Republic of Liberia

Ministry of Public Works

Liberia Urban Resilience Project

ID No.: P169718

Draft Environmental and Social Management Plan (ESMP) for the Supply, Delivery and Installation of Pipes, Fittings and Appurtenances for Connection of 2,500 Households to the LWSC Water Distribution Network in Greater Monrovia

A Quick Win Emergency Water Supply Intervention

May 2025

Contents

Abbreviation

EPA	Environmental Protection Agency
ESMP	Environmental and Social Management Plan
GBV	Gender Based Violence
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
HSE	Health Safety and Environment
LURP	Liberia Urban Resilient Project
LUWSP	Liberia Urban Water Supply Project
LWSC	Liberia Water and Sewer Corporation
MPW	Ministry of Public Works
MSDS	Material Safety Data Sheet
NWASHC	National Water & Sanitation Hygiene Commission
PPE	Personal Protective Equipment
QIIP	Quick Impact Intervention Project
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
TBD	To Be Determined
WASH	Water, Sanitation and Hygiene

Executive Summary

Background

This Environmental and Social Management Plan (ESMP) is prepared by the Liberia Urban Resilience Project (LURP) to support the Emergency Water Supply Intervention to connect 2500 households in four selected communities in Montserrado County, namely Paynesville City, Omega Area, Bushrod Island and Central Monrovia under the Liberia Urban Water Supply Project at the Liberia Water & Sewer Corporation (LWSC). The intervention is managed and will be implemented by the PMU of the LURP with funding from the World Bank. The primary objective of this ESMP is to ensure compliance of the proposed intervention with the World Bank Environmental and Social Framework (ESF) and Government of Liberia's Environmental and Social Protection and Management Law (EPML) of the Environmental Protection Agency (EPA) including the EPA 2022 Revised ESIA Procedural Guidelines by serving as an instrument for identifying, evaluating, managing, and mitigating the potential environmental and social risks and impacts associated with the proposed intervention.

Description of Project Location

The water supply emergency project will be implemented in Central Monrovia, Southern Paynesville, Bushrod Island, and Omega Community. These communities are parts of the Greater Monrovia Region and share diverse economic and livelihood challenges in light of poor sanitation, improper waste disposal, and inadequate infrastructure and services. Access to safe drinking water in these communities relies on locally produced and packaged mineral water supplied by vendors. Project communities face significant economic disparity due to poor sanitation, improper disposal of domestic waste, inadequate infrastructure and services, water pollution, leading to waterborne diseases such as typhoid, diarrhea, dysentery etc. The livelihood of residents is heavily impacted by these conditions, with many relying on locally produced mineral water for safe drinking water.

Description of the Proposed Intervention Works

The water supply project is designed to provide safe drinking water to 2,500 households in these communities through the installation of 15,560 meters of 4" uPVC pipes and 25,015 meters of 2" uPVC pipes as well as bulk meters, fire hydrants, including valves and other water supply appurtenances. The connection of about 2,500 households will be carried out along the corridor of the Right of Way and Alleys within the project locations which are governed by the Liberia Land Rights Act 2018. This ESMP is prepared based on the environmental and social conditions in the project area including the engineering designs. After final clearance, the ESMP will be disclosed by the PMU and the WB external website before a Contractor mobilizes and carryout civil works. The project activities will be rolled out in phases, commencing with the recruitment and mobilization of contractors and a supervision consultant. The construction phase involves the installation and civil works (i.e., clearing of site, trenching, installation of pipes, meters, valves and backfilling of trenches to

preexisting status).

Operation and maintenance of the water supply system will ensure the proper installation and technical testing to detect and correct leaks and ensure that the system functions currently. The last phase is the decommissioning, which involves campsite demobilization and rehabilitation where necessary to ensure public health and safety.

Policy, Institutional & Regulatory Framework

This ESMP is prepared in accordance with the World Bank's Environmental and Social Framework (ESF) and the relevant Standards, the Liberian policies and laws governing water supply and installation, environmental and social management to communities and supports the effectiveness of safeguarding the implementation of projects involving government, Consultants and Contractors.

Environmental and Social Baseline Conditions

Environmental and Social Baseline data collection was conducted on the project area including the environmentally sensitive features and livelihood indicators along the project corridors. Below in Table 1 are the E&S baseline conditions.

Table 1: Environmental and Social Baseline Conditions

Project Location	Environmental Conditions	Socio-economic Conditions
Omega Community (Omega Market & Morris Farm communities)	The area is frequently flooded due to poor drainage network and unplanned settlement. Waste generated from the commercial activities is not adequately manage and tends to be disposed into waterways and drainages.	The area hosts the biggest commercial center within Greater Monrovia. Access to safe drinking water is limited to private wells.
Bushrod Island	Bushrod Island is characterized by its relatively flat terrain. The island is surrounded by the Atlantic Ocean, the Saint Paul River. the Mesurado River, and Stockton Creek. This geographical setting has a mix of mangrove swamps and developed lands. The area is prone to flooding and surface runoff during most time of the year thus impacting the quality of ground water.	The island is home to many manufacturing and commercial activities. Despites the economic viability of the area, many households lack access to proper sanitation, hygiene and safe drinking water.
Central Monrovia	Central Monrovia is characterized by a diverse topography that includes coastal plains, rolling hills, and river valleys. The terrain includes low-lying coastal plains that are prone to flooding during heavy rains and high tides. The elevation in central Monrovia ranges from sea level along the coast to higher elevations of up to 73 meters (240 feet) in the hilly areas.	Monrovia hosts the seat of the Government of the Republic of Liberia. It is a cosmopolitan city where multiple socio-economic activities are interconnected. Monrovia is also the commercial capital of Liberia and essentially the educational, residential, and diplomatic hub of Liberia.
Paynesville City	Paynesville city is regarded as the largest and most populated city in Montserrado County. The city is a built environment with	The high population rate of the city leads to an increase in socio-economic activities. Thus, increase

	low biodiversity population of high conservation value. Shara Community in Duport Road (Paynesville City) is a low-lying land surrounded by swamps and the Du River. It is also a built environment with commercial centers and other livelihood facilities. GSA Road community is characterized by a mixture of rolling hills and steep slopes	wastes generation and poor environmental condition. The need for proper sanitation and provision of safe drinking water is very high in the city of Paynesville.

Environmental and social risks and impacts and mitigation measures

The potential adverse environmental and social risks and impacts (including health and safety issues) associated with the proposed Water Supply Emergency Intervention Project were assessed and impact significance determined. The identified potential adverse impacts are identified with the project across the phases. The summarized key potential risks and impact identified are presented below in Table 2.

