exit of construction vehicles and machinery should be restricted to particular points as directed by the engineer
	(b)	Contractor should provide necessary instructions to drivers, operators and other construction workers not to destroy ground vegetation cover unnecessarily
	2.1.4	Borrowing of Earth
	(a)	Earth available from excavation for roadside drains as per design, may be used as embankment materials, subject to approval of the engineer
	(b)	Contractor shall comply with the environmental requirements/guidelines issued by the Central Environmental Authority (CEA) and the respective local authority with respect of locating borrow areas and with regard to all operations related to excavation and transportation of earth from such sites.
	(c)	All borrow pits/areas should be rehabilitated at the end of their use by the contractor in accordance with the requirements/guidelines issued by the CEA and the respective local authority.
	(d)	Borrow areas shall not be opened without the permission of the engineer. The location, depth of excavation and the extent of the pit or open cut area shall be as approved by the engineer.
	(e)	Establishment of borrow pits/areas and its operational activities shall not cause any adverse impact to the properties. Also shall not be a danger of

Environmental Issues	Protection and preventive measures	
		health hazard to the people.
(f)		Contractor shall take all steps necessary to ensure the stability of slopes including those related to temporary works and borrow pits.
	2.1.5	Prevention of soil erosion
(a)		Embankment slopes, slopes of cuts, etc shall not be unduly exposed to erosive forces. These exposed slopes shall be graded and covered by grass as per the specifications. All fills, back fills and slopes should be compacted immediately to reach the specified degree of compaction and establishment of proper mulch.
(b)		Work that lead to heavy erosion shall be avoided during the raining season. If such activities need to be continued during rainy season prior approval must be obtained from the Engineer by submitting a proposal on actions that will be undertaken by the contractor to prevent erosion.
(c)		The work, permanent or temporary shall consist of measures as per design or as directed by the engineer to control soil erosion, sedimentation and water pollution to the satisfaction of the engineer. Typical measures include the use of berms, dikes sediment basins, fiber mats, mulches, grasses, slope drains and other devices. All sedimentation and pollution control works and maintenance thereof are deemed, as incidental to the earthwork or other items of work and no separate payment will be made for their implementation.
	2.1.6	Contamination of soil by fuel and lubrications
(a)		Vehicle/machinery and equipment servicing and maintenance work shall be carried out only in designated locations/ service stations approved by the engineer
(b)		Approval from CEA in the form of an Environmental Protection Licenses (EPL) should be secured by the contractor if he intends to prepare his own vehicle servicing yard
(b)		Waste oil, other petroleum products and untreated wastewater shall not be discharged on ground so that to avoid soil pollution. Adequate measures shall be taken against pollution of soil by spillage of petroleum/oil products from storage tanks and containers. All waste petroleum products shall be disposed of in accordance with the guidelines issued by the CEA or the engineer.
(c)		Sites used for vehicle and plant service and maintenance shall be restored back to its initial status. Site restoration will be considered as incidental to work.
	2.1.7	Disposal of harmful construction wastes
(a)		Contractor prior to the commencement of work shall provide list of harmful, hazardous and risky chemicals/ material that will be used in the project work to the Engineer. Contractor shall also provide the list of places where such chemicals/materials or their containers or other harmful materials have been dumped as waste at the end of the project.
(a)		All disposal sites should be approved by the engineer and approved by CEA and relevant local authority.
(b)		The contractor shall clean up any area including water-bodies affected/contaminated (if any) as directed by the engineer at his own cost.
	2.1.8.	Quarry operations
(a)		Utilizing the existing quarry sites available in the project influential area as much as possible which are approved by GSMB or local authorities, operating with EPL and Industrial Mining Licences (IML); If new quarries are to be opened, prior approval should be obtained from GSMB, CEA and local authorities such as Pradeshiya Sabha;

Environmental Issues		Protection and preventive measures
		Selected quarry sites should have proper safety measures such as warnings, safety nets etc., and third party insurance cover to protect external parties that may be affected due to blasting.
	(b)	It is recommended not to seek material from quarries that have ongoing disputes with community.
	(c)	The maintenance and rehabilitation of the access roads in the event of damage by the contractors operations shall be a responsibility of the contractor.
2.2	Storage and handling of construction material	
	2.2.1	Emission of dust
	(a)	Storage locations of sand, metal, soil should be located away from settlements and other sensitive receptors and covered (with artificial barriers or natural vegetation). Measures given under clauses 2.4.1 (c), (d), (e) should be considered within material storage site to minimize dust during handling of material. All access roads within the storage site should be sprinkled with water for dust suspension.
	2.2.2	Storage of fuel, oil and chemicals (avoid fumes and offensive odour)
	(a)	All cement, bitumen (barrels), oil and other chemicals should be stored and handled on an impervious surface (concrete slab) above ground level. Storage facility of cement, bitumen (barrels), oil and other chemicals should be an enclosed structure ensuring that no storm water flows in to the structure. A ridge should be placed around the storage facility to avoid runoff getting in to the structure. Adequate ventilation should be kept to avoid accumulation of fumes and offensive odour that could be harmful to material handlers. Measures given under clause 2.9 should be considered to avoid any accidents and risks to worker population and public.
	2.2.3	Transportation of material
	(a)	The contractor should avoid over loaded trucks to transport material to construction sites.
2.3.	Water – Protection of Water Sources and Quality	
	2.3.1.	Loss of minor water sources and disruption to water users
	(a)	Contractor should make employees aware on water conservation and waste minimization in the construction process.
	(b)	Contractor shall protect sources of water (potable or otherwise) such as water sources used by the community so that continued use these water sources will not be disrupted by the work. In case the closure of such sources is required on temporary basis contractor shall provide alternative arrangement for supply. Alternative sources such as wells thus provided should be within acceptable distance to the original sources and accessible to the affected community.
	(c)	Contractor shall not divert, close or block existing canals and streams in a manner that adversely affect down – stream intakes. If diversion or closure or blocking of canals and streams is required for the execution of work, contractor must obtain the engineers approval in writing. Contractor shall also obtain the approval from the National Water Supply and Drainage Board (NWS&DB) or local authority of Divisional Secretary depending on the operating agency of the intake/water supply. Contractor shall restore the drainage path back to its original status once the need for such diversion or closure or blockage ceased to exist. During the affected

Environmental Issues	Protection and preventive measures	
		period contractor shall supply water to the affected community.
	(d)	In case the contractors activities going to adversely affect the quantity or quality of water, the contractor shall serve notice to the relevant authorities and downstream users of water sufficiently in advance.
	2.3.2	Siltation into water bodies
	(a)	Contractor shall take measures to prevent siltation of water bodies as a result of his work including construction of temporary/ permanent devices to prevent water pollution due to siltation and increase of turbidity. These shall include the measures against erosion as per EMAP 2.1.6.
	(b)	Construction materials containing small/ fine particles shall be stored in places not subjected to flooding and in such a manner that these materials will not be washed away by runoff.
	(C)	Temporary soil dumps should be placed at least 200m away from all water bodies
	(d)	If temporary soil piles are left at the site for a long time those piles should be covered with thick polythene sheets
	(f)	All fills, back fills and slopes should be compacted immediately to reach the specified degree of compaction and establishment of proper mulch
	2.3.3	Alteration of drainage paths
	(a)	Contractor shall not close or block existing canals and streams permanently. If diversion or closure or blocking of canals and streams is required for the execution of work (e.g. for construction of bypass), contractor must first obtain the Engineers approval in writing. Contractor shall carry out an investigation and report to the Engineer, if an investigation is requested by the Engineer. Contractor shall also obtain the approval from the relevant agency such as Department of Irrigation (DI)/Agrarian Services Department (ASD)/Divisional Secretary (DS) prior to such action is taken. Contractors shall restore the drainage path back to its original status once the need for such diversion or closure or blockage is no longer required.
	(b)	The debris and spoil shall be disposed in such a manner that waterways and drainage paths are not blocked.
	(c)	Avoid/ minimize construction works near/ at such drainage locations during heavy rain seasons such as Mara rains from November to December.
	2.3.4.	Contamination of water from construction wastes
	(a)	The work shall be carried out in such a manner that pollution of natural watercourses, inland tanks and irrigation canals is avoided. Measures as given in 2.1.6., 2.1.7, 2.1.8, 2.3.2 and 2.3.6. clauses shall be taken to prevent the wastewater produced in construction from entering directly into streams, water bodies or the irrigation systems.
	(b)	Avoid/ minimize construction works near/ at such drainage locations during heavy rain seasons such as Mara rains from November to December.
	(b)	The discharge standards promulgated under the National Environmental Act shall be strictly adhered to. All waste arising from the project is to be disposed in a manner that is acceptable to the engineer and as per the guidelines/instructions issued by the CEA.
	2.3.5.	Contamination from fuel and lubricants
	(a)	All vehicle and plant maintenance and servicing stations shall be located and operated as per the conditions and /or guidelines stipulated under the EPL issued by CEA. In general these should be located at least 200m away from water bodies and wastewater shall not be disposed without meeting the disposal standards of the CEA. Wastewater from vehicle and plant maintenance and servicing stations shall be cleared of oil and grease

Environmental Issues	Protection and preventive measures	
		and other contaminants to meet the relevant standards before discharging to the environment.
	(b)	Vehicle, machinery and equipment maintenance and re-filling shall be done as required in EMAP clause 2.1.6. to prevent water pollution as well
	2.3.6.	Locating, sanitation and waste disposal in construction camps
	(a)	Locations selected for labour camps should be approved by engineer and comply with guidelines/ recommendations issued by the CEA/Local Authority (LA). Construction labourer's camps shall not be located within 200m from waterways, within an area coming under DWLC or DoF, near to a site or premises of religious, cultural or archeological importance and school.
	(b)	Labour camps shall be provided with adequate and appropriate facilities for disposal of sewerage and solid waste. The sewage systems shall be properly designed, built and operated so that no pollution to ground or adjacent water bodies/watercourses takes place. Garbage bins shall be provided the camps and regularly emptied. Garbage should be disposed off in a hygienic manner, to the satisfaction of the relevant norms. Compliance with the relevant regulations and guidelines issued by the CEA/LA shall be strictly adhered to.
	(c)	Contractor shall ensure that all camps are kept clean and hygienic. Necessary measures shall be taken to prevent breeding of vectors
	(d)	Contractor shall report any outbreak of infectious disease of importance in a labour camp to the engineer and the Medical Officer of Health (MOH) or to the Public Health Inspector (PHI) of the area immediately. Contractor shall carry out all instructions issued by the authorities, if any.
	(e)	Contractor shall adhere to the CEA recommendations on disposal of wastewater. Wastewater shall not be discharged to ground or waterways in a manner that will cause unacceptable surface or ground water pollution.
	(f)	All relevant provisions of the Factories Act and any other relevant regulations aimed at safety and health of workers shall be adhered to.
	(g)	Contractor should remove all labour camps fully after its need is over, empty septic tanks, remove all garbage, debris and clean and restore the area back to its former condition.
	2.3.7.	Wastage of water and waste minimization
	(a)	The contractor will minimize wastage of water in the construction process/operations by reusing water as much as possible, utilizing only the required amount of water for the construction works etc...
	(b)	The contractor shall educate and made employees aware on water conservation, waste minimization and safe disposal of waste following guidelines given by CEA and LA.
	2.3.8.	Extraction of water
	(a)	The contractor is responsible for arranging adequate supply of water for the project purpose throughout the construction period. Contractor shall not obtain water for his purposes including for labour camps from public or community water supplies without approval from the relevant authority. Such extraction (if approved) should be under direct supervision of the engineer
	(b)	Extraction of water by the contractor for the project purposes shall comply with the guidelines and instructions issued by relevant authority. . The Contractor shall not extract water from groundwater or from surface water-bodies without permission from the Engineer.

Environmental Issues		Protection and preventive measures
	(c)	Construction over and close to the non-perennial streams shall be undertaken in the dry season. Construction over the irrigation canals, if disruption to the flow, quality of water and impact on the irrigation structure is expected (or probable in the view of the Engineer), will be undertaken under necessary permission from the Department of Irrigation.
	(d)	The Contractor may use the natural sources of water subject to the provision that any claim arising out of conflicts with other users of the said natural sources of water shall be made good entirely by the contractor
2.4.	Flood Prevention	
	2.4.1.	Blockage of drainage paths and drains
	(a)	Contractor's activities shall not lead to flooding conditions as a result of blocked drainage paths and drains. The contractor shall take all measures necessary or as directed by the Engineer to keep all drainage paths and drains clear of blockage at all times.
	(b)	If flooding or stagnation of water is caused by contractor's activities, contractors shall provide suitable means to (a) prevent loss of access to any land or property and (b) prevent damage to land and property. Contractor shall compensate for any loss of income or damage as a result.
	2.4.2	Work in Flood Prone Areas
	(a)	Contractor's activities shall not lead to aggravate floods in flood prone areas when working in flood prone areas.
	(b)	When working in flood prone areas during rainy season the contractor shall avoid storing materials, chemicals and other items of work in areas where those can be washed away by the floods.
2.5	Air Pollution	
	2.5.1.	Generation of Dust
	(a)	The contractor shall effectively manage the dust generating activities such as topsoil removal, handling and transporting sand, rubble, bitumen, and cement during periods of high winds or during more stable conditions with winds directed towards adjacent residences and other facilities.
	(b)	All stockpiles shall be located sufficiently away from sensitive receptors.
	(c)	All vehicles delivering materials shall be covered to avoid spillage and dust emission.
	(d)	The Contractor should avoid, where possible and take suitable action to prevent dirt and mud being carried to the roads (particularly following wet weather).
	(e)	The contractor should enforce vehicle speed limits to minimize dust generation.
	(f)	The Contractor shall employ a water truck to sprinkle water for dust suppression on all exposed areas as required (note: the use of waste water / waste oil for dust suppression is prohibited)
	(g)	All cleared areas shall be rehabilitated progressively.
	(h)	All earthwork shall be protected in a manner acceptable to the minimize generation of dust.
	(i)	All existing highways and roads used by vehicles of the contractor, or any of his sub-contractor or supplies of materials or plant and similarly roads which are part of the works shall be kept clean and clear of all dust/mud or other extraneous materials dropped by such vehicles or their tyres.
	(j)	Clearance shall be affected immediately by manual sweeping and removal of debris, or, if so directed by the Engineer, by mechanical sweeping and clearing equipment. Additionally, if so directed by the Engineer, the road surface will be hosed or sprinkled water using appropriate equipments.
	(k)	Plants, machinery and equipment shall be handled (including dismantling)

Environmental Issues	Protection and preventive measures	
		so as to minimize generation of dust.
(l)		The contractor shall take every precaution to reduce the level of dust emission from the hot mix plants and the batching plants up to the satisfaction of the Engineer in accordance with the relevant emission norms.
(m)		The hot mix plant be sited in accordance with CEA guidelines and operated with an EPL. The hot mix plants shall be fitted with the requirements of the relevant current emission control legislation.
	2.5.2	Emission from Hot-Mix Plants and Batching Plants
(a)		The hot mix plants and batching plants shall be sited in accordance with CEA guidelines. It is recommended that hot mix plants and batching plants to be located sufficiently away from sensitive receptors such as vulnerable habitats, religious, cultural and archaeological sites, residential areas, schools and industrial areas (locations given in item 2.4.1).
(b)		The exhaust gases shall comply with the requirements of the relevant current emission control legislation. All operations at plants shall be undertaken in accordance with all current rules and regulations protecting the environment as well as the conditions given in the EPL.
	2.5.3.	Odour and offensive smells
(a)		Contractor shall take all precautions such as storing all chemicals used for construction works in properly closed containers with good ventilations to prevent odour and offensive smell emanating from chemicals and processes applied in construction works or from labour camps. In a situation when/where odour or offensive smell does occur contractor shall take immediate action to rectify the situation. Contractor is responsible for any compensation involved with any health issue arisen out of bad odour and offensive smells.
(b)		The waste disposal and sewerage treatment system for the labour camps shall be properly designed, built and operated so that no odour is generated. Compliance with the regulations on health and safety as well as CEA and LA guidelines shall be strictly adhered to.
	2.5.4.	Emission from construction Vehicles, Equipment and Machinery
(a)		The emission standards promulgated under the National Environment Act shall be strictly adhered to.
(b)		All vehicles, equipment and machinery used for construction shall be regularly serviced and well maintained to ensure that emission levels comply with the relevant standards.
(c)		Contractor should obtain the certificate issued by the Vehicular Emission Test (VET) for all construction vehicles, plants and other machineries and it should be renewed annually
	2.5.5.	Air Pollution from Crusher
(a)		Crusher plants should operate under an EPL and shall confirm to relevant dust emission levels as stated in the EPL. Only the quarries approved by GSMB and holding current EPL shall be used for material extraction.
(b)		Crushing plants shall be sited sufficiently away from sensitive receptors such as houses, schools, hospitals, temples, shrines and outdoor recreation areas (locations given under item 2.4.1) or as required by the Engineer.
	(c)	Sprinkling of water (through a sprinkler system) for dust suppression.
2.6. Noise Pollution and Vibration		
	2.6.1	Noise from Vehicles, Plants and Equipment
(a)		All machinery and equipment should be well maintained and fitted with noise reduction devices in accordance with manufacturer's instructions.

