

**Environmental and Social Safeguards Framework
(ESSF)**

for

GPOBA-Financed –

***Increasing household access to domestic sanitation in
Greater Colombo, Sri Lanka***

National Water Supply and Drainage Board

(NWSDB)

(September, 2011)

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List of Acronyms

ADB	Asian Development Bank
BOD	Biological Oxygen Demand
CO	Carbon Monoxide
COD	Chemical Oxygen Demand
dBA	Decibels (measurement of noise level)
EA	Environmental Assessment
EIA	Environmental Impact Assessment
EMMP	Environmental Mitigation and Monitoring Plan
EMP	Environmental Management Plan
NWSDB	National Water and Sanitation Drainage Board
GoSL	Government of Sri Lanka
GPOBA	Global Partnership for Output Based Aid
HHs	Households
INGO	International Non-Governmental Organization
MPA	Marine Protected Area
MPN	Most Probable Number (of E. coli in a water sample)
NGO	Non-Governmental Organization
O&M	Operation and Maintenance
OP	Operational Policies (World Bank)
OP/BP	Operational Policies / Bank Policies (World Bank)
PACD	Project Appraisal Commitment Document
PDCED	Program for Socio-Economic Development in Communes faced with Extreme Difficulties
PM	Particulate Matter
RAF	Resettlement Action Framework
RAP	Resettlement Action Plan
RWC	Rain Water Catchment
SPEAR	Sub-project Environmental Assessment Report
WB	World Bank
WHO	World Health Organization
WPF	Watershed Protection Forest
WQ	Water Quality
WWTP	Waste Water Treatment Plant
WSS	Water Supply and Sanitation

NOTE: \$1 = SLR 115 approximately

1. EXECUTIVE SUMMARY

Introduction and Background

Under this Output-based Aid (OBA) Pilot Project – Increasing Household Access to Domestic Sanitation in Greater Colombo, Sri Lanka – the National Water Supply and Drainage Board (NWSDB) will provide sanitation services to low income households. Part of the cost of improved sanitation (which will include both new connections to sewers and improvements to onsite sanitation) will be funded by the Global Partnership on Output-Based Aid, a multi-donor trust fund administered by the World Bank (WB), through an OBA approach. The specificity of OBA is that it is performance-based subsidies disbursed on the basis of realized pre-agreed outputs, after an independent verification of their eligibility for financing under the project is carried out. NWSDB will plan and implement the work.

The principal objective of the project is to increase the number of poor households in greater Colombo who benefit from improved sanitation systems and services, and to ensure that their domestic wastewater is effectively managed and appropriately disposed of, improving health and environmental conditions of the population living in targeted areas. In order to provide services to the poorest households and to achieve significant health and environmental improvements the project will support both new connections to networked sewerage, either centralized or decentralized, and improvements to the management of onsite sanitation.

A secondary objective of the project is to pilot OBA as an efficient mechanism for delivery of improved sanitation services to poor households, whereby the NWSDB will offer a range of services including sewer connections, decentralized treatment, and improved on-site sanitation in partnership with municipalities. This approach will also formalize the relationship between NWSDB and local private sector companies who manage domestic sludge.

The proposed OBA pilot would leverage investments in a Sida financed wastewater collection and treatment project in areas around Colombo (excluding Colombo Municipal Areas), ensuring that poor households would be able to connect to the proposed new sewerage system. The wastewater treatment plant (WWTP) itself was focused principally on treating industrial wastewater, but it was recognized that sewers would be running through residential areas that were not connected to a sewerage system. The NWSDB together with Sida, approached GPOBA with a proposed design, and requested financial support to first assess feasibility and later fund the pilot, once proven feasible.

During the feasibility assessment, it became clear that the original design and structuring of the OBA approach needed to be widened to include, in addition to conventional connections, shallow sewer network extensions, decentralized collection and treatment systems and on-site solutions. The feasibility of the proposed revised pilot design was approved by the Sri Lankan authorities during a July 2009 workshop. GPOBA committed funding to the pilot on the basis of the proposed design in 2010.

This Environmental and Social Safeguards Framework (ESSF) has been prepared in accordance with World Bank safeguards policies and Sri Lankan Government guidelines. This report deals with: a) environmental conditions in the five selected project areas; b) the impacts that may be caused by the project; and c) mitigation measures for any negative impacts that might occur. These impacts and associated mitigation measures reflect provisions of the World Bank safeguards policies and GoSL environmental regulations, as to whether conditions commonly encountered in the proposed areas are likely to trigger World Bank safeguards policies or not.

This ESSF has been triggered in accordance with World Bank requirements. GoSL regulations do not require that environmental assessment documentation to be completed in advance of the proposed project, as the subject of the proposed project (improvements to sanitation services) qualifies for exemption from such environmental requirements. By its very nature, the proposed

project seeks to improve the existing environmental and human health conditions found in the project areas through improved sanitation¹ coupled with the removal, and in some cases treatment of this domestic waste, prior to discharging to the environment. The baseline against which all impacts (beneficial and negative) must be compared is the status quo.

Based on data gathered and technical plus economic analysis completed, the proposed project demonstrates overwhelmingly net positive benefits. Furthermore, all negative impacts can be either prevented or mitigated. Overall, the environmental (and socioeconomic and community health) impacts of sanitation projects are positive, while potential negative impacts are temporary and manageable. This document entails an Environmental Management Plan describing how these potential negative impacts will be avoided or mitigated.

The procedures herein describe how NWSDB staff will carry out environmental screening, assessments, and apply mitigation measures that might be necessary during the project planning, construction, and operational stages for sanitation systems.

Implementation Process

A Project Implementation Manual (PIM) is being prepared, detailing roles and responsibility of the NWSDB and the other parties involved in the implementation of the Project. It includes a general description of the Project and focuses more on the roles and responsibility of the National Water Supply and Drainage Board, as it is the Project implementation agency and therefore the key stakeholder.

Within the framework of the project, NWSDB is generally free to organize the work in the way it deems most appropriate to deliver the outputs. However, the application of World Bank policies and procedures to the GPOBA funding implies that the Board complies with some specific requirements on specific aspects addressed in the PIM. In compliance with such rules, the Board may use any approach it deems suitable to ensure efficient, quality and timely implementation. The PIM also aims at describing what defines output eligibility requirements for the purposes of receiving the applicable OBA subsidy.

Outputs

The project will deliver two categories of outputs;

- **Output 1:** new household connections to reticulated (networked) sewerage; and
- **Output 2:** improvements to the performance and operation of on-site sanitation systems and services, through the construction or rehabilitation of on-site septic tank facilities and regular desludging services.

Where poor households live in eligible areas that can be served with piped sewers, they will be offered access to the sewers at a subsidized rate. Depending on the technical feasibility, households requesting connection will be provided with connections to sewers. Types of connections include:

- **Output 1a:** Direct connections for households located within 20m of an existing sewerage network. Direct connections are organized into two categories :

¹ Sanitation is defined as preventing populations and communities from contact with human excreta.

- **Output 1a1:** “Direct connection full cost build out” encompasses all infrastructure from all gray and black water outputs of the house to the sewerage network located under the nearest road; and
- **Output 1a2:** “Direct connection within premises” is limited to the infrastructure developed on the premises of the beneficiary household.
- **Output 1b:** Extensions with conventional sewer technology for households located more than 20m from the main sewerage network.
- **Output 1c:** Extensions with simplified sewer (also called shallow sewer or condominium sewer) and connections for households located more than 20m from the main sewerage network. The “connections to simplified sewer extensions” are organized in two categories:
 - **Output 1c1:** Gravity fed connections to simplified sewer extensions; and
 - **Output 1c2:** Connections to simplified sewer connections requiring wastewater pumping to feed it into the main sewerage network.
- **Output 1d:** Connections to new stand-alone sewerage networks with decentralized waste water treatment (“Dewat”). This output will be offered to households located in areas where sewerage is technically feasible, but too far from the existing, central sewerage network to make an extension a viable economic option.
- **Output 2:** Where sewers cannot be provided or are not appropriate, GPOBA funds will be used to stimulate the introduction of a new system of management of on-site sanitation. GPOBA funds will be used to subsidize, to the benefit of poor households, a portion of the costs of rehabilitation of household septic tanks, vaults and pits where these are not providing suitable environmental protection. Payment of the subsidy will be dependent on the ongoing management and good operation of these systems, including regular desludging and proper disposal of the sludge in one of the NWSDB-authorized discharge points.

Legal Aspects and Safeguard Policies

The key legal and contractual arrangements are:

- 1) the **Grant Agreement** signed between Sri Lankan Ministry of Finance and Planning (External Resources Department) and the World Bank, acting as Administrator for GPOBA.
- 2) the **subsidiary Grant Agreement** between the Ministry of Finance and Planning, the Ministry of Water Supply and Drainage (MWSD) (the parent ministry of NWSDB), and NWSDB.
- 3) this **Project Implementation Manual**, including all its annexes; and,
- 4) the present **Environmental and Social Safeguards Framework (ESSF)** including its annexes.

Relevant legislation and permitting is provided in this Environmental and Social Safeguards Framework. As GPOBA is the proposed financing agency for this World Bank-administered project, Bank environmental policies and guidelines will be complied with. In brief, NWSDB does not anticipate that that the proposed sanitation project will trigger any GoSL safeguards policies. However, World Bank Safeguard Policy 4.01 on Environmental Assessment applies and is complied with through the preparation of the present ESSF, which will determine how the

NWSDB should manage WB requirements in terms of Environmental and Social Safeguards during the implementation of the OBA pilot.

NWSDB will be the implementation agency for the project. NWSDB will develop a detailed implementation plan for new connections to poor households in the project area which will be presented to the Steering Committee for approval. NWSDB will follow relevant guidelines and policies of GoSL.

Local Authorities/Municipalities are responsible for sanitation service provision; thus they have a key role in this project. Through the steering committee the municipalities will delegate their onsite sanitation responsibilities in the identified communities, to NWSDB. Local authorities will also be closely involved in the final selection of sites for decentralized wastewater treatment plants and sludge disposal sites and these will almost certainly be located on public land.

Divisional secretariats are taking a close interest in understanding how effective the project poverty-targeting approach is in practice as this may help to inform future iterations of the Samurahi system.

Environmental Screening for Site Selection

Environmental Screening through the use of exclusion criteria via a standard Checklist will be carried out at all prospective sub-project sites. For those sites not automatically rejected due to failure to meet overriding WB Safeguards identified in the Checklist, Sub-Project Environmental Assessments Reports (SPEARS) will be completed in advance of tendering each Sub-Project². Exclusion criteria are defined to avoid potentially significant negative impacts to:

- Physical resources (water, land, soil, mineral, forest, climatic change, environmentally sensitive areas, etc.);
- Cultural, historical, and religious sites;
- Socioeconomic and public health conditions (livelihoods, health and safety, etc.); and
- Resettlement, relocation, or compensation issues.

Environmental Impacts and Project Benefits

Environmental impacts, associated mitigation measures, monitoring plans, and institutional responsibilities are identified in this report. Overall, sanitation projects should produce overwhelmingly net positive benefits, as such projects are comprised of service provision and improvements in environmental conditions. Any potentially significant negative impacts will be identified prior to construction and prevented and/or mitigated. The served customers and neighboring population will benefit from improved sanitation services, which typically result in marked improvement in community health indicators and quality of life (e.g., reduced frequency of diarrheal disease). Less frequent diarrheal and other water related diseases will likely result in: a) fewer lost work days for both children and adults (e.g., increased income), and fewer lost school days for children (improved educational benefits).

² The detailed process is described in the project's Implementation Manual.

2. OBJECTIVES OF THIS REPORT

Principal objectives of this ESSF include:

- (i) Outline the project approach and protocol for ensuring compliance with World Bank (WB) Safeguards Policies and Sri Lankan Government environmental requirements;
- (ii) Assess whether conditions found in the proposed project areas are likely to trigger WB safeguards policies or further GoSL environmental compliance measures;
- (iii) Assess baseline conditions in the proposed project areas;
- (iv) Assess the impacts that may be caused by implementation of the project;
- (v) Develop general mitigation measures to prevent or minimize any negative impacts that might occur; and
- (vi) Define the proposed mechanisms for monitoring environmental performance of the proposed project.

3. TECHNICAL SCOPE OF PROPOSED PROJECT

Under this Output-based Aid (OBA) Project – Increasing Household Access to Domestic Sanitation in Colombo, Sri Lanka – the National Water Supply and Drainage Board (NWSDB) will provide sanitation services to low income households, with support from the Global Partnership on Output-Based Aid (GPOBA) and the World Bank. Part of the cost of improved sanitation, including both new connections to sewers and improvements to onsite sanitation, will be reimbursed by the Ministry of Finance from OBA funds after independent verification of their eligibility for financing under the project. NWSDB will plan and implement the work.

3.1. Project Objectives and Justification

The principal objective of the project is to increase the number of poor households in greater Colombo who benefit from improved sanitation systems and services, and to ensure that their domestic wastewater is effectively managed and appropriately disposed of, in order to improve health and environmental conditions of the population living in targeted areas. In order to provide services to the poorest households and to achieve significant health and environmental improvements the project will support both new connections to networked sewerage, either centralized or decentralized, and improvements of on-site sanitation infrastructure and management.

A secondary objective of the project is to pilot OBA as an efficient mechanism for delivery of improved sanitation services to poor households, whereby the NWSDB will offer a range of services including both sewer connections and improved on-site sanitation in partnership with municipalities. This approach will also formalize the relationship between NWSDB and local private sector companies who manage fecal sludge (regular desludging of onsite sanitation system and appropriate disposal of fecal sludge).

The average cost of a connection to the sewer network is reported by NWSDB to be in the order of US\$500 to US\$600 equivalent per household. As is typical in many South Asian utilities, the full cost of a house connection is passed on to the consumer – meaning not only that costs are high but also that they vary with the geometry and technical specifications of the connection and are therefore unpredictable to the customer prior to the connection being made. The connection

costs can be compared to the average monthly household incomes in the project area which are typically in the range of US\$150-250.

Although the costs of managing onsite facilities are also high they are considerably lower than the one-off costs of gaining a sewer connection and most households or landlords have invested in some type of onsite system. Many households do report very poor levels of service for on-site sanitation and yet are unable to connect to the sewerage due to both the high and uncertain connection costs and the distance to trunk sewers.

The very low rate of connection to sewers coupled with unregulated management of on-site sanitation results in high levels of contamination of the environment and cross contamination into the water supply system. Illegal unregulated dumping of fecal sludge into the sewer network also causes blockages and contributes to poor performance of the network as a whole.

Surveys showed that there is strong demand for sewerage connections throughout the project area and a willingness to pay for improvements to onsite sanitation. However, only the more affluent households can pay the whole cost using the available financing facility (which allows for the connection cost to be spread over successive water bills).

The proposed project would introduce a time-bound connection subsidy to enable NWSDB to rapidly connect a large number of households to the network, either via sewer connections or regulated on-site services.

3.2. Rationale for GPOBA involvement

This pilot project will provide a financial incentive to the operator (NWSDB) to rapidly increase connection rates to its existing sewer network, to DEWATs, and to improved on-site treatment units. It will result in greatly enhanced levels of service for poor households who currently rely on substandard on-site systems and will have a wider positive environmental impact on the city. The project is demand-based but uses GPOBA funds to remove financial barriers which have previously suppressed connection rates.

The introduction of GPOBA funding will leverage ongoing investments by SIDA and sunk investments in the sewer network to ensure that these result in service delivery at the household level.

GPOBA funds will enable NWSDB to pilot several important innovations:

- firstly the use of time-bound subsidies to directly increase access to networked services;
- secondly the use of subsidies to improve the operation of on-site systems; and
- finally, mainstreaming the concept of a universal sanitation service which enables households to become legitimate 'sanitation customers' of the utility irrespective of whether services are provided by piped sewers or properly-managed on-site systems.

Several proposed components of this project represent potentially important innovations delivering both capital investments and improved operation, while significantly increasing potential market for private sludge removal/disposal service providers in the sector.