Table 2: Identified Potential Adverse Environmental and Social Risks and Impacts & mitigation measures

Project Activity	Potential Environmental Risks and Impacts	Mitigation Measures
Site Preparation and Clearing	Deterioration of local air quality due to the release of fugitive dust from land clearing activities.	Regularly water /spray surfaces to control dust emissions Suspend activities during extreme rainfall events Ensure to Provide drainage channels and silt traps for all parts of the topsoil storage areas Ensure to grade or restore disturbed surfaces of existing roads Install sediment and erosion controls
Construction (Earthworks, Excavation, trenching, pipes installation and backfilling)	Risk of soil erosion during construction, handling, storage, and transportation of construction materials	Suspend activities during extreme rainfall events. Provide drainage channels and silt traps for all parts of the topsoil storage areas. Install sediment and erosion controls.
	Surface water contamination during construction, and through improper handling, storage, and transportation of construction materials and as a result of sediment/pollutants run off from spoils and exposed soil surfaces.	Install sediment, leakage, and erosion control measures; Cover open stockpiles of construction materials on site with tarpaulins during rainstorm events; Compact earthworks as soon as the final surfaces are formed to prevent erosion; Avoid dumping of construction waste illegally on land and into water bodies.
	Risk of surface runoff from busted pipes draining into the nearby community during and after the trenching activities	Inspect and determine pressure valves for disconnection where necessary to avoid runoff draining into communities.
	Generation of construction waste excavated materials in	Waste materials should not be left in close proximity to the trenches but immediately

Project Activity	Potential Environmental Risks and Impacts	Mitigation Measures
	the communities living alongside the trenches	disposed at the Whein Town Landfill after excavation, to reduce odor intensity for surrounding inhabitants.
	Risk of air pollution during construction, and through improper handling, storage, and transportation of construction materials	Ensure that persons working in areas prone to dust are provided PPE; Ensure adequate maintenance and repair of equipment & machinery; Ensure that vehicles and machines are switched off when not in use; Maintain minimum traffic speed on-site and on access roads.
	Risk of Noise from equipment application and movement	Selection of equipment with low sound power level; Well-maintained equipment should be operated on-site
	Soil erosion from exposed soil surfaces during excavation	Ensure to Provide drainage channels and silt traps for all parts of the topsoil storage areas Ensure to grade or restore disturbed surfaces of existing roads Install sediment and erosion controls
	Risk of damage to public utility cables and pipes (water, telecommunication, electrical) and subsequent disruption of services due to excavation activities.	In case where public utilities are encountered during works, the Contractor shall notify the Client and the relevant Institution. Excavation activities will be carried out manually throughout which will therefore minimize risks of damage to public utilities.
	Potential Social Risks and Impacts	
Planning/ Preparation	Potential exclusion of households from access to the water connection due to lack of access ways	Engagement to identify households with potential restrictions due to lack of access ways and dissemination of criteria for access to the project for the provision of water
Mobilization	Risk of community members not cooperating with the Project due to hiring of majority of laborers from outside the affected community	The PMU shall include clause(s) in the contract which will require contractors to utilize as much as possible the available labor within the affected communities.
	Risk of gender-based violence (GBV), sexual exploitation and abuse (SEA), and sexual harassment (SH) occurring at different levels	The Contractor shall hire a GBV/Gender Specialist who will monitor and ensure compliance to the Project's GBV Action Plan. The Specialist shall ensure that all workers sign the Code of conduct document.
Construction (Excavation pipes installation and backfilling)	Risks to occupational health and safety	Provision of PPE, first aid kit and service, barricade sensitive or dangerous work areas/equipment to avoid workers or community exposure to danger and harm. The contractor shall recruit an occupational health and safety officer to manage, document and report all health and safety issues (incidents and accidents) on site.
	Temporary livelihood disruption (sales and income of traders within markets on site)	Engagement with PAPs to agree on mitigation measures by finding temporary alternative routes for travelers and alternative sites for traders. Work on weekends and night shift as concurrent measure case by case

Project Activity	Potential Environmental Risks and Impacts	Mitigation Measures
	Risk of traffic congestion in work zones	As part of the CESMP, the Contractor shall prepare a robust traffic management plan and hire a trained Traffic management Supervisor to ensure compliance with the TMP
	Risk of violation of workers' rights, including various forms of discrimination	Workers and contractors shall make use of the Labor Management Procedures including the Code of Conduct and the Project's Grievance Mechanism to seek redress to their grievances.
	Risk of ignoring stakeholders and their engagement regarding project implementation	Ensure that consultations with stakeholders are planned and carried out throughout the project period
Activities carried out at Critical Locations	Risk associated with restrictions of access to homes, schools and businesses due to project activities.	Implement adequate traffic management measures to regulate traffic flow.
		Prioritize working during weekends
		Notify key stakeholders within the corridor at least 48 hours prior to commencement of works
Health and Safety Concerns of Project Communities and the general Public	Exposure of the community and the Public to the risks of opened excavated trenches, movement of equipment, prolonged safety risk due to delay in execution of works, contaminated water, and contact of contagious diseases/infections (STIs) from Workers	Adequate protection and signaling of work sites in particular during the night, with clear marking of the safety borders on the works perimeter. • Prohibition of access to work sites by any person having no work permit in particular where it concerns areas marked as restricted. The latter should include at least places occupied by operation mechanical and electrical equipment • Civil work should be minimized at night except where necessary and clear signs should be placed around and along site of operation to avoid accidents. • Barricades and road diversions should be installed boldly and clearly. Warnings can be installed around and along project implementation sites to ward off visually impaired members of the public. • Comply with timelines and schedules of works to avoid delays. • Avoid leakages during pressure testing, backfilling and ensure proper waste management and sanitation on site. • Comply with the Project's GBV action plan.

Stakeholder engagement

Stakeholder engagement is a key component of the project implementation, and it is consistent with the World Bank's Environmental and Social Standards (ESS10). The stakeholder engagement is designed to establish an effective platform for productive interactions with potentially affected parties, create a sense of community ownership of the project, and address concerns and issues from communities regarding the project implementation as presented in table 3.