Environmental Issues		Protection and preventive measures
	(b)	In construction sites within 150 m of the nearest habitation, noisy construction work such as crushing, concrete mixing and batching, mechanical compaction, etc., will be stopped between 20.00 hours to 06.00 hours. In silence zone (areas up to 100 m around such premises as hospitals, educational institutional and courts) no hot-mix, batching or aggregate crushing plant will be allowed. No construction shall take place within 100m around hospitals between 20.00 hours to 06.00 hours. Near noise sensitive sites, such as hospitals, educational institutional and courts noisy equipment shall not be used during noise sensitive times of the day.
	(c)	All vehicles and equipment used in construction shall be fitted with exhaust silences. During routine servicing operations, the effectiveness of exhaust silencers shall be checked and if found to be defective shall be replaced. Notwithstanding any other conditions of contract, noise level from any item of plant(s) must comply with the relevant legislation for levels of sound emission. Non-compliant plant shall be removed from site.
	(d)	Noise limits for construction equipment used in this project (measured at one meter from the edge of the equipment in free field) such as compactors, rollers, front loaders, concrete mixers, cranes (moveable), vibrators and saws shall not exceed 75 dB(A).
	(e)	Maintenance of vehicles, equipment and machinery shall be regular and proper, to the satisfaction of the Engineer, to keep noise from these at a minimum.
	(f)	Workers in vicinity of strong noise, and workers working with or in crushing, compaction, batching or concrete mixing operations shall be provided with protective gear.
	2.6.2	Vibration
	(a)	Contractor shall take appropriate action to ensure that construction works do not result in damage to adjacent properties due to vibration.
	(b)	Prior to commencement of excavation, blasting activity, the Contractor shall undertake a condition survey of existing structures within the zone of influence, as agreed with the relevant government agencies and the engineer.
	(c)	Contractor shall carry out monitoring at the nearest vibration sensitive receptor during blasting or when other equipments causing vibration are used.
	(d)	The contractor shall modify the method of construction until compliance with the criteria, if vibration levels exceed the relevant vibration criteria.
	(e)	Contractor shall pay due consideration on vibration impacts of blasting on adjoining structures. Explosive loads shall be determined so that excessive vibration can be avoided and blasts shall be controlled blasting in nature. Notwithstanding to these provisions contractor is liable for any damage caused by blasting work.
	2.6.3	Noise from Blasting or Pre splitting Operations
	(a)	Blasting shall be carried out only with permission of the Engineer and approval from GSMB for road side blasting all the statutory laws, regulators, rules, etc., pertaining to acquisition, transport, storage, handling and use of explosives shall be strictly followed.
	(b)	Blasting shall be carried out during fixed hours (preferably during mid-day), as permitted by the Engineer. The timing should be made known to all the people within 500 m (200 m for pre-splitting) from the blasting site in all directions. People, except those who actually light the fuse shall be excluded from the area of 200 m (50 m for pre-splitting) from the blasting site in all directions at least 10m minutes before the blasting.

Environmental Issues	Protection and preventive measures	
2.7.	Impacts to Flora	
	2.7.1	Loss or Damage to Trees and Vegetation
	(a)	All works shall be carried out in a manner that the destruction to the flora and their habitats is minimised. Trees and vegetation shall be felled / removed only if that impinges directly on the permanent works or necessary temporary works. In all such cases contractor shall take prior approval from the Engineer.
	(b)	Contractor shall make every effort to avoid removal and/or destruction of trees of religious, cultural and aesthetic significance. If such action is unavoidable the Engineer shall be informed in advance and carry out public consultation and report on the same should be submitted to the Engineer.
	(c)	Contractor shall adhere to the guidelines and recommendations made by the Central Environmental Authority, if any with regard to felling of trees and removal of vegetation.
	(d)	If the trees and vegetation that require removal is in a forest plantation or natural forest under the jurisdiction of the DoF the contractor shall take prior approval from the DoF for such removal and adhere to conditions /guidelines imposed by the DoF if any.
	(e)	If the trees and vegetation that require removal is in a protected area under jurisdiction of the Department of Wildlife Conservation, the contractor shall take prior approval from the DWLC for such removal and adhere to conditions /guidelines imposed by the DWLC if any.
	(f)	Removed trees must be handed over to the Timber Corporation.
	(g)	A compensatory tree planting program should be developed in consultation with DoF, local authorities and communities in order to replenish the loss of trees. At least 3 good specimens of same tree species (having > 4 cm DBH) should be planted for each tree removed. Compensatory tree planting should be attended for about two years to promote survival of the replanted specimens Replanting should be as near as possible to the removal location Planting of selected fast growing trees which are of native species Replanting in the private lands could be encouraged to compensate impact due to loss of vegetation in private lands
	2.7.2	Chance found important Flora
	(a)	During construction, if a rare/threatened/endangered flora species is found, it shall be immediately informed to the PMU by the contractor. All activities that could destroy such flora and/or its habitat shall be stopped with immediate effect. Such activities shall be started only after obtaining the Engineer's approval. Contractor shall carry out all activities and plans that the Engineer instructed him to undertake to conserve such flora and/or its habitat.
2.8.	Impact on Fauna	
	2.8.1.	Loss, Damage or Disruption to Fauna
	(a)	All works shall be carried out in such a manner that the destruction or disruption to the fauna and their habitats is minimum.
	(b)	Construction workers shall be instructed to protect fauna including wild

Environmental Issues		Protection and preventive measures
		animals and aquatic life as well as their habitats. Hunting, poaching and unauthorized fishing by project workers is not allowed.
	(c)	Strict worker force supervision should be carried out by the contractor when conducting construction work close to forest lands of DoF and DWLC Construction workers shall not be allowed to trespass into such forest land
	(d)	Siting of all hot mix plants, crushing plants, workshops, depots and temporary worker camps and storing of toxic and hazardous materials at approved locations, and recycling and dumping of solid waste matter at locations approved by local authorities, maintenance of vehicles and equipment in good operable condition, ensuring no leakage of oil or fuel and the fitting of proper exhaust baffles. Any solid waste should not be dumped into water bodies.
	(e)	Regular and adequate fuel supplies of Liquid Petroleum Gas (LPG) or kerosene to worker camps in order to avoid workers scavenging for fuel wood from the proposed forest reserves and sanctuary areas.
	2.8.2	Chance found important Fauna
	(a)	During construction, if a rare/threatened/endangered fauna species is found, it shall be immediately informed to the PMU by the contractor. All activities that could destroy such fauna and/or its habitat shall be stopped with immediate effect. Such activities shall be started only after obtaining the Engineer's approval. Contractor shall carry out all activities and plans that the Engineer instructed him to undertake to conserve such fauna and/or its habitat.
2.9.	Disruption to Users	
	2.9.1	Loss of Access
	(a)	At all times, the Contractor shall provide safe and convenient passage for vehicles, pedestrians and livestock to and from side roads and property accesses connecting the project road. Work that affects the use of side roads and existing accesses shall not be undertaken without providing adequate provisions to the prior satisfaction of the Engineer.
	(b)	The works shall not interfere unnecessarily or improperly with the convenience of public or the access to, use and occupation of public or private roads, railways and any other access footpaths to or of properties whether public or private.
	(c)	On completion of the works, all temporary obstructions to access shall be cleared away, all rubbish and piles of debris that obstruct access be cleared to the satisfaction of the Engineer.
	(d)	Providing advance information to the public about the planned construction works and activities causing disruption to access roads, and the temporary arrangements made to give relief to public in order to avoid any inconveniences due to the construction activities.
	(e)	Use of flagmen and/or temporary traffic lights to control traffic flows at constricted sites, including safe crossing for pedestrians especially at town areas and near schools.
	2.9.2	Traffic Jams and Congestion
	(a)	Detailed Traffic Control Plans shall be prepared and submitted to the Engineer for approval 5 days prior to commencement of works on any section of road. The traffic control plans shall contain details of temporary diversions, details of arrangements for construction under traffic and details of traffic arrangements after cession of work each day. If directed by the Engineer the contractor shall obtain the consent for the traffic

Environmental Issues	Protection and preventive measures	
		arrangement from the Local Police.
	(b)	Temporary diversion of traffic to facilitate construction work shall have the approval of the Engineer. If directed by the Engineer the contractor shall obtain the consent for the traffic arrangement from the Local Police.
	(c)	Special consideration shall be given in the preparation of the traffic control plan to the safety of pedestrians and workers at night.
	(d)	The contractor shall ensure that the road surface is always properly maintained, particularly during the monsoon so that no disruption to the traffic flow occurs.
	(e)	The temporary traffic detours shall be kept free of dust by frequent application of water.
	(f)	Personnel used for traffic control by the contractor shall be properly trained, provided with proper gear including communication equipment, luminous jackets for night use. All signs, barricades, pavement markings used for traffic management should be to the standards and approved by the Engineer/ Police.
	(g)	The manual of traffic control devices of RDA Should be followed during construction period in order to ensure the safety and traffic control.
	2.9.3	Traffic Control and Safety
	(a)	The Contractor shall take all necessary measures for the safety of traffic during construction and provide, erect and maintain such barricades, including signs, markings, flags, lights and flagmen as may be required by the Engineer for the information and protection of traffic approaching or passing through the section of the highways under improvement. The provision of traffic safety measures shall be considered incidental to work and follow The Institute for Construction Training and Development (ICTAD) guidelines and instructions given by the Police, if any.
	(b)	Informing the public through newspapers/ announcements/ radio/ TV etc. about the construction activities in order to avoid any inconveniences due to the construction activities.
2.10.	Accidents and Risks	
	2.10.1	Public and Worker safety
	(a)	All reasonable precautions will be taken to prevent danger of the workers and the public from accidents such as fire, explosions, blasts, falling rocks, falling to excavated pits, chemical sprays, unsafe power supply lines etc.
	(b)	The Contractor shall comply with requirements for the safety of the workmen as per the international labour organisation (ILO) convention No. 62 and Safety and Health regulations of the Factory Ordinance of Sri Lanka to the extent that those are applicable to this contract. The contractor shall supply all necessary safety appliances such as safety goggles, helmets, masks, boots, etc., to the workers and staff. The contractor has to comply with all regulations regarding safe scaffolding, ladders, working platforms, gangway, excavations, trenches and safe means of entry and egress.
	2.10.2	Prevention of Risks of Electrocutation
	(a)	All electrical wiring and supply related work should conform to British Standards (BS) or relevant Sri Lankan Standards. Adequate precautions will be taken to prevent danger of electrocuting from electrical equipment and power supply lines including distribution boards, transformers, etc. Measures such as danger signboards, danger/red lights, fencing and lights will be provided to protect the public and workers. All electric power driven machines to be used in the construction shall be free from defect, be

Environmental Issues	Protection and preventive measures	
		properly maintained and kept in good working order, be regularly inspected and as per BS provisions and to the satisfaction of the Engineer.
	2.10.3	Risk at Hazardous Activity
	(a)	All workers employed in hazardous activities shall be provided with necessary protective gear. These activities include mixing asphalt material, cement, lime mortars, concrete etc., welding work, work at crushing plants, blasting work, operators of machinery and equipment such as power saws, etc.
	(b)	The use of any toxic chemical shall be strictly in accordance with the manufacturer's instructions. The Engineer shall be notified of toxic chemicals that are planned to be used in all contract related activities. A register of all toxic chemicals delivered to the site shall be kept and maintained up to date by the Contractor. The register shall include the trade name, physical properties and characteristics, chemical ingredients, health and safety hazard information, safe handling and storage procedures, and emergency and first aid procedures for the product.
	2.10.4	Lead Pollution
	(a)	No paint containing lead or lead products will be used except in the form of paste or readymade paint. Facemasks shall be supplied to workers who are working in spray painting or scraping lead paints.
	2.10.5	Handling of Explosives
	(a)	Except as provided in the contract or ordered or authorized by the Engineer, the Contractor shall not use explosives. Where the use of explosives is so provided or ordered or authorized, the Contractor shall comply with the requirements of the following Sub-Clauses of this Clause besides the law of the land as applicable.
	(b)	The Contractor shall at all times take every possible precaution and shall comply with relevant laws and regulations relating to the importation, handling, transportation, storage and use of explosives. Contractor shall obtain Ministry of Defence (MoD) approval for importing and handling explosives and keep the Local Police informed of the same.
	(c)	Contractor shall take precaution to prevent injury to people and damage the structures/houses and vehicles in the vicinity at the locations of blasting work. Blasting should be controlled to prevent vibration damage to structures and injury to people. The vehicles and road users should be stopped at a reasonable distance from the site and people in the vicinity should be informed when the blasting is carried out. Any debris on the road should be removed promptly before clearing the road for users. Blasting work should be carried out in off peak hours but not during the hours of darkness or at other times, which may cause unacceptable disturbance to religious or other ceremonies.
	(d)	Sufficient and adequate warning shall be given prior to blasting. Use of flagmen, siren, etc. should be arranged to the full satisfaction of the Engineer. The public in the area should be informed well in advance about the blasting operation and timing.
2.11.	Health and Safety	
	2.11.1	Prevention of Vector based Diseases
	(a)	Contractor shall take necessary actions to prevent breeding of mosquitoes at places of work, labour camps, plus office and store buildings. Stagnation of water in all areas including gutters, used and empty cans, containers, tyres, etc shall be prevented. Approved chemicals to destroy

Environmental Issues		Protection and preventive measures
		mosquitoes and larvae should be regularly applied. All burrow sites should be rehabilitated at the end of their use by the contractor in accordance with the requirements/guidelines issued by the Central Environmental authority and relevant local authorities
	(b)	Contractor shall keep all places of work, labour camps, plus office and store buildings clean devoid of garbage to prevent breeding of rats and other vectors such as flies.
	2.11.2	Workers Health and Safety
	(a)	Contractor shall comply with the provisions in Health and Safety regulations under the Factory Ordinance with regard to provision of health and safety measures and amenities at work place(s).
	2.11.3	First Aid
	(a)	At every workplace, first aid kit shall be provided as per the regulations. At every workplace an ambulance room containing the prescribed equipment and nursing staff shall be provided.
	2.11.4	Potable Water
	(a)	In every workplace and labour camps potable water shall be available throughout the day in sufficient quantities.
	2.11.5	Hygiene
	(a)	The contractor shall provide and maintain necessary (temporary) living accommodation and ancillary facilities for labour to standards and scale approved by the resident engineer.
	(b)	At every workplace and labour camps sufficient number of bathing facilities, latrines and urinals shall be provided in accordance with the Health and Safety regulations and/or as directed by the Engineer. These bathroom and toilet facilities shall be suitably located within the workplace/buildings. Latrines shall be cleaned at least three times daily in the morning, midday and evening and kept in a strict sanitary condition. If women are employed, separate latrines and urinals, screened from those for men and marked in the vernacular shall be provided. There shall be adequate supply of water, within and close to latrines and urinals.
	(c)	The sewage system for the camp must be properly designed, built and operated so that no health hazard occurs and no pollution to the air, ground or adjacent watercourses takes place.
	(d)	Garbage bins must be provided in the camp, work sites and regularly emptied and the garbage disposed off in a hygienic manner. Construction camps shall have a clean hygienic environment and adequate health care shall be provided for the work force.
	(e)	Unless otherwise arranged for by the Local Authority, the contractor shall arrange proper disposal of sludge from septic tanks. The contractor shall obtain approval for such disposal from the Public Health Inspector of the area.
2.12	Protection of Archaeological, Cultural and Religious Places and Properties	
	2.12.1	Prevention of damage to Archaeological, Cultural and Religious Places and Properties
	(a)	During construction activities the contractor should take all necessary and adequate care to minimize impacts on archaeological and cultural properties which includes cultural sites and remains, places of worship including temples, mosques, churches and shrines. Workers should not be allowed to trespass in to such areas.

Environmental Issues		Protection and preventive measures
	(b)	Conservation and protection measures shall be taken up as per design and as per the instructions issued by the Department of Archaeology (DoA) or Department of Cultural Affairs when working close to such sites. Contractor shall seek advice from the Engineer if such instructions are not available. Access to such properties from the road shall be maintained clear and clean.
	(c)	Blasting work shall not be allowed near or within archaeological and historical sites without prior approval of the Department of Archaeology and the Engineer.
	2.12.2	Chance found Archaeological property
	(a)	All fossils, coins, articles of value of antiquity and structures and other remains or things of geological or archaeological interest etc. discovered on the site and/or during construction work shall be the property of the Government of Sri Lanka, and shall be dealt with as per provisions of Antiquities Ordinance of 1940 (Revised in 1956 & 1998)
	(b)	The contractor shall take reasonable precaution to prevent his workmen or any other persons from removing and damaging any such article or thing and shall, immediately upon discovery thereof and before removal acquaint the Engineer of such discovery and carry out the Engineer's instructions for dealing with the same, awaiting which all work shall be stopped within 100m in all directions from the site of discovery.
	(c)	If directed by the Engineers the Contractor shall obtain advice and assistance from the Department of Archaeological of Sri Lanka on conservation measures to be taken with regard to the artefacts prior to recommencement of work in the area.
2.13	Environmental Enhancement	
	2.13.1	Roadside Landscape
	(a)	Road landscape plantation, re-vegetation of road embankments and other slopes, edge treatment of water bodies shall be taken up as per either detailed design or typical design guidelines given as part of the Bid Documents. The contractor also shall remove all debris, piles of unwanted earth, spoil material, away from the roadsides and from other work places and disposed at locations designated or acceptable to the Engineer or as per Clause 2.1.1.
	(b)	On completion of the works, the temporary structures shall be cleared away in full, all rubbish burnt, waste dumps and septic tank shall be filled and closed and roadsides, workplaces and labour camps, cleared and cleaned.
	2.13.2	Utilities and Roadside Amenities
	(a)	Contractor shall replace all amenities such as bus shelters that were removed/ relocated during the construction unless the Engineer directed the contractor not to do so.
	(b)	Contractor shall take care not to damage/destroy or affect the functional purposes of utilities such as water, electricity, telephone posts. The arrangements the contractor made with those service providers shall be informed to the Engineer in writing(advance work). Contractor shall assist the service providers in whatever possible manner to minimize disruption to such services.
	(c)	In case of an inadvertent damage cause to a utility, the contractor shall immediately inform the service provider and help to restore the service without delay.
	2.13.3	Road Furniture

Environmental Issues		Protection and preventive measures
	(a)	Road furniture including footpaths, railings, storm water drains, crash barrier, traffic signs, speed zone signs, pavement markers and any other such items will be provided as per design given in the Bid Documents.
	(b)	Intersections, rotaries, traffic islands, roadside protection and other structures or furniture shall be constructed, complete with the landscape elements as per design in the above manner.
2.14	Handling Environmental Issues during Construction	
	(a)	The Contractor will appoint a suitably qualified Environmental Officer following the award of the contract. The Environmental Officer will be the primary point of contact for assistance with all environmental issues during the pre-construction and construction phases. He/ She shall be responsible for ensuring the implementation of EMAP.
	(b)	The Contractor shall appoint a person responsible for community liaison and to handle public complaints regarding environmental/ social related matters. All public complaints will be entered into the Complaints Register. The Environmental Officer will promptly investigate and review environmental complaints and implement the appropriate corrective actions to arrest or mitigate the cause of the complaints. A register of all complaints is to be passed to the Engineer within 24 hrs they are received, with the action taken by the Environmental Officer on complains thereof.
	(c)	Contractor shall develop suitable method to receive complaints. The complain register shall be placed at a convenient place, easily accessible by the public.
	(d)	Contractor shall prepare detailed Environmental Method Statement (EMS) clearly stating the approach, actions and manner in which the EMAP is implemented. It is required from the contractor to prepare the EMS for each work site, if work will be carried out at more than one site at once and time plan for implementation. The EMS shall be updated regularly and submit for Engineers review.
3.0 Operational stage (periodic maintenance)		
	3.1	Stagnation of water at culverts during heavy rains due to siltation and blocking of openings with debris
		Regular clearing/ cleaning and maintenance of all culverts to reduce the chances of failures and blocking due to debris. Maintenance manual of RDA should be followed to maintain the road drainage system. Debris and materials that are removed from blocked drains and culverts should be disposed at only suitable sites.
	3.2	Loss, damage or disruption to fauna
		Placing warning signs at locations where wild animal movement corridors cross the road. Such sign posts should be placed at least 1 km before approaching the area in order for the drivers to be more vigilant and reduce speed.
	3.3.	Road safety
	(a)	All road furniture described under item 2.12.3 should be maintained by RDA
	(b)	A management plan should be formulated with the local police to avoid any vehicle to carry loads that exceed the carrying capacity (load) of the rehabilitated road. Weigh stations could be introduced at selected locations to measure the load of vehicle.
	3.4	Encochement of new ROW

Environmental Issues	Protection and preventive measures
	Continuous monitoring and strict regulations should be followed to avoid the encroachment. Executive Engineers under direct supervision of Chief Engineer and Provincial Director should conduct regular checking along the road and remove any unauthorized activities within the ROW.