GPOBA funding is specifically intended to improve service delivery to poor households. In Sri Lanka national poverty-targeted subsidies are largely distributed by means of the Samurdhi system. For the purposes of targeting GPOBA subsidies under the project however, the use of geographically- identified poor settlements was preferred over Samurdhi for four reasons:

- 1) it enables communications regarding the available subsidy to be accurately targeted to potential beneficiaries in a single area, thus reducing potential confusion for households;
- 2) it facilitates planning and design of new decentralized networks and network extensions, so that planned works can be more easily coordinated with applications from eligible households for subsidized connections;
- 3) it facilitates the packaging and tendering of operational contracts for on-site improvements in areas where all households will be eligible for similar financing; and
- 4) it provides a more stable group of potential project beneficiaries over the life of the project, thus reducing the chance that households will move between 'eligible' and 'ineligible' status while interventions are planned and delivered.

As a result, the pilot project is going to use geographic targeting, as agreed with GPOBA and the World Bank. Namely, all households living in the identified low-income settlement within the five project areas (See Section 3.3 below) and requesting access to improved sanitation under the conditions of the OBA pilot will be eligible to receive the subsidized rate.

In addition to the targeting mechanism based on geographically- identified poor settlements, additional criteria may be put in place to further refine the focus on the subsidies to non-poor households. Additional criteria will be subject to decision of the Project Steering Committee.

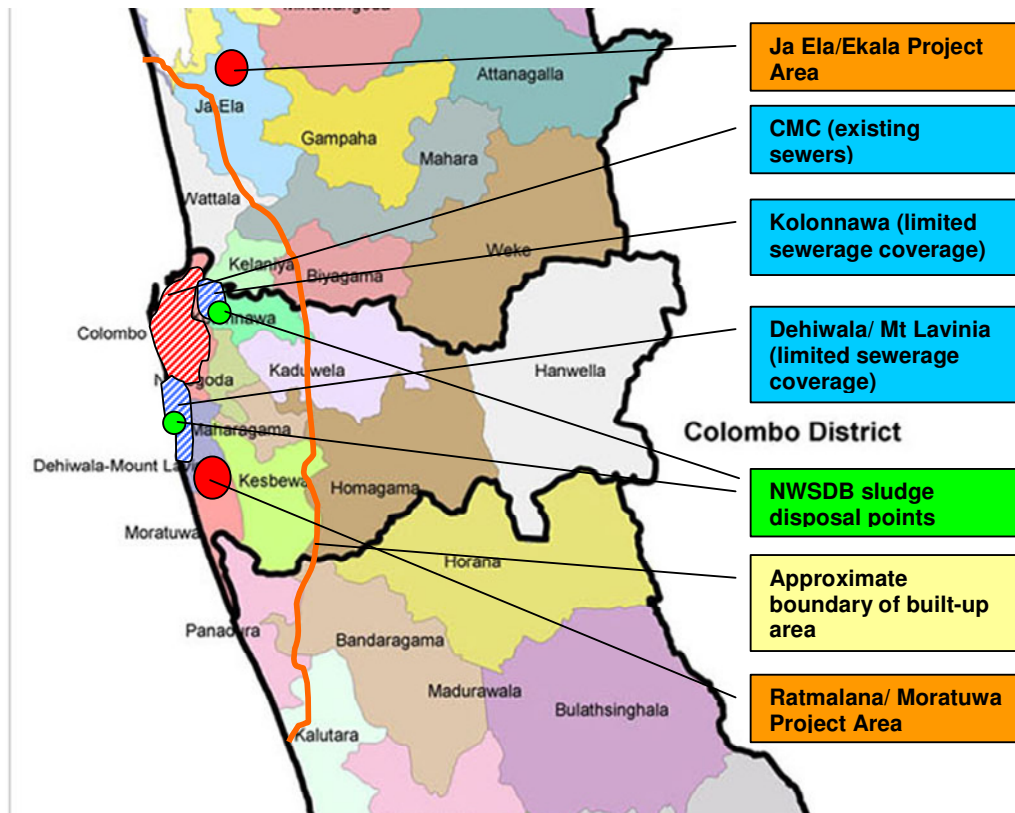
3.3. Subproject Location and Sanitation Situation

The five project areas (Ja Ela/Ekala, Kolonawa, Dehiwala/Mt. Lavinia, Moratuwa, Ratmalana) lie within the part of Greater Colombo in which NWSDB is the designated sewerage service provider. It does not include CMC managed area, it covers:

- i) Those areas under the jurisdiction of the Local Authorities/Municipalities of Dehiwala/Mt Lavinia and Kolonnawa Urban Council in which NWSDB has existing sewerage networks.
- ii) The areas of Ratmalana (within Dehiwala/Mt Lavinia), Moratuwa Urban Council and parts of Ja-Ela Pradeshiya Sabah in which NWSDB is constructing new sewerage networks with SIDA funding.
- iii) Parts of the Local Authorities/Municipalities which currently have no sewerage and rely on desludging of septic tanks and cess pits.

The individual project areas identified above are illustrated in **Figure 1** below.

Figure 1: Definition and boundaries of the project areas



Currently there are around 100 water customers for every one sewer connection in the project area. The vast majority of households in the Greater Colombo area are not connected to the sewerage network. Instead, these households, both poor and non-poor, have some form of on-site sanitation (either septic tanks or pits).

Although it is difficult to estimate the proportion that are deficient, many are observed to be in poor condition and discharge into the environment – either directly into rivers and canals or into storm drains. Site visits confirmed the severity of pollution of inland waterways.

The quality of on-site sanitation and desludging services is inadequate resulting in increased localized and widespread public health risks. This situation is caused by:

- a) Inadequate coverage of latrines leading poor families to share the use of facilities;
- b) On-site sanitation facilities that are poorly constructed and maintained ;
- c) Poor scheduling and high cost that leads to low frequency of desludging; and
- d) Lack of sufficient outlets for sewage disposal.



3.4. Outputs and Beneficiaries

The project will deliver two types of outputs, expected to directly benefit 15,407 households (about 77,035 people):

- New household connections to reticulated (networked) sewerage (13,107 households);
- Improvements to the performance and operation of on-site sanitation systems and services (2,300 households).

The proposed OBA scheme excludes in-house plumbing for new connections to reticulated sewerage at this point, as the majority of households have toilet and washroom outside the house. Discussions with NWSDB are nevertheless on-going on their provision, but would occur independently of the OBA project.

Table 1 below shows the anticipated allocation of project beneficiary connections by location and output (note that these figures are approximate).

Table 1: Beneficiary Connections by Location and Output

DS divisions	Number of beneficiary households		
	Output 1: sewer connections	Output 2: on-site sanitation improvements	Total
Ratmalana	3,715	500	4,215
Dehiwala	1,320	100	1,420
Moratuwa	2,011	800	2,811
Kolonnawa	4,725	800	5,525
Ja-Ela/Ekala (SIDA area only)	1,336	100	1,436
Sub-total	13,107	2,300	15,407

The above estimated numbers of output of each type in each project area are indicative and rely on the estimations during preparation. The pilot leaves the flexibility to the NWS&DB to adapt to the particular situations encountered during implementation, within the framework set in the Grant Agreement and in the Project Implementation Manual.

3.4.1. New Household Connections to reticulated (networked) sewerage (Output 1):

The proposed OBA scheme will provide approximately 13,107 new sewer connections to poor households. The household contribution for all connections has been set at US\$30, based on incomes and affordability levels, as well as NWSDB understanding of consumer willingness to pay. In order to encourage cost-efficiency, acceptable OBA unit subsidies have been capped at 80% (actual subsidy levels do not exceed 65% in current scenario models developed at the time of this ESSF) of the total connection cost and NWSDB will finance a part of the cost of each output, creating an incentive to keep costs as low as possible. Because costs are a function of the distance to the network, a menu of outputs have been identified for planning purposes, as presented below.

Direct Connections to existing sewers (Output 1a):

These will consist of connections to existing sewer networks that have already been built or are being supplied by the ongoing Sida-funded wastewater treatment project. Generally these households would lie less than 20 m from the junction, ensuring a lower cost per household

connection relative to direct connections that also require building out on-premise sewage piping or extensions to the network.

Direct connections are organized into two categories:

- Output 1a1: “Direct connection full cost build out” encompasses all infrastructure from all gray and black water outputs of the house to the sewerage network located under the nearest road; and
- Output 1a2: “Direct connection within premises” is limited to the infrastructure developed on the premises of the beneficiary household in areas where network infrastructure up to plot boundaries was developed under the Sida-funded project.

Connections to conventional short sewer network extensions (Output 1b):

Conventional construction technology will be used in areas near heavily trafficked roads, in order to ensure robustness of the sewage system. In less trafficked areas, a simplified extension technology will be deployed. Conventional connections will incur a greater per unit cost and will also require the prior-approval of the Independent Verification Agent to verify that the conditions warrant use of conventional technology and that the households reached are eligible to the OBA subsidy.

Connections to short sewer network extensions (Output 1c):

Simplified connections would still be linked to the existing sewerage network, but the extensions needed to link the households would be shallower and have smaller diameter pipes. Simplified extensions are only appropriate in areas where there is no heavy vehicular traffic passing over the pipework. In a second variation of this option, wastewater collected by these simplified extensions would be pumped to appropriate discharge points.

The “connections to simplified sewer extensions” are organized in two categories:

- Output 1c1: “Connections to simplified sewer extensions”: Gravity fed connections to simplified sewer extensions; and
- Output 1c2: “Connections to simplified sewer extensions with pumping”: connections to simplified sewer connections requiring wastewater pumping to feed it into the main sewerage network.

Connections to small networks with decentralized treatment systems (Output 1d):

In many of the target poor communities there is no feasible access to centralized sewerage networks – such networks are either too distant from these communities (>250m) and there are no plans to extend them any time soon. The scheme has, therefore, incorporated the construction of new stand alone networks with decentralized wastewater treatment systems (“DEWATs”).

3.4.2. Improved performance and operation of on-site sanitation systems and services (Output 2):

Many poor households in the target communities use on-site sanitation systems and services. Such systems are common throughout the country. Poor settlements potentially suitable for pilot testing on-site sanitation improvements were identified in the proposed project areas. The list of settlement where the pilot will be implemented will be finalized during implementation, on the

basis of demand levels from the populations. These settlements are located in areas where it is difficult to construct sewerage and where public health risks. The proposed OBA scheme will provide poor households with access to improved on-site septic tank facilities and regular desludging services over a period of 2-3 years.

It was estimated during project preparation that 80% of on-site facilities need significant work to meet the output standards of the project – 63% require rehabilitation of pits and/or superstructure and 17% need to be completely replaced. While the on-site improvements are designed to deliver an equal level of service to sewer connections, a discounted connection fee will be offered to households for this level of service at this stage to encourage households to 'connect'. Households will pay a connection fee of the equivalent of US\$15. To encourage efficiency on the part of NWSDB, the OBA subsidy has been set slightly below the estimated average cost of the capital works.

The proposed contracting arrangement is to offer clustered contracts for services to groups of households for the provision of rehabilitation and servicing of onsite sanitation, each for a period of three years. The costs for the works comprise two elements: i) capex for rehabilitation and new construction and ii) opex for operation and maintenance. Households will pay the connection fee and the monthly tariff to NWSDB through the monthly water supply and sewerage bill.

3.5. Anticipated Project Benefits

In general terms, the proposed project will deliver the following benefits to the benefitting population and communities.

- Increased number of households with connections to sanitation services
- Decreased risk of morbidity and mortality due to decreased lessened contact with pathogens found in discharged untreated contaminated domestic wastewater
- Improved quality of waterways in and near beneficiary communities
- Testing of potentially replicable investment model for improving sanitation

A cost-benefit analysis has been performed to estimate Financial Internal Rate of Return (F-IRR), Economic Internal Rate of Return (E-IRR) and Net Present Value (NPV) of the investments proposed. The F-IRR analysis considered two scenarios, (i) without GPOBA subsidy, and (ii) with GPOBA subsidy. The project will deliver 15,407 connections to improved sanitation services to poor households in Greater Colombo, and assumes an occupancy rate of 5 people per household. The project will only qualify for GPOBA funding if the FIRR and E-IRR meet World Bank thresholds, on a per output basis. Details of the financial analysis can be found in the Commitment Paper and other project documentation available from the GPOBA.

As households eligible for the project will have to be existing NWSDB customers, full (100%) water supply coverage was assumed, i.e. the households which will benefit from improved sanitation (sewerage and on-site) are already connected to water supply services³. It was also assumed that all GPOBA project beneficiaries would be transferred to the water supply Samurdhi tariff, with an average monthly consumption of 12m³.

³ In the case of Ja-Ela/Ekala it is assumed that households will be connected to NWSDB's water supply network before they are connected to the new sewerage network (with funding from JBIC, Towns North of Colombo Water Supply Project). Thus, water supply revenues and O&M costs in Ja-Ela/Ekala accrue from 2012 onwards.

3.6. Potential Negative Environmental Impacts of Small-Scale Urban Sanitation Projects

Potential negative environmental impacts which could apply small-scale urban sanitation projects are presented below. An Environmental Risk/Benefit Assessment Matrix has been completed for the proposed OBA Greater Colombo Improved Sanitation Project and is found in **Appendix IV**. Detailed, site-specific impacts and mitigation measures will be identified in the Sub-Project Environmental Assessment Reports (see Sections 6.0 and 7.0 of this ESSF), which will be carried out in advance of each sub-project. The below list and the Environmental Risk/Benefit Assessment Matrix together identify impacts and risks that will need to be looked at for each Sub-project to determine whether and to what extent it may apply.

Mitigation measures will be included in the contract documents for the prospective contractors to prevent or minimize environmental impacts. The exact construction technology and methodology used will depend on the design studies and method statement submitted by the contractor in the proposal. Contractors' method statements are subject to approval by NWSDB and the World Bank-hired IVA, in consultation with the other line agencies before the order to commence construction is granted.

Pre-Construction:

- Site selection and project definition activities may affect attitudes and property values near the project sites, as there is a potential for misinformation to be generated resulting from uncertainties about planned activities. Communications measures have been and will continue to be employed as part of a timely and inclusive public relations and stakeholder involvement campaign.
- Additionally, all required permits and approvals will be obtained by the NWSDB prior to construction, which may also affect attitudes and of the beneficiary communities, due to awareness of the proposed project.

Construction:

- Construction vehicle noise, dust, and emissions near sites and on local roads.
- Excavation and construction activities may cause noise and dust.
- Vibration and noise from cement mixers, generators and other equipment.
- Soil erosion from construction activities (if not properly planned and executed).
- Runoff from construction activities could be released into local water sources and water bodies.
- Traffic patterns may be temporarily affected
- Key emergency routes (fire, ambulance, etc) may be temporarily obstructed or closed
- Access to public facilities such as schools, community centers, and religious buildings may be temporarily obstructed
- Temporary public hazards may be created from open trenches, construction equipment, and materials storage
- Solid waste generation from construction activities and workers
- Human waste from construction workers
- Road deterioration may take place from construction vehicles hauling equipment and materials.

- Wastewater from construction activities may pollute local surface or groundwater.
- Work-related accidents affecting construction workers and/or the local community.
- Waste materials may accumulate and will need to be managed/disposed of properly

Post-Construction (Operational Period):

- Improved sanitation in project areas is likely to have a significant positive impact on community health due to reduced contact with human waste and disease vectors contained therein.
- Apart from only marginal additional loadings being discharged off-shore via the existing submarine outfalls, only low to negligible impact on local flora and fauna.
- Improperly installed (or poor quality) pipes or junctions may break, causing leaks of domestic wastewater to surrounding surface water, groundwater, and soil.

4. LEGAL AND POLICY ASPECTS

The proposed Project and each of its subprojects will be in full concurrence with legal requirements of both the World Bank and relevant GoSL Ministries and agencies.

4.1. Potentially Relevant Existing GoSL Environmental Regulations

In Sri Lanka, various environmental legislations and standards are in force, pertaining to wastewater collection, treatment and disposal in practice, in order to safeguard environment. It should be noted that many number of statutes exist which deal with this subject directly or indirectly. Only the most important legislations and standards are briefly described in the following sections with focus on the project scope.