Table 3: Summary of Stakeholder Concerns and Responses from Project Affected Communities and PMU Staff Respectively

Nature of Concerns	Details Description of Concerns/Recommendations	Responses Provided
Potential displacement	Does the project intend to install new connections or to rehabilitate existing water supply lines? Many of the participants, fear about potential displacements/risk to their properties, as many of them have encroached upon the existing water lines.	The project will provide new connections, using galvanized pipes, and not use the pre-war supply lines. However, water lines that were recently disconnected would be repaired. Therefore, there will be no potential displacement of project affected persons.
Beneficiaries' selection processes and methods	What were the procedures and criteria used in deriving the target beneficiaries and whether leaders from the various communities were involved in the selection process?	The selection was informed by LWSC's existing distribution network and the project design. A mapping exercise was conducted by the LWSC project team and residents living in homes within seven meters along the access roads were considered for the project.
Security and maintenance of pipes	Many participants were concerned about the security and maintenance of the pipes to be installed, complaining that exposure of pipes was common in many existing connected communities, which they attributed to LWSC's failure to burry water pipes properly or to prioritize maintenance.	In line with LWSC standards, water pipes will be buried at 3feet depths minimum except in rocky areas. However, communities have the responsibility to guard against some behaviors and practices that typically cause damages to the pipes or their exposure.
Work/ employments through the project	Employment of skilled and unskilled community members. There was a huge expectation about temporary employment through the project	The contractors will come with their skilled workers, and their ability to present such a team is one of the criteria used for their selection. However, community members will be recruited largely for casual labor.
Security of the meters	Some were concerned that installing the meter outdoors increases the risk of theft and wanted to know if the meter could rather be installed indoor.	The LWSC meter readers may not have regular access to the meters when installed indoors. Besides, in the past LWSC was accused of theft when meters were installed indoors. Hence meters will be installed outdoors.
Water safety and quality	The safety and quality of the water to be provided	Water from the LWSC system undergoes many layers of purification and testing and is therefore pure and safe.

Implementation Schedule

The project implementation schedule is estimated for 6 months.

Institutional Arrangements for the Implementation of the ESMP

The successful implementation of the ESMP will depend on the commitment and capacity of the LURP PMU, E&S Officers, relevant Government agencies/institutions to implement the ESMP effectively. During implementation, the PMU will conduct regular monitoring visits. The contractors will be responsible for implementing the mitigation measures in the E&S risk management documents, with PMU oversight. Given that most of the mitigation measures are the obligations of the Contractor during project implementation, the contractor shall prepare the Contractors ESMP (C-

ESMP) taking into account the measures in this ESMP which sets out the requirements to be followed by contractors. In this case, the ESMP should be incorporated as part of the contract between the Borrower and the contractor, including E&S requirements in the final contract to ensure the contractor is legally obliged to deliver.

ESMP Cost Estimates

The total cost for the ESMP implementation is estimated at Forty-one thousand seven hundred thirty-seven unites states dollars and fifty cents only (**US$41,737.50**); Table 4 below presents a summary cost.

Table 4: Estimated Budget for the Implementation of ESMP

Activity	Responsibility	**Amount (US$)**
Mitigation	Contractor, PMU	**31,000.00**
Monitoring	PMU	Monitoring cost is covered under PMU Operational budget
Training and Capacity Building	PMU	8,750.00
SUB-TOTAL		**$39,750.00**
Contingency (5% of Total)		**1,987.5**
TOTAL		**$41,737.50**

Disclosure Requirements

Copies of this ESMP shall be publicly disclosed at designated centers to the project's stakeholders (LWSC, WB, MPW, LURP PMU, Project communities) and the public at designated centers and the MPW/IIU website upon the approval of the final draft by the World Bank and subsequently the EPA of Liberia.

CHAPTER 1: INTRODUCTION

1.1 Project Background

The Government of Liberia (GoL), with funding support from the World Bank (WB), has embarked on the Liberia Urban Resilience Project (LURP). The Project aims to increase flood resilience and access to urban infrastructure in selected neighborhoods and to improve urban management in Liberia. The project became effective on 28 February 2023 and will be implemented over a period of 6 years, ending in June 2028.

The Project Development Objective (PDO) is to increase flood resilience and access to urban infrastructure in selected neighborhoods and to improve urban management in Liberia. Specific outcomes are:

- Outcome 1: Area protected from flooding
- Outcome 2: People benefitting from improved urban infrastructure (sex-disaggregated)
- Outcome 3: Urban management capacity enhanced

The four (4) main components of the Project are:

Component 1: Climate Resilient Infrastructure and Urban Upgrading

1.1 Climate Risk Management Infrastructure

1.2 Resilient Urban Planning and Development

Component 2: Strengthening Integrated Resilient Urban Development Capacity

2.1 Climate Resilient Spatial Development Planning for Greater Monrovia

2.2 Solid Waste Management Operations and Financing

2.3 Revenue mobilization and financial sustainability

2.4 Operations and maintenance of infrastructure

Component 3: Project Management

Component 4: Contingency Emergency Response Component

Component One (1) will support flood risk management and community upgrading infrastructure in prioritized areas of Greater Monrovia. This will include investments in drainage infrastructure to improve connectivity of drainage networks to reduce climate and flood risk, neighborhood and market upgrading interventions to improve access to public services. In addition, one key potential positive socio-economic benefit of this project is to improve safe water supply in the communities and reduce tension/conflict emanating from scarcity of water supply and reduce the problems of women who bear the burden of water collection from long distances. Due to the growing population, the increased demand of portable water supply within Monrovia and its surrounding areas cannot be overemphasized. As a result, the Liberia Urban

Resilience Project intends to extend the water supply network and to connect additional households in order to increase revenue which will improve the operational efficiency of the Liberia Water and Sewer Corporation (LWSC). The proposed project includes the construction of branch lines in LURP project areas and the connection of 2,500 households to LWSC pipe-borne water distribution network. This support will reduce the number of households lacking access to safe water supply by 2,500.

From this background, in September 2024, the LURP identified new investments to support component one. "Connection of 2,500 Households to the LWSC Water Distribution Network in Greater Monrovia" which was identified as one of the subprojects for new investments under LURP. This intervention has the potential to mitigate the challenges faced with limited access to safe drinking water, reduce risk of social tension and water collection from long distances that directly affects the wellbeing of women and children within selected locations in Greater Monrovia. This investment will reduce the burden of women and girls who bear the responsibility of water collection from long distances that directly affects their well-being as they are sometimes assaulted on their way from these water sources.

LURP proposes to connect additional households to the water distribution network, building on the existing rehabilitation and extension of Monrovia's water distribution network.

The Rationale for the ESMP

The connections of 2,500 households in Greater Monrovia was selected in order to enhance urban living conditions and improve water connections and supply in Greater Monrovia to strengthen municipal and institutional capacities for integrated urban management. The proposed Project activities, (which includes mobilization, excavation, pipes installation, connections of 2500 households, etc.) have the potential to generate adverse environmental and social impacts and risks that need to be identified and addressed to avoid social issues and environmental pollution leading to effective stakeholder's engagement, public trust, project sustainability and environmental protection.