4.3 Environmental indicators to ensure implementation of mitigation measures

Effectiveness of suggested mitigation measures should be assessed in order to determine the implementation of the EMAP and compensation given to project affected persons (APs). Following is a list of such indicators and how best they could be assessed;

Environmental Impacts

1. Impacts on soil

Soil testing for type of soil, its composition etc. are done as part of engineering study. Type of soil is a good qualitative indicator on how much a soil is susceptible for erosion. Turbidity of nearby streams and water paths could also be used to assess the level of erosion.

Measuring turbidity of upstream and downstream of a water path that crosses any road section under construction will provide information on the level of soil and other construction related sediments are discharged in to the stream.

Relating past experience in similar projects and in similar physical settings could be aided in anticipating type and extent of impacts to soil in the current project.

2. Impacts on surface and ground water

The reconnaissance survey to the study area should be targeted to identify the hydrological character of the area and an understanding of the likely modifications to the baseline conditions that could occur due to road improvements works will be required to assess the impacts on surface and ground water. It should be noted that a hydrological study should be conducted under detailed design; therefore this information should be reflected in the EA.

In terms of impacts to water quality baseline conditions for sensitive and important water bodies should be established using physical, chemical and biological parameters. When establishing the baseline conditions, it is very necessary that the selection of appropriate parameters to be monitored is carried out instead of testing the whole range which would result in the collection of large sets of data that would not be useful.

3. Impacts on ambient air quality

Generation of dust will be the main concern during construction phase of the project. However, this impact will be localized as the construction works will be mainly limited to the existing ROW. Measuring selected air quality parameters at the nearest receiver will be the ideal approach in determining the effectiveness of mitigation measures that are used to suppress dust.

4. Impacts on eco-systems

Evaluation of ecological impacts should be done with three objectives, that is; to take stock of the existing conditions, determine the sensitivity of these conditions to the proposed project and to predict the short term and long term environmental response.

As the rehabilitation works are to be limited to the ROW, it is anticipated that impacts on flora and fauna will be not significant. However, trees close to the existing road edges will need to be

removed for road widening. Hence a tree survey should be undertaken at very initial stage of the project.

5. Impacts of noise

Noise generated through construction operations and vehicle movement will have an impact on settlements through which the road passes fauna living in forest areas close to road sections under the project. Establishing baseline noise levels at sensitive receivers will assist to minimize noise impacts during construction stage.

5.0 Potential Social Impacts and Mitigation Measures

Social Assessments carried out indicate that the proposed construction activities involve widening the existing road (carriageway) to at least two lane and four lane operations with improvement of the surface, construction of side drains, widening of black spots, widening or replacement of culverts and bridges, removal of the roadside structures and trees. Such activities may require additional land and economic and physical displacement of people in certain locations. The RDA has framed this Resettlement Policy Framework (RPF) in accordance with existing Policies, including the LAA, NIRP, and World Bank guidelines on involuntary resettlement. The RPF establishes a process by which members of potentially affected communities participate in design of project components, determination of measures necessary to achieve resettlement policy objectives, and implementation and monitoring of project activities.

In situations where land is acquired from private land owners or even squatters, resettlement of the owners and their homesteads can bring about negative impacts and issues. Some issues from the Sri Lanka legal framework that need further attention to ensure compliance with the World Bank's OP 4.12 are highlighted below:

- *Avoiding/Minimizing Land Acquisition:* As there are no clear guidelines, the only limiting factor might be the costs that may discourage acquisition more than necessary.
- *Eligibility for Compensation:* As the provisions for inquiry into the affected persons' (APs) interests and compensations claim indicate, there is a need to recognize the rights of the titleholders and others who have some form of legal basis to the interest claims.
- *Relocation of Homestead Losers:* Stipulates "reasonable expenses" to effect any change of residence caused by the acquisition. There is need for reallocation of lands and other facilities.
- *Socioeconomic Rehabilitation:* No provisions are there to mitigate long-term socioeconomic changes the APs and households might undergo in the post-acquisition period.
- *Ensuring Payment/Receipt of the Compensation:* In acquisition of land, it would be necessary to ensure that the APs would actually receive the awards.
- *Deduction Due to Market Price Appreciation:* On the other hand, deduction of an appreciation in market value, where a portion of a plot is acquired and the market price of the remainder is likely to increase. Such reasonable deductions of the market value of the acquired portion should be taken in to consideration.

The Land Acquisition Act (LAA) of 1950 seems to recognize the government's accountability to the affected property owners, who could challenge a decision up to the Supreme Court and the

Board of Review. While this may have been necessitated by the application and practices of the act, the process is very time consuming. Resolution of the court cases, where the appeals could go up to the Supreme Court and Board of Review, could take a relatively long time.

Some of these shortfalls and difficulties with using the 1950 LAA for time-bound development projects are widely recognized by project execution agencies of GoSL and the donors supporting development projects in Sri Lanka. This led to formulation of a National Involuntary Resettlement Policy (NIRP), by taking into consideration the resettlement principles and guidelines of major donors, including the World Bank. Amendments to the 1950 LAA have also been made to complement a few provisions of the NIRP and facilitate preparation and implementation of the land-based development projects. The NIRP has been adopted by the government, but the full extent of the amendments to the acquisition act remain to be incorporated. As a result, land acquisition remains as difficult as before, even though the NIRP is followed to plan resettlement activities. Under the circumstances, the land acquisition process to be followed in the proposed project makes use of the country's existing LAA, the NIRP and the World Bank's OP 4.12.

5.1 Impact Mitigation Principles

The RPF aims to outline the principles to be applied in the resettlement and rehabilitation of any project affected persons so that they do not suffer adverse effects from the project and they improve, or at the minimum retain, their previous standard of living, earning capacity and production levels. The resettlement actions should minimize dependency and be sustainable socially, economically and institutionally. Special attention must be paid to improvement of the living standards of any vulnerable or marginalized groups. The mitigation principles and guidelines proposed below are based on the provisions adopted in the NIRP of Sri Lanka, and the World Bank's OP 4.12 on Involuntary Resettlement.

- Where displacement is unavoidable, resettlement of the APs will be planned and developed as an integral part of the project and will be implemented as a development program.
- Homestead-losers, including the households living on public lands without authorization, will be given the options of physical relocation in similar locations of their choice, or in designated resettlement sites, and will be assisted with relocation.
- The relocation sites, wherever needed, will be selected in consultation with the potential resettlers, and will be provided with the social and community facilities similar to those used previously. All efforts will be made not to take the APs far away from their residual lands, if any, and the existing sources of income and livelihood.
- For compensation and assistance, encroachers who have been regularized by GoSL, and those who have earned prescriptive rights to public lands they presently use, will be treated as landowners with legal titles to the lands.
- Absence of legal title will not be considered a bar to compensation for non-land assets created by public land users¹.
- Vulnerability of the APs, in terms of economic, social and gender characteristics, will be identified and mitigated with appropriate policies.
- Where community-wide impacts are caused in the form of affecting community facilities, restricting access to common property resources, and the like, the project will rebuild such facilities and provide for alternative accesses.

¹ According to the Land Acquisition Act, if a person keeps using public land for 10 years or more may earn 'prescriptive right' and may become eligible for compensation for the land as well.

- The project executing agency will bear the costs of land acquisition and resettlement.

5.2 Impact Mitigation Modalities

The following types of compensation/ entitlement will be paid for losses expected to be caused by the project.

- Replacement costs will include registration costs or stamp duties in cases replacement of the affected lands and other assets involve such costs, subject to actual replacement.
- Loss of houses/ structures and other immovable assets of value, which are to be rebuilt, will also be compensated at replacement costs.
- Loss of other assets like trees, which cannot be replaced, will be compensated for at current market prices at the time of first acquisition notification. Compensation for affected orchards and similar commercial plantations will take into account the loss of investment and income. [RDA will use expert assistance and any available standards in determining the compensation.]
- Cut-off dates will be established to determine compensation eligibility of persons and their assets. These are the dates on which census of the affected persons and their assets will be taken. Assets like houses/ structures and others which are created, and the persons or groups claiming to be affected, after the cut-off dates will be ineligible for compensation.
- If a notice for eviction has been served on a person/family before the cut-off date and the case is pending in a court of law, then the eligibility of APs will be considered in accordance with the legal status determined by the court and the affected persons will be eligible for compensation/assistance in accordance with this policy's provisions.
- Where acquisition causes displacement from homesteads, the project will encourage for and assist with self-relocation. Where self-relocation is infeasible, the project will arrange for lands to relocate, and provide for basic social and physical infrastructure.
- The project will identify and implement policies to mitigate any adverse impacts that are unique to any project locations and have so far remained unknown.
- Compensations/ entitlements due to the APs will be paid in full before they are evicted from the public lands.

5.3 Impacts and Losses Eligible for Compensation/ Assistance

The mitigation principles and impact mitigation modalities stated in the preceding section are operationalized by defining and categorizing the potential impacts/ losses which will qualify for mitigation. The losses/ impacts listed below are only the likely ones and remain open to revision as the specific corridors are selected and social assessments are carried out. Any unforeseen impacts, as and when encountered, will be taken into account along with appropriate measures to mitigate them.

Impacts Eligible for Mitigation

Lands (All Kinds):

All kinds of lands, such as agricultural, residential, commercial, fallow and any other kinds of lands acquired from private ownerships. The following land users will also qualify for compensation:

1. Where public lands, on which encroachers/ users have been regularized, are acquired or taken back, the affected land users will be entitled to replacement costs of the lands.
2. Where public lands, on which the users qualify for prescriptive rights (for use for 10 years or more), are taken back, the affected land users will be entitled to replacement costs of the acquired lands.
3. Where public lands are taken back from legally authorized private users, the users will be entitled to the remaining lease value and entitlements for other losses in accord with the stipulated policies.
4. The unauthorized or informal users of public lands, such as squatters and encroachers, are not eligible for compensation for land, but for other losses covered by the mitigation policies.

Built Structures:

Houses and Other Structures on Public Lands: All built structures, such as living quarters, commercial and those used for other purposes.

Trees and Orchards: Market price of all trees, including those in orchards, grown on private and public lands. The compensation for fruits and other crops will be assessed and paid in terms of seasonal and perennial characteristics.

Fruits and Other Crops: Compensation will be assessed based on the market value of the crops standing in the field and those found on trees.

Seasonal Crops: Compensation of such crops will be paid for only one season.

Perennial Crops: For a reasonable period of time based on the year's value of the crops grown on the acquired lands.

Business and Wage Income: Temporary loss of business and wage income by the owners and employees of businesses affected on private and public lands, for a reasonable period of time.

Severe Impacts on Livelihood: The persons /households, whose livelihood-irrespective of landownership status- is severely affected, would be assisted to deal with the changed circumstances.

Common Property Resources: RDA will provide alternative access to or develop similar resources, whichever is appropriate. [No compensation will be paid in cash.]

Usufruct Rights: If such rights, which have been acquired by private citizens/groups through a formal agreement with the government, RDA will pay for remainder of the lease value or fulfill the obligations agreed in the contract and any other entitlements in accord with the mitigation policies. [Where agreements are between private parties, the owner of the affected property will fulfill any obligations agreed between them.]

Unforeseen Losses/ Impacts: All other losses/ impacts that have remained unknown as of now, but identified in AP censuses will be mitigated with appropriate measures.

5.4 Eligible Affected Persons (APs) for compensation and assistance

As follows from the proposed mitigation principles and modalities, the following persons/ households/entities will be entitled to financial and other forms of compensation and assistance. It is to be noted that depending upon the types of losses, an AP may be entitled to more than one form of compensation.

Regularized Encroachers: Those who have been regularized on the public lands acquired or taken back for the project, as determined by the Divisional Secretaries.

Persons with Prescriptive Rights on Public Lands: Those who have been using the public lands for at least 10 years, as identified by the Divisional Secretaries.

Informal Users of Public Lands (Squatters and Encroachers): Residing on public lands and/or using such lands for income earning purposes.

Persons with Usufruct Rights: Owners of business and other activities on formally leased-in public lands.

Community or Groups: Where local communities and groups are likely to lose income earning opportunities or access to crucial common property resources, special development programs will be undertaken to provide alternatives to restore and improve their livelihood.

5.5 Resettlement Planning and Execution

The key steps in resettlement planning are: social screening, SIA, inventory and valuation, determining eligibility and entitlements, consultation and disclosure of findings, preparation of resettlement instruments (abbreviated or full resettlement action plan), consultation and finalization of the RAPs, development of resettlement sites, disclosure of the final RAP (impacts, entitlements, implementation agencies and schedule, list of eligible APs, grievance redress mechanisms (GRMs), initiation of the land acquisition process; disbursement of compensation and the R&R entitlements, relocation planning and actual relocation, resolution of grievances if any, site clearance, site handover to contractor for civil works; post resettlement support measures, monitoring and evaluation.

RDA will carry out initial screening and social assessments to identify potential resettlement issues and impacts. Based on the screening data on the extent of likely IR impacts, sub-project safeguard requirements will be categorized as follows:

- A. Significant (Category A) – If as a result of the subproject, about 200 or more people may experience major impacts, that is, being physically displaced from housing, or losing 10% or more of their productive (income-generating) assets;
- B. Not significant (Category B) – If as a result of the subproject, fewer than 200 people will be physically displaced from housing or lose less than 10% of their productive (income-generating) assets. Resettlement plans are prepared commensurate to their impacts;
- C. No resettlement effect (Category C) – If the subproject does not require temporary or permanent land acquisition, and there are no impacts involving the loss of land, structures, crops and trees, businesses or income. No resettlement plan is required. This category also includes temporary but not significant impacts which will have to be mitigated as a part of construction management in consultation with the AP by the Contractor as specified in the EM and in Implementation Arrangement Chapter:

If a RAP is required, the RDA is responsible for conducting all necessary assessments, preparation and implementation of the RAP satisfactory to the Bank requirements meeting the policy principles. TOR for preparation of SA and RAP is given in the Annex 6.

5.6 Entitlement Matrix

For addressing impacts/loss categories, entitlement and entitled persons, a Compensation Entitlement Matrix (EM) has been developed. Following EM outlines the compensation payments based on the anticipated impacts and eligibility of different types of APs for such compensations. The entitlements and compensations will be determined by the Land Acquisition & Resettlement Committees (LARC) and any further decisions by the Super LARC established by the Cabinet providing special powers under 2013 LA Regulations.

Table Entitlement Matrix

Type of Impacts/Entitlements	Compensation recommended	Eligibility	Responsibility
Loss of land 1.1 Non-agricultural land (e.g. residential lands, barren lands)	A) All (cash) payments for acquisition of land will be at replacement value at current market prices. The compensation will be decided by a Committee termed Land Acquisition and Resettlement Committee (LARC) (see below for details)The compensation should be the amount equal to the difference between	Land owner or affected persons losing assets on production of documentary proof of entitlement.	Chief Valuer, Divisional Secretary Social staff of RDA and PMU. Provincial Director/RDA,

	<p>statutory value and replacement cost (ex-gratia) decided by the CV plus Replacement value and statutory value decided by the CV.</p> <p>B) If the portion remaining after the acquisition cannot be used as a separate plot, and if the AP desires to keep the remaining portion with him/her, LARC could pay him an allowance for same.</p>		LARC and Super LARC.
1.2 Agricultural lands	<p>A) For the agricultural lands compensation will be paid as item 1.1 above.</p> <p>B) If the remaining portion after acquisition could not be used physically for cultivation, the LARC could decide whether to acquire same or pay compensation .If the compensation for the remaining portion is not based on market value a reasonable period should be given to harvest the annual crops.</p>	Land owner or affected persons losing assets on production of documentary proof of entitlement.	<p>CV,DS</p> <p>Social staff of RDA and PMU.</p> <p>Provincial Director/RDA.</p> <p>Agrarian Service Department, LARC/Super LARC</p>
1.3 Paddy Lands	<p>Difference between 10 % of the market value of the land determined by the CV and the statutory value, is the ex gratia payment for the paddy land plus the statutory value in addition to the ex-gratia payment.</p> <p>Note : the market value is calculated by taking the value of a perch of highland in the area where the paddy field is situated and this sum is multiplied by 10 on the assumption that 10 perches of paddy land is allowed to be filled for development purposes under the Agrarian Services Act.</p> <p>Source: Department of Valuation.</p>	Land owner or affected persons losing assets on production of documentary proof of entitlement.	<p>CV,DS</p> <p>Social staff of RDA and PMU.</p> <p>Provincial Director/RDA, RE</p> <p>Agrarian Services Department</p> <p>LARC/Super LARC</p>
2. Lost Assets (Buildings and	Pay replacement cost for the affected portion based on the extent (volume)	Occupants of structures on	CV,DS, Social staff of