4.1.1. Environmental Quality

The key legislation concerning the environmental quality is the National Environmental Act (NEA) No. 47 of 1980 and No. 56 of 1988. This is the main enactment that was formulated to protect the national environment and to manage it in order to maintain environment quality and to prevent pollution. It also paved the way for the establishment of the Central Environmental Authority (CEA) in 1981.

The duties and functions of the CEA are spelt out under section 10. Section 10(9) states that one of the functions is to *regulate maintain and control the volume, types, constituents, and effects of waste, discharges emissions, deposits or other sources or sub sources of pollution which are of danger or potential danger to the quality of the environment or any segment of the environment.*

It defines a pollutant as any substance whether liquid, solid or gaseous emission, which directly or indirectly:

- a) Affects the quality of any segment or element of the receiving environment so as to affect any beneficial use adversely, or
- b) Is hazardous or potentially hazardous to health.

Section 23(g) states that, subject to section 23(a) no person shall deposit or emit waste into inland waters of Sri Lanka except under standards or criteria set out under section 23a.

4.1.2. Pollutant Discharge to Waterways & Land

Wastewater discharge standards are stipulated under the NEA according to the type of industries and discharge methods. The following sets of wastewater discharge standards are prescribed in the National Environmental (Protection and Quality) Regulations, No. 1 of 1990 (Gazette Extra-ordinary No. 595/16, dated 2nd February 1990):

The general standards for discharge of effluents into inland surface waters set forth:

- Tolerant limits for industrial effluents discharged on land for irrigation purpose
- Tolerant limits for industrial and domestic effluents discharged into marine coastal areas; Tolerance limits for effluents from rubber factories discharged into inland surface waters;
- Tolerance limits for effluents from textile industry discharged into inland surface waters; and
- Tolerance limits for effluents from tanning industry.

In general all activities have to comply with general discharge standards unless specific standards for that type of activity have been drafted.

4.1.3. Industrial Discharges to Public Sewers

Industrial discharges to the public sewers are legally unacceptable if it's not complying with the relevant effluent standards specified in the NEA. However, presently CEA is in reviewing process of effluent discharge standards. Industries use storm water drainage system as one of the wastewater discharge methods with or without treatment. Most of the industries in the Ja Ela / Ekala are direct the wastewater to the drainage system, which ultimately end with water bodies such as Dandugam Oya or Negambo Lagoon.

4.1.4. Hazardous Waste Disposal in the Context of Project

At present national legislation exists concerning the management of hazardous wastes. This has been in force since June 1, 1996 though it has hardly been enforced. The GoSL published, in the Gazette Extraordinary, No.924/13 of May 23, 1996, regulations concerning hazardous wastes. This came as an amendment to the National Environmental (Protection and Quality) regulation, No.1 of 1990 that is the EPL (Environmental Protection License) regulation. With the new amendments the EPL regulations have been redesigned as Part I.

The new part II of the regulations deals with hazardous waste management. This section sets out the requirements to obtain a license from the CEA and specifies the procedures for obtaining such licenses and the conditions attached to them. A schedule within Part II lists out 19 constituents and 9 waste types and this indicates what should be considered as hazardous wastes.

The term hazardous waste is not specifically defined other than by this method in the present act. However, the proposed new environmental act defines the term Hazardous waste as "*those materials, substances and waste which have toxic, corrosive, radioactive, chemically reactive, flammable or explosive characteristics and which are listed by the Agency by Gazette notification from time to time.*" Sri Lanka ratified the *Basel convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal* with effect from 28 August 1992. However, broadly the characteristics of hazardous wastes are the same.

4.1.5. Health and Safety

- Mines & machinery protection ordinance (Act No. 2 of 1986)
- Workmen's compensation ordinance (Act No. 19 of 1934)
- Factories ordinance (Act No.45of 1942)
- Maternity benefits ordinance (Act No. 32 of 1939)
- Shop and office employees Act (Act No. 19 of 1954)
- Employment of women, young persons and children Act (Act No. 47 of 1956)

4.1.6. Water Reuse

The standards concerning to the water reuse is published by Sri Lanka Standards Institute includes,

- SLS 722: 1984/1985 – Tolerance limits for inland surface waters for use as raw water for public water supply;
- SLS 614: 1983/1984 – Sri Lanka standards specifications for potable water; and
- Tolerance limits for industrial wastewater discharged into public (common) sewer for further treatment (interim standards).

In 1992, BKH Consultants has proposed inland water quality standards for the following uses:

- Nature conservation;
- Drinking water with simple treatment;
- Bathing;
- Fish and aquatic life;
- Drinking water with conventional treatment;
- Irrigation and agriculture; and
- Minimum quality

But none of the standards have so far been gazetted, they are therefore not official Sri Lankan standards, but can be considered as indicative.

4.1.7. Air Quality and Offensive Odor

The amended NEA provides standards for air quality and offensive odors. Extra Ordinary Gazette No 850/4 of 20th December 1994 covers: the relevant environmental standards. The gazette also includes the method of measurement to be followed.

Environmental Management Strategy for Colombo Urban Area – Action Plan, Urban Development Authority, May 1994 has proposed ambient air quality standards for the most important pollutants for Colombo Urban Area with an objective to reach an ambient air quality, which does not impair human health. The proposed standards include average concentration of pollutants for –6 hr, 8 hr, 24 hr and 1 year.

Environmental Norms for Sri Lanka published by the Board of Investment of Sri Lanka (1999) also gives ambient air quality standards.

4.1.8. Solid waste (non-hazardous)

For solid waste (non-hazardous) and its handling, there are no standards or guidelines in Sri Lanka. However, recently A National Solid Waste Management Strategy document had been formulated by the Ministry of Forestry and Environment. At present the Local Councils are charged with the responsibility for managing solid waste under the relevant ordinance.

4.1.9. Noise & Vibration

Under the National Environmental Act No 47 of 1980, National Environmental (Noise Control) Regulations No 1 of 1996, Gazette No 924/12 of 23rd May 1996 provides for standards on noise. Under this regulation, the following standards are provided (see Annex 1):

- Schedule - I: provides maximum permissible noise levels at boundaries (of land in which source of noise is located) in low noise areas, medium noise areas, high noise areas and silent zone areas, both for day time and night time.
- Schedule - II: provides maximum permissible noise levels for low noise areas, medium noise areas, high noise areas and silent zone areas, where the background noise level exceed or is marginal to the given level in Schedule – I.
- Schedule - III: provides maximum permissible noise levels at boundaries of construction activities for day time and night time.
- Schedule - IV: provides maximum permissible noise levels at boundaries of industries located in different specified residential areas, sensitive areas, commercial areas and industrial areas for day time and night time.
- Schedule - V: provides permissible noise levels in places where the background noise level exceed or is marginal to the given level in Schedule – I. The specified areas include rural residential areas, noise sensitive areas, mixed residential and commercial areas and industrial areas.
- Schedule - VI: provides permissible noise levels in industrial / commercial areas and urban / rural / mixed residential areas for daytime and night time.

In Sri Lanka, no standards have been introduced yet for vibration control.

4.1.10. Public Nuisance Law

The nuisance (both public and private) law relating to public nuisances is contained in Section 261 of the Penal Code and section 98 of the Code of Criminal Procedure Act, No 15 of 1979. Section 270 of the Penal Code relates to the fouling of the water of any public spring or reservoir (*the frequent disposal point for much of garbage today*) and section 271 to making the atmosphere noxious to health (*the effect of rotting garbage exposed to elements*). Sections 56 and 58 of the Police Ordinance, No 16 of 1865 authorities the Police Officers to abate/prevent public nuisances and make it their duty to do so. Owning or operating a rubbish dump, cesspit or other collection of filth that affects the health or habitability of a locality, are activities that amount to environmentally damaging public nuisances.

4.1.11. Sri Lanka Ports Authority Act No 51 of 1979

Under section 55(9) of this act, any person who pollutes the water of the harbor by overflow or discharge of oil or any other impurity within the limits of any specified port or the approaches to

a port shall be guilty of an offence and shall be liable to a fine not exceeding 2,500 rupees or to an imprisonment up to an year or to both punishments.

4.1.12. Marine Pollution Prevention Act no 59 of 1981

This act provides for the prevention, reduction and control of pollution in Sri Lanka waters and to give effects to international contention for the prevention of pollution of the sea. The discharge of oil and other pollutants into Sri Lankan waters has been made a criminal offence and the scope of the sections is wide enough to cover all possible sources that can cause marine pollution regardless of the locality and an offender can be fined up to one million rupees. This statute makes such acts a civil offence and provides for charging for damages caused by any such act and to recover the expenses borne by the authorities to control, reduce or remove such harm. The act not only includes the sea, but also any activities associated with it such as fisheries, wildlife, and tourism, health and the well being of coastal population. The act also mandates that no one is allowed to dump oil or pollutants to Sri Lankan waters except under a permit from the Marine Pollution Prevention Authority and that any escape of such matter should also be immediately notified.

4.1.13. Coast Conservation Act No. 57 of 1981 amended by Act No 64 of 1988

Coastal management in Sri Lanka was first mandated by the coast conservation act of 1981, which gave the Coast Conservation Department (CCD) primarily responsibilities for:

- Policy formulation, planning and research
- Administration of permit procedure regulation, coastal development activities
- Construction and maintenance of shoreline protection works

4.1.14. Agricultural and Landscape use of Sludge

Under the hazardous waste regulations of Sri Lanka residues arising from industrial waste disposal operations are classified as hazardous waste streams. Sludge from sewage or combine treatment systems are being used as soil conditioner and land filling material in many places in the world provided that no heavy metals or any other harmful residues are in presence. Currently there are no governmental requirements for the usage of sludge for different purposes. There is a 10-page "Draft Sri Lanka Standard Specification for Organic Fertilizers" published by the Sri Lanka Standards Institution. But still this standard is in the draft format.

List of other Environmental Legislation (both having indirect and direct impact – on Pollution Control)

- Flood Protection Ordinance No 4 of 1924
- Land development Ordinance of 1935
- Nuisance Ordinance No. 15 of 1862 as amended by act No 57 of 1946
- State Land Ordinance No 8 of 1947
- Soil Conservation Act No 25 of 1951
- The regulations on ionizing radiation protection, Atomic Energy Authority Act No. 19, 1969
- Urban Development Authority Law No 41 of 1978
- Mahaweli Authority of Sri Lanka Act No 23 of 1979

- Mines and Minerals Act No 33 of 1980
- Mines and Minerals Act No 33 of 1980
- Municipal Councils Ordinance No 29 of 1947 amended by act no 61 of 1981
- Natural Resources, Energy and Science Authority of Sri Lanka Act No. 78 of 1981
- Colombo District (Low lying areas) reclamation and development board act No 15 of 1968 amended by act No 52 of 1982
- Fauna and Flora Protection Ordinance No 2 of 1987
- Agrarian Services Act No 58 of 1979 amended by Act No. 4 of 1991
- National Water Supply and Drainage Board Law of No 2 of 1974 amended by Act No 13 of 1992
- Irrigation Ordinance No 32 of 1946, amended by No 48 of 1968 and by No 13 of 1994
- Forest Ordinance No 16 of 1907 as amended by Act No 23 of 1995
- Fisheries and Aquatic Resources Act No 2 of 1996

4.2. New Laws and Regulations

Several new laws and regulations and policies addressing environmental quality are being circulated in the form of drafts and have been put forward for public discussion. These include:

National Environmental Policy (Draft, released for Discussion as of March, 2011) – Ministry of Environment and Natural Resources . The draft policy addresses quality and quantity of all forms of water management with regard to industries, cleaner production principles to promote efficiency in the use of environmental and natural resources, as well as impacts and risks to environmental quality and public health.

Proposed Amendments to National Environmental Act – Amendments are being proposed to the National Environmental Act to overcome delays in enforcement actions. No amendment components address "Wastewater" of any kind at present. Also proposals are underway to legalise the international environmental conventions under national laws.

Draft National Water Resources Policy: This policy has been formulated by the Interim National Water Resources Authority . It is proposed to establish National Water Resources Authority (NWRA) which will become the apex body in the country for the regulation of all activities related to inland water. The NWRA would be responsible for the regulation of all future water related activities, functioning under Water Resource Council (WRC), which will include members from key ministries and organizations, such as the NWSDB and CEA. A new act called "The National Water Resources Act " is also being drafted. Under the proposed water policy, water quality assessments would be completed for all river basins and aquifers on a priority basis. The local administrative bodies and other relevant agencies are to consult with the NWRA. This information will be used for water quality management and monitoring in identified areas. All future monitoring activities related to environmental impacts will have to be carried out by a monitoring committee.

Coastal Resources Management Policy: Coastal resources management policies are still being formulated by the Department of Coast Conservation. The main aim of these policies are to arrest beach erosion, establish beach stabilisation and to conserve coastal habitats.

4.3. World Bank Environmental Impact Assessment (EIA) Regulations and Safeguards

By design, the proposed sub-projects focus on small-scale sanitation, local connections, and on site sanitation in communities currently lacking such services. The World Bank has assessed that this pilot project, given its size and type of intervention, is classified as a category B, i.e. its potential adverse environmental impacts on human populations or on the environment are limited and manageable through appropriate mitigations measures.

World Bank Safeguards Policies are described in **Appendix I** of this report. The proposed GPOBA-financed pilot project is not expected to trigger any Safeguard Policy other than the overarching Safeguard Policy OP4.01 on "Environmental Assessment". Some of the sub-projects lie along urban coastal habitat. Potential direct and negative impacts will be identified during screening and assessment stages using appropriate checklists and guidelines to ensure compliance with World Bank Safeguards Policies. The project will represent a significant improvement compared to the baseline situation. During implementation, the NWSDB is to ensure that Safeguards policies are complied with. The Board will report to GPOBA any situation challenging any of the World Bank Safeguard Policies to ensure that the situation is assessed as early as possible and that appropriate mitigation measures are put in place.

In brief, NWSDB does not anticipate that that this proposed GPOBA project will trigger any Bank or GoSL safeguards policies:

- While project development activities will take place near or along coastal areas, any potential direct and negative impacts can easily be avoided during the Sub-Project Environmental Assessment development using screening protocols and checklists to identify such impacts and incorporate appropriate mitigation measures where necessary.
- A Land Acquisition and Resettlement Policy Framework has been developed in case such situation arises (**Appendix II**). Land acquisition and/or involuntary resettlement are not anticipated to take place as part of the implementation of the OBA pilot. However, in case it is unavoidable, such land acquisition and /or involuntary resettlement should be carefully managed in order to minimize potential adverse social impacts it may generate. Although project areas have been identified during pilot preparation, the exact location of project interventions will depend on demand expressed by households and are therefore not precisely known beforehand. This Land Acquisition and Involuntary Resettlement Framework is consistent with the requirements of the Sri Lankan Governmental policies, in particular the *National Involuntary Resettlement Policy (NIRP)* and the *Land Acquisition Act of 1950 (LAA)* and with World Bank OP/BP 4.12. In the event that land acquisition is unavoidable, the land acquisition process, consultation and compensation procedures and principles will take place per the provisions of the present Land Acquisition and Resettlement Policy Framework.
- The project does not include subprojects near larger tracts of natural habitat that would trigger policies on "Natural Habitat" and "Forests".
- Pest management is not a part of the project. Intensive agricultural use of pesticides, herbicides and fertilizers are not a part of the project. Through proper water quality testing, NWSDB will ensure that water quality meets existing GoSL standards.
- The project is not taking place in any known cultural or religious sites. If archaeological finds are made, the provisions of OP 4.11 on "Physical Cultural Resources" will apply.
- No water system constructed under this project will utilize water from an existing dam.
- Safety of dams, international waterways and disputed areas are not relevant.

5. BASELINE CONDITIONS

Site-specific features characterizing the proposed location of each of the Sub-Projects will be assessed with the performance of the Sub-Project Environmental Assessments Reports (SPEARS) to be completed in advance of tendering each Sub-Project.

5.1. Geology

5.1.1. Regional Geological Setting

The general topography of the area consists of largely flat or mildly sloping low-lying terrain. Elevations vary only from 0m MSL (at sea level) to 6m MSL in high areas. The geology of the area mainly falls into the Highland Series lithotectonic group, consisting of charnockitic (hypersthene) gneiss, charnockitic biotite gneiss and migmatic in parts.