The ESF require that all environmental and social risks and impacts associated with Bank funded projects must be fully addressed. The proposed project has an existing ESIA report which was prepared five years ago under the World Bank's Operational Safeguard Policies by the Liberia Urban Water Supply Project (LUWSP) at the Liberia Water and Sewer Corporation (LWSC), financed by the World Bank. In September 2024, the LURP Project mission discussed that the existing ESIA would need revision and updated to ensure consistency with the WB ESF. Following sites assessments and E&S screening of the proposed project, an ESMP has been prepared by LURP PMU and approved by the World Bank to be used to manage E&S risks and impacts of the proposed project.

This ESMP is essential for ensuring that the project complies with the national Environmental Protection and Management Law (EPML) of Liberia, including the EPA 2022 Revised ESIA Procedural Guidelines and, other social regulations and

international best practices.

1.2 Objective of the ESMP

The key objectives of this ESMP include but not limited to the following:

Identify and assess environmental and social risks and impacts associated with the execution of the project from construction, operations to decommissioning.

- Provide a detailed plan for mitigating and monitoring environmental and social risks and impacts,
- Provide a grievance redress mechanism for project workers and link the communities within the water project areas to the existing LURP's grievance management system established at the local community level
- Ensure that project implementation arrangements are compliant with the World Bank's Environmental and Social Standards (ESS) and the National EPA requirements
- Ensure that adequate stakeholder consultation and engagement is conducted
- Specify the institutional framework for implementing the ESMP including roles and responsibilities of Contractor personnel regarding environmental and social issues related to the project.
- Specify non-performance and corrective action procedures to ensure best available environmental and social management

Recommendations of this ESMP will be mainstreamed into the final project designs and project implementation processes to ensure sustainable management of the environment during pre-construction, construction, operation, and decommissioning phases.

1.3 Scope of the Assignment

The main scope of this assignment is to identify potential positive and adverse environmental and social risks and impacts and prepare an environmental and social management plan that will be used to mitigate and monitor those potential adverse risks and impacts during the construction and operation of the emergency water connection and supply project,

1.4 Approach/Methodology of the Assignment

The approach that was used in preparing this ESMP Includes the following:

i. **Site inspection:** LURP approved E&S screening checklist was used to record E&S baseline information during the inspection at various sites locations.
ii. **Stakeholder's engagement and community consultations:**
iii. **Literature review:** the following document were reviewed to support the preparation of this ESMP; LURP's PIM, ESMF, GRM, GBV/SEA Action Plan, LMP, LUWSP's ESIA, LIGIS 2022 Census report, WB ESF/ESS, Liberia's EPA EPML, etc.

CHAPTER 2: PROJECT DESCRIPTION

2.1 Description of Project Location

The Water Supply Emergency Intervention Project will target four main regions within Montserrado county, Liberia, namely, (a). Central Monrovia, (b) Southern Paynesville, (c) Bushrod Island and (d) Omega Community. The project areas encompass diverse communities with varying levels of economic and livelihood challenges. The Project communities face significant economic disparity due to poor sanitation, improper disposal of domestic waste, inadequate infrastructure and services, water pollution, leading to waterborne diseases such as typhoid, diarrhea, dysentery, etc. The livelihoods of residents are heavily impacted by these conditions, with many relying on locally produced mineral water for safe drinking water.

The Project community has a mix of residential and commercial areas, with local businesses and services contributing to the local economy. Most of these project communities are densely populated. The pipes and connections are expected to be carried out in accordance with Government of Liberia corridors within the project affected communities. Efforts to improve sanitation, infrastructure, and community engagement are crucial to enhancing the quality of life for residents in these areas. Table #1 lists the neighborhoods to benefit from the intervention. Figures 01- # shows location maps and satellite imagery for the pipeline routes.

Table 5: Neighborhoods to benefit from interventions

Omega
Omega Market
Morris' Farm
Bushrod Island
New Kru Town
Cornel West
Duala Market
Central Monrovia (Soniwein Corridor)
Buzzi Quarters
Bernard Quarters
Soniwein
Lynch Street North
Rally-Time Market
Paynesville City
Duport Road (South, North & North-East)
GSA Road Rockville