<p>Structures)</p> <ul style="list-style-type: none"> • Parts of structures Access of business and residential places/concrete steps • Remaining portion of the structure after acquisition if unusable. 	<p>of the structure constructed without depreciation</p> <p>Compensation should be paid for the unusable portion too at replacement cost.</p>	<p>production of proof of ownership</p>	<p>RDA and PMU.</p> <p>Provincial Director/RDA, RE</p> <p>LARC and Super LARC</p>															
<p>3. Ex gratia payment for the residential and Commercial buildings subject to provisions of Rent Control Act.</p>	<p>An amount equal to the difference of Statutory value and, replacement cost to be distributed as per the following table:</p> <table border="1" data-bbox="435 934 932 1402"> <thead> <tr> <th>Period Of occupation (years)</th> <th>Owner (%)</th> <th>Occupant (%)</th> </tr> </thead> <tbody> <tr> <td>>20</td> <td>25</td> <td>75</td> </tr> <tr> <td>10-20</td> <td>50</td> <td>50</td> </tr> <tr> <td>5-10</td> <td>75</td> <td>25</td> </tr> <tr> <td>>10</td> <td>90</td> <td>10</td> </tr> </tbody> </table>	Period Of occupation (years)	Owner (%)	Occupant (%)	>20	25	75	10-20	50	50	5-10	75	25	>10	90	10	<p>Owner and occupants of buildings fall within the provisions of the Rent Control Act.</p>	<p>CV,DS</p> <p>Social staff of RDA and PMU.GN ,Local Authority</p> <p>Provincial Director/RDA, RE, LARC and Super LARC</p>
Period Of occupation (years)	Owner (%)	Occupant (%)																
>20	25	75																
10-20	50	50																
5-10	75	25																
>10	90	10																
<p>4. Loss of Business</p> <p>4.1.Informal(nontax payers)</p> <p>4.2.Formal (tax payers)</p>	<p>If income could be proved by supporting documents, Rs.15, 000.00 or net income of 03 months whichever is higher.</p> <p>Adjusted average net profit of 03 years preceding the publication of Sec.07 notice under LAA</p>	<p>All Business owners who are affected</p>	<p>CV,DS</p> <p>Social staff of RDA and PMU.</p> <p>Provincial Director/RDA, RE</p> <p>LARC and Super LARC.</p>															

4.3. Temporary Disruption of business	Compensation to be decided by the LARC	All Business owners who are affected	CV,DS Social staff of RDA and PMU. Provincial Director/RDA, RE, LARC./Super LARC
4.4. Loss of livelihood	Compensation to be decided by the LARC	All Business owners who are affected Self-employed and those who are temporarily affected due to loss of livelihood	CV,DS Social staff of RDA and PMU. Provincial Director/RDA, RE , LARC and Super LARC
4.5. Vulnerable Households	Compensation to be decided by the LARC	All household that fall within the category of vulnerable households for e.g. Very old, women headed households without a reasonable income very poor, disabled, indigenous people	CV,DS Social staff of RDA and PMU. Provincial Director/RDA, RE LARC and Super LARC
4.6. Loss of Employment	Compensation to be decided by the LARC	Those who lost their wage earning employment due to acquisition of the business premises they were employed.	CV,DS Social staff of RDA and PMU. Provincial Director/RDA, RE, LARC and Super LARC

4.7 Ex-Gratia payment for the handing over possession within the prescribed period.	Ex-gratia payment to be decided by the LARC.	The owners of residential houses and/or cultivated lands	CV,DS Social staff of RDA and PMU. Provincial Director/RDA, RE, LARC and Super LARC.																				
4.8. Temporary Residential facilities	Payments applicable to APs for temporary residential facilities. <table border="1" data-bbox="435 684 922 1083"> <thead> <tr> <th>Floor Area</th> <th>MC</th> <th>UC</th> <th>PS</th> </tr> </thead> <tbody> <tr> <td><500</td> <td>50000</td> <td>4000 0</td> <td>2000 0</td> </tr> <tr> <td>500-700</td> <td>60000</td> <td>5000 0</td> <td>5000 0</td> </tr> <tr> <td>700-1000</td> <td>75000</td> <td>6000 0</td> <td>4000 0</td> </tr> <tr> <td>>1000</td> <td>100000</td> <td>7500 0</td> <td>5000 0</td> </tr> </tbody> </table>	Floor Area	MC	UC	PS	<500	50000	4000 0	2000 0	500-700	60000	5000 0	5000 0	700-1000	75000	6000 0	4000 0	>1000	100000	7500 0	5000 0	Affected occupants at the date of publication of Sec.02 notice under LAA who are expected to hand over possession before the prescribed date. Rate depends on the floor area occupied by the affected prior to the above date.	CV,DS Social staff of RDA and PMU. Provincial Director/RDA, RE, LARC and Super LARC
Floor Area	MC	UC	PS																				
<500	50000	4000 0	2000 0																				
500-700	60000	5000 0	5000 0																				
700-1000	75000	6000 0	4000 0																				
>1000	100000	7500 0	5000 0																				
4.9. Change of residence Entitlement	Type of House Payment (Rs.) Floor Area (Sq.ft) <table border="1" data-bbox="435 1251 922 1524"> <thead> <tr> <th>Floor Area (Sq.Ft)</th> <th>Amount (Rs)</th> </tr> </thead> <tbody> <tr> <td><500</td> <td>50,000</td> </tr> <tr> <td>500-750</td> <td>75,000</td> </tr> <tr> <td>750-1000</td> <td>1,00,000</td> </tr> <tr> <td>>1000</td> <td>1,500,000</td> </tr> </tbody> </table>	Floor Area (Sq.Ft)	Amount (Rs)	<500	50,000	500-750	75,000	750-1000	1,00,000	>1000	1,500,000	If the acquisition officer need to get the possession of the property before the prescribed date the floor area occupied by the affected prior to the date of publication of Sec 02 notice under LAA. is entitled to compensation shown under 4.9 column 2	CV,DS Social staff of RDA and PMU. Provincial Director/RDA, RE, LARC and Super LARC.										
Floor Area (Sq.Ft)	Amount (Rs)																						
<500	50,000																						
500-750	75,000																						
750-1000	1,00,000																						
>1000	1,500,000																						

<p>4.10. Resettlement Entitlement</p>	<p>A plot of land up to 20 perches equivalent to undeveloped value of land acquired from the affected from a resettlement site with all service facilities. LARC to decide on the extent. Or if affected desires to be self-relocated. The following cash payments are payable by the PMU. The land could only be offered subject to the land availability of land in the relevant area.</p> <p>The local area Amount(Rs)</p> <table border="1" data-bbox="435 659 930 814"> <thead> <tr> <th>MC</th> <th>UC</th> <th>PS</th> </tr> </thead> <tbody> <tr> <td>5,00,000</td> <td>3,00,000</td> <td>1,50,000</td> </tr> </tbody> </table>	MC	UC	PS	5,00,000	3,00,000	1,50,000	<p>Minimum of 03 years residence in the same premises with the principal occupant prior to the date of publication of Sec02 notice under same electoral list or separate electoral list</p>	<p>CV,DS Social staff of RDA and PMU. Provincial Director/RDA, RE, LARC and Super LARC</p>
MC	UC	PS							
5,00,000	3,00,000	1,50,000							
<p>4.11. Resettlement Entitlement for Sub families</p>	<p>The local area Amount (Rs.)</p> <table border="1" data-bbox="435 890 930 1016"> <thead> <tr> <th>MC</th> <th>UC</th> <th>PS</th> </tr> </thead> <tbody> <tr> <td>250,000</td> <td>150,000</td> <td>75,000</td> </tr> </tbody> </table>	MC	UC	PS	250,000	150,000	75,000	<p>For those encroachers who were in occupation of such land prior to the date of publication of Sec.02 notice</p>	<p>CV,DS Social staff of RDA and PMU. Provincial Director/RDA, RE, LARC and Super LARC.</p>
MC	UC	PS							
250,000	150,000	75,000							
<p>5.0. Compensation for Encroachers 5.1. Improvements done on the land 5.2. Resettlement Entitlement</p>	<p>At replacement value for structures and other improvements</p> <p>Plot of land up to 10 perches from a resettlement site or the compensation applicable to title holders for self-relocation as item 4.11, if the LARC is of the opinion that such assistance is reasonable and justifiable. The land could only be offered depending on the availability of land in the relevant area.</p>	<p>Those untitled people who were in occupation prior to the publication of Sec.02 notice under LAA.</p> <p>Same as above</p>							

Above table is based on the provisions contained in the Government Gazette No. 1837/47 dated 22nd November 2013.

The above matrix is based on the provisions made on compensation by the Government gazette NO.1837/47 dated 22nd November 2013 in consultation with the RDA assuming that the project will be included for compensation based on the relevant gazette

All ex-gratia compensation will be decided by the LARC, as per the guidance provided in the above gazette. Statutory value and replacement cost is decided by the Chief Valuer.

According to the Government Gazette No.1837/47 of the above date, the members of the LARC will be appointed by the Hon Minister of land and Land Development will be composed of following officers

1. Divisional Secretary or Assistant Secretary
2. Surveyor General or his representative
3. Chief valuer or his representative
4. An officer not below the rank of an Assistant Secretary nominated by the Minister in charge of the ministry that implement the project.

Every affected person should be provided with opportunity to come before the LARC and submit reasons to support his/her case.

Any AP who is not satisfied with the decision of the LARC has the right to appeal to the Super LARC for redress.

Composition of Super LARC appointed by the Hon Minister of Land and Land Development

1. Secretary of the ministry or his representative that implements the project.
2. Secretary or his representative of the ministry of Land and land Development
3. Secretary or his representative of the Ministry of Finance
4. Chief Valuer or his representative
5. Surveyor General or his representative
6. The Chairman, Chief Executive Officer or an officer nominated by him of the organization that implement the project.

After considering all the facts relating to the appeal carefully the Super LARC will confirm the decision of the LARC, increase or decrease the compensation awarded by the LARC and the decision of the Super LARC should be conveyed to the affected person.

6.0 Consultation and Information Dissemination

The project executing agency, RDA, will ensure that all would-be affected persons, titleholders, regularized encroachers and those who have earned prescriptive rights to public lands, and informal users (squatters) of public lands, are consulted about the impacts of the proposed road rehabilitation; proposed impact mitigation policies; and the process that would be followed to implement them. Consultations will be carried out with all stakeholders and through community meetings, which will seek active participation of the local government and administration officials. Focus-group discussions will be carried out in particular with adversely affected persons/ households. RDA will seek the assistance of a local CBO/NGO or research firm to facilitate the consultation process.

Discussions will especially focus on the planned DBMOT contract, vis-à-vis the rights and responsibility of the affected people; the impact mitigation policies and the measures that have been stipulated beyond the LAA; and the mechanisms adopted to implement them. Among other issues, consultation will include the following topics:

- Types of affected persons (including squatters) as recognized by the LAA.
- Types of losses eligible for compensation under the LAA.
- Valuation of affected assets: preparation of the *compensation claims* at open market prices; inquiry into the claims by the Divisional Secretaries and further assessments by the Valuation Officers.
- Compensation payment process.
- Any other issues/ topics concerning land acquisition and compensation.

The following topics will be discussed in greater details:

- Principles and modalities adopted for mitigation
- Affected persons/ households and assets eligible for compensation
- Mitigation measures specific to losses/ impacts, including physical relocation options, special measures stipulated for acquisition-induced vulnerability
- Grievance Redress Mechanism – its function, procedure to lodge grievances, etc.
- Compensation payment process to be used by RDA

Required documentation of these consultations will consist of minutes with dates, venues, number of participants, issues/ topics discussed, major feedback which may have policy implications in terms of unforeseen impacts and project design considerations, and any agreements that may have been reached. Documentations will be available during IDA supervision of the project.

7.0 Grievance Redress Mechanism

According to the LAA, persons who are displaced from public lands do not have a right to bring their grievances to any institutional entities. However, the Bank policy requires the borrowers to establish mechanisms to deal with issues and grievances that might be raised by all affected persons, including the informal users of public lands. The procedure is meant to reduce the incidence of expensive and time consuming litigation involving minor issues among the landowners, and to give an opportunity to those not covered by the LAA. The general GRM established under the project will process all land , environment and livelihood related grievances.

The decisions made by GRM will be binding on the project execution agency. To instill confidence and trust in the procedure, the convener will ensure that all grievance decisions are made in formal hearings and that the individual GRM members are not contacted by the aggrieved APs or stakeholders in advance. The convener will have the authority to ensure impartiality, fairness and transparency. The GRM will record the details of the grievances and the reasons that led to acceptance or rejection of the particular grievances, and will make them available for review by the IDA supervision missions and other interested persons/ entities.

Establishment of a Grievance Redress Committee (GRC)

Grievance Redress Committees (GRCs) will be formed by the RDA in each Divisional Secretariat Division or other appropriate project locations consisting of the following members as given in table 7.1.

Table 7.1 Positions and Duties of the GRC Members

Designation/Official Position	Function in the Committee	Task Assigned	Remarks
Provincial Director/RDA	Convener- (Chairman)	Chairing the GRC Meetings, making recommendations and sending for action	Grievance Notice should be Headed within a month
Officer representing	Secretary-	Maintaining minutes,	

RDA - at the project area	CE or EE of the RDA can act as the Secretary of the GRC	Correspondence on Decisions by the GRC	
Chairman of the Pradeshiya Sabha	Member	To represent local Authority and its Concerns	
Divisional Secretary	Member	To represent Divisional Secretariat And its Concerns	
Member of local Community organization / NGOs and CBOs	Member	To represent the Local community	
A representative Of concerned PAP/Stakeholder	Member	To represent the Concerned PAP/stakeholder	

Creation of Awareness of the Grievance Redress Mechanism

RDA should inform the relevant APs/Communities, Grama Niladharis, Local Samurdhi Officers and Social Development officers of the Divisional Secretariats and Pradeshiya Sabhas of the areas about the existence of grievance redress mechanism.

RDA should prepare flyers indicating:

- Project brief including the benefits of the rehabilitated road for the public
- Procedures for registering a complaint
- Categories of persons, institutions and property/assets affected that can claim compensation

- Explanation of those who would not be considered as an affected person, property etc.
- The address of the authority to receive and register the application with the name of the officer in-charge, address, and telephone/fax numbers to contact.

The minutes of the GRC signed by the GRC members are maintained at the office of the Provincial Director of RDA. The recommendations along with other issues will be sent to the Project Director within a week after the GRC meeting. The same information will also be sent to the relevant applicants for his information. The recommendations will be implemented before the construction work is started in the sections of the road where affected persons have claimed for redress.

8.0 Institutional Arrangements for implementation of ESMF

The Environmental and Social Division (ESD) of the Road Development Authority was established in year 2006 and implements environmental and social safeguards compliance strategies at different levels of road construction projects. The ESD will provide safeguards compliance related services for all the road development activities in the organization, beginning at project identification stage, all the way through implementation and post implementation evaluation. The ESD's active involvement in upstream planning and downstream processing and implementation would be significantly aided on all safeguard compliance related aspects of road sector development in Sri Lanka. Consequently, with ESD's assistance any social or environmental compliance related issues would be brought to the attention of the authorities right at the outset, thereby preventing major issues from emerging during implementation.

Institutional Roles and Responsibilities

Institutional Roles and Responsibilities for implementation of social safeguards are summarized in the table below:

Table 8.1 - Institutional roles and responsibilities for implementation of social safeguards

Name of Institute & Persons responsible	Activities and responsibilities to implement social safeguards
<p>Road Development Authority</p> <p><u>Director Lands/ESD and Resettlement Assistants of the Land Division/ESD of the RDA.</u></p> <p>Provincial Director/RDA</p> <p>Chief Engineer/ RDA</p> <p>Executive Engineer/ RDA</p>	<p>Project executing agency.</p> <p>Also Land Acquisition should be as per the guidelines stipulated in LAA, NIRP and World Bank operational policy on Involuntary Resettlement; and the resettlement could be done according to RAP. Acquisition is carried out it will follow normal acquisition procedure without following the section 38A Proviso, which is the emergency procedure of the LAA.</p> <p>Mitigation of social impact and Implementation of Grievance redress mechanism (as the Chairman of the GRC). Conducting Grievance redress Meetings. Coordination with line agencies.</p> <p>Act as the Secretary of the GRC. Public consultation and awareness raising. Coordination with line agencies to replace all structures, affected parties located within the RoW. Assist to DS of the area to implement land acquisition process under the LAA.</p> <p>Monitoring and Evaluation of social mitigation activities and progress implementation. Coordination with utilities agencies.</p>
<p>Project Management Unit</p> <p>Project Director</p>	<p>Overall responsibility/ supervision for implementation of RAP and providing necessary assistance and guidance for the project staff to implement social safeguards successfully.</p>

<p>Social Specialist</p>	<p>Implementation of RAP.</p> <p>Providing training on social safeguards.</p> <p>Conducting public awareness.</p> <p>Providing guidance to implement social safeguards.</p> <p>Management of all social safeguards of the project.</p> <p>Public consultation and awareness raising</p> <p>Conducting training programs for all stakeholders.</p> <p>Coordination with all line agencies related to social safeguards.</p> <p>Monitoring and evaluation of all social safeguards of the project.</p> <p>Supervision of Implementation of grievance redressal mechanism</p>
<p>Supervisory Consultant Office</p> <p>Resident Engineers</p> <p>Social Specialists, Site engineers and Technical officers.</p>	<p>Coordination with the PMU, RDA to implement social safeguards policies of the project. Responsible for implementation of Grievance Redress Mechanism.</p> <p>Take actions to implement the RAP. Monitoring the progress of social safeguards taken to minimize negative social impacts. Preparation of progress reports on social safeguards.</p> <p>Making changes to the designs to avoid significant social issues.</p>

	Manage good relationship with affected parties and general public.
Divisional Secretariats Divisional Secretary	Act as the Acquisition officer and assist the RDA to confirm ownership of properties and implement the land acquisition process. Participation in grievance redress committee as a member.
Utility Agencies Regional Engineers of Telecom, Water Board and Ceylon Electricity Board.	Shifting of utilities as per scheduled time. Take responsibility to carryout shifting of utilities with minimum effect on consumers and general public.

Table 8.2 Institutional roles and responsibilities for implementation of Social Safeguards during maintenance period.

Name of Institute & Persons responsible	Activities and responsibilities to implement social safeguards
<p>Road Development Authority</p> <p>Director, ESD and Field Monitoring Assistants (FMAs) of ESD</p> <p>Provincial Director/RDA</p> <p>Chief Engineer/ RDA</p> <p>Executive Engineer/ RDA</p>	<p>Responsibility of executing all road maintenance work through designated Executive Engineers (EE) of the areas under guidance of the Maintenance, Management and Construction (MMC) Division of RDA.</p> <p>To observe and report the level of social safeguards compliance maintained during road maintenance work to DG, RDA.</p> <p>Direct and guide EE in complying with social safeguards during road maintenance works through the respective Chief Engineer, RDA</p> <p>To Guide EE in complying with social safeguards during road maintenance works</p> <p>To ensure the social safeguards are complied during any road maintenance work..</p>
<p>Divisional Secretary</p>	<p>Act as a focal point for receiving any grievances of public that is related to road maintenance work</p>
<p>Utility Agencies</p> <p>Regional Engineers of Telecom, Water Board and Ceylon Electricity Board.</p>	<p>Shifting of utilities if required (temporarily) for any road maintenance work.</p>

9.0 Monitoring and Reporting

A robust monitoring and reporting system will be established by the Environmental and Social Safeguards Division of the RDA. The monitoring and reporting system will be integral to social safeguards and the Project will establish a monitoring and reporting system for ensuring efficient and effective implementation performance of the delivery of the project social safeguard program.