5.1.2. Stratigraphy, Soils, and Intrusive Rocks

The geology of the area mainly falls into the Highland Series lithotectonic group, consisting of charnockitic (hypersthene) gneiss, charnockitic biotite gneiss and migmatic in parts.

The geological features given above relate to the global types, and in the local areas of the project, where pipelines, pumping stations and treatment plant will be positioned, the local geological features types could vary. These site-specific features are the most important ones as the environmental impact is considered.

The main global soil types of the area are Regosols on recent beach sands in flat terrain in the coastal belt, Latosols and Regosols on old red and yellow sands of flat terrain in the adjacent land strip to the coastal belt. Bog and half bog soils in and around water bodies such as Bolgoda Lake system.

It should be noted that the soil complexes given above relate to the global virgin soil types, and in the local areas of the project, where pipelines pumping stations and treatment plant are positioned, the local soil types could vary. Special geotechnical investigations were carried out under the project at various locations covering these entities, and the key soil types found are sand, silty sand and silty clay as given in the section above. These site-specific features are the most important ones as the environmental impact is considered.

5.2. Rainfall Characteristics and Monthly Average Rainfall

Rainfall in the area is a bi model with peaks in May and October. The general rainfall is of monsoonal, convectional and depressional origin. The average annual rainfall for the project area is around 2000-3000 mm. Daily rainfall is measured at the principle meteorological station Ratmalana maintained by the Department of Meteorology. The following chart shows the monthly average rainfall for the project area derived from the Ratmalana meteorological station.

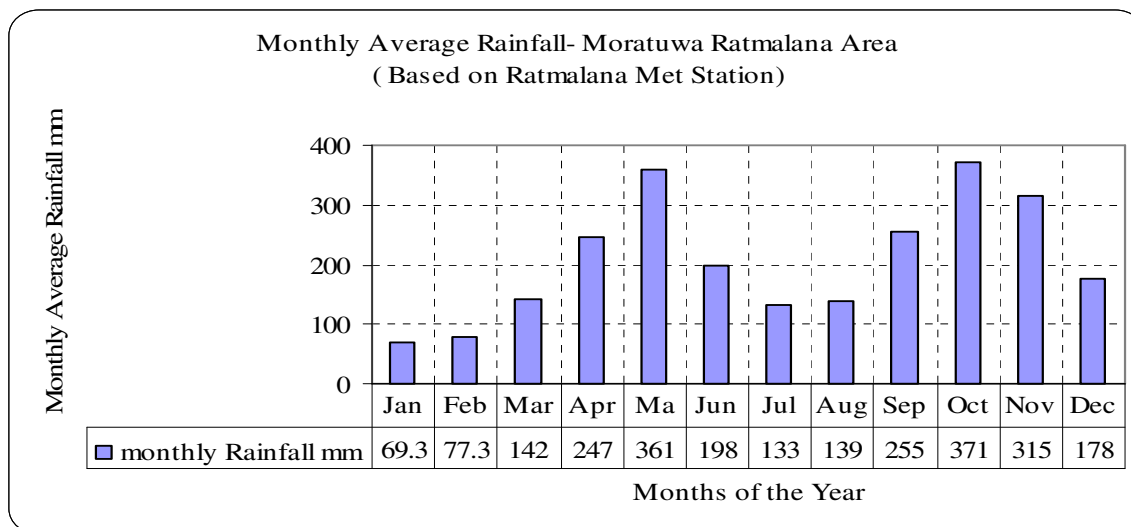


Figure 4.1- Monthly Rainfall for Moratuwa/Ratmalana Area

Runoff characteristics are also proportional to rainfall characteristics. It is seen that the project area is highly urbanized and consist of a considerable amount of built up areas in towns where runoff is high. The groundwater table is also high in the area because of the coastal and lake environments hence the soils are less water penetrative. The runoff coefficients 9 runoff/rainfall ratio) for such industrial areas are in the range of 0.5-0.8 according to Tables provided for runoff coefficients in “Water and Environmental Planning” – Thomas Dunne et. Al. Runoff coefficient for the overall Bolgoda Basin has been estimated to be 0.5 under Western River Basin Project [Ref-28]. As the project area soil cover properties are different from that of the overall Bolgoda Basin the runoff coefficient of the project area can be higher. A value around 0.7 will be reasonable estimate. Based on this value and monthly rainfall monthly runoff for the project area is given in the table below.

Monthly Runoff.

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Runoff mm	49	54	99	173	252	139	93	98	178	260	220	124

5.3. Wind Speed and Direction

Average wind speed is in the range of 7-10 km/hr according to the wind data recorded at the Colombo meteorological station. The following table shows the average wind speed and direction during the months of January, April, July and October.

Wind Speeds.

Month	Wind Speed km/hr	Dominant Direction
January	9	North East
April	7	South West
July	10	South West
October	8	South West

5.4. Temperature

Average annual temperature in the project area is in the range of 25.0-27.5C⁰. The variation of monthly average temperature is shown in the following table. These data are based on the meteorological station Colombo.

Table 5-1- Average Temperature.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature C ⁰	26.6	26.9	27.7	28.2	28.3	28.0	27.6	27.5	27.5	27.0	26.7	26.6

5.5. Relative Humidity

Relative humidity data are available for Ratmalana meteorological station, which is in the project area. Relative humidity is from 66% to 75% during the daytime, and it varies from 84% to 90% during the nighttime. Details are presented in the following table.

Relative Humidity.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Relative Humidity Day %	67	68	66	71	75	75	75	74	74	75	73	75
Relative Humidity Night %	87	88	89	89	86	84	85	84	85	87	90	88

5.6. Hydrology

Surface drainage pattern

The surface drainage pattern of the area is largely determined by the Bolgoda Lake and Lunawa Lagoon and sea. The drainage in the Ratmalana North area and Mount Lavinia area is directed to sea through various roadside drains. The drainage waters of Ratmalana south, Moratuwa, etc. mainly on the western side of the Galle Road is to Lunawa lagoon. Parts of the project area on the eastern side of Galle road flows to Bolgoda Lake through Weras Ganga.

Surface Water availability & uses

Surface water is available in the area only in large water bodies such as Bolgoda Lake and Lunawa Lagoon. There is hardly any use of the waters of Lunawa Lagoon as the quality of water has got drastically degraded owing to regular and haphazard industrial effluents. Water in Weras Ganga also has undergone degradation but not to the extent that of the Lunawa Lagoon. The water of Bolgoda Lake is used mainly for recreation and vegetable cultivation. There is no surface water source in the project area, which stores potable water.

Height of Groundwater Table

According to groundwater maps in the project area, there is a thin strip of coastal sands and a strip of laterite is available in the project area, which are good groundwater bearing formations. It is a fact that the area is a low-lying area, which is subject to flooding, and a large water body, Bolgoda Lake, is present on the eastern side and Lunawa Lagoon is present on the Western side. Because of these reasons, the groundwater table is high in the area.

The surface drains carry the industrial and other wastewater into the Bolgoda Lake system and the Lunawa Lagoon, while the domestic wastewater partially treated in septic tanks, finds its way into the ground water, due to the sandy soil and high water table in the area. Evidence of ground water and surface water pollution is visible in most places.

Groundwater Uses

The quality of groundwater is degraded in the area because of the industrial effluent and seepage from the septic tanks. Additionally, dumping of solid waste in drains and streams has caused pollution in nearby wells. Hence there is hardly any use of groundwater in the project area.

Tidal Levels and Periods

The tide around Sri Lankan coast is mixed semi-diurnal type with two high waters and two low waters occurring approximately every 24 hours. First high water is almost twice high than the second high water. Amplitude of the tide ranges from 10cm at neap tide to 35cm at spring tide.

Wave Heights, Periods, Dominant Directions and other Ancillary Offshore and Nearshore Wave Parameters

Directional wave measurements near the project area are not available. However the wave conditions in the area have been established by a wave transformation study. According to Directional Wave Climate Study of Southwest Coast of Sri Lanka, dominant wave characteristics of the project area can be summarized as follows.

Wave Frequency.

Significant Wave Height (m)	Percentage of Occurrence (Based on 4 years of data record: 1989 - 1992) (%)					
	Southwest Monsoon (May - September)			Northeast Monsoon (October - April)		
	Sea Waves	Swell Waves	Overall Waves	Sea Waves	Swell Waves	Overall Waves
< 0.1	0.49	0.28	0	50.86	0.64	0.41
0.1-0.5	1.74	7.38	0	16.09	44.21	31.11
0.5-1.0	16.16	40.75	3.58	19.73	41.04	36.58
1.0-1.5	41.17	27.94	24.1	10.585	12.21	23.19
1.5-2.0	27.64	16.9	30.16	1.505	1.74	7.22
2.0-2.5	9.58	5.42	28.8	0.59	0.13	1.18
2.5-3.0	2.57	1.14	10.53	0.13	0.03	0.23
3.0>	0.64	0.21	2.92	0	0	0.05
Wave Period (s)	5.1	11.2-13.0	6.5	*	10.9-12.8	10.3-11.6
Wave Direction (N)	240-270	210-230	230-250	*	210-230	210-230
Percentage of Occurrence	63	84	52	*	85	63
* No Clear Dominance						

Marine Outfalls

The shoreline within the proposed project areas is a bare sandy beach devoid of beach vegetation. Human settlements are seen all along the beach and domestic sewage and other waste have ruined the scenic value of the beach. Visual pollutants are scattered in the beach and in the surface waters of the near shore area.

Inter-tidal areas are also was devoid of sea grasses and seaweeds. Benthos of the seabed closer to the shore are characterized by very low species diversity. Patchy sandstone reefs occur at about 1 km distance away from the shore. It is presumed that fauna and flora common to other sandstone reefs exist in these reefs too. Closest available information comes from the Wellawatta sandstone reef area, which could be regarded similar to the sandstone reefs off Ratmalana/Moratuwa as both reefs face same weather conditions and are situated 1-2 km away from the coast. The fishermen in the study area confirm that the reef area is rich both in faunal and floral diversity. As recorded from other sandstone reefs various species of algae, coelenterates, bryozoans, sponges, crustaceans, mollusks and polychaetes may be available in the reef area in addition to fish. As recorded by Rajasuriya and De Silva (1988) live coral cover in the sandstone reefs vary from 25% to 10% but the generic diversity is high compared to true coral reefs. They have recorded 35 species of live coral species from Wellawatta sandstone reef. The coral species composition of the Wellawatta reef is given in the table below. Faviidae, Pectiniidae and Mussidae are the dominant families found on sandstone reefs. A nursery ground of lobster also exists beyond the reef area.

Small meshed gill net fishery also exists in the study area. The catches of small gillnet fishery are dominated by families Clupeidae and Engraulidae. The dominant clupeids consist of *Amblygater sirm*, *Sardinella albella*, *Pellona ditchells* and *Dussumieria acuta*.

There are no records of turtle nestings in Angulana and Moratuwa area but nestings of Green turtle, *Chelonia mydas* and Leatherback turtle, *Dermochelys coriacea* has been recorded from Mount Lavinia beach. The former species used to nest in the area throughout the year while the latter species nests from May to November.

Species compositions of corals in Wellawatte sandstone reef

Family	Species
Pocilloporidae	Pocillopora sp.
Acroporidae	Acropora sp.
	Montipora sp.
Agariciidae	Pavona sp.
	Gardineroseris sp.
	Leptoseris sp.
Fungiidae	Pachyseris sp.
	Podabacia sp.
Siderastreidae	Coscinaraea sp.
	Pseudorastre sp.
Poritidae	Porites sp.
	Goniopora sp.
Faviidae	Favia sp.
	Favites sp.
	Montastrea sp.
	Goniastrea sp.
	Platygyra sp.
	Leptoria sp.
	Leptastrea sp.
	Cyphastrea sp.
	Oulophyllia sp.
Plesiastrea sp.	

Merulinidae	Hydnophora sp.
Oculinidae	Galaxea sp.
Mussidae	Acanthastrea sp.
	Symphyllia sp.
	Lobophyllia sp.
Caryophylliidae	Paracyathus sp.
	Euphyllia sp.
Pectiniidae	Echinophyllia sp.
	Mycedium sp.
Dendrophylliidae	Tubastre sp.
	Dendrophyllia sp.
	Turbinaria sp.
Stylasteridae	Distichopora sp.

(after Rajasuriya and De Silva (1988)).

Note: All species of corals indicated above are protected under the Fauna and Flora act.

Karunasinghe (1998) has recorded 45 species of fish belonging to twenty families and shellfish belonging to two families from beach seine fishery operating in the area. Table below indicates the species of pelagic fish recorded from the study area by her study. According to the observations made during the present study, *Stolephorus heterolobus* consisted more than 90% of the catch followed by *Sardinella* sp. and *Leiognathus* sp.

5.7. Water Quality

There is very little existing data that describes the baseline water quality of surface/groundwater resources in the proposed project area. Although water quality information contained in the Environmental Impact Assessment (EIA) carried out in 2003/2004 as part of the preparation of the Sida-funded project for the extension of sanitation to industrial areas in Ja-Ela/Ekala and Ratmalana/Moratuwa would be one of the few sources that can be found, a close examination of the data has revealed a number of limitations in interpreting them to describe the baseline conditions in the general area where the proposed OBA pilots are to take place. Firstly, a majority of the monitoring points reflected in said EIA are outside of the proposed project areas of the OBA pilot. Secondly, the monitoring points closest to the proposed project areas are located close to the Sea, where the influence of sea tides are biasing the water quality measurements. Consequently, the majority of the results do not reflect the actual situation of the fresh water quality. The EIA study itself concludes that the water quality test results is not indicative of the pollution caused by domestic and industrial discharges in the area and attributes these variations to the high surface run-off experienced during the testing period. As such, the data available in aforementioned EIA is not sufficient to establish the background levels of water quality in the proposed project areas of the OBA pilots.

However, in order to establish a proper baseline and to assess potential impacts on environmental outcomes, which may be attributable to the OBA interventions, NWSDB will establish a water quality monitoring programme with sampling points located in selected pilot areas, in accordance with the guidelines set forth in section 10 of this ESSF.

5.8. Protected Areas (Parks, Reserves and World Heritage Sites)

There are no protected areas located within or near the proposed project sites.

6. SUB-PROJECT IMPLEMENTATION PROCESS

This section summarizes the process by which the NWSDB will carry out the planning and development of the planned OBA sanitation project components (Sub-Projects). Sub-projects consist of either a single output or multiple outputs within each of the five Project areas (Ja Ela/Ekala, Kolonnawa, Dehiwala/Mt. Lavinia, Moratuwa, & Ratamalana). The exact distribution of outputs according to Sub-Project (i.e. the outputs defining each Sub-project) will be finalized by NWSDB in the Implementation Plan in the month following the signing of the Grant Agreement. Within the framework of the project, NWSDB is generally free to organize the work in the way it deems most appropriate to deliver the outputs. However, consistent with World Bank policies and procedures as applied to the GPOBA, the NWSDB must comply with requirements set forth in the Grant Agreement, in the Project Implementation Manual (PIM) and in this ESSF.

During project definition and development stages, NWSDB and GPOBA completed preliminary project identification, screening, and surveying to assess basic information about the proposed subprojects. NWSDB has been coordinating with Divisional Secretariats from the start at each of the project areas to verify local interests and incorporate input from beneficiary communities. All five of the proposed target communities expressed strong interest and have agreed to proceed with the project. The World Bank, acting as Administrator of the GPOBA, will enter into a single Grant Agreement with the Ministry of Finance and Planning. The Ministry of Finance and

Planning, the Ministry of Water Supply and Drainage (MWSD), and NWSDB will enter into a subsidiary Grant Agreement. NWSDB will be the main implementing agency for the project and the recipient of the OBA subsidy.