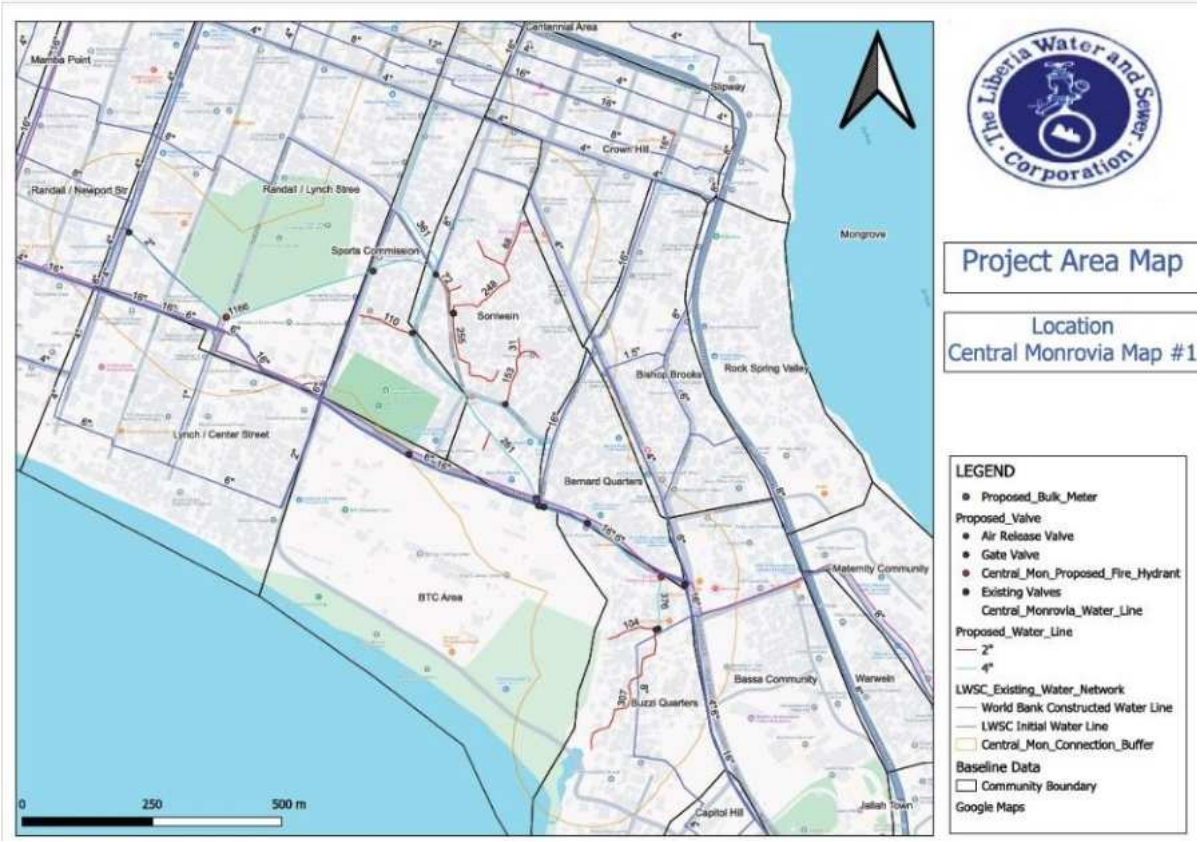


Figure 1: Map showing locations in Central Monrovia for pipe borne water supply

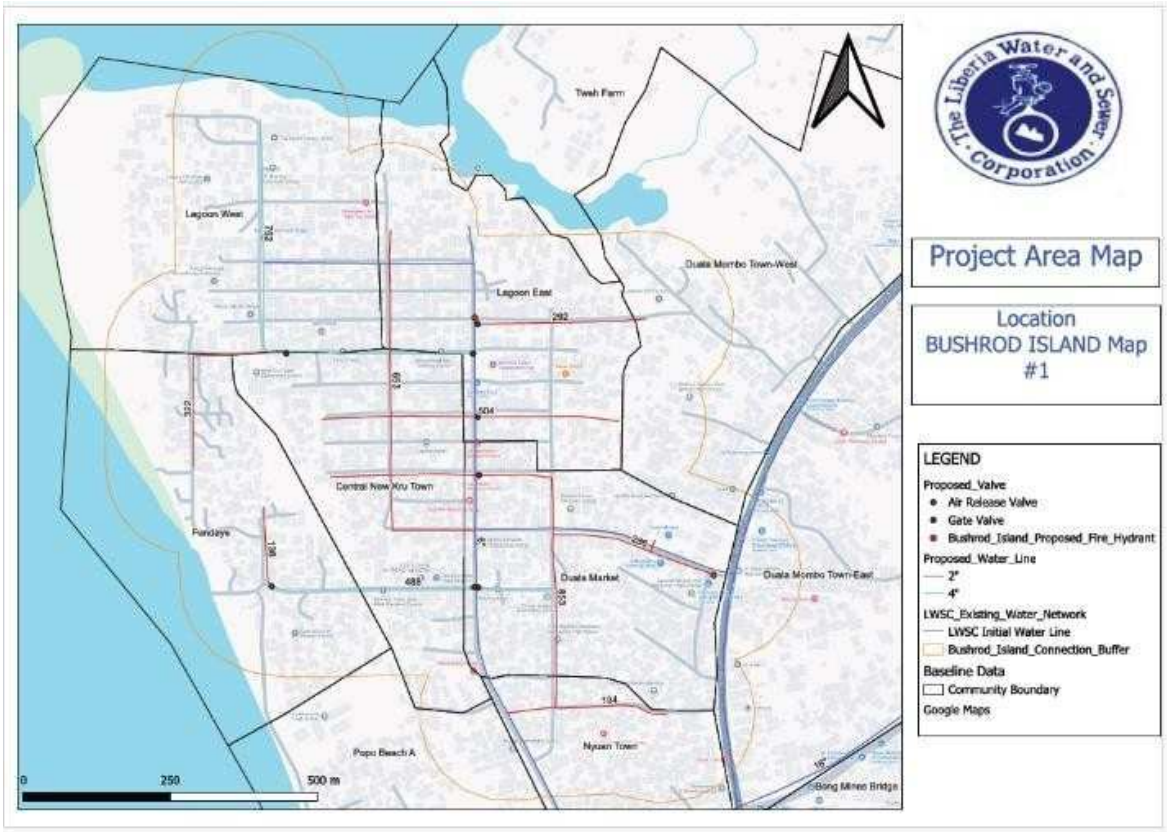


Figure 2: Maps showing locations in