The monitoring and reporting system of ESD will be responsible for the systematic collection of information on the progress of the application of the social safeguards program and reporting the findings to the stakeholders through the RDA. Overall the objective of monitoring and reporting will be to ensure that the proposed mitigation measures are producing the intended results. The monitoring system will involve: guidelines and terms of reference, monitoring indicators, mechanisms and methodologies, frequency, documentation and reporting arrangements.

Monitoring will be both internal and external (Third Party) with details as described below:

Internal monitoring

Internal monitoring will be done by the RDA and ESD will play an active role in implementing the M&E system. Internal monitoring will be focused on timely execution of safeguard activities in line with the ESMF including screening, survey, mitigation planning, RAP implementation, scheduling with civil works, monitoring the role of contractors, managing safeguards consultants and their outputs, documentation of progress with regard to eligibility list preparation, disclosure and consultation, grievance registration and resolution, disbursement of entitlements, day-to-day relocation support, etc. Internal Monitoring will pay special attention to the following:

- Efficiency and effectiveness of the day to day planning and implementation of the RAP;
- Efficient and transparency in disbursement of compensation and R&R benefits;
- Data collection, feedback information, identification of bottlenecks and troubleshooting;
- Documentation for informed decision making, and efficient response to implementation issues;
- Maintenance of each APs entitlement updated file;
- Management of baseline information on socio economic conditions of the APs, to assess whether the socio economic conditions improve and income and living standard are improved restored;
- Preparation of progress reports; and
- Coordination within the implementing organization as well as with outside agencies.

External monitoring

The RDA will engage an external monitoring and review agency/consultant for independent review of the safeguard implementation program to determine whether intended goals are being achieved, and if not, what corrective actions are needed. External monitoring will have two objectives.

- Verify if the safeguard program is being implemented in accordance with the approved framework; and
- Verify whether APs, households and communities are able to address negative impacts and either improved or at least restore their livelihoods and living standards.

External Monitoring is intended to:

- Verify that the RAP has been implemented according to approved plans and procedures;
- Assess that the objectives of the RP has been achieved;
- Determine that APs livelihood and living standards have been restored or improved and if not suggesting ways and means of improving performance;
- Obtain views of the APs on their relocation, entitlements and Grievance Redress committee's performance;
- Evaluate the performance of all implementing Agencies including PMU, PPAs, registered civil societies, CBOs and other Government Agencies associated with the implementation of the project;
- All social development objectives have been met accordance to the ESMF

The External Monitoring (Third party) will be carried out by an experience research based institution and which is expected to involve road users and other stakeholders as well. This also will perform the task for Citizen Engagement mechanism for the project.

Monitoring arrangements.

The project may undertake a Social Impact Assessment at mid-term and project closure, where the overall impact of the project will be assessed, in particular its impact on local communities and their livelihood

Annexes

Screening checklist to determine the level of environmental and social impacts during road maintenance works.

Following check lists would be utilized by the Executive Engineer who will be carrying out maintenance works to determine the level of environmental and social impacts due to the maintenance work. The EE will be responsible to develop feasible mitigation

measures to avoid, reduce to mitigate such adverse impacts before implementing the maintenance works.

Annex I Screening checklist to determine the level of environmental impacts.

Screening checklist to determine the level of environmental impacts. SCREENING QUESTIONS	Ye s	No	REMARKS
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Protected Area	<input type="checkbox"/>	<input type="checkbox"/>	
17 Wetland	<input type="checkbox"/>	<input type="checkbox"/>	
18 Mangrove	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Estuarine	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Buffer zone of protected area	<input type="checkbox"/>	<input type="checkbox"/>	
▪ Special area for protecting biodiversity	<input type="checkbox"/>	<input type="checkbox"/>	
Potential Environmental Impacts Will the Project cause...			
encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?	<input type="checkbox"/>	<input type="checkbox"/>	
encroachment on precious ecology (e.g. sensitive or protected areas)?	<input type="checkbox"/>	<input type="checkbox"/>	
▪ alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site?	<input type="checkbox"/>	<input type="checkbox"/>	

Screening checklist to determine the level of environmental impacts. SCREENING QUESTIONS	Ye s	No	REMARKS
<ul style="list-style-type: none"> ▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction? 	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ▪ increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing? 	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ▪ noise and vibration due to blasting and other civil works? ▪ dislocation or involuntary resettlement of people 	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ▪ other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress? 	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ▪ hazardous driving conditions where construction interferes with pre-existing roads? 	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases from workers to local populations? 	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ▪ creation of temporary breeding habitats for mosquito vectors of disease? 	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ▪ dislocation and compulsory resettlement of people living in right-of-way? 	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ▪ accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials and loss of life? 	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ▪ increased noise and air pollution resulting from traffic volume? 	<input type="checkbox"/>	<input type="checkbox"/>	

<p>Screening checklist to determine the level of environmental impacts.</p> <p>SCREENING QUESTIONS</p>	<p>Ye s</p>	<p>No</p>	<p>REMARKS</p>
<ul style="list-style-type: none"> ▪ increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road? 	<input type="checkbox"/>	<input type="checkbox"/>	

Annex 2 . Screening checklist to determine the level of social impacts.

Project :

Province:

Subproject :

District:

Level of Project

Design:

Potential for Involuntary Resettlement Effects*	Not Known	Yes	No	If yes, consider potential scope of resettlement effects
Will the project include any new physical construction work?				
Does the project include upgrading or rehabilitation of existing facilities?				
Are any environmental effects likely which may lead to loss of housing, other assets, resource use or incomes?				
Is land acquisition likely to be necessary?				
Is the site for land acquisition known?				
Is the ownership status and current usage of the land known?				
Will easements be utilized within an existing site or Right of Way?				
Are non-titled people present on the site/within the Right of Way?				
Will there be loss of housing?				
Will there be loss of crops, trees, and other fixed assets through land use related changes?				
Will there be loss of incomes and livelihoods?				
Will people lose access to facilities, services, or natural resources through land use-related changes?				
Will any social or economic activities be affected through land use-related changes?				
Affected Persons and Severity of Impacts				
Any estimate of the likely number of those affected by the project? No () Yes ()				
If yes, approximately how many?				
Any estimate of the severity of impact at the household level?				
If yes, what?				
Any of these people poor, indigenous, or vulnerable to poverty risks? No () Yes ()				
If yes, how?				

Annex 3 . Environmental Legislation in Sri Lanka

National Environmental Act

In 1981 GOSL passed the National Environmental Act (NEA) and in 1982, created the Central Environmental Authority (CEA) as a regulatory and enforcement agency. The CEA's statutory and enforcement powers were strengthened significantly in 1988, by an amendment to the NEA. A cabinet level ministry to handle the subject of environment was created in 1990, with the appointment of a Minister of Environment to ensure that environmental issues will be given the required attention.

Under provisions of Part IV C of the NEA No. 47 of 1980 as stipulated in Gazette (Extra Ordinary) No. 772/22 dated June 24, 1993 GOSL made Environmental Assessment (EA) a legal requirement for a range of development projects. The list of projects requiring an EIA/IEE is prescribed in the above Gazette notification. In addition, the Gazette notification includes a list of line ministries and agencies that are designated as Project Approving Agencies (PAA). The PAA's are responsible for the administration of the EIA process under NEA. With the change of government in August 1994, and the resulting re-allocation of Ministries, a new list of PAAs were specified—under subject area rather than with the name of the Ministry, as listed originally—in Gazette (Extra Ordinary) No. 859/14 dated February 13, 1995.

According to provisions of the NEA regulations, the only prescribed project type under the Transport and Highways Sector relevant to the proposed project requiring an EA is the construction of national and provincial highways involving a length exceeding 10 Km. In addition, other prescribed projects requiring environmental assessments, listed in the same regulations relevant to the proposed project include;

- (i) Reclamation of land, wetland area exceeding 4 hectares;
- (ii) Conversion of forests covering an area exceeding 1 hectare into non forest uses;
- (iii) Involuntary resettlement exceeding 100 families, other than resettlement effected under emergency situations;
- (iv) Extraction of timber covering land areas exceeding 5 hectares;
- (v) Clearing of land areas exceeding 50 hectares;
- (vi) Inland deep mining and mineral extraction involving a depth exceeding 25 meters;
- (vii) Inland surface mining of cumulative areas exceeding 10 hectares;
- (viii) Mechanized mining and quarrying operations of aggregate, marble, limestone, silica, quartz, and decorative stone within 1 kilometer of any residential or commercial areas; and
- (ix) All projects and undertakings irrespective of their magnitude, if located partly or wholly within 100 meters from the boundaries of or within any area declared under the National Heritage Wilderness Act; the Forest Ordinance; 60 meters from a river or stream bank and having a width of 25 meters or more at any point of its course; any archeological reserve, ancient or protected monument as defined or declared under the Antiquities Ordinance (Chapter 188); any areas declared under the Botanical Gardens Ordinance; and within 100 meters from the boundaries of or

within any areas declared as a Sanctuary under the Fauna and Flora Protection Ordinance.

The EIA approval/disapproval can be granted by the PAA with jurisdiction over the project activity, only with the concurrence of the CEA. However, the project proponent is not permitted to perform the functions and duties of a PAA. Therefore, in the event of a PAA becoming the project proponent, the CEA will designate an appropriate PAA. In instances where the project would fall within the purview of more than one PAA, the CEA will determine an appropriate PAA or serve as the PAA. Any functions of the PAA related to the approval of the project can be devolved to a Provincial Council only with written concurrence of the Minister in charge of the subject of Environment. Considering the scope of activities supported under this project, the most likely PAA's would be the CEA, Ministry of Highways or Ministry of Provincial Councils and Local Government. The CEA will formally decide on the PAA depending on the scope and location of the project on a case by case basis.

According to GOSL procedure, all development activities require environmental clearance. In order to obtain such clearance, the project proponent has to fill in a Basic Environmental Information Questionnaire. The questionnaire requires information from the project proponent to enable the CEA to determine the level of environmental analysis required prior to providing approval for the project. Upon reviewing the questionnaire, the CEA determines whether the project requires an Initial Environmental Examination (IEE), or an Environmental Impact Assessment (EIA), or whether no further environmental analysis is required, depending on the nature of the potential impacts. The CEA review is based on the list of prescribed projects listed under provisions of Part IV C of the NEA No. 47 of 1980 as stipulated in Gazette (Extra Ordinary) No. 772/22 dated June 24, 1993. All prescribed projects have to be subjected to environmental assessments, either through IEEs or EIAs. The CEA also determines the PAA for the specific project. The EA process as described under the NEA applicable to this project is outlined in Annex 2.

Other Acts relevant for Environmental Assessment

In addition to the National Environmental Act, which is the most important legislation governing the process of EA, there are three other legislations under which EA can be required.

Coast Conservation Act (CCA) No.57 of 1981 implemented by the Coast Conservation Department (CCD) and applicable to the coastal zone as defined in the Act. The coastal zone as it pertains to this project is considered to be 300 meters inland from the high water mark. Therefore, any road works within this zone falls under the jurisdiction of CCD. Director of the CCD has the discretion to request for an EIA/IEE from the project proponent if the initial screening reveals significant impacts in the coastal areas by the project. Once the type of environmental analysis required is decided, a scoping committee comprising of the relevant stakeholder agencies meet to discuss issues of the project after which a draft ToR is prepared for review by the Coast Conservation Advisory Council. The EA prepared accordingly by the project proponent is subsequently reviewed by a Technical Evaluation Committee based on whose assessment the Director can grant approval/disapproval for the project. The public consultation process is similar to that of the NEA where the public has the opportunity to

comment on the proposed development within a period of 30 days from time of notification, if it is an EIA.

Fauna and Flora Protection Ordinance (FFPO) No.2 of 1937 (amended in 1993) implemented by the Department of Wildlife Conservation. This act specifies that any development activity that takes place within one mile of the boundary of a National Reserve declared under the Ordinance require an EIA/IEE. The FFPO follows a similar process as the NEA in conducting scoping, setting the ToR, preparation of EA, review of EA and public consultation and disclosure. The decision of project approval or disapproval is finally granted by the Director of the Department of Wildlife Conservation.

Provincial Environmental Act (PEA) of 1991 implemented by the North Western Provincial Council for areas coming under the North Western Province. Environmental Assessments are required for prescribed projects that have been gazetted in Gazette Extraordinary 1020/21 of 27th March, 1998. It specifies two lists of project types (a) where EIA/IEE is mandatory and (b) where the EA can be requested if the PAA decides so. The scoping process is similar to that of the NEA and will be headed by one of the two listed PAAs; (a) Provincial Environmental Authority and (b) Provincial Ministry of Fisheries and Aquaculture. Representation of the CEA and the Ministry of Environment in the scoping committee is a mandatory requirement. Setting up of the ToR, preparation of the EA, review and public disclosure and consultation, granting of the project decision are the same as specified in the NEA.

Annex 4 - EIA and IEE Procedure in Sri Lanka

The EIA Procedure

In the event that an EIA/IEE is required, the PAA in consultation with CEA, is responsible for subjecting the preliminary information to environmental scoping, in order to set the Terms of Reference (TOR) for the EIA/IEE. The TOR is prepared by a Technical Committee (TC) comprising experts in the relevant field, appointed by the PAA. In developing the TOR, the regulations provide for the PAA to consider the views of state agencies and the public.

Upon submission of the EIA by the proponent, the PAA is required to determine whether issues referred to in the TOR have been addressed and notify the proponent of any inadequacies within 14 days. In the event any inadequacies are identified, the proponent is required to make necessary amendments and resubmit the report. Once accepted, in addition to the EIA being forwarded to the CEA by the PAA, notice is also placed in the Government Gazette and in a national newspaper published daily in Sinhala, Tamil and English languages inviting the public to make written comments, if any, to the PAA within 30 days from the date of first appearance of the notice. According to the legislation, public consultation is mandatory only at this stage of the EIA process. Informal consultation with NGOs, interested groups and civil society may occur during early stages of the EA as determined by the PAA depending on the type of project and public interest in the project. The notification would specify the times and places at which the EIA would be available to the public. As a minimum the report would be available at the CEA, PAA and in a GOSL agency in the locality (Colombo and outstation) of the proposed project. The environmental regulations have provisions for public hearings on the project although it is not mandatory. The PAA can use its discretion and hold a public hearing if it would be in the interest of the public. The PAA is required to forward all comments, either written or raised during any public hearing, to the project proponent for review and response within 6 days of completion of the public comment period. The proponent is required to respond to all such comments in writing to the PAA.

The Technical Evaluation Committee (TEC) appointed by the PAA would then evaluate the EIA and require the project proponent to respond to any queries raised by the TEC. The TEC would also evaluate the adequacy of the proponent's response to any comments raised during the public comments period. Upon completion of the evaluation of the TEC, the PAA with the concurrence of the CEA would grant approval for the implementation of the proposed project subject to specified conditions or refuse approval for implementation of the project, with reasons for doing so. The notification must be made within 30 days of the receipt of responses from the proponent. The PAA is required to specify a period within which the approved project should be completed. In the event the proponent is unable to complete the project within the specified period, written permission for an extension has to be obtained from the PAA, 30 days prior to the expiration date.

The PAA is responsible for forwarding a report which contains a plan for monitoring the implementation of the approved project, to the CEA, within 30 days from granting approval. It is also the responsibility of the PAA to publish in the Government Gazette and in one national newspaper published in Sinhala, Tamil and English languages, granting approval for the project. It is mandatory that the project proponent inform the PAA of any alterations to the project as approved and/or the abandonment of the project. The PAA shall, where necessary, obtain fresh approval in respect of any such alterations that are intended to be made to the approved project. The PAA in consultations with the CEA, would also determine the scope and the format of the supplemental report required to be submitted for such alterations.

The IEE Procedure

Upon review of the preliminary information provided by the project proponent (PP), if the PAA determines that the project would have no long-term adverse environmental impacts, an initial environmental examination (IEE) would be considered adequate. Under such circumstances, the proponent will be required to submit a detailed IEE for review and approval by the PAA. The IEE will identify potential environmental and social issues and the complexity of possible remedial actions. Upon reviewing the IEE, if the TEC identifies any substantial environmental issues that may arise as a result of the proposed project, the proponent will be required to undertake a detailed EIA. In the event the IEE is considered adequate, then the project proponent is requested to prepare an Environmental Management Plan (EMP), to address any potential environmental and social issues as well as incorporate the PAA/CEA's approval conditions. The IEE review process is similar to the EIA review process, except for the level of detail and analysis involved, which is proportionate to the anticipated environmental and social impacts.

The CEA has developed, custom made IEE questionnaire for following projects:

- (i) Extraction of timber
- (ii) Thermal power plants
- (iii) Sewage disposal systems
- (iv) River basin development
- (v) Projects which involve underground pipelines
- (vi) Reclamation of land, wetland areas
- (vii) Stand alone industries/ industrial estates
- (viii) Hydro power projects
- (ix) Hotel projects
- (x) Transport & highway projects
- (xi) Fisheries and aquaculture

These questionnaires are used by the CEA/PAA to determine whether the potential project results in long term irreversible or complex environmental and social issues and if so, it warrants an EIA. If no EIA is required, the proponent is required to prepare an EMP which contains remedial measures to address adverse environmental and social issues. The IEE is not required by law to be opened for the public for comments and does not go through the public consultation process required for an EIA.

Annex 5

ASSET MANAGEMENT PROJECT USING OUTPUT AND PERFORMANCE-BASED ROAD CONTRACT (OPRC)

Terms of reference for preparation of Environmental Assessment (EA) and Environmental Management and Monitoring Plan

1. General

1. The Roads Development Authority of Sri Lanka (RDA) wishes to explore the possibility to apply Output (based) Performance Road Contract format (OPRC), under the worldwide known Design Build Maintain Operate and Transfer methodology (DBMOT), as the basis for their asset management of the nation's most priority road network.

2. The OPRC contract format will be applied to the design, rehabilitation/improvement/maintenance of the national roads, Ja Ela to Puttalam section of Peliyagada Puttalam Road (A03) (Corridor 1- about 128.0 km) and Awissawela to Pelmadulla road section of Colombo Ratnapura Wellawaya Betticaloa road (A04) (CRWB) and Pelmadulla Padalangala road section of Pelmadulla - Embilipitiya - Nonagama road (PEN /A018) , totaling to about 158 km.