Main steps in the implementation process can be summarized as follows:

- Project Areas and Targeting Criteria confirmed by the Steering Committee;
- Upon signing of the final Grant Agreement, description of the program approach and responsibilities summary is sent to local authorities.
- NWSDB will engage in a communications campaign with local authorities, providing targeted information to potential beneficiaries in project areas and advertising the discounted connection fees on offer and the details of eligibility and timing for households, to encourage targeted households to request the connection.
- After the signature of the Grant Agreement, NWSDB will submit an Implementation Plan to GPOBA outlining the works planned under the project, including the estimated number of each type of connection to be implemented at each location.
- Within one calendar month of receipt of the first Implementation Plan the IVA will provide a written report indicating the conclusion of its review, in particular whether the plan is fully approved, partially approved or not approved. Where approval is withheld or only partial the report will include details of any objections to the plan and IVA recommendations for amendments.
- At that point, NWSDB carries out an environmental screening process at each Sub-Project⁴ site to confirm whether or not the prospective sites meet the required environmental criteria. If all checklist requirements are met, NWSDB then completes a Sub-Project Environmental Assessment Report (SPEAR) for each Sub-project, prior to preparation of construction tender documentation. Recommendations and mitigation measures identified in the SPEARs (in the form of an Environmental Mitigation and Monitoring Plan (EMMP)) are also to be included in construction tender documentation to ensure compliance by contractors. The potential impacts and mitigation measures are expected to be similar across all Sub-projects such that a model EMMP can be used as the common starting basis for all SPEARs.
- **The first 6 SPEARs will be submitted to the World Bank for its review and no objection, leaving the others for Bank post review through supervision.** Each SPEAR will be made available to the public for information and comments, possibly on the NWSDB website and preferably in the relevant Divisional Secretariat or Urban Councils, as appropriate. Evidence of such public disclosure should be provided to the World Bank / GPOBA for its information and files.

⁴ Sub-projects consist of either a single output or multiple outputs within each of the five Project areas (Ja Ela/Ekala, Kolonnawa, Dehiwala/Mt. Lavinia, Moratuwa, Ratamalana & Badowita). The exact distribution of outputs according to Sub-Project (i.e. the outputs defining each Sub-project) will be finalized by NWSDB in the Implementation Plan in the month following the signing of the Grant Agreement.

- NWSDB prepares preliminary engineering design and cost estimates.
- NWSDB plans the detailed project construction schedule, and then identifies and obtains bids from qualified contractors to carry out construction. After suitably qualified contractors are selected and contracted, construction begins.
- NWSDB works with private contractors to deliver sewer connections and new networks, and will work with third-party providers (TPPs) to deliver improvements to on-site sanitation as well as septic tank pumping and sludge removal.
- Appropriate periodic inspections of construction progress take place, to ensure quality control. The Board will report to GPOBA any situation challenging any of the World Bank Safeguard Policies to ensure that the situation is assessed as early as possible and that appropriate mitigation measures are put in place, as laid out in the subproject EMMP.
- NWSDB supervises construction to ensure compliance with the Environmental Mitigation and Monitoring Plan.
- It is the role of the IVA to confirm that eligible connections have been made. At the end of each quarter and on an annual basis, the IVA will also review and assess the progress and performance of the Project on the basis of NWSDB's reports, background documentation, including as-built files of the connections, and any other relevant material, discussions and interviews. As part of the TOR, the IVA will review the performance of safeguards implementation and report its observations in the quarterly IVA report.
- NWSDB also conducts an evaluation one year after the completion of the project.

7. ENVIRONMENTAL GUIDELINES FOR SUBPROJECT AREAS

7.1. Initial Subproject Screening Based on Exclusion Criteria

Environmental screening will be carried out at all proposed sanitation project sites prior to proceeding with project design and finalizing any commitments to construct. Exclusion criteria are defined to address potential impacts upon:

- Physical resources (water, land, soil, mineral, forest, climatic change, environmentally sensitive areas, etc.);
- Cultural, historical, and religious sites;
- Socioeconomic and public health conditions (livelihoods, health and safety, etc.); and
- Resettlement, relocation, compensation issues.

Subproject environmental screening will be based on exclusion criteria as described in Table 7.1 below. If the answer to any of the questions below is "Yes", then the site will not be selected for assistance through the GPOBA project.

Table 7.1: Site Description and Subproject Screening based on Exclusion Criteria

Site Name:		
Budget Estimate:	# of Households:	Population served:
Major System Components :		
Proposed Construction Contract Period: (e.g., March 1 through May 31)		
Exclusion Criteria		
1. Are any aspects of the proposed project immediately non-compliant with GoSL standards or regulations?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2. Will there be a substantial risk of adversely impacting sensitive physical resources, (water, land, soil, mineral, forest, climatic change, environmentally sensitive areas, etc.)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
3. Is the proposed project located in a protected area (e.g., national park, forest reserve, nature tourism location, or similar area)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4. Are there special areas of cultural, historical or religious significance along the proposed site that would be negatively impacted after application of mitigation and/or prevention measures?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
5. Will the proposed project lead to unpreventable or immitigable direct or indirect environmental or occupational health and safety risks?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
6. Will the proposed sub-project adversely affect the livelihood of any individuals or communities?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
7. Will the proposed sub-project discharge into the catchment basin of a large dam?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
8. Does construction of the project involve a significant conversion or degradation of critical natural habitat?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
9. Will the project result in a significant and irreversible use of local natural resources (land, water, soil, minerals, or forest resources)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
10. Is the sub-project likely to generate a significant amount of sediment that cannot be easily disposed of in an environmentally safe manner?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If the answers to any of questions #1-#10 are yes, the subproject will be rejected. If those answers are no, then the subproject is acceptable, and an appropriate subproject SPEAR must be prepared prior to project approval.		
Conclusion		
Does the Environment consultant confirm that the above screening criteria have been met such that this sub-project be cleared for implementation, provided a SPEAR is completed and measures therein are carried out?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

7.2. Environmental Assessment Process and Procedures

Based on pre-feasibility studies to be reviewed by the World Bank, Sub-project activities will not be selected if they pose any serious risks the environment quality or natural environment of the areas where the sanitation systems are to be constructed. Environment assessment instruments required by WB and GoSL for the five types of proposed GPOBA sub-projects are shown below. The project will be in full compliance with Sri Lankan EIA/IEE regulatory requirements. NWSDB is not required to carry out an EIA nor IEE for the scale and nature of the proposed investment. NWSDB has coordinated fully with CEA in the development of the project preparation phase and with the understanding that the CEA to proceed with the project under this assumption. In addition, all design standards to meet treatment requirements for DEWATs will be submitted to CEA for review and approval upfront in the project development cycle. Nevertheless, as reflected in the table below, even in cases when NWSDB is not required to carry out an IEE under the Sri Lankan regulation, a Sub-project EA Report will be prepared for each subproject, to assess potential negative impacts and propose mitigation measures for each potential impact identified, through an Environment Mitigation and Monitoring Plan (EMMP).

Environmental Assessment Instruments Required

Subproject	Environmental Assessment Instruments	
	Gov of Sri Lanka	WB
1 (a) Direct conventional connection to sewer	None required	Sub-project EA Report with screening checklist and EMMP
1 (b) Extension and direct connections to sewer	None required	Short Sub-project EA Report with screening checklist and EMMP
1 (c) Simplified connection to sewer	None required	Short Sub-project EA Report with screening checklist and EMMP
1 (d) Decentralized wastewater treatment system (DEWATS)	CEA Approval by submitting relevant designs, effluent quality and discharge point	Short Sub-project EA Report with screening checklist and EMMP
2) On-site (HH) treatment of domestic wastewater	None required	Short Sub-project EA Report with screening checklist and EMMP

7.3. Sub-project Environmental Assessment Reports

The principal instrument for assessing environmental impacts under the proposed OBA pilot project will be the Sub-project Environmental Assessment Report (SPEAR) which is to be completed during the detailed scoping, definition and design of each sub-project. SPEARs will include environmental screening to determine the scale and level of further required analysis of potential environmental impacts. It will also include mitigation measures, and monitoring activities for each sub-project, presented as an Environment Mitigation and Monitoring Plan - EMMP. The implementing agency (NWSDB) itself and through supervision of its contractors, will ensure that all potential impacts are identified, assessed and mitigated against. SPEARs completed for

the “Improved Access to Sanitation in Greater Colombo” Project will address the following subjects:

- Sub-project description;
- Required approvals and permits;
- Existing environmental conditions found in the sub-project area (baseline);
- Possible environmental impacts;
- EMMP including prevention, mitigation, and monitoring measures (see below)
- Identification of accountable parties and their responsibilities in ensuring compliance with the EMMP.
- Modes of public consultation and disclosure;

After design of each sub-project is complete, measures identified in the finalized Environmental Mitigation and Monitoring Plan will be included in tender documentation and will serve as a guide for NWSDB compliance. EMMP clearance, consultation, and disclosure will be performed by the NWSDB, with the WB reserving the right to review these as needed.

7.4. Environment Mitigation and Monitoring Plan (EMMP)

The EMMP is to be developed as a part of the SPEAR for each sub-project and will identify environmental impacts and measures for environment mitigation and monitoring. EMMPs for sub-projects will be developed to ensure modes of compliance with WB and GoSL regulations. The EMMPs will be finalized after being accepted by local authorities and the WB. The EMMP will entail, for each potential negative impact:

- Prevention and mitigation measures to be taken;
- Identification of accountable parties and their responsibilities in ensuring compliance with the EMMP
- Plan for monitoring and reporting;
- Procedures for public consultation and information dissemination;

The EMMP should be a clear and concise document that allows for easy review using tables and charts. In the case of smaller Sub-projects, the EMMP may even consist only of a single table showing key impacts, mitigation measures, monitoring actions, and responsible parties. A template of the EMMP to be completed as part of the SPEAR is included in this ESSF as **Appendix III**.

7.5. Public Consultation and Information Dissemination

The NWSDB organized initial consultations with local authorities in each project area, to present the Project, its conditions, implementation arrangements and seek confirmation of the interest in participating. Original minutes and non-official translations are attached in Appendix V.

Community consultation and information dissemination will be carried out during subproject preparation. NWSDB has an established public consultation process that it has practiced successfully on a regular basis in conjunction with its many sanitation and water development projects. As part of the consultation process with community members and the local authorities in

each prospective site, the environmental screening process will be explained. All issues and concerns relevant to the remediation activities will be raised during these public consultation meetings, and in meetings with potential household beneficiaries in the water service area of the proposed site. This activity is also required in the Safeguard policies of the World Bank (OP 4.01 and BP 17.5). Also, while preparing the SPEAR reports, community consultations shall be carried out as needed (by way of meetings, brochures, leaflets, etc.). Information about main findings and proposed mitigation measures shall be announced. Feedback from community consultation shall be attached with the draft SPEAR reports.

8. ENVIRONMENTAL MITIGATION MEASURES

8.1. Planning and Design

1. In order to limit the disruption to the neighborhood and traffic flow, the Contractor will coordinate with NWSDB to provide guidance to the organization of construction works.
2. Work will not begin until all necessary permits have been obtained by responsible municipal authorities.
3. The design will include guidelines for site safety which will include specific requirements for physical division (fence), where necessary, of the construction site from passing pedestrians, children at play, vehicles, and any other people at risk.
4. The design will include guidelines for workers' safety on site and the safety of visitors. Bills of quantities and technical description of works will include needed safety equipment.
5. The design will specify the handling and transportation of construction materials,
6. The design will specify the guidelines for the proper handling and disposal of waste to predetermined authorized disposal sites;
7. The design will specify the guidelines for the safe transportation, use, and storage of construction vehicles and equipment ;
8. The contract will specifically underline the methods for handling and disposing of hazardous materials, both for workers safety and for environmental protection.

8.2. Construction Phase

1. Establish and adhere to construction timetables that minimize disruption to the normal activities of the construction area and the surrounding community.
2. Coordinate truck and other construction activity to minimize noise, traffic disruption and dust.
3. Develop and implement appropriate human health and worker safety measures.
4. Handle, store, use and process branded materials in accordance with manufacturer's instructions and recommendations.
5. Prohibit the use of pipe, cement; paper; board; sealant and glazing formulations; piping; roofing material; or other materials containing asbestos.
6. Introduce measures to control and minimize the volume of waste on site.
7. Physical divisions will be provided to divide the storage of construction materials, vehicles, and backfill from adjacent public spaces such as sidewalks (where present), streets and institutions found along the project path.

8. Contracted supervisor(s) and contractor monitors will ensure that existing vegetation, as well as structures such as sidewalks, fences, other features of interest or necessity will only be disturbed or removed if absolutely necessary. All features and areas will be restored to their original condition or better upon completion of construction activities.
9. Supervisors and contractor monitors will carefully inspect the site for unnecessary or dangerous debris or hazards, and insist the contractor keep the site clean and safe.
10. Supervisors and contractor monitors will ensure workers are using safety gear including helmets, gloves, eye protection, safe ladders and equipment.
11. Construction will be halted and construction sites closed when serious violations are noted.
12. Waste materials will be segregated to the maximum extent and only materials which cannot be reclaimed or recycled will be directed to the engineered landfill.
13. Any residual soil must be disposed of at designated waste locations or distributed/sold for reuse be designated parties to ensure that prevention of illegal dumping/disposal at sites inappropriate or not legal.
14. The Contractor will at all times be responsible for maintaining in good condition all engines, vehicles, machinery and equipment in order to minimize air pollution.
15. Dust creation during and after excavation will be reduced by carefully controlling and continuously implementing approved water-spraying procedures, as needed.

9. ENVIRONMENTAL MONITORING

All construction activities will be monitored to ensure that environmental measures are being implemented to ensure compliance, together with health and safety measures (accident prevention, etc.) by the contractor. Specifically:

- There will be day-to-day supervision of all activities and rehabilitation works to ensure that sound environmental practices are employed during the contract period.
- Environmental monitoring and supervision will be integrated into the project management and reporting system.
- Regular monitoring of the project will be conducted from the beginning of planning and construction stages all the way through commissioning and beyond.
- Additional monitoring will take place in the post-commissioning phase to ensure proper operation of the rehabilitated segment to design specifications.
- NWSDB will supervise or contract the services of qualified supervising engineer who will be present at the project location to supervise and observe all project stages.
- The supervisors will report to NWSDB technical staff on all issues relating to compliance with environmental requirements.
- NWSDB technical staff will also visit the project site on a regular basis during construction to ensure that all environmental requirements are being met.
- NWSDB will document materials quantities, check site safety, pre-approve materials and monitor all aspects of environmental impact prevention and mitigation.
- An environmental mitigation checklist will be kept on site and reviewed and signed by supervisors and contractors at critical junctures to ensure compliance.

10. WATER QUALITY MONITORING

At the beginning of the project and before any investments takes place, NWSDB, together with the IVA, will carry out a **background check on fecal contamination of the project areas**. This will include, but may not be limited to:

- 1) Preparation of a location map indicating all water bodies, ponding and flooding in the area, including areas which are reported by residents to suffer from flooding in monsoon periods.
- 2) Identification of sampling points located within and around project areas in an appropriate water body or from the general environment where water is ponding on the surface. The GPS coordinate for each sample site, and a short description, should be noted to facilitate consistent, on-going monitoring.
- 3) Identification of specific household sampling points – in each block to identify not less than one household where sanitation conditions are deemed to be inadequate and samples of well, standing water or nearby surface water can be taken and where households indicate an interest and willingness to pay for improved sanitation services.

At least 10 sampling points will be established, in order to allow monitoring while limiting the associated costs. For each of the identified sampling point, the NWSDB will take a water sample prior to project interventions and then subsequently on a quarterly basis throughout project implementation, using accepted sampling procedures, to test for total fecal coliforms, E-coli⁵, BOD, and dissolved Oxygen, in a certified lab.

The monitoring aspects will be established in the framework of the SPEAR preparation process, and will be discussed during the community consultation meeting. For each of the project areas, it will entail a description of the general sanitary conditions prevailing including in particular evidence of gross fecal contamination or, if it exists, of open defecation practices. The SPEAR will note major sources of pollution entering the area, or water bodies that is outside the proposed area of sanitation improvement (in other words, main identifiable sources of pollution which will not be mitigated by the proposed intervention) and indicate qualitatively if these other sources of pollution are likely to represent a significant bias to the measurement of the improvements expected under this project.