Bushrod Island for pipe borne water supply

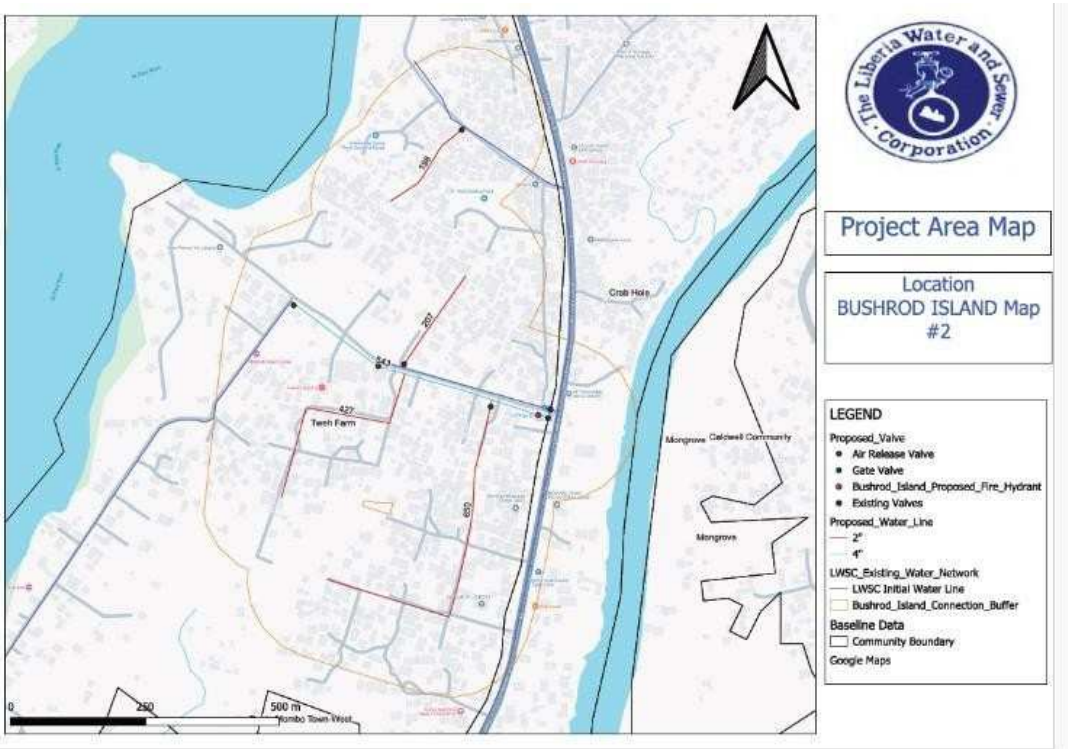
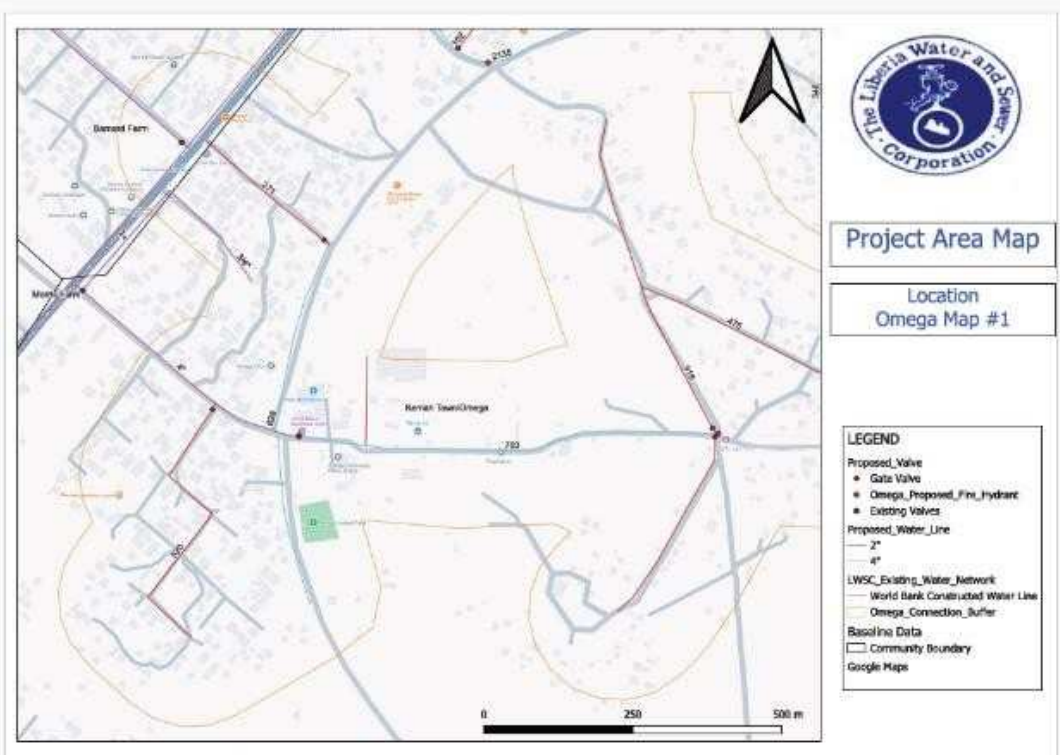
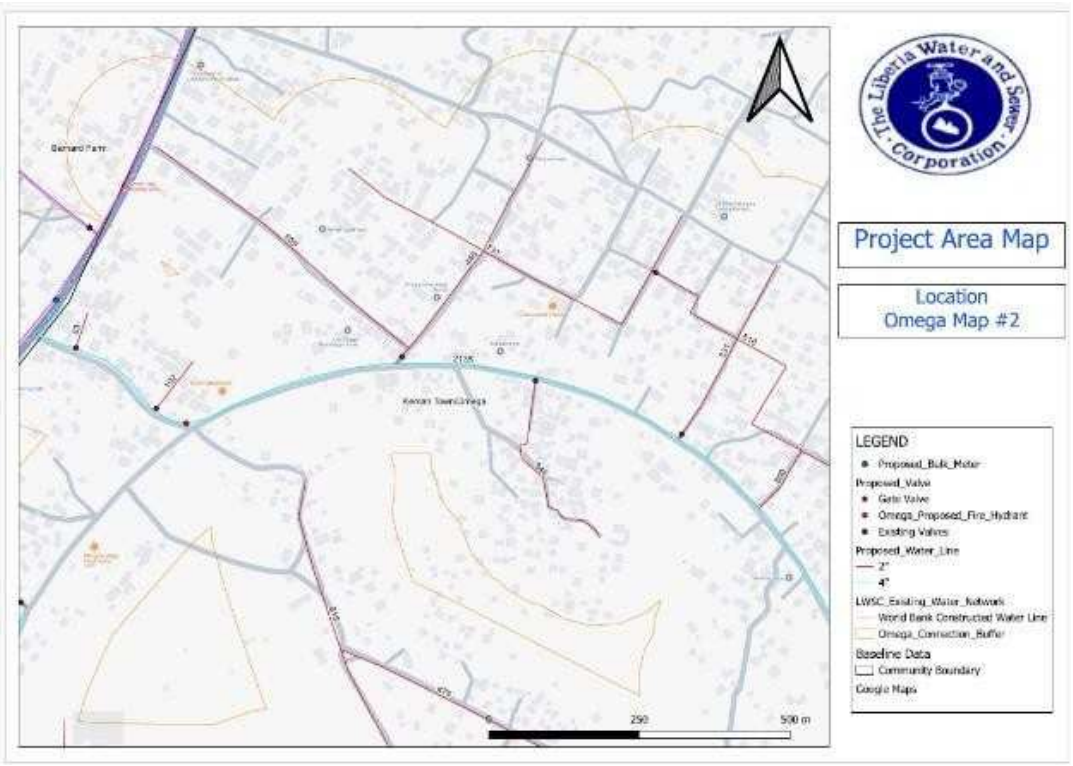
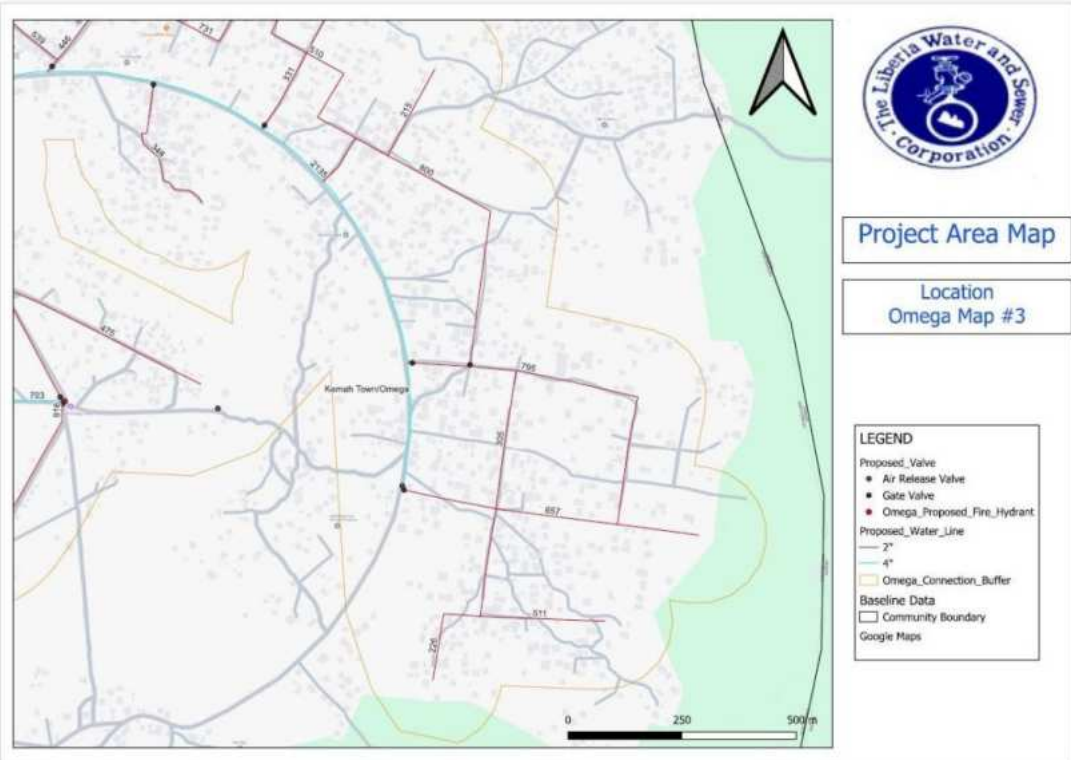