3. **Ja Ela to Puttalam Road** section is basically composed of about 90 km of urban/semi urban and about 36 km of rural national roads, transitioning between Colombo and Northern part of the Country. The road includes a number of smaller as well as major and relatively long bridges, R/C and steel constructed. Out of these bridges, some have been already commissioned under other arrangements and will be not included in the project. All these, including the bridges that are included in the project, have been described in the Attachment 2 to this TOR. The bridges under consideration in this project will require a quick assessment focusing on maintenance aspects (routine and periodic) and a possible widening of a few of them, mainly by adding the sidewalks. The road is paved by A/C, in relatively fair condition. The first part of the road section of length about 12.5 km is in substandard 4 lane having lane width of 3.2 m and the rest is of two travelling lanes with the width of 3.5 m each and with a very narrow soft shoulders or sidewalks. The Right of Way (ROW) is corresponding to the urban major arterial street/highway and needs a careful consideration regarding the road and pedestrian safety and health requirements. The traffic volume is visible heavy and of mixed composition, in magnitude of 55,100 vpd at the start section and reduce to 12,480 vpd towards the end. No major vertical and horizontal realignment is envisaged, except for the new bridge and its approaches at Kochchikadi, which will be not the part of this project. The end section of the road of, about 1.6 km from km 125 of the road has been planned for widening to four lanes, until the center of Puttalam. The drainage has been neglected and needs serious consideration and planning given the nature of the terrain.

4. **Awissawela to Pelmadulla Road** section of Colombo Ratnapura Wellawaya Betticaloa road (A04) (CRWB) is two lane road on a rolling terrain. The CRWB road is the trunk road which provides connection to Colombo the capital city from Sabaragamuwa, Uva and Eastern provinces. The road is very important in terms of food security as it provide transport of

vegetable grown in Uva province and paddy grown in Eastern province. And also road leads to several tourist destinations such as Ratnapura gem city, Bandarawela hill country, Batticaloa beautiful beaches and sea for wind surfing. The length of the road section is about 63 km and has lane width of 3.00 m. There no hard shoulder along the road section and need few realignment at sharp bends to improve road safety. The road section from Awissawella to Ratnapura has been improved in the year 1999 with AC surface and needs an overlay with adding hard shoulder. The section from Ratnapura to Pelmadulla has been improved in the year 2006 with AC surface and surface is in reasonably good condition. The average daily traffic of the section is varying from about 18,000 vpd at the start and to 14,000 vpd towards the end. The traffic is in mix in composition and nearly 50% of the traffic consists of motor cycles and three wheelers. Four townships along the road need to be widen to 4 lane facility to relieve the traffic congestion at townships and land for the widening is available at present. There are bridges along the section and two (2) major bridges have been taken out of the project as the reconstruction of these bridges have been taken under other funding. There are 4 bridges located in town sections need widening to 4-lane facility. Asphalt concrete road surface is in fair condition need overlay with adding adequate hard shoulder.

5. **Pelmadulla – Padalangala section of Pelmadulla - Embilipitiya - Nonagama road (PEN /A018)** is two lane road of length of about 73.5 km. The PEN road is one of the important trunk roads of the National road network. The road provides the connection to Sabaragamuwa province from Hambanthota where new international Airport at Mattala and new port is located. This also provides the alternative road to Southern province from Colombo through CRWB road. This road also tourist important road as it provide the access to Udawalawe National Park. The road section under consideration has been improved in the year 2006 with surface of DBST. The average width of the Carriageway is 9.6m which provides two lanes of 3.5m and 1m hard shoulder on both side of the road. The Vertical and Horizontal alignment of the road section is reasonably good and no realignment is required. Surface of the road is reasonably good condition except 1st section up to Madampe of length about 12km. This section has some potholes and surface deteriorations.

6. The OPRC contract format, based on Design, Build, Maintenance, Operate and Transfer (DBMOT) methodology, requires the Consultants to prepare a detailed technical and financial analysis for road asset management of the road, involving road rehabilitation/improvement/upgrading, maintenance (routine and periodic) works as well as management of the road ROW, until handing over to the client. The duration of such contract involving the mentioned civil works and ROW management, is estimated to about 10 years, (for asphalt based paved roads). The sequence of the required civil works will depend of the traffic, environmental and climate conditions, and be decided based on the deterioration of its pavement, providing at all times the required residual life of the pavement. The entire project will be designed under one integral civil works and management operation , using an output based performance contract format, involving the agreed Level of Service (LOS) indicators of quality and quantity nature, , thus making sure that the Contracting Entity- (CE) The Contractor (an Entity involving contractor and consultant) has adequate incentives to maintain his service during the maintenance period given the fact that the majority of funding will be spent on rehabilitation/improvement activities. The “life span of the project”, which governs this concept- asset management, should include a “full cycle” of the road interventions, i.e. between two major road interventions (from rehabilitation to rehabilitation works), providing at all the times the approved Level of Service conditions from user’s point of view and from the road durability aspects (strength and residual life of the pavement). At the end of the project life-span, at the handing over to Employer event, the road conditions will be in accordance to the agreed Level of Service conditions, defined by the contract.

7. The payments to the Contracting Entity (CE) will be met only if the Level of Service conditions are met and are in accordance to the other conditions of the contract, to be developed under this assignment. The Contracting Entity will undertake majority of the project implementation and operation risks, which otherwise and traditionally, have been vested with Employer. Therefore, the CE will prepare the required detailed designs and other required construction details and shopping drawings, based on detailed field investigations, also to be carried by him, and in accordance to the defined specifications (technical, environmental, social, legal, etc), developed under this assignment. These detailed designs will be then checked and recommended for approval by the Project Monitoring/Supervision Consultant, before actual construction. However, the CE will decide on “when and how” the works will be implemented, thus involving his optimal use of resource and potential innovations. In addition, OPRC are a fixed price contracts, allowing only for the price fluctuations during the life-span of the project.

8. In order to ensure compliance with the World Bank’s environmental and social safeguard policies and the relevant provisions under the National Environmental Act (NEA) and associated regulations, as well as other relevant legislation and policies linked to road works, an Environmental Assessment for each proposed OPRC roads have to be undertaken.

2. Detailed Requirements for conducting Environmental Assessment and preparing Environmental Management and Monitoring Plan and Standards

2.1 Background

9. The Environment Assessment (EA) is a decision-support mechanism to ensure that the OPRC project design and implementation are environmentally sound and sustainable. In order to achieve this, the RDA is initially undertaking through this consultancy an upstream EAs for the two selected roads that would provide guidance for the OPRC Contractor in managing environmental impacts, designing mitigation measures and standards to be adhered to, as well as for the RDA to monitor the performance of the OPRC Contractor in accordance with the Environmental Management and Monitoring Plan (EMMP) and Environmental Standards specified in the contract.

10. It is expected that EAs will be prepared in close collaboration with the team preparing conceptual designs. The road-specific EAs should be ready prior to finalization of the OPRC bidding documents. Sufficient conditions should be specified in the bidding documents, as well as the contractual agreements clearly defining requirements of compliance based on standards and specific requirements necessary to reduce impacts on sensitive sites such as natural habitats and physical cultural resources. The EMMP will be cost estimated.

11. It is important to put additional emphasis in collecting environmental baseline data such as river/stream flows/hydrology, ambient air quality, noise levels and water quality in random locations along the road, as well as strategic locations where increased levels of disturbances are expected (e.g. strengthening/widening bridges, town development, etc.) or sensitive sites are located. While it is recognized that collection of some of the environmental baseline data related to various sites such as crusher and asphalt plant sites and labour camps may not be possible prior to bidding process, standards to be maintained should be clearly defined including need to collect additional data prior and post operations.

12. The following objectives are expected from the EA study:

- Establish the environmental baseline in the study area, and to identify any significant environmental issue based on detailed surveys, analysis of data, assessment of impacts;
- Assess impacts of the project, and provide for measures to address the adverse impacts by the provision of the requisite avoidance, mitigation and compensation measures, as well as standards;
- Integrate the environmental issues in the project planning and design (conceptual design); and
- The EA study and reporting requirements to be undertaken under this TOR must conform to the Government of Sri Lanka guidelines and regulations and the World Bank Operational Policies.

2.2 Environmental Assessment Legislative and Policy Requirements

13. **National laws and regulations:** The National Environmental Act (NEA) has made Environmental Assessments (EA) a legal requirement for a range of development projects. A list of projects requiring an EA is prescribed in Gazette (Extra Ordinary) No. 772/22 dated June 24, 1993. Road rehabilitation, improvement and maintenance are not listed as prescribed projects requiring EAs under the above gazette notification. Agreement has been reached with the Central Environmental Authority (CEA) and the World Bank that projects financed through World Bank resources will be required to undertake an environmental analysis commensurate with the potential for environmental impacts of roads selected for rehabilitation, improvement and maintenance and prepare detailed EMPs that will be included for implementation as part of the Contractors contracts.

14. The GOSL environmental clearance process, in principle, is consistent with World Bank environmental and public disclosure requirements. The exception being the screening criteria adopted in the GOSL process under the NEA, where project thresholds are used to determine the type of clearance required and the content of public consultation. However, all activities under the proposed project will be subjected to the EA process regardless of the project threshold, prior to disbursement of funds. The implementing agency will share the final versions of EAs and EMPs with the CEA for information. However, under the project activities including setting up and operating crusher plants, asphalt plants and quarry sites require obtaining an Environmental Protection Licenses (EPLs) and be valid at all times during operations.

15. In addition to the National Environmental Act, which is the most important legislation governing the process of EA, there are three other legislations under which EA can be required. These are (1) Coast Conservation Act (CCA) No.57 of 1981 implemented by the Coast Conservation Department (CCD) and applicable to the coastal zone as defined in the Act and its amendments; (2) Fauna and Flora Protection Ordinance (FFPO) No.2 of 1937 and its amendments implemented by the Department of Wildlife Conservation. This act specifies that any development activity that takes place within one mile of the boundary of a National Reserve declared under the Ordinance require an EIA/IEE; (3) The Forest Ordinance of Sri Lanka No. 17 of 1907 and its amendments.

16. **World Bank Policies:** Projects financed with IDA/IBRD resources normally need to comply with World Bank Operational Policies. For the proposed project two operational policies have been triggered which includes OP/BP/GP 4.01 – Environmental Assessment and

OP/BP/GP 4.04 – Natural Habitats. In addition to these two, the applicability of OP/BP/GP 4.11 – Physical Cultural Resources will be assessed and necessary mitigation measures will be proposed if triggered.

17. OP 4.01 requires EA of projects proposed for Bank financing to help ensure that these projects are environmentally and socially sound and sustainable. EA is a process whose breadth, depth and type of analysis depend on the nature, scale and potential for environmental impacts of the proposed project. Considering the work involved and resultant environmental repercussions in road resurfacing and upgrading and/or provision of drainage in non-sensitive environments, as well as subsequent maintenance activities, this project can be treated as Category B.

18. OP 4.01 is very clear that for a project in Category B proposed for financing under an IDA Credit/IBRD Loan, the developer must consult project affected people, local non-governmental organizations (NGOs) and local authorities about the project's environmental and social impacts and take their views into account in the design and implementation. The EA should particularly incorporate such comments to improve social acceptability and environmental sustainability. Such consultations should be initiated as early as possible, in the Project cycle and it is mandatory that consultations are undertaken after the draft EA is prepared. In addition, a process has to be defined to continue the consultation process which is defined in the third part of this ToR. The OP 4.01 also highlights the importance of analyzing alternative designs, technologies and operational strategies systematically in terms of their potential environmental and social impacts in order to select the most environmentally friendly, socially acceptable and economically viable option.

19. OP 4.04 recognizes that conservation of natural habitats and other measures that protect and enhance the environment is essential for long-term sustainable development. The Bank therefore supports the protection, maintenance, and rehabilitation of natural habitats and their functions. The Bank supports and expects borrower to apply, a precautionary approach to natural resource management to ensure opportunities for environmentally sustainable development. The Bank does not support projects that, involve significant conversion or degradation of critical natural habitats unless there are no feasible alternatives for the project and its siting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs. Bank financed operations will ensure that no activities will take place in designated protected areas as per Flora and Fauna Protection Ordinance of Sri Lanka and designated Forest Reserves under the Forest ordinance of Sri Lanka. In addition, impacts on any environmentally sensitive sites that are not under any form of protection will also be assessed to ensure project-specific negative impacts are adequately mitigated.

20. OP 4.11....

21. The design of road specifications and works and subsequent operations of the project must be in compliance with environmental safeguards as specified in the EA. The EAs will be made available for public review and comment in appropriate locations in Sri Lanka and in World Bank's Public Information Center in accordance with BP 17.50 requirements of disclosure.

2.3 Scope of Work

3. The consultant is required to undertake road-specific EAs and prepare a report including EMMPs for the two road sections defined earlier in the ToR that will be managed through an OPRC contract to ensure the objectives of the EA are addressed based guidelines provided below.

Task 1. Description of the Proposed Project

4. Major components of the project to be described include, Include description of the project; covering geographical location, road route(s), road length specifying start and end chainages, type of development envisaged including a description of upgrading/widening and/or maintenance treatments. In addition, to understand the proposed project activities information on ROWs, adjustments to alignments, including earthworks, repair/replacement of bridges, widening and stabilization of embankments, improvements to drainage and service ducts, sources of materials used during proposed road works, generation of wastes and their disposal, expected volume of use and traffic impacts, necessary rehabilitation activities resettlement, land acquisition and temporary re-routing of traffic, safety features, staffing and accommodation of employees, site clearance requirements, scheduling of project activities, road paving and road signs and markings, operation and maintenance activities (e.g. clearing of ditches, prevention of erosion, especially at culverts) will need to be provided as much as possible. Any information currently not available that may have a bearing on the environment or people should be also identified.

5. Define the road-specific influence area in consultation with the RDA and the World Bank. The basis of the next tasks should be on analyzes conducted within the infleucne area.

Task 2. Description of the Environment

6. Assemble and evaluate and baseline data on the environmental characteristics of the study area. Include information on any changes anticipated before the project commences.

(a) *Physical environment*: geology (general description for overall study area); topography; soils; monthly average temperatures, rainfall and runoff characteristics; ambient air quality; noise levels; surface and ground water hydrology; identity of streams, lakes, or marine waters and their flows; receiving water quality. In addition, identify potential natural disaster and climate change risks.

(b) *Biological environment*: flora and fauna; rare or endangered species within or in areas adjacent to project-related development sites and any adjustments to the present alignment; sensitive habitats, including wetlands, protected areas or reserves in areas affected by construction, facility siting, land application or disposal; aquatic, estuarine or marine communities in affected waters; significant natural habitats; species of commercial importance in land application sites and receiving waters.

(c) *Sociocultural environment*: present and projected population; present land use/ownership; planned development activities; community structure; present and projected employment by industrial category; distribution of income, goods and services; recreation; public health; cultural properties; indigenous peoples, customs and aspirations; significant natural, cultural or historic sites, etc. Identify land or water based activities such as agriculture (eg. paddy cultivation), fisheries etc. within the project influence area.

7. The consultant shall (i) collect information from primary and secondary sources that are relevant to understanding the baseline, as well as the design of mitigation and enhancement measures, as pertaining to physical, biological and socio-cultural environments defined, but not limited to the above; (ii) carry out site visits and investigations of all the protected areas, forests reserves and other environmentally sensitive locations and document them on base maps to identify conflict points with the likely design of the project; and (iii) prepare detailed specific maps showing details of candidate sites for environmental enhancements.

8. The consultant shall extensively use the video or other records of the project road (carried out as part of the engineering surveys), as well as photo document significant sites in terms of environmental and social sensitivity and safety. All recognized environmental resources and features within the OPRC road's influence area shall be clearly identified, and studied in relation to activities proposed under the OPRC activities. Typically, these will include stretches with significant roadside trees; environmental and common property resources such as forests, wetlands, significant water bodies; and major physical cultural properties. All these may be depicted using a line diagram or a strip map.

9. All surveys shall be carried out including techniques, tools and samples employed for the surveys to conform to the international practices. Environmental quality (air, water and noise) monitoring shall include an adequate number of samples so as to provide a representative sample of the entire OPRC corridors. Additional sample data for sensitive environmental/ecological receptors, if any, shall be collected such as to analyze and predict the possible impacts to a degree and precision of acceptable professional standards. Further, additional specialized surveys, such as biodiversity assessment survey, and/or hydrological surveys shall be conducted to be agreed during the inception phase.

Task 3. Legislative and Policy Considerations

10. Describe the pertinent laws, regulations and standards governing water quality and use, noise levels to be maintained, air quality to be maintained, pollutant discharges to surface waters and land, health and safety, protection of sensitive areas and endangered species, siting, land use control, etc., at national, regional and local levels. The report should describe the national laws and that need to be adhered to and to be implemented during the project including, (a) The Flora and Fauna Protection Ordinance; (b) Forest Ordinance; (c) Coast Conservation Act; (d) Geological Survey and Mines Bureau (GSMB) established under Mines and Minerals Act. Mining and exploitation for minerals, including sand, must be licensed under the Act of the GSMB; (e) Water Resources Board Act where promotion of afforestation, control of soil erosion, prevention of the pollution of rivers, streams and other water sources are required; (c) State Land Ordinance Act provides guidelines to the protection of the source, course or bed of any public stream, springs, reservoirs, lakes ponds lagoons, creeks, canals, aqueducts, etc., prevention of the erosion of soil and preservation of water supplies; (f) Soil Conservation Act makes provision for the conservation of soil resources for prevention or mitigation of soil erosion and for protection of land against damage by floods and droughts. It is possible to declare any area defined in the order to be an erodable area for the purpose of this act; (g) Prevention of Mosquito Breeding Act; (h) relevant legislation/regulation that governs the use of land, and (i) other relevant laws and regulations that should be taken into consideration.

11. The EA should also specify various licenses, permits and approvals and relevant authorities that are required to be maintained by the contractors for sourcing of material for road construction and site utilization. It should also specify in all cases, according to the World Bank Policy, no activity including setting up of burrowing sites, dumping sites, quarry and sites for

stock piling, storage or any other facility siting related to the project within protected areas or forest reserves will be allowed even with the permits and approvals by the relevant agency.