Monitoring During the Project

The NWSDB will pursue regular measurements in each of the sampling points throughout Project implementation, and will report on the measurement results for each parameter at each sampling point in their Quarterly Progress Reports. The cost associated with water quality monitoring and testing will be borne by the NWSDB's project funds.

⁵ Total coliforms and e-coli have been selected as the indicator counts due to their relative ease of measurement compared to other potential health indicators. Values will be expressed in terms of total number of organisms per 100ml of sampled water.

11. INDEPENDENCE GRIEVANCE MECHANISM

At the request of the World Bank, NWSDB committed to set up, before starting construction in the given project area, an independent grievance mechanism at local level to monitor, record and respond to local complaints relating to environmental and social issues and impacts related to the project. Although acquisition of private land is not foreseen to take place under the project, the NWSDB understand it as a preventive measure in case of direct or indirect loss of assets, livelihood or income due to acquisition of private land. It also sees this measure as an additional opportunity to ensure, in good faith, that it is ready to deal with any issue related to the project with utmost professionalism and concern for the beneficiaries.

Commitment to set up a Grievance Redress Committee (GRC) and associated staffing specifications.

The objective of the GRC is to find or resolve any issues, complaints, disagreements between beneficiaries, etc that may be identified in the SPEARs or general operations of the project.

- a) The GRC will be composed of:
 - The Divisional Secretary of the relevant area or its representative;
 - The Grama Niladari in the specific area;
 - The Project Director for the NWSDB or its representative;
 - One person representing the land acquisition officers or land assessors;
 - One person representing the professional group related to the subject matter;
 - One person representing the following groups of people: NGOs, CBOs, or individuals who have no vested interest in the project
- b) A meeting of the GRC can be conducted only with a quorum of 4 members.
- c) An individual who has no vested interest in the project will be the convener of the GRC. The person appointed by the NWSDB as the Project Director will be the secretary to the GRC and record the minutes.
- d) The GRC will decide by simple majority.

The GRC scope:

- a) The committee will deal with zoning related grievances and make necessary recommendations to the relevant authorities to ensure resolution.
- b) The GRC will address complaints on all social and environmental issues emanating from project activities, including livelihood related problems.
- c) The GRC will analyze the livelihood issues on a case-by-case basis and point out different solutions to the problems faced by various groups.
- d) Provide resolutions in writing.

An opportunity to appeal will be offered in case people wish to contest the conclusions reached by GRC and recorded in its written resolutions.

Appendices

Appendix I

World Bank Environmental Safeguards Policies and Categories

The World Bank has prepared a number of safeguards policies that provide a mechanism for integrating environmental and social concerns into development decision making. Safeguards policies include the following⁶, with a short statement (where appropriate) as to the applicability of these policies in the context of the currently proposed GPOBA proposal:

- The Environmental Assessment policy provides the framework for the screening of projects, mitigation of potential impacts, disclosure and consultation, and capacity building. (OP 4.01).
- The Natural Habitats policy is concerned with avoiding, minimizing and mitigating damage to natural habitats. It forbids the funding of activities in critical natural habitats. (OP 4.04). No NWSDB rural water system will be built in any critical natural habitat under any circumstances.
- The Forests policy promotes the sustainable management of forests, while protecting the rights and welfare of people dependent on forests. It limits financing of commercial harvesting and prohibits financing of conversion of critical forest habitats to plantations. OP 4.36). This does not apply to any NWSDB rural water systems that will be built under this project.
- The Pest Management policy promotes biological and environmental pest management (Integrated Pest Management—IPM) where possible, and limits the selection and use of chemical pesticides. A Pest Management Plan will not be needed, as there is no pest management component of this project. (OP 4.09)
- The Involuntary Resettlement policy applies whenever land is taken resulting in relocation, loss of shelter, loss of assets, or loss of livelihood. The policy specifies the need to, at least, restore past income levels, and the need for consultation. Where a need for resettlement has been identified, a Resettlement Action Plan (RAP) must be prepared, agreed and implemented, while a Resettlement Action Framework (RAF) is used in cases where needs may be identified in the course of project implementation. (OP 4.12). There never has been, and never will be, any involuntary resettlement required in NWSDB rural water projects.
- The Indigenous Peoples policy aims to ensure that the development process fosters full respect for the dignity, human rights and cultural uniqueness of such people, through informed participation. An Indigenous Peoples' Development Plan (IPDP) is prepared, agreed and implemented.
- The Physical Cultural Resources policy seeks to avoid harm to significant, non-replicable cultural property, and provides guidance in the case of chance finds. (OP 4.11)

⁶ The Effectiveness of World Bank Support for Community-Based and -Driven Development *Background Paper*, Safeguard Policy Review, P. Whitford and K. Mathur, The World Bank, Washington, D.C. 2006

- The Safety of Dams policy provides detailed procedures for reviewing the design, construction and operation of new dams over 15 m in height, together with simpler procedures for small dams and for existing dams, any failure of which could harm the project. (OP 4.37) No dam built by NWSDB will be over 15 m in height.
- The policy for Projects on International Waterways applies to any project which involves the use or potential pollution of an international waterway, such as a trans-boundary river, and may require notification of project details to other riparians. (OP 7.50). This will not apply to any rural water system built by NWSDB.
- The policy on Projects in Disputed Areas sets out conditions under which a project in an area claimed by another country may go ahead. (OP 7.60). This will not apply to any rural water system built by NWSDB.
- The proposed GPOBA RWS project in the Central Region of Vietnam will under no circumstances affect the specific safeguards policies as noted above. For the remainder, a brief mention will be made on possible impacts.

Project Environmental Categories

According to the World Bank OP 4.01 (Environmental Assessment), a project is classified as:

- Category 'A' "if it is likely to have significant adverse environmental impacts that are sensitive, diverse or unprecedented. ("Sensitive" is further defined to include irreversible impacts and issues covered by the policies on indigenous people, natural habitats, cultural property and involuntary resettlement. Thus, Category A is the default option for major infrastructure projects, though this may be lowered to 'B' in cases where the works are mainly of a rehabilitation nature. Category 'A' projects require a "full" Environmental Impact Assessment (EIA), followed by supervision and monitoring of the potential impacts
- Category B: the project's potential adverse environmental impacts on human populations or environmentally important areas are less adverse than those of Category A. EA for Category B and Category FI (see below) may involve any of a number of document types, depending on the nature and extent of the issues raised.
- Category C: the project is likely to have minimal or no adverse environmental impacts, and therefore generally need only a brief analysis in the appraisal document.

Category FI: the project involves investment of Bank funds through a financial intermediary in sub-projects that may result in adverse environmental impacts.

APPENDIX II

LAND ACQUISITION AND RESETTLEMENT POLICY FRAMEWORK

Output-Based Aid pilot in the Sanitation Sector

1. Land acquisition and/or involuntary resettlement are not anticipated to take place as part of the implementation of the OBA pilot. However, in case it is unavoidable, such land acquisition and /or involuntary resettlement should be carefully managed in order to minimize potential adverse social impacts it may generate. Although project areas have been identified during pilot preparation, the exact location of project interventions will depend on demand expressed by households and are therefore not precisely known beforehand. The National Water Supply and Drainage Board (NWSDB) has prepared this Framework for Land Acquisition and Involuntary Resettlement, consistent with the requirements of the Sri Lankan Governmental policies, in particular the *National Involuntary Resettlement Policy (NIRP)* and the *Land Acquisition Act of 1950 (LAA)* and with World Bank OP/BP 4.12. In the event that land acquisition is unavoidable, the land acquisition process, consultation and compensation procedures and principles will take place per the provisions of the present Land Acquisition and Resettlement Policy Framework.

RSAP's Resettlement Policy Objectives

2. *The objectives, principles and guidelines for land acquisition and resettlement proposed in this framework are primarily aimed at avoiding or minimizing, to the extent possible, the hardships and impoverishment that land acquisition and displacement may cause, and mitigating any adverse impacts thereof at the household and community levels. All decisions regarding design of construction works will be made, to the extent feasible, to facilitate achievement of these objectives. These objectives are detailed and made more specific in the principles and guidelines proposed for land acquisition, adoption of compensation/entitlement policies and standards, and planning and implementation of the land acquisition and resettlement activities.*

Applicability and Scope

3. In keeping with the above objectives, the proposed principles and guidelines will apply to:

All project components which will involve land acquisition from private ownerships and/or displace people from public lands which they may have been using for commercial, residential or other purposes with or without formal authorization.

4. As to planning instruments, two options will be considered:

- *The resettlement policy framework, as proposed here, will be used to prepare and implement separate Resettlement Action Plans (RAPs) for each of the pre-identified project area (as listed in Annex X), where land acquisition affects 200 or more persons.*
- *Where land acquisition from private ownerships needs to take place affects less than 200 persons per pre-identified pilot area, instead of a RAP, and a Abbreviated Resettlement framework will be followed (attachment 2i) and the information will be documented:*

- An account of land acquisition requirements and the number of affected landowners, including members of their households;
 - The minutes or records of consultations where agreements on compensation were reached; and
 - Records of compensation receipt by the affected landowners.
- *In pilot area where there no land acquisition from private ownerships is necessary, no particular action needs to be taken with respect to this Land Acquisition Framework.*

The number of project affected persons (PAPs) will be determined by taking into account all landowners and their household members affected within a pre-identified pilot area.

Resettlement in the Sri Lankan Legal Framework

6. Lands in Sri Lanka are acquired by using the *Land Acquisition Act (LAA) of 1950*, which provides for financial compensation at current market prices. It also has some provisions to compensate for income loss from certain types of affected economic activities, and displacement from homesteads. The principal enactment no. 9 of 1950 has been amended on several occasions (most recently in 1986) to accommodate the needs of the State and to some extent to safeguard the rights of the public. While some of these provisions may seem quite akin to those expected in the Bank's OP 4.12, the act does not provide for resettlement as required by the Bank's principles and guidelines. The act recognizes only those who have legal titles or other legal bases to the acquired properties, but not those who may have been let use the public lands for residential, commercial and other purposes. To highlight the major shortfalls which require additional mechanisms to satisfy the Bank's policy:

Avoiding/Minimizing Land Acquisition: The 1956 LAA has no clear guidelines about it. The only limiting factor might be the costs which may discourage acquisition more than necessary.

Eligibility for Compensation: As the provisions for inquiry into the affected persons' interests and compensations claim indicate, the act seems to recognize the rights of the titleholders and others who have some form of legal basis to the interest claims. But, contrary to the Bank requirement, the act does not have any provisions for those who do not have legal titles to the lands they live on or make a living from.

Relocation of Homestead Losers: Stipulates "reasonable expenses" to effect any change of residence caused by the acquisition. But the act does not provide for relocation lands and other facilities.

Socioeconomic Rehabilitation: No provisions are there to mitigate long-term socioeconomic changes the affected persons and households might undergo in the post-acquisition period.

Ensuring Payment/Receipt of the Compensation: The act provides for taking possession of the lands by the acquiring officers "at any time after an award [compensation] is

made under Section 17 (Section 38)⁷. But it is not clear whether the affected persons would actually have to *receive* the awards.

Deduction Due to Market Price Appreciation: On the other hand, the act provides for 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 deductions may amount to 20% of the market value of the acquired portion. While the act does not consider price appreciation for unaffected plots, it also does not consider the fact that unless the remaining portion of the plot is sold the appreciated value could not be realized.

7. The act stipulates market prices of the affected lands prevailing at issuance of the Notice under Section 7. And it is the responsibility of the affected landowners to prepare the compensation claims based on market prices. The acquiring officers are required to inquire into these claims and determine whether to accept them as they are, or to get them investigated independently by the Department of Valuation. As to claim preparation, there seems to be a presumption that the property owners are all well-conversant with the acquisition act and are able to prepare the claims. It is also assumed that there are sufficient transactions in the local land markets and the affected landowners are well-aware of them, so that the claims would not be arbitrary. The act is also not clear about what standards are used for inquiry into the claims by the acquiring authority, before it asks for the Valuation Department's assistance⁸. Of all the issues faced in the on-going STDP, the market price determination is said to be the most difficult task, and could as well be highly time-consuming.

8. Procedurally, the acquisition act 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 may seem too long for implementing time-bound land-based development projects. Experience of previous projects has shown that performing all the process tasks leading to possession takeover of lands can take more than 54 weeks. This takes into account the time legally allowed to the interested persons to lodge objections, prepare compensation claims, etc., as well as the minimum time taken by the Ministry of Land, acquiring officers, survey department, valuation officers, government printing press, etc., where the act stipulates no limits on time. Resolution of the court cases, where the appeals could go up to the Supreme Court and Board of Review, could take any length of time.

9. Land acquisition and/or involuntary resettlement are not anticipated to take place at this stage as part of the OBA pilot. However, in case it is unavoidable, such land acquisition and /or involuntary resettlement ought to be carefully managed in order to understand and minimize potential adverse social impacts it may generate. Also, since the exact location of project

⁷ But the Minister of Land can order to take possession of any land on the ground of any urgency, at any time after Notice under Section 2 or after the Notice under Section 4 is displayed on or near the land.

⁸ In cases of controversial claims, an acquiring officer (Divisional Secretary) can call upon the Valuation Department of the government to assess the market price. The market price so decided is however not the final. As the act provides for, a dissatisfied claimant has the right to litigation. Starting in the District Court, the claimant can go up to the Supreme Court. If still dissatisfied, the person can appeal to the Board of Review.

interventions are not all known beforehand and depend on demand expressed by households, the GOSL has prepared this Framework for Land Acquisition and Involuntary Resettlement, consistent with the requirements of the NIRP and OP/BP 4.12. In the event that land acquisition is unavoidable, the land acquisition process, consultation and compensation procedures and principles will be as per Sri Lankan Governmental policies and compliant with OP 4.12.

OP 4.12 Land Acquisition and Involuntary Resettlement

Guidelines for Land Acquisition under the OBA pilot

10. Where public lands are not available for infrastructure development, it might become necessary to acquire land and properties which belong to the private owners. In such circumstances resettlement of the owners and their homesteads can bring about negative impacts and issues. Some of the issues which need to be addressed are highlighted below in order to fall in line with the Bank's policy:

11. 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. But the act is not sufficiently clear about how they affect possession takeover⁹.

12. The procedure involved in Land Acquisition under the Land Acquisition Act is outlined in the table below:

⁹ It is reported that some court cases have caused stoppage of the civil works under previous project.

Activity	Responsibility	Minimum period for task (weeks)
1	Request sent to the approval of the Line Ministry & after that sent to the Land Ministry under the Section 2(1) of the Act	Project agency executing 6
2	Approval granted by the Minister and sent to DS to publish	Minister of Land 6
3	Preparation of a perimeter survey plan	Survey Department 4
4	Publication of notice under Section 4	Ministry Lands 6
5	Inquiry under Section 4, if any objections are brought to the Minister's notice. Notice issued giving date of inquiry (after giving sufficient time). Followed by the inquiry and submission of the report to the ministry of lands.	Acquiring officer 9
6	The Minister's decision to acquire the land to be published in the Government Gazette.	Minister of Lands 5
7	Preparation of the preliminary plan under the section 6	Survey Dept. 6
8	Publication of the notice that an inquiry will be held under section 7(1) and those interested to appear before the inquiring officer for an inquiry	Acquiring officer 6
9	Under the section 8, any person interested in respect of the land can deliver to the acquiring officer the names and addresses of the interested parties and nature of interest in the land and all other details as rent, profit etc.	affected persons
10	Inquiry under Section 9 by acquiring officer to ascertain the market value, compensation claims of the parties and interests. Valuation department to be requested to estimate the amount of compensation to be paid.	Acquiring officer 8

11	Decision of inquiry (under Section 10 - 1) of persons' right to the lands. If claimant is not satisfied with the decision, the Acquiring Officer can make a reference to district court/primary court and defer the decision until the court order is made.	District court/ Primary court	Indefinite
12	The result of the inquiry under Section 9 and decision under Section 10 which is the final determination makes his award under 17- giving details of (1) Persons entitled to compensation (2) Nature of interests (3) Amount of compensation (4) Appointment of such compensation	Acquiring Officer	5
13	If the parties disagree they can appeal to the Board of Review	APs/Board of review	Indefinite
14	Payment of compensation	Acquiring officer	4
15	A notice under Section 38A is gazetted (if the land is not taken over earlier). This is a vesting order.	Minister	6
16	Taking possession of the land	Acquiring officer	3
17	Registration of the land and state title in the land registry	Ministry of lands	3
	Estimated total number of weeks		77*

*These are minimum time period, in most of the cases it will take more time to complete this process.