Figure 3: Maps showing locations in Omega Community for pipe borne water supply




Project Area Map
Location
Omega Map #2
LEGEND
Proposed_Bulk_Meter
Proposed_Valve
Gate Valve
Omega_Proposed_Fire_Hydrant
Existing Valves
Proposed_Water_Line
2"
4"
LWSC_Existing_Water_Network
World Bank Constructed Water Line
Omega_Connection_Buffer
Baseline Data
Community Boundary
Google Maps
250
500 m


Project Area Map
Location
Omega Map #3
LEGEND
Proposed_Valve
Air Release Valve
Gate Valve
Omega_Proposed_Fire_Hydrant
Proposed_Water_Line
2"
4"
Omega_Connection_Buffer
Baseline Data
Community Boundary
Google Maps
0
250
500 m

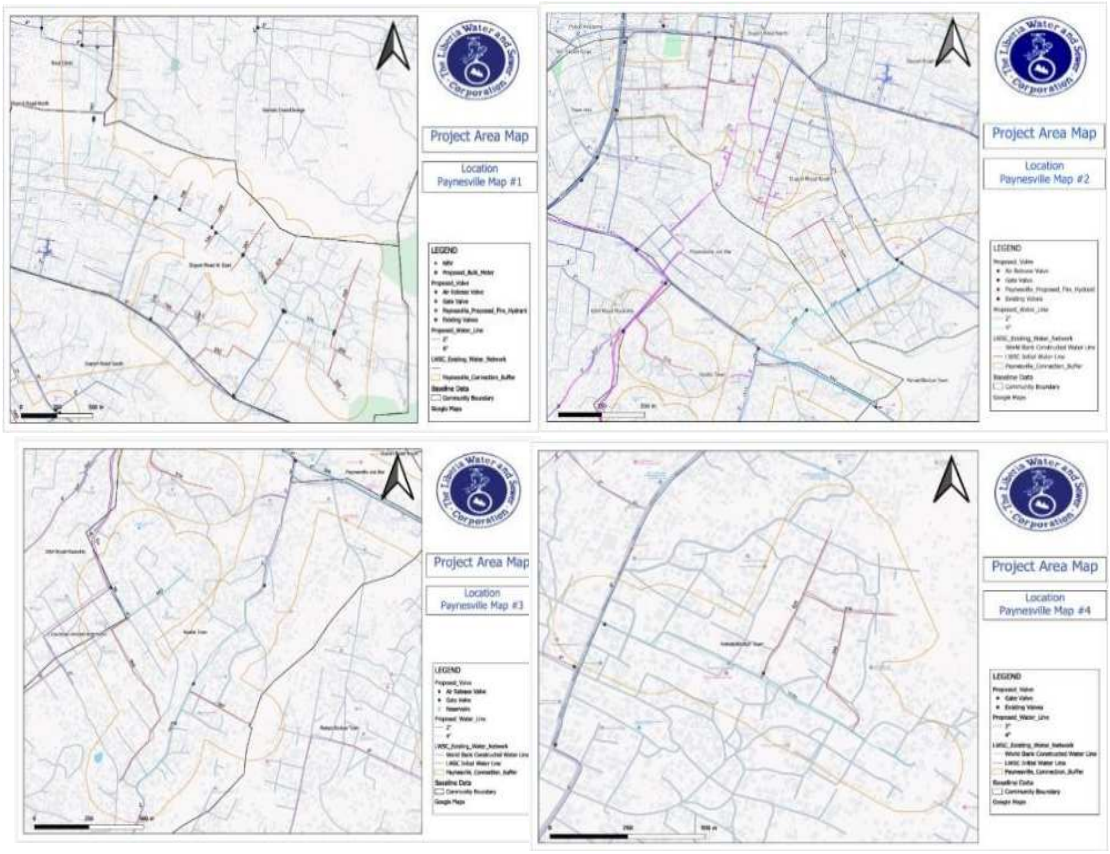


Figure 4: Maps showing locations in Paynesville for pipe borne water supply

Figure 5: Images showing locations of MCC's Solid Waste facilities for pipe borne water supply

2.2 Proposed Project

This proposed Project is the Connection of 2,500 Households to The LWSC Water Distribution Network in Greater Monrovia. The water supply intervention is designed to provide safe drinking water to 2,500 households in targeted communities through the installation of 15,560 meters of 4" uPVC pipes and 25,015 meters of 2" uPVC pipes as well as bulk meters, fire hydrants, including valves and other water supply accessories. This work includes excavation and backfilling, pipes installation and fittings, site restoration, pressure-testing and disinfection. The connection of about 2,500 households will be carried out along the Government of Liberia's Right-of-way and accessible alleys within the project communities.