Task 4. Determination of the Potential Impacts of the Proposed Project

12. Identify all significant changes that the project is likely to generate. Distinguish between significant positive and negative impacts, direct, indirect and cumulative impacts, and immediate and long-term impacts. Include indirect impacts (e.g., increased access to forests and other sensitive areas and increased urbanization). Identify impacts that may occur due to accidental events (e.g., spillage of toxic materials). Identify impacts that are unavoidable or irreversible. Wherever necessary, describe impacts quantitatively, in terms of environmental costs and benefits. Assign economic values when feasible. Characterize the extent and quality of available data, explaining significant information deficiencies and any uncertainties associated with predictions of impact.

13. Identify any significant developments proposed in the project influence area such as township development, industrial zones, etc. that may have impact on the level of road use as well as to the environmental and people and level of impacts. The EA should focus on the potential for negative environmental and social impacts caused by planned and unplanned (spontaneous) in-migration of people if applicable to the given road section; clearing of forest lands for agriculture; increased pressure on fuel wood, fodder and water resources; social disruptions and conflicts; threat to natural habitats and important wildlife species, etc.

14. Determine the impacts due to likely changes to hydrology due to design or construction time. Specifically describe impacts on agriculture and fisheries where applicable due to temporary and/or long-term changes to hydrology in the area.

15. Special attention should be given to:

- Air quality: air pollution from asphalt plants; dust; noise from construction, equipment and blasting.
- Land resources: landslides; erosion; roadside litter; material for road construction.
- Hydrology: crossing of rivers, streams, canals and ravines; temporary closure of water flow (such as due to bridge construction); foreclosure of other land uses (if new alignment proposed); landslides; erosion; roadside litter; modifications to natural drainage patterns and groundwater elevation; flash-flooding; setting up of or clearing of lead aways; upstream activities that will have impacts to the project, as well as downstream impacts.
- Water quality: river/stream and lake sedimentation; use of pesticides; fuel and oil spills; water pollution from spills or accumulated contaminants on road surfaces.
- Biological: impacts on biodiversity caused by facilitation of access to and spontaneous settlements in natural areas; impacts on coastal/wetland management; control of hunting and poaching/wood-cutting; removal of existing trees along the roadsides
- Socio-economic: loss of agricultural and residual lands; loss of water sources for

drinking and agriculture purposes; unplanned settlements; noise; threat to cultural and historical sites or artifacts.

Task 5. Analysis of Alternatives to the Proposed Project

16. Describe alternatives that were examined in the course of developing the proposed project and identify other alternatives that would achieve the same objectives. The concept of alternatives extends to siting and design of new alignments, rehabilitation techniques and phasing of activities, and operating and maintenance procedures. The alternatives should be also proposed based on the experience of road rehabilitation in the recent past. Compare alternatives in terms of potential environmental and social impacts, capital and operating costs (including mitigation measures and their monitoring), and institutional, training, and monitoring requirements and recommend the best possible options. To the extent possible, quantify the costs and benefits of each alternative, incorporating the estimated costs of any associated mitigating measures.

17. The alternatives shall reflect "best practices" in road alignment and construction to ensure that potential negative environmental impacts are minimized (e.g., through measures to prevent soil erosion, to ensure proper drainage, and provide for waste disposal such as of cut and fill material and used oil, spoil and borrow area restoration; avoidance of cutting trees; avoidance/control resettlement, etc.), avoidance of significant socio-economic changes; and safety.

Task 6. Development of an Environmental Management and Monitoring Plan (EMMP)

18. For each impact predicted, feasible and cost effective mitigation measures shall be identified to reduce potentially significant adverse environmental impacts to acceptable levels. The capital and recurrent costs of the measures, and institutional, training and monitoring requirements to effectively implement these measures shall be determined. The consultant shall explore and recommend environmental enhancements including roadside landscaping, separation of non-motorized lanes in an aesthetically appealing manner, provision of walking pathways, and development of cultural properties or improving access along the corridor. At this stage, it would be important to identify the need for further environmental studies for issues that cannot be dealt with during this stage, but should be undertaken by the OPRC Contractor.

19. Estimate the site specific impacts and costs of the mitigation measures and of the institutional and training requirements to implement them. If appropriate, assess compensation to affected parties for environmental impacts that cannot be mitigated – example closure of water flow of a river that will impact the planting of paddy downstream where compensation may have to be provided to the affected communities. Prepare an EMMP, including proposed work programs, budget estimates, schedules, staffing and training requirements, and other necessary support services to implement the mitigating measures, monitoring, etc. Include measures for emergency response to accidental events (e.g. entry of raw sewage or toxic wastes into rivers, streams, etc.).

20. Prepare a detailed plan to monitor the implementation of mitigating measures and the impacts of the project during rehabilitation and operation including monitoring indicators (e.g, emission and ambient levels of pollutants where these may be detrimental to human health, soil erosion, changes in the floodplain). Include in the plan an estimate of capital and operating costs and a description of other inputs (such as training and institutional strengthening) needed to implement the plan. Include a regular schedule of monitoring the quality of surface and ground

waters, air quality and noise to ensure that mitigation measures are effective. Provide guidance for reporting, enforcement and conducting environmental audits.

21. Review the responsibilities and capability of institutions at local, provincial/regional, and national levels and recommend steps to strengthen or expand them so that the EMMP may be effectively adopted and implemented by the OPRC contractor. The recommendations may extend to agency functions, intersectoral arrangements, management procedures and training, staffing, operation and maintenance training, budgeting and financial support.

22. Identify environmental standards to be maintained which can be translated to environmental specification for the OPRC contractor. Each specification should also have a measureable indicator(s) for monitoring purposes.

23. EMMPs should be also presented in summary as part of an appendix (es) in a format agreed with the PMU. The EMMPs should have the following sections:

- Site-specific impacts identified and mitigation measures proposed (e.g. removal of trees, need for drainage, etc.)
- Standards to be maintained which are applicable throughout the road (e.g. safety measure, traffic management, noise and dust management, water and air quality maintenance, etc.) and/or the site is unknown (e.g. site of the labour camp, asphalt plant, etc.).
- Potential list of sites for material sourcing and siting of burrowing sites, dumping sites, quarry and sites for stock piling, storage, crusher plants, asphalt plants, etc. in the vicinity of the road sections. Potential sites identified for stock piling, storage, crusher plants, asphalt plants, etc. should be also checked for existing necessary clearances/permits and reported. This should include information such as existing site clearance details (including the quality of the source as per the GSMB, amount available for extraction, expiry dates of the clearances/permits if a commercial site, etc.), as well as details of requirements of permits for such activities. Such site identification should adhere to the condition specified under the Task 3, paragraph 2.
- Staffing requirement for the Contractor and supervising entity

Task 7. Assist in Inter-Agency Coordination and Stakeholder Participation

24. The Consultant shall assist the PMU/RDA in coordinating the EA with relevant agencies and the government will consult with groups likely to be affected by the proposed project and with local NGOs on the environmental and social aspects of the proposed project – the detailed consultation requirements are presented separately in the next section of the ToR. These groups should be consulted during the initial stages of the assessment as well as when a draft EA is ready. The draft EA should also be available in a public place accessible to affected groups and stakeholders. Relevant information will be provided to affected groups in a timely manner prior to consultation and in a form and language that is understandable and accessible to the groups being consulted. The Consultant should maintain a record of the public consultation and the records should indicate: means other than consultations (eg, surveys) used to seek the views of affected stakeholders; the date and location of the consultation meetings, a list of the attendees and their affiliation and contact addresses; and, summary minutes. It should be also reported on how the suggestions and requirements of stakeholders have been influenced in proposing mitigation measures proposed under EMMP, as well as the

conceptual design. The summary of the above should be presented as part of the main text of the EA and detailed information including photographs should be annexed as part of the EA document.

2.4 EA Report

25. Provide EA reports for the two road sections separately which are concise and limited to significant environmental issues. The main text should focus on findings, conclusions and recommended actions, supported by summaries of the data collected and citations for any references used in interpreting those data based on the tasks listed in section 2.3. Detailed or uninterrupted data are not appropriate in the main text and should be presented in appendices or a separate volume. Unpublished documents used in the assessment may not be readily available and should also be assembled in an appendix. Organize the environmental assessment report according to the outline below.

- Executive Summary
- Introduction
- Description of the Proposed Project
- Policy, Legal and Administrative Framework
- Description of the Environment
- Significant Environmental and Social Impacts
- Analysis of Alternatives
- Environmental Management and Monitoring Plan, including mitigation, monitoring, capacity development and training and implementation schedule and costs
- Inter-Agency and Stakeholder Consultation
- List of References
- Appendices:
 - ToR
 - EMMP
 - List of Environmental Assessment Preparers
 - Records of Inter-Agency and stakeholder communications and consultations
 - Data (such as environmental quality monitoring, ecological surveys, hydrological data, etc.)
 - Unpublished Reference Documents
 - List of References

3. Detailed Requirements of the Assignment

3.1 Consulting team

The team should include experts with experience conducting environmental assessments in the roads sector development, conducting cost benefit analysis, assessing alternatives and suggesting alternative low cost solutions. The team should be formed in minimum as indicated below with the expertise defined:

- Environmentalist with experience undertaking Environmental Impact Assessments and terrestrial and aquatic ecology
- Hydrologist with additional experience on disaster/climate change risk assessment

- Engineer with environmental engineering knowledge and quantity surveying capabilities
The Team Leader should be either the Environmentalist or an Engineer with experience preparing Environmental Impact Assessments.

3.2 Reporting and feedback schedule

All submissions related to the assignment should be submitted to Project Director of Project Management Unit (PMU) of Road Sector Assistance Project, as hard copies and electronically. Electronic version of the final report should be in Word form and not PDF. During the final submission of the EA report, if changes requested during the draft report stage are not satisfactory to the employer, the consultant will be required to work further on the document until it is considered satisfactory. All reports will be also reviewed by the World Bank. Any feedback/discussions in addition to below can be requested by the employer as well as the consultancy firm.

Description	Deadline	Feedback
Submission of the inception report.	01 weeks after signing the contract agreement.	Within 1 week, comments and suggestions will be provided in writing A meeting will be organized by the employer to discussion clarifications and provide additional feedback
Submission of the draft EA reports & EMMPs	07 weeks after receiving comments.	Within 1 week, comments, corrections and further information necessary will be provided in writing
Submission of the final EAs and EMMPs.	02 weeks after receiving comments	Submission of Final Reports (one soft copy and two hard copies for each road)

3.3 Information to be provided by Employer

In order to expedite the process, the PMU will provide copies of the most recent EA/EMAP and SIA reports (also available in the Infoshop of World Bank) of RSAP phase 2, as well as the Environmental and Social Management Framework of RSAP on the day of contract signing. The PMU will also provide any documents related to OPRC. In addition, relevant sections of the bid document of RSAP phase 2 will be provided. A meeting to discuss any clarifications with PMU and the World Bank in reference to this ToR can be arranged on request.

Annex 6

ASSET MANAGEMENT PROJECT USING OUTPUT AND PERFORMANCE-BASED ROAD CONTRACT (OPRC)

Terms of Reference for preparation of Social Impact Assessment (SIA) and Resettlement Action Plan (RAP)

1. General:

1. The Roads Development Authority of Sri Lanka (RDA) wishes to explore the possibility to apply Output (based) Performance Road Contract format (OPRC), under the worldwide known Design Build Maintain Operate and Transfer methodology (DBMOT), as the basis for their asset management of the nation's most priority road network.
2. The OPRC contract format will be applied to the design, rehabilitation/improvement/maintenance of the national roads, **Ja Ela to Puttalam** section of Peliyagada Puttalam Road (A03) (Corridor 1- about 128.0 km) and **Awissawela to Pelmadulla** road section of Colombo Ratnapura Wellawaya Betticaloa road (A04) (CRWB) and **Pelmadulla-Padalangala** road section of Pelmadulla - Embilipitiya - Nonagama road (PEN /A018) , totaling to about 158 km.
3. Ja Ela to Puttalam Road section is basically composed of about 90 km of urban/semi urban and about 36 km of rural national roads, transitioning between Colombo and Northern part of the Country. The road includes a number of smaller as well as major and relatively long bridges, R/C and steel constructed. Out of these bridges, some have been already commissioned under other arrangements and will be not included in the project. *All these, including the bridges that are included in the project, have been described in an Attachment to this TOR*. The bridges under consideration in this project will require a quick assessment focusing on maintenance aspects (routine and periodic) and a possible widening of a few of them, mainly by adding the sidewalks. The road is paved by A/C, in relatively fair condition. The first part of the road section of length about 12.5 km is in substandard 4 lane having lane width of 3.2 m and the rest is of two travelling lanes with the width of 3.5 m each and with a very narrow soft shoulders or sidewalks. The Right of Way (ROW) is corresponding to the urban major arterial street/highway and needs a careful consideration regarding the road and pedestrian safety and health requirements. The traffic volume is visibly heavy and of mixed composition, in magnitude of 55,100 vpd at the start section and reduce to 12,480 vpd towards the end. No major vertical and horizontal realignment is envisaged, except for the new bridge and its approaches at Kochchikadi, which will be not the part of this project. The end section of the road, of about 1.6 km, from km 125 of the road has been planned for widening to four lanes, until the center of Puttalam. The drainage has been neglected and needs serious consideration and planning given the nature of the terrain.

4. **Awissawela to Pelmadulla Road** section of Colombo Ratnapura Wellawaya Batticaloa road (A04) (CRWB) is two lane road on a rolling terrain. The CRWB road is the trunk road which provide connection to Colombo the capital city from Sabaragamuwa, Uva and Eastern provinces. The road is very important in terms of food security as it provide transport of vegetable grown in Uva province and paddy grown in Eastern province. And also road leads to several tourist destinations such as Ratnapura gem city, Bandarawela hill country, Batticaloa beautiful beaches and sea for wind surfing. The length of the road section is about 63 km and has lane width of 3.00 m. There no hard shoulder along the road section and need few realignment at sharp bends to improve road safety. The road section from Awissawella to Ratnapura has been improved in the year 1999 with AC surface and need overlay with adding hard shoulder. The section from Ratnapura to Pelmadulla has been improved in the year 2006 with AC surface and surface is in reasonably good condition. The average daily traffic of the section is varying from about 18,000 vpd at the start and to 14,000 vpd towards the end. The traffic is mix in composition and nearly 50% of the traffic consist of motor cycles and three wheelers. Four townships along the road need to be widened to 4 lane facility to relieve the traffic congestion at townships and land for the widening is available at present. There are bridges along the section and two (2) major bridges have been taken out of the project as the reconstruction of these bridges have been taken under other funding. There are 4 bridges located in town sections need widening to 4 lane facility. Asphalt concrete road surface is in fair condition need overlay with adding adequate hard shoulder.
5. **Pelmadulla – Padalangala section of Pelmadulla - Embilipitiya - Nonagama road (PEN /A018)** is two lane road of length of about 73.5 km. The PEN road is one of the important trunk roads of the National road network. The road provides the connection to Sabaragamuwa province from Hambanthota where new international Airport at Mattala and new port is located. This also provides the alternative road to Southern province from Colombo through CRWB road. This road also tourist important road as it provide the access to Udawalawe National Park. The road section under consideration has been improved in the year 2006 with surface of DBST. The average width of the Carriageway is 9.6m which provides two lanes of 3.5m and 1m hard shoulder on both side of the road. The Vertical and Horizontal alignment of the road section is reasonably good and no realignment is required. Surface of the road is reasonably good condition except 1st section up to Madampe of length about 12km. This section has some potholes and surface deteriorations.
6. The OPRC contract format, based on Design, Build, Maintenance, Operate and Transfer (DBMOT) methodology, requires the Consultants to prepare a detailed technical and financial analysis for road asset management of the road, involving road rehabilitation/improvement/ upgrading, maintenance (routine and periodic) works as well as management of the road ROW, until handing over to the client. The duration of such contract involving the mentioned civil works and ROW management, is estimated to about 10 years, (for asphalt based paved roads). The sequence of the required civil works will depend of the traffic, environmental and climate conditions, and be decided based on the deterioration of its pavement, providing at all times the required residual life of the pavement. The entire project will be designed under one integral civil works and management operation , using an output based performance contract format, involving the

agreed Level of Service (LOS) indicators of quality and quantity nature, , thus making sure that the Contracting Entity- (CE) The Contractor (an Entity involving contractor and consultant) has adequate incentives to maintain his service during the maintenance period given the fact that the majority of funding will be spent on rehabilitation/improvement activities. The “life span of the project”, which governs this concept- asset management, should include a “full cycle” of the road interventions, i.e. between two major road interventions (from rehabilitation to rehabilitation works), providing at all the times the approved Level of Service conditions from user’s point of view and from the road durability aspects (strength and residual life of the pavement). At the end of the project life-span, at the handing over to Employer event, the road conditions will be in accordance to the agreed Level of Service conditions, defined by the contract.

7. The payments to the Contracting Entity (CE) will be met only if the Level of Service conditions are met and are in accordance to the other conditions of the contract, to be developed under this assignment. The Contracting Entity will undertake majority of the project implementation and operation risks, which otherwise and traditionally, have been vested with Employer. Therefore, the CE will prepare the required detailed designs and other required construction details and shopping drawings, based on detailed field investigations, also to be carried by him, and in accordance to the defined specifications (technical, environmental, social, legal, etc), developed under this assignment. These detailed designs will be then checked and recommended for approval by the Project Monitoring/Supervision Consultant, before actual construction. However, the CE will decide on “when and how” the works will be implemented, thus involving his optimal use of resource and potential innovations. In addition, OPRC are a fixed price contracts, allowing only for the price fluctuations during the life-span of the project.