13. Some of the shortfalls and the 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 recommended to complement 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 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 North East Local Services Improvement Project makes use of the country's existing LAA, the NIRP and the Bank's OP 4.12.

Land Acquisition Principles

In keeping with the resettlement objectives and to avoid or minimize potential disruptions to the peoples' livelihood, land acquisition will be guided by the following principles.

- Alternative designs will be carefully considered to avoid or minimize land acquisition in general, and particular attention will be paid to using minimum of private lands, and as much of public lands as possible.
- Sub-projects will be designed to avoid or minimize acquisition of buildings/ structures that house business/commercial activities. Partial dismantling of business premises in small townships and other places will be done in consultation with the owners and in ways that would not threaten the structural stability of the remainder.
- Where acquisitions make residuals of housing, commercial or agricultural plots economically or otherwise unviable, the landowners will be given the option to offer the entire plots for acquisition.
- In all times possibility will be sought to find land from crown land and department of land will be consulted in all matters related to land acquisition.
- Alternative designs will be considered not to affect objects and sites like places of worship, cemeteries, and buildings/structures that are considered socially and religiously important.

Voluntary donation of land: In case of voluntary land donation, the Project will ensure the following:

- that the land is free of any structures or assets;
- so small an area that its donation does not negatively impact the livelihood of the owner;
- the voluntary nature of donation is fully and independently verified;
- that the land is unencumbered, of squatters and conflicting claims;
- that community based mitigation measures are acceptable;
- that a grievance redressal system is in place;
- that the person(s) give up all claim to the donated land and that the land is transferred in the name of the Government /Department.

Impact Mitigation Principles

The mitigation principles and guidelines proposed below are based on the provisions adopted in the *National Involuntary Resettlement Policy* of Sri Lanka, and the Bank's OP 4.12 on Involuntary Resettlement.

- Where displacement is unavoidable, resettlement of the PAPs 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 PAPs 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 users¹⁰.
- Vulnerability of the PAPs, 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.
- The project executing agency will bear the costs of land acquisition and resettlement.

Impact Mitigation Modalities

Where the most preferred “land-for-land” option is not feasible¹¹, the compensation for lands will be fixed at their replacement value, and for other affected properties at replacement costs or market prices. The following types of compensation/entitlement will be paid for losses expected to be caused by the project.

- Compensation for the acquired lands legally owned, or on which the current users are regularized or qualified to prescriptive right (by use of public lands for at least 10 years), which include residential plots, agricultural and other lands, will be paid at ‘replacement costs’ to be determined by the Land Resettlement Committees (LRCs) headed by the Divisional Secretaries.
- 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 for 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.

¹⁰ 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.

¹¹ Offer and acceptance of this option will consider factors like soil quality and productivity and distance from the affected landowners’ present places of residence. If such lands are situated too far away it may not be feasible for them, especially the self-cultivators, to use the lands profitably.

[PS/LRCs 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.
- 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.
- Owners of the affected businesses will be compensated for temporary loss of income based on net income for a reasonable period of time, or a one-time lump sum grant.
- Where rented businesses premises are affected, the business owners will be paid an 'advance rent' for a reasonable period of time, as determined by LRCs.'
- Employees of the affected businesses, who have been continuously employed for a certain period of time up to the cut-off dates, will be compensated for temporary loss of income for a reasonable period of time.
- Loss of rental income from rented-out business and residential premises situated on private lands will be compensated for a reasonable period of time, as determined by LRCs. [Rental income loss from unauthorized premises situated on public lands will be ineligible for compensation.]
- 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 PAPs will be paid in full before they are evicted from the acquired private and public lands.

Impacts and Impactees 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 remains open to revision as the specific projects are selected and social risks screening and assessment are carried out. Any unforeseen impacts, as and when encountered, will be taken into account along with appropriate measures to mitigate them.

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.
5. Temporary displacement of mobile vendors and other vulnerable encroachers: The project will ensure that their livelihood is not affected by helping to relocate them during construction phase

Built Structures:

6. *Houses and Other Structures on Private Lands:* All built structures, such as living quarters and those used for other purposes, commercial and industrial premises, and brick-concrete built amenities like drainage, sanitation facilities.
7. *Houses and Other Structures on Lands Under Prescriptive Rights:* All built structures, such as living quarters and those used for other purposes, such as commercial and industrial premises.
8. *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 by LRCs.

9. *Seasonal Crops:* Compensation of such crops will be paid for only one season.
10. *Perennial Crops:* For a reasonable period of time based on the year's value of the crops grown on the acquired lands, as determined by LRCs.

Rental Income: Loss of rental income from houses/structures situated on private lands, for a reasonable period of time.

Rented Business premises: Businesses displaced from rented premises.

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 with the changed circumstances.

Community Facilities: Affected educational institutions and other community facilities will be rebuilt by PS. [No compensation will be paid in cash].

Common Property Resources: PS 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, PS 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 PAP censuses will be mitigated with appropriate measures.

Project Affected Persons (PAPs)

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 a PAP may be entitled to more than one form of compensation.

Private Land and Other Property Owners: Legally-recognized owners of affected lands and other assets built and grown on the acquired lands. Legal owners will be identified by the Divisional Secretaries.

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 & Encroachers): Residing on public lands and/or using such lands for income earning purposes.

Owners and Employees of Affected Businesses: For a reasonable period of time, subject to certain conditions (See *Impact Mitigation Modalities*).

Rental Income Earners: From rented-out premises situated on private lands, for a certain period of time (Certain conditions will apply– see *Impact Mitigation Modalities*).

Owners of Businesses in Rented Premises: Where businesses housed in rented premises are displaced by the acquisition.

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.

For *adverse impacts on community facilities*, such as educational institutions, places of worship, graveyards, cremation grounds, etc, no financial compensation will be paid directly to individual persons and groups. PS will itself rebuild the affected facilities, or provide alternatives in consultation with the user communities.

Compensation Payment

As the lands will be acquired by using the present acquisition act, the Divisional Secretaries will pay all mandated compensation to all affected persons recognized by LAA. PS will pay all other

compensations/entitlements that have been stipulated beyond the jurisdiction of acquisition act, to all eligible affected persons/households, such as titleholders, regularized encroachers, prescriptive right holders, and informal public land users.

NWSDB, with financial support from GOSL and implemented through eligible DS, UC and PS will pay all non land compensations/entitlements as laid out in the entitlement framework to all eligible affected persons/households. Furthermore, all compensations and assistance to PAPs must be paid in full prior to dispossession of affected assets in the project. For any land related impact (although not envisaged) compensation will be paid under the Land Acquisition Act and payments be made at market rates.

Consultation and Information Dissemination

The project executing agency, PS, 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 acquisition and recovery of possession of the lands that may have been under unauthorized private uses; 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

Discussions will especially focus on the provisions of the acquisition act, vis-à-vis the rights and responsibility of the affected property owners; 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:

Consultations: Depth of consultation and discussions will depend upon PAPs' present knowledge of the acquisition act and the necessity and interest to learn more about it. The discussions will at least cover the following:

- A brief overview of the 1950 Land Acquisition Act, with an emphasis on the *legal notices* under the sections that directly concern the landowners, and their legal rights.
- Types of affected persons 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.

Resettlement: In addition to the objectives of the resettlement program, the following topics will be discussed in greater details:

- Land acquisition principles
- 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 grants stipulated for acquisition-induced vulnerability.

- Grievance Redress Mechanism – its function, procedure to lodge grievances, etc.
- Compensation payment process to be used by PS
- PS’s organizational structure engaged in RAP preparation and implementation.
- Any other issues/topic deemed useful to explain resettlement process.

Required documentation of these discussion meetings 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.

Grievance Redress Mechanism

The LAA allows the persons with ‘interest’ in the acquired lands to challenge the decision of the acquiring officers (Divisional Secretaries) to the courts of law, such as District Courts and Supreme Court, and finally to the Board of Review. But those who are displaced from public lands do not have a right to bring their grievances to any institutional entities. Then there could be issues and grievances which would hardly qualify as legal, but they need to be resolved somehow. As such, 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 Grievance Redress Mechanism established under the project will process land related grievances.

At the request of the World Bank, NWSDB committed to set up, before starting construction in the given project area, an independent grievance mechanism at local level to monitor, record and respond to local complaints relating to environmental and social issues and impacts related to the project. Although acquisition of private land is not foreseen to take place under the project, the NWSDB understand it as a preventive measure in case of direct or indirect loss of assets, livelihood or income due to acquisition of private land. It also sees this measure as an additional opportunity to ensure, in good faith, that it is ready to deal with any issue related to the project with utmost professionalism and concern for the beneficiaries.

The objective of the GRC is to find or resolve any issues, complaints, disagreements between beneficiaries, etc that may be identified in the SPEARs or general operations of the project.

a) The GRC will be composed of:

- The Divisional Secretary of the relevant area or its representative;
- The Grama Niladari in the specific area;
- The Project Director for the NWSDB or its representative;
- One person representing the land acquisition officers or land assessors;
- One person representing the professional group related to the subject matter;

- One person representing the following groups of people: NGOs, CBOs, or individuals who have no vested interest in the project
- b) A meeting of the GRC can be conducted only with a quorum of 4 members.
- c) An individual who has no vested interest in the project will be the convener of the GRC. The person appointed by the NWSDB as the Project Director will be the secretary to the GRC and record the minutes.
- d) The GRC will decide by simple majority.

The GRC scope:

- a) The committee will deal with zoning related grievances and make necessary recommendations to the relevant authorities to ensure resolution.
- b) The GRC will address complaints on all social and environmental issues emanating from project activities, including livelihood related problems.
- c) The GRC will analyze the livelihood issues on a case-by-case basis and point out different solutions to the problems faced by various groups.
- d) Provide resolutions in writing.

An opportunity to appeal will be offered in case people wish to contest the conclusions reached by GRC and recorded in its written resolutions.

The procedure will seek to resolve an issue quickly, amicably, and transparently out of courts in order to facilitate the land acquisition and compensation determination and payment processes, and save the PAPs from resorting to expensive and time-consuming legal actions. The decisions made by GRCs 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 GRC members are not contacted by the aggrieved PAPs or stakeholders in advance. The convener will have the authority to ensure impartiality, fairness and transparency. The GRC 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.

Attachment 2(i)

Abbreviated Resettlement Framework,

In compliance of the Bank's Operational Policy 4.12, in case of less than 200 Project Affected People (PAPs), the following abbreviated Resettlement Framework shall be followed in order to restore housing and issue economic compensation for loss of land and livelihood through a consultative and mutually agreeable process.

Principles

- all land should be surveyed and mapped and agreement reached with government on explicit eligibility cut-off date.
- where land is disputed or land ownership is not clear, the land will be surveyed and a map hereof issued to the affected families. In case of land disputes, attempts should be made to settle disputes prior to project start.
- customary and collective rights, e.g. to grazing land and commons, should be verified and documented through community-level consultations and local authorities. Customary and collective rights are also subject to compensation.
- compensation for land, housing and assets are based on principles of replacement cost and mutually agreeable solutions based on consultative approach with PAPs.
- where affected land provide income, the equivalent to the value of the crop lost will be given in compensation, based on the value of the harvests lost until the replacement crop (e.g. fruit trees) come into full production.
- if land forms basis for other income, the value of the income hereof will be subject to third party assessment
- if PAPs are squatters/informal settlers on the land, they will receive economic/material compensation to re-establish themselves elsewhere (e.g. on government land) without suffering damage to their livelihood or living standard.

Process

1. Survey of land and assets & census of Project Affected Peoples, including squatters and informal settlers:

- the surveyed land and assets should be identified, marked and photographed, and by the defined eligibility cut-off date the areas should be secured against encroachers.
- the Project Affected People should be identified and registered with full data and photographs
- a compensation package should be developed (categories of impacts and appropriate entitlements to formal and informal settlers landholders and squatters), and
- initial consultations should be conducted to identify any salient issues or concerns impacting on affected people. Gender separate consultations should be conducted in order to properly ascertain the views of the women.

2. Calculation of individual entitlements. There should be continued consultations with the affected people regarding the project, land acquisition and compensation package in order to reach mutually agreeable solution to land/asset acquisition and/or shifting of house. In case any

PAP refuses to shift, an abbreviated Resettlement Plan, compliant to OP 4.12, should be developed.

3. The compensation package and abbreviated Resettlement Plan should be submitted to the Bank for approval, using the formats included in the Safeguards Framework (Attachment 3 (ii-iv))

4. The acquisition process is only completed with the actual payment of compensation to Project Affected People and settlement of any grievances they may hold.

Appendix III

EMMP Template for use in OBA Colombo Improved Sanitation Project SPEARs

Environmental Mitigation and Monitoring Plan

Activity	Identified Environmental Impacts	Mitigation Measures	Monitoring Indicators	Monitoring and Reporting Frequency	Party(ies) Responsible
Planning and Pre-construction					
Construction					
Operation and Maintenance					

APPENDIX IV

Minutes of meetings of NWSDB and local authorities in each project area

See separate files for original scanned minutes and attendance lists

Non official English translations of the aforementioned meeting minutes

REGISTRATION OF APPLICANTS FOR THE PROJECT OF SUPPLYING DRAINAGE SYSTEMS AT A SUBSIDIZED RATE TO LOW INCOME GROUPS, UNDER WORLD BANK AID. MINUTES OF THE MEETING HELD ON 09-03-2011 AT THE KOLONNAWA PRADESHIYA SABHA AUDITORIUM

Participants:

1. Regional Secretary
 2. All Rural officers (grama sevakas) of Kolonnawa region.
 3. All Samurdhi Captains of Kolonnawa region.
 4. Project Managers. (GPOBA) National Water Supply and Drainage Board
 5. Manager (Jayawadanagama/Kolonnawa) NWSDB
 6. Officer in charge (Drainage-Kolonnawa) NWSDB
 7. Engineer (GPOBA) NWSDB
 8. Commercial Officer, National Water Supply and Drainage Board
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1. The meeting commenced at 2 pm and initially the Regional Secretary invited Mr. D.P.M. Chandana, project manager National Water Supply and Drainage Board, to educate the assembly about the project to provide sewerage services at a highly subsidized system for the low income groups under World Bank aid.
 2. The project manager explained the project and pointed out that the main requirement of the project is to introduce a system of disposing sewerage and waste water without causing any effect to the health of the public. In addition he made clear that by sending out not only sewerage but also kitchen waste water and water from bath rooms to common drains and water ways the public health is affected and the environment gets polluted, so this project also aims make sure to avoid this situation and ensure that this waste is disposed in a proper system.
 3. The project Manager also pointed out that already the sewerage services in the Kolonnawa Urban Council area is being satisfactorily provided by the NWSDB. In addition he also informed the assembly about the recipients nourished under this project. The intention of the meeting was to highlight the manner in which the recipients will be chosen for the project. Here it was pointed out that the income of the prospective recipients should not exceed Rs. 15,000/= a month and their land should be between 6-10 perches.
 4. It was then pointed out that this sewerage services will be provided under three categories. The first will be to allow the recipients living within 20 meters of the main sewerage line to get linked to

those lines directly as that would help them get this service easily. Those who live beyond 20 meters can be given the service by extending the sewerage line and they expect to provide the facility to those who live beyond 250 meters from the main line by building a Sewerage recycling system (DEWATS) to be established in the same place that would be common for a few houses. It was also mentioned here that either a piece of govt land or unused land should be available in the vicinity to build them.