2.2.1 Sub-Project Components

The Project is designed to:

- Supplying and installing 15,560 meters of 4" uPVC pipes, including all fittings, excavation and backfilling, site restoration, pressure-testing and disinfection.
- Supply and installation of 25,015 meters of 2" uPVC pipes, including all fittings, excavation and backfilling, site restoration, pressure-testing and disinfection.
- Connection of 2,500 homes to the water distribution system
- Supplying and installation of 4" bulk meters, 3/4" domestic meters, fire hydrants, air valves, and other appurtenances

2.2.2 Material Specifications

- **uPVC Pipe**
  - Standard: ISO 1452-2
  - Pressure rating: 10 bar
  - Form: Bell end
  - Minimum laying depth: 120mm under roads, 1000 elsewhere
  - Thrust Blocking: Installed at bends, tees, valves, reducers, etc. against undisturbed soil
  - Backfilling: 150 mm thick precast concrete slab over compacted backfill in road crossing sections; properly compacted material in other sections

- **Air Release Valve**
  - Standard: AWWA C512-15
  - Double orifice equipped with isolation valve
  - Flange end connection
  - Pressure rating 10 bar
  - Body and cover: Cast iron
  - Disc sealing: EPDM
  - Floating balls: Stainless steel

- **Gate Valve**
  - Standard: AWWA C509-23

- Stem: Non-rising stem
- End connection: flanged
- Seat: Resilient seat for drip tight shutoff.
- Quick wear gasket: Nitrile rubber
- Valve body: Cast iron
- Operator: Handwheel
- Pressure rating: 10 bar

- **Bulk Meter_**
  - Standard: ISO 4064
  - Body: Brass
  - Pressure rating: 10 bar
  - Ends: Flanged
  - Design life: 10 years under normal condition with 5-year manufacturer warranty
  - Accuracy: +/- 2%

- **Domestic (House Connection) Meter**
  - Standard: ISO 4064
  - Body: Brass
  - Pressure rating: 10 bar
  - Ends: Threaded
  - Design life: 10 years under normal condition with 5-year manufacturer warranty
  - Accuracy: +/- 2%

- **Fire Hydrant**
  - Standard: AWWA C502-18 (dry barrel)
  - Material: Cast iron
  - Size: 4" (100mm)
  - Hose connection: Threaded
  - Rated pressure: 10 bar
  - Nozzles: 1-4" (100mm) and 2-2.5" (65mm)

Connection of 2,500 Households; this includes.

- Construction and Installation of 15,560 meters of 4" Upvc Pipes.
- Construction of 25,015 meters of 2" uPVC Pipes.
- Installation of bulk meters, fire hydrants (), air valves (), and other water supply appurtenances

2.2.3 Project Duration and Implementation Phases

This project is to be implemented for a period of six (6) months under four (4) phases. The Project activities under each phase include but not limited to the following:

1. **Preconstruction/Mobilization Phase:**

The mobilization phase involves recruiting potential contractors and supervision consultants, including key experts. It also includes securing equipment and campsites, and developing management strategies for labor management, traffic management, waste management and occupational health and safety management in a Contractor Environmental and Social Management Plan (C-ESMP), etc. These strategies require approval by the PMU and subsequent implementation by the contractor. Additionally, the procurement of key Sewer Equipment will be carried out under this phase.

1.1 Project Design

The Liberia Water and Sewer Corporation's water treatment plant that supplies water to Monrovia has a design capacity of 16 MGD (60,600 m3/day); the distribution system consists of a total of only 231 km, extending to less than 50 percent of the Greater Monrovia area, and supplying less than 10,000 active customers. The network is not only limited in reach but lacks density in areas it nominally supplies. The water supply intervention is designed to provide safe drinking water to 2,500 households in targeted communities through the installation of 15,560 meters of 4" uPVC pipes and 25,015 meters of 2" uPVC pipes as well as bulk meters, fire hydrants, including valves and other water supply accessories. The connection of about 2,500 households will be carried out along the Government of Liberia's Right-of-way and accessible alleys within the project communities.

The Liberia Urban Resilience Project support to LWSC is intended to extend the network and to connect additional households in order to increase revenue which will improve the operational efficiency of the utility. Planned interventions include the construction of branch lines in LURP project areas and the connection of 2,500 households. This support will reduce the number of households lacking access to safe water supply by 2,500.

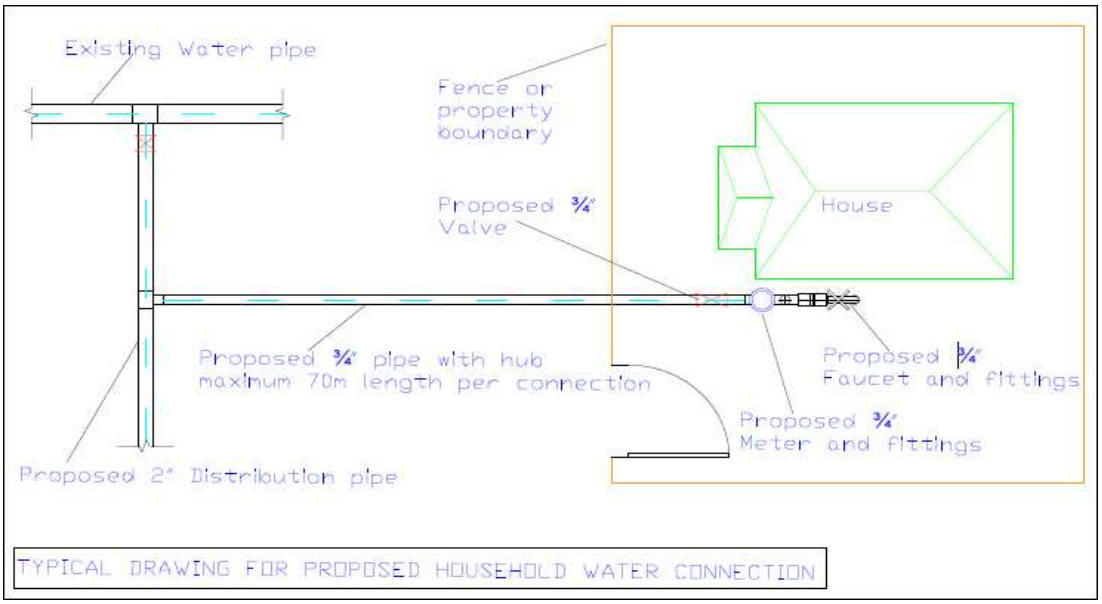