2. Detailed specifications for the preparation of Social Impact Assessment (SIA) and Resettlement Action Plan (RAP)

2.1 INTRODUCTION AND OBJECTIVES

8. Where the project will entail acquisition of land, structures and other assets, and/or cause displacement of loss of assets within the public Right of Way (ROW), the Land Acquisition Act No. 9 of 1950 and subsequent LA regulations in 2008 applies. The project is under consideration for World Bank financing, and must therefore also be in compliance with the World Bank’s policy on “ Involuntary Resettlement” as described in OP 4.12.
9. It is the responsibility of the Borrower to prepare a plan that complies with the Government of Sri Lanka’s and the World Bank’s policy guidelines and directives on land acquisition and involuntary resettlement. This Plan is referred to as a Resettlement Action Plan (RAP). The RAP will be prepared in two phases and will include a gender action plan and details of community consultations. The GoSL and the World Bank will first agree on an appropriate Entitlement Framework, on the basis of which a detailed RAP will be developed.
10. The RAP has three main objectives:
 - to present the project area and the impacts of land acquisition for project civil works on the people who own properties to be acquired, live on the land to be

acquired, and/or derive their income from the land or enterprises operating on the land to be acquired;

- to present the entitlement policy for compensation and assistance to people affected by the project;
 - to present an action plan for delivery of the compensation and assistance outlined in the policy, to the persons identified as entitled to such assistance.
11. GoSL and World Bank policy is based on the principle that the population affected by the project should receive benefits from it, or at the very least not be worse off than before. Acquisition of land and other assets, both of private holdings and within the ROW, are integral part of project design and implementation. Undertaking a social impact assessment and preparing a RAP should be incorporated as part of the project design from the start, and undertaken in close coordination with environmental analysis, the Environmental action plan, and the engineering design and implementation.
 12. The World Bank policy emphasizes that involuntary resettlement should be avoided or minimized where possible by exploring other alternative project designs. Therefore, the initial screening for social and environmental impacts should be part of the feasibility studies to determine the final selection of roads to be included in the project.
 13. In cases where displacement, loss of assets, or other negative impacts of people are unavoidable, the project should assist the project Affected Persons (PAPs) with the means to improve their former living standards, income earning capacities, production levels or at least maintain the previous standards of living of those suffering losses.
 14. Since a key principle is that no civil works should be undertaken on any stretch of road before land acquisition has been completed and compensation or assistance carried out according to the RAP, it is essential that the planning and implementation of civil works be coordinated with the RAP.
 15. Preparation of a RAP requires thorough understanding of social, economic and cultural factors influencing the lives of the adversely affected people. Detailed baseline studies need to be conducted, and a participatory approach through consultation with potentially affected persons and other stakeholders such as local NGOs, municipal authorities, etc is essential. Appropriate skills and experience to coordinate and implement this must be available within the responsible agencies.
 16. The Terms of Reference for the work undertaken may be modified according to local contexts, subject to approval by GoSL and the World Bank.

2.2 SCOPE OF WORK

Task 1. Social Impact Assessment (SIA)

- 19 The objectives of the Social Impact Assessments are:
 - to provide the minimum information on social impacts as part of the preliminary screening of road sections;
 - to verify the legal boundaries of the Right of Way, document existing structures, land plots, and other physical assets within the ROW to establish a cut-off date for

entitlements in accordance with the policy to be developed, identify project affected persons including those who are vulnerable; and

- to provide the socio-economic baseline information required for preparation of the entitlement framework.

20 **Preliminary Screening:** The consultant shall make initial visits to all the different stretches of road under consideration for project. Coordinated with the other screening exercises being undertaken (environmental, techno-economic), an assessment shall be made of the potential magnitude of social impacts. Any major social impact issues such as large scale resettlement, relocation or impact on dense urban clusters, loss of livelihood, acquisition of private land and other vulnerable groups shall be identified. Stretches with no or minor social impacts shall be identified, and given priority in the selection of roads to be improved.

21 Following the selection of road stretches to be included in the project, a verification exercise shall be undertaken. The verification shall establish the legal boundaries of the Right of Way, and identified current usage of the land in terms of squatters, land encroachments, fixed and movable structures, trees and wells, etc. This shall be jointly verified by the (RDA) and the respective Provincial Council, in the field, the information gathered should be reflected in maps and records, jointly verified by signature of the responsible senior (RDA) and PC officials. The following guidelines shall be followed:

- a) Where it is likely that dislocation of people will be required, suitable resettlement sites of government owned land in close proximity to the current locations of the affected persons should be recorded. The resettlement sites should be identified and finalized in consultation with the displaced persons;
- b) All encroachments within the public ROW, as well as private holding of land and other assets in areas where it is probable that the corridor of impact will go shall be documented;
- c) Assets both within and outside of the ROW such as structure, land holdings, trees and wells, etc shall be recorded on strip maps, and be numbered in each named settlement and administrative unit;
- d) The information gathered shall be recorded on strip maps, and if possible computerized Photography and/or video recordings should be used to document existing structures and land holdings, and circumstances for identification and planning.

20. Following this a public notification of the intent to undertake a project shall be issued, in accordance with the legal requirements of GoSL. This represents the cut-off date for entitlements under the project. Only those people with land or other assets identified as existing prior to this date will be entitled to support under the project. This is to prevent land invasions, erection of new structures for speculation purposes, and other attempts at false claims. The consultants shall assist the appropriate authorities in undertaking this work.

21. **Socio-economic baseline information:** This will be collected by means of a sample socio-economic survey of the pre-selected roads. The survey shall gather information on the various categories of losses and other adverse impacts likely under the project. The losses shall be categorized according to type. These losses will vary based on the local context. They may include, but not be limited to, types of impact and number of PAPs against each impact type such as:

- a) loss of land and other productive resources such as trees

Loss of livelihood or sources of livelihood

Temporary loss of assets, livelihood or sources of livelihood

How project will impact women differently – on livelihood, displacement, access to resources, etc;

- b) loss of structures, temporary or fixed, within or outside of ROW;
- c) loss of access to public services (roads, water supply, schools, medical facilities, shops);
- d) loss of customers and supplies;
- e) loss of access to forest or protected areas
Loss of fishing, grazing, or forest areas;
- f) loss of access to common property resources; and
- g) Disruption of social, cultural, religious, or economic ties and networks.

22. Furthermore, the sample socio-economic survey shall identify potentially affected populations, with special attention to vulnerable groups such as landless households and women-headed households. It shall include but not be limited to:

- a) demographic characteristics (age, sex, marital status, literacy level, peer relations, numbers, and categories of affected people);
- b) ethnic composition of the population and settlement pattern;
- c) main and secondary forms of livelihood including specification of the resource base, seasonal and permanent use of resources including land based and salaried employment for different household members, labor mobility and migration, the importance of informal networks and labor exchange patterns and the potential impact of disrupting these patterns, skill base, training need assessment for livelihood enhancement income through various sources, expenditure pattern, economic vulnerability, asset base;
- d) status of access to market, health facilities, banking, communication, etc;
- e) if any persons have already been displaced, information on them should be collected for two time periods at the time of displacement and at present.

23. As part of the sample socio-economic survey, an assessment shall also be made of what the likely replacement value of the various assets lost is based on the following considerations:

- a) entitlements to affected persons shall be based on replacement value rather than registered land prices etc. which tend to be undervalued;
- b) this assessment is also important as a means of preventing inflated claims to compensation;
- c) as part of this assessment, consultations and discussions shall be held with a representative number to the different categories of affected persons, to assess their views on what constitutes fair compensation or assistance, their preferences for resettlement actions, and reactions towards the project; and
- d) a suitable methodology shall be developed to classify different types of assets, and the measurements taken to determine quantities of losses, i.e different types of land, tree, crops, structures, businesses etc, and the unit of measurement such as area of land, number of trees, floor area or other measurements for houses etc.

24. The sample survey shall form the basis for the full base line socio-economic survey to be undertaken subsequently of all PAPs. By conducting it first for a sample population, it may be modified and improved prior to undertaking the full survey.

25. **Reporting.** The findings from the Social Impact Assessment shall be presented in a report. The information collected shall be gender segregated. This shall include:
- a) Baseline information on socio-cultural and economic parameters of the project area;
 - b) assessment of current land acquisition practices, their appropriateness and potential impacts for this project;
 - c) estimates of the type of losses expected as a result of the project, broken up in categories of cultivated, homestead, enumeration of structures, trees and other assets;
 - d) identification of the categories of affected persons, bases on the identified losses, and estimates of their numbers;
 - e) it is important to analyze the data in such a way that the report captures the likelihood that some persons may lose different kinds of assets. Therefore, the number under each category is not mutually exclusive and in identifying different person's losses and entitlements, provision must be made for recording and compensation for more than one kind off loss; and
 - f) the status of squatters and encroachers within the public Right of Way.
26. Based on this information the consultants shall prepare a draft Entitlement Framework, which will form part of the agreement between GoSL and the Bank. The following considerations are essential:
- a) the framework will be adopted as policy for this project;
 - b) the entitlement framework shall be prepared by the consultants. However, it is essential that this be done in close consultation with the agencies responsible for the subsequent implementation of the Resettlement Action Plan, to ensure full understanding and agreement on the issues;
 - c) the framework should be placed within the legal context of Sri Lanka and the Bank's applicable Operational Policies must be adhered to. If there is a divergence between domestic law, the practice, and the World Bank's Policies, this should be clearly identified and analyzed before the framework is finalized. If necessary, consultation between the Bank and GoSL authorities should be held to arrive at a framework acceptable to both;
 - d) a key consideration should be to develop a methodology to document to what extent the objectives are achieved. Indicators should be developed which can be used for systematic monitoring and comparison with the baseline data over time;
 - e) as a general principle, there ought to be more than one option offered to PAPs within each category of impact. The entitlement framework should analyze these options, the risks and benefits of each, and how to implement the various programs in a transparent manner;
 - f) Wherever possible, land for land ought to be a priority. Cash compensation should only be undertaken when it can be clearly documented that land for land or other types of assistance are not available. If cash payments are made, special arrangements should be made to assist the most vulnerable in making productive use of the money. The entitlement framework should also describe how payments can be made in a transparent manner, for example, by doing it publicly with independent verification;
 - g) the entitlement framework shall specify the period of notification about acquisition of assets, and establish that no civil works may start on a stretch of road before the

Resettlement Action Plan has been implemented there. This is a key principle, and must be taken account of when awarding contracts for civil works. Improper or delayed implementation of the RAP may lead to costly delays in civil works;

- h) As the project will work in different areas at different times, the framework and RAP should be prepared in such a way that the period between the acquisition of people's assets and the actual start of work is the shortest possible. The framework should, therefore, also contain provisions as to how the compensation and assistance levels may be re-evaluated and adjusted in case of price increases. Such reassessment should be done at least on an annual basis (ideally every six months).

27. The framework shall be presented in a tabular form as below:

Type of Loss	Entitled person	Entitlement	Implementation Issues/Guidelines	Organizations Responsible

Task 2. Preparation of Resettlement Action Plan (RAP)

28. The information collected during the Social Impact Assessment shall form the basis for preparing a Resettlement Action Plan (RAP). The RAP should contain, at a minimum, the following sections:

- a) Summary findings from the Social Impact Assessment;
- b) Summarized description of applicable legal framework of the Country and the World Bank's policies and Entitlement framework. The RAP should clearly bring out why and how laws and policies are applicable and what measures have been taken in the project to address them;
- c) Data on expected impacts, numbers and categories of affected persons;
- d) Consultation and participation arrangements of RAP and other stakeholders, and framework for continued consultation during implementation stage;
- e) Mitigation measures;
- f) Gender action plan;
- g) Institutional arrangements, including grievance procedures;
- h) Implementation procedures;
- i) Timetable of activities, with Gantt charts showing the various elements of the plan, coordination of land with road design, contracting, and construction;
- j) Monitoring and evaluation of land acquisition and resettlement process; and
- k) Budget and costs.

29. In preparing the RAP, the likely alignment and corridor of impact for the roads to be improved shall be determined. This shall be done as a joint exercise, coordinating the various design aspects of the project (engineering, environmental, socio-economic). The corridor of impact is defined as the width required for the improved road and the civil works necessary to construct it, including the new pavements, shoulders, support slopes, and necessary safety zones. People who live or have assets outside of this corridor of impact and who will not be affected by the project will not be considered as PAPs and will not be entitled to compensation of other forms of assistance. The following considerations are important:
- a) The identification of the corridor of impact shall be undertaken as a joint exercise between the planners responsible for engineering design, environmental assessment, social impact and R& R planning;
 - b) Public consultation shall be undertaken to determine what local people consider to be the best alignment for the improved road;
 - c) The corridor of impact will normally fall within the existing Right of Way but the study shall assess where private land acquisition may be required;
 - d) It is likely that the exact road alignment, and therefore the corridor of impact, may shift following detailed engineering designs. The purpose of this early estimate is to get as complete a picture as possible of the expected scope of land acquisition required, number of PAPs categories and entitlements, and budgets and time frame required for the implementation of the Resettlement Action Plan. However, this shall be updated and corrected as required following the final engineering designs;
 - e) the consultant, along with the engineering team, shall carry out analysis of alternatives to ensure that requirement of private land is minimum to improve and upgrade the existing road alignment to the defined technical standard;
 - f) the analysis of alternatives should take into account the usage of land, vulnerability of land owner, productivity of land and land cost while determining land acquisition. The lower value land should be acquired where possible;
 - g) wherever possible, the alignment should be designed so as to avoid acquiring residential buildings and buildings in which permanent businesses operate;
 - h) re-alignments should only be done where it is necessary for safety reasons or when it is preferable for environmental reasons or because it has less asset acquisition impact.
30. Based on the agreed entitlement framework, the full baseline socio-economic survey and a joint on-site verification shall take place for the total length of highway to be improved. The baseline socio-economic survey shall be conducted within the corridor of impact.
31. The survey shall be a full census of all entitled persons and a baseline socio-economic survey. It shall uniquely identify all entitled persons under the policy. The survey shall use the methodology developed for the sample survey undertaken earlier and provide the data for an overall estimate of total numbers of people affected, assets to be acquired by the project, and scope of resettlement and rehabilitation measures to be taken. The joint on-site verification will determine the precise nature and quantity of assets to be acquired and the losses to be compensated.
32. The consultants shall advise the project authorities about the best way to coordinate this activity. The following considerations are important:

- a) the survey and verification should be done jointly by representatives of the project authorities and the PAPs and other authorities (as appropriate);
- b) during this survey, the PAPs shall be explained of the likely impact by the project authorities and presented with a copy of the entitlement framework in his/her local language;
- c) the assets to be acquired shall be tabulated, bearing in mind that each PAP may have losses in more than one category. The compensation or assistance he/she is entitled to shall be clearly explained, as well as the likely timetable for when the acquisition is to take place;
- d) where different options have been developed, these shall be explained along with the likely risks involved. Wherever possible as part of the analysis of alternatives, the principal of high vulnerability/ low risk should be followed, i.e. those among the PAPs identified as particularly vulnerable should be encouraged to choose the assistance or compensation that offers the least risk. This choice shall not be made on the spot but provision should be made in the RAP for further consultation and sufficient time should be given to the PAPs to make their choices;
- e) the table of likely losses and types of entitlements shall be verified by the three parties present and signed by each of them. The PAP shall be given a copy, which will serve as proof of his/her status as PAP, and each PAP should be given a unique identification code. Other measures such as identity cards may be considered if necessary;
- f) this information should be coded and computerized, and updated as required following finalization of the data. Developing a database to track PAPs entitlement and compensation of assistance given should be considered to ensure accurate and efficient implementation of the RAP;
- g) it should be made clear to the PAP that if the final road design and the choice of alignment mean that he/she is no longer within the corridor of impact, no compensation will be given;
- h) the PAP shall also be informed about the mechanism set up for grievance procedures;
- i) provision should be made for how missing data can be collected later, and other mechanisms for information sharing and local participation should also be developed;
- j) undertaking the baseline socio-economic survey and joint verification is a time consuming exercise. People are not always available, and it may be difficult to coordinate the movements of local government officials with the project authorities. It is therefore essential to allow sufficient time for the survey and verification before any civil work start, and to coordinate the planning of the different project components.
- k) Summary information shall be tabulated based on districts, with length of road, land to be acquired (cultivated and homestead listed separately), temporary and permanent buildings, and number of households and total persons affected (broken down by gender and other relevant categories such as major/minors, etc.)

33. Institutional Arrangements. Responsibilities for implementation of various parts of the RAP should be clearly delineated:

- a) while elements of the plan may be undertaken by other institutions (for example by NGOs), the consultant shall prepare terms of reference for hiring the NGO; (b) for coordination among different agencies of government of community organization,

appropriate mechanisms should be identified and established. The organizational structure and type of skills required should lead to the creation of a joint task force or steering committee with representation from different agencies, involving participation from local government and representatives of the PAPs;

- b) Appropriate monitoring and evaluation arrangements should be developed. It should be the responsibility of the implementing agency to systematically monitor the progress of the RAP, and analyze and report on its impacts compared with the baseline data. Suitable indicators should be developed. Independent evaluation or supervision should be provided for, and guidelines prepared for how this is to be undertaken;
- c) A grievances and appeals mechanism should be evolved;
- d) It is essential to document the institutional capacity of the agency or agencies responsible for implementing the RAP. Where institutional capacity is yet to be developed or identified, a realistic plan shall be presented for how this is to be achieved, bearing in mind likely constraints and delays.

34. Assessment of institutional capacity will be a key factor in the appraisal of the RAP.

35. Following agreement on an entitlement framework, a summary publication with project description, estimates of land acquisition losses and entitlements should be prepared, both in English and in the local language. This is to be distributed among the local communities and other stakeholders.

2.3 REQUIREMENTS OF THE ASSIGNMENT

36. **Consulting team:** The consultant team shall, as a minimum, be staffed as follows:

- Senior Social/Resettlement Specialist with overall responsibility for the assignment - MA or above in social sciences, with relevant previous experience in land acquisition and resettlement planning with a minimum of 10 years' experience. Knowledge of the World Bank's related guidelines and operational directives will be required;
- Senior Social Specialist(s), with background in social sciences, proven ability in qualitative and quantitative methodology, and at least 5 years' experience from development related research. Practical experience in working on community development / livelihood restoration projects will be essential;
- National research assistants

37. **Reporting and feedback schedule:** All submissions related to the assignment should be submitted to Project Director of Project Management Unit (PMU) of Road Sector Assistance Project, as hard copies and electronically. Electronic version of the final report should be in Word form and not PDF. During the final submission of the report(s), if changes requested during the draft report stage are not satisfactory to the employer, the consultant will be required to work further on the document until it is considered satisfactory. All reports will be also reviewed by the World Bank. Any feedback/discussions in addition to below can be requested by the employer as well as the consultancy firm.

Description	Deadline	Feedback
Submission of the inception report	01 week after signing the contract agreement.	Within 1 week, comments and suggestions will be provided in writing A meeting will be organized by the employer to discuss clarifications and provide additional feedback
Submission of the draft SIA report & RAPs	07 weeks after receiving comments.	Within 1 week, comments, corrections and further information necessary will be provided in writing
Submission of the final SIA and RAPs	02 weeks after receiving comments	Submission of Final Reports (one soft copy and two hard copies for each road)

38. Information to be provided by Employer: In order to expedite the process, the PMU will provide copies of the most recent SIA reports and RAPs (also available in the Info shop of the World Bank) of RSAP phase 2, as well as the Environmental and Social Management Framework of RSAP on the day of contract signing. The PMU will also provide any documents related to OPRC. In addition, relevant sections of the bid document of RSAP phase 2 will be provided. A meeting to discuss any clarifications with PMU and the World Bank in reference to this ToR can be arranged on request.