5. The application for this subsidized sewerage services can be sent by post to the consumers, or along with the water bill. The project manager also pointed out that these duly filled application forms should be attested by the Grama seva officer/Samurdhi officer and sanctioned by the regional secretary.
6. At the same time the Regional Secretary advised the Grama seva officers and Samurdhi officers to identify the residents living beyond the 20 meter limit and beyond 250 meters for DEWATS systems and hand over all details about them to the administrative officer of the office within three weeks.
7. The project manager also asked the assembly whether they have any questions or doubts. Accordingly one Grama seva officer inquired as to how this service can be given to areas where these sewerage pipes have not been laid. It was then informed that the third step of this project the DEWATS system, can be activated based on the number of houses and once information in this regard is gathered, the officers of the Board will come and decide whether these can be connected to this project technically.
8. There was also a question of how to provide sewerage services to areas in the Kolonnawa electorate's 15 odd grama seva divisions that do not have it. In reply the project manager said that the distance will be decided according to the sewerage pipes already laid and extension of the line or the establishment of DEWAT systems can be done according to the number of houses applying for the facility and a technical evaluation will also have to be done in this regard.
9. When asked whether any payment will have to be made in this regard, the project manager said that since the venues has to be investigated by the grama seva officers before the applications are recommended, a suggestion was made at the meeting held at Ratmalana regional Secretariat office to pay an incentive of Rs. 25/= per inspection and this decision will be made after the issue is being discussed by the Management.
10. This meeting organized by the National Water Supply and Drainage board ended at 3.30 pm.

**MINUTES OF THE MEETING HELD AT THE JA ELA REGIONAL SECRETARIAT AUDITORIUM ON
23-03-2011**

Participants:

1. Divisional Secretary Ja Ela
 2. Asst Directress Ja Ela
 3. All Grama seva officials of the Ja Ela region
 4. Ja Ela Samurdhi officials
 5. Mr. D.P.M. Chandana. Project Director (GPOBA) NWSDB
 6. Ms. Thilini Keppetipola Engineer (GPOBA) NWSDB
 7. Ms. Kumari Mallikarachchi Commercial Officer NWSDB
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1. The meeting commenced at 10.15 am under the chairmanship of the Divisional Secretary and he welcomed the project manager and other officers of the National Water Supply and Drainage Board. He then informed the assembly that the NWSDB officials have come here to explain how sewerage services could be provided to low income families in village areas while also to show how domestic waste water in the Ja Ela divisional secretariat division could be effectively disposed. The secretary also emphasized that he expect that the grama seva officials will not just retain the knowledge they gain today at this moment within themselves, but will educate the people in their respective areas in this regard. He then invited project Manager Mr. D.P.M. Chandana to address the meeting.
 2. The project manager thanked the secretary for the invitation and mentioned that the main purpose of this meeting is to educate the grama seva officials and Samurdhi officials about provision of waste water disposal services.
 - He informed the assembly that the main reason that made it necessary to launch such a project is the serious threat to public health being caused by water in canals and water ways being contaminated by directing waste water coming out of septic tanks due to malfunction of the Soakage pit without being sucked in to the ground, to these water ways.
 - The main target of this project is low income groups. Normally construction of a proper sewerage system costs a lot of money, which these low income groups cannot afford.
 - There are five areas covered by this project. These are Ja Ela, Kolonnawa, Dehiwala/Mt. Lavinia, Ratmalana and Moratuwa.
 - Here the waste water mentioned is not only toilet water, but also water used in bath rooms and Kitchens and it has made plans to ensure that this waste water as well is systematically disposed of.
 4. It was then pointed out that this sewerage services will be provided under three categories. The first will be to allow the recipients living within 20 meters of the main sewerage line to get linked to those lines directly as that would help them get this service easily. Those who live beyond 20 meters can be given the service by extending the sewerage line and they expect to provide the facility to those who live beyond 250 meters from the main line by building a Sewerage recycling system (DEWATS) to be established in the same place that would be common for a few houses.
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5. The main purpose of the decision to meet the grama seva officials and Samurdhi officials today is to inform them about how the recipients for this project should be selected. Though initially it was decided to include only Samurdhi recipients, later on during the committee meeting of the secretary it was decided to include those who have less than Rs. 15,000/= a month income and who's land area is between 6-10 perches.
6. While clarifying the applications for this service, it was said that these applications could be sent to the recipients either by post or with the water bills after April and these should be recommended by the Grama Seva officials/Samurdhi officials and approved by the divisional secretary. It was also said that the guide lines in this regard will be supplied shortly. The World Bank has said that it would be risky to extend this facility to illegal residents.
7. Since the recommendation of applications is an additional task for the Grama seva officials, they were informed that it is scheduled to get the approval of the management to pay them an incentive of Rs. 25/= per call.
8. The Project Manager then asked whether anyone needs any more clarifications. One Grama seva official questioned as to when this project will commence and he was told that soon after the agreement is signed in April, tenders will be called by July. In the first stage service will be provided to areas where sewer lines are laid and in the second stage beneficiaries will be given the service through the extension of sewerage lines. Under the 3rd stage small recycling systems (DEWATS) are to be constructed, which however is still at the discussion table. He also informed the assembly that this project will come after the completion of other sewerage projects which are being implemented in Ja Ela.
9. He also stressed that identifying the residents beyond the 250 meter limit (DEWATS) through the grama sevaka officials is absolutely essential. The Grama sevaka officers were told to use the maps provided by the Divisional Secretary to mark these houses.
10. The assembly raised the question of how the service could be given by constructing small recycling plants (DEWATS). The Project manager explained this by showing charts and pictures of sewerage services given flats in Ratmalana area by giving them septic tanks, under the Tsunami aid program.
11. The Project manager finally ended his speech by stating that he expects the support of the Grama Sevaka officials given on the realization that this is a service given to people in the area not only as one of their requirements, but also as a requirement of the whole society. He also used the opportunity to thank the Asst Director for creating the background for this opportunity to create the necessary awareness about the project and the Divisional Secretary for chairing the event meaningfully, while also thanking all grama seva officials and Samurdhi officials who took part in the meeting.
12. "In the near future all urban areas will need such sewerage services and though it may not be a novel thing in the future it will remain a very important social responsibility. So please pay full attention to the application form and make sure that correct information is given and deserving recipients are selected before sending the data to the NWSDB" said the Divisional secretary while concluding the meeting at 11.30 am.

**REGISTRATION OF APPLICANTS FOR THE PROJECT OF SUPPLYING DRAINAGE SYSTEMS AT A
SUBSIDIZED RATE TO LOW INCOME GROUPS, UNDER WORLD BANK AID. MINUTES OF THE MEETING
HELD ON 23-02-2011 AT THE DEHIWALA PRADESHIYA SABHA AUDITORIUM**

Participants:

1. The Divisional Secretary
 2. Asst Divisional Secretary
 3. All Grama Seva officers of the Dehiwala Region
 4. Project Manager (GPOBA) National Water Supply and Drainage Board.
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1. The meeting commenced at 1 pm and project manager of National Water Supply and Drainage Board Mr. D.P.M. Chandana was invited to address the assembly.
 2. The Project manager made an introduction about the project to the assembly and sought views and opinions about it. Accordingly the Grama seva officials forwarded their views and ideas about it.
 3. He also informed the Grama seva officials that applications should be obtained from residents making Rs. 15,000/= a month as income and their land should be less than 10 perches, to select the beneficiaries for this project. He also added that since the total number of beneficiaries is limited, the recipients will be selected starting from the smallest land owners upwards and for this purpose the recommendation of Grama Seva officers and the approval of the Divisional secretary is essential.
 4. Since it was decided that identifying low income groups is not an easy task, the Grama sevaka officials were given that responsibility.
 5. The application prepared by the NWSDB was scrutinized then and at this juncture the Divisional secretary pointed out that the application should include the information whether the prospective beneficiary is a Samurdhi recipient or not.
 6. The Project manager then asked whether these applications could be distributed through the grama seva officials. The officers requested the project manager to have these applications distributed with the water bills. They also agreed to get the Grama Sevaka officers recommend the land extent and income of prospective recipients and then have it approved by the Divisional secretary.
 7. The Grama sevaka officer of Kalubowila Saranakara Road asked the project manager whether it is possible to provide this sewerage services to the 150-200 cluster homes in the area. The project manager informed him that he should provide the necessary addresses and information in this regard and afterwards the project officials will come there and do the necessary.
 8. An officer inquired whether holy places can also be given these sewerage facilities under the low income category and the project manager said that it can be done.
 9. The Grama Seva officials and the Divisional secretary agreed to send all information to the NWSDB about residents who are in need of sewer extensions and DEWATS systems for cluster homes, within two weeks.
 10. This meeting organized by the NWSDB wound up at 2 pm.
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**REGISTRATION OF APPLICANTS FOR THE PROJECT OF SUPPLYING DRAINAGE SYSTEMS AT A
SUBSIDIZED RATE TO LOW INCOME GROUPS, UNDER WORLD BANK AID. MINUTES OF THE MEETING
HELD ON 28-02-2011 AT THE RATMALANA PRADESHIYA SABHA AUDITORIUM**

Participants:

1. The Administrative officer of Grama seva officers
 2. All Grama seva officials of Ratmalana region.
 3. All Samurdhi officials of the Ratmalana region.
 4. The Project Manager, (GPOBA) National Water Supply and Drainage Board
 5. Miss. Thilini Keppetipola – Engineer, (GPOBA) NWSDB
 6. Mrs. Kumari Mallikarachchi – Commercial officer NWSDB
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1. Since the Divisional secretary of Ratmalana had to attend another meeting, the assembly was chaired by Administrative officer of Grama Seva officers. The meeting began at 2 pm and the chairman invited project manager of the NWSDB Mr. D.P.M. Chandana to address it.
 2. The Project manager introduced the project and explained its goals and intentions and also educated the assembly of how aid is being given for this project through the intervention of the World Bank and the govt of Sri Lanka.
 3. He also informed the Grama seva officials that applications should be obtained from residents making Rs. 15,000/= a month as income and their land should be less than 10 perches, to select the beneficiaries for this project. He also added that since the total number of beneficiaries is limited, the recipients will be selected starting from the smallest land owners upwards and for this purpose the recommendation of Grama Seva officers and the approval of the Divisional secretary is essential.
 4. After the initial introductory speech of the project manager, he asked whether there are any short comings in the application form. At this juncture the Grama Seva officers requested to include a question as to whether the recipient is an illegal resident and another category as “Other Problems” to which the project manager agreed.
 5. After these applications are distributed by the NWSDB it was agreed that the land extent of the beneficiary and his income status will be verified and recommended by the Grama sevakas and then approved by the Divisional secretary.
 6. A request made to provide all information on residents who are in need of sewer extensions and to provide necessary facilities to cluster houses (DEWATS) within the month of March.
 7. Since the Grama seva officers have to inspect the residences of prospective applicants before recommending the application, it was asked whether these officials would be paid an incentive. At this juncture the Grama Seva Administrative officer proposed to pay Rs. 25/= per call. The Project Manager stated that he would take up this proposition with the project management to decide whether this can be accommodated or not and then inform their decision.
 8. This meeting presented by the NWSDB ended at 3 pm.
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**Minutes of the meeting held on March 22, 2011 at the Divisional Secretariat office of
Moratuwa**

Present:

Divisional Secretary – Moratuwa
All grama Sewa Officers in the Moratuwa area
Samurdhi officials
D P M Chandana – Project Manager
Thilini Keppetipola – GPOBA Engineer
Kumari Mallikarachchi – Commercial Officer

1. The meeting began by the DS welcoming those present and welcomed those from the housing development Authority, the Medical Health officer and those from the GPOBA Office.
2. Mr. Chandana thanking the DS for her welcome said that a working committee decision taken at the level of the secretary to provide sewerage facilities under concessionary terms through WB aid.
3. Also at present deposits from houses (toilets, bathrooms and kitchens) are channeled through a drainage system in front of the residence or canals nearby, and this has more or less become a habit of the people. This has both an adverse effect on the health and environment. Therefore the objective of this program is to provide appropriate methods of disposing the waste and enhancing the health of the people.
4. The focus group here is the low income earners and the objective would be to provide them with sanitation facilities at concessionary terms. This would be done in three (3) ways. 1) Those living within 20 meters of the main sewerage line will be provided access without any restrictions. 2) For those beyond 20 meters, the sewerage line will be extended. 3) Those beyond 250 meters of the main sewerage line, will be provided with newly constructed sewerage facilities (DEWATS). Government land or infertile land will be selected for this purpose.
5. Applications for such requests can be obtained either with the consumer's water bill or be sent by post. These applications will need to be attested by the GSO/SO and recommended by the DS. While these recommendations made by the GSO/SOs are important in order that the benefits be identified and highlighted.
6. The world bank has requested that the beneficiaries be Samurdhi beneficiaries but since this is not a viable option, it has been decided that those with an income of not more than LKR 15,000/- and/or owners of 6-10 perches of land be the beneficiaries of this project.
7. A GSO requested that concessionary terms be further elaborated on. The project Manager said that while the task of providing water was an easy thing to do, providing sewerage facilities cannot be expected. Providing sewerage facilities from a house to the main line can be a costly

therefore manholes will be needed leading to the main line. Since low income people cannot afford such costs, under this particular scheme beneficiaries will only be asked to pay LKR 3500/- in order to obtain this facility.

8. Another official queried as to if GoSL officials could benefit through this project and in response was told that those with an income of not more than LKR 15,000/- and/or owners of 6-10 perches of land be the beneficiaries of this project.
9. It was raised as to absence of sewerage facilities in the Indibedda and Kaldemulla areas. In response it was stated that phase 2 of the Ratmalana/ Moratuwa would be carried following the release of funds for same.
10. It was also inquired if the Tsunami housing scheme in Egoda Uyana had been provided with sewerage facilities. It was said that officials were still investigating possibilities of providing these facilities.
11. Applications can be obtained either with the consumer's water bill or be sent by post and applicants will need to have a water connection through the water board.
12. The main purpose of this meeting is to identify the beneficiaries, those with an income of not more than LKR 15,000/- and/or owners of 6-10 perches of land will have to get their applications attested by the GSO/SO and recommended by the DS.
13. It was queried if there was a charge for the processing of these applications and in response it was said that at the meeting held in Ratmalana it was decided to charge LKR 25/- per applicant as processing fee but that this was yet to be finalized.
14. It was also queried if the approximately 50 families/low income earners in the Telawela area would also benefit from this project. Responding it was stated that if these families were within the 250 meter range this facility could be extended to them but those living beyond the 250 meter range will have to get technical evaluations (DEWATS) before committing.
15. Someone inquired how those who are not low income earners could obtain this facility. They were informed that these facilities can be obtained after paying the relevant fees decided by the board.
16. They wanted written instructions given in the application in order to classify low income earners. The project manager informed that after the agreement is signed with the World Bank, these written instructions will be made available.
17. The DS informed the assembly if they had any more questions to make them known. Since there were none they dispersed.

APPENDIX V

General Environmental Risk and Benefit Assessment Matrix for OBA Colombo Improved Sanitation Project

KEY: Potential Benefits: Δ = High; Δ = Moderate; Δ = Low
 Potential Risks: \times = High; \times = Medium; \times = Low

<div style="text-align: center;"> </div>		PHYSICAL ENVIRONMENT									BIOLOGICAL ENVIRONMENT									SOCIAL ENVIRONMENT										
		Agricultural Land	Soil Erosion	Slope Stability	Energy/Mineral Resources	Surface Water Quantity	Surface Water Quality	Ground Water Quantity	Ground Water Quality	Air Quality	Noise	Aquatic Ecosystems	Wetland Ecosystems	Terrestrial Ecosystems	Endangered Species	Migratory Species	Beneficial Plants	Beneficial Animals	Pest Plants	Pest Animals	Disease Vectors	Public Health	Resource/Land Use	Distribution Systems	Employment	At Risk Population	Migrant Population	Community Stability	Cultural/Religious Values	Tourism/Recreation
Overall Proposed OBA Sanitation Project (net risk/benefit)						Δ		Δ	\times	\times	Δ	Δ							Δ	Δ	Δ	Δ		Δ	Δ		Δ		Δ	Δ
PLANNING & DESIGN	Site selection & project definition																										\times			
	Communications campaign																										Δ			
	Approvals and permitting																										\times			
	Completing design plans																										Δ			
	EMMP preparation																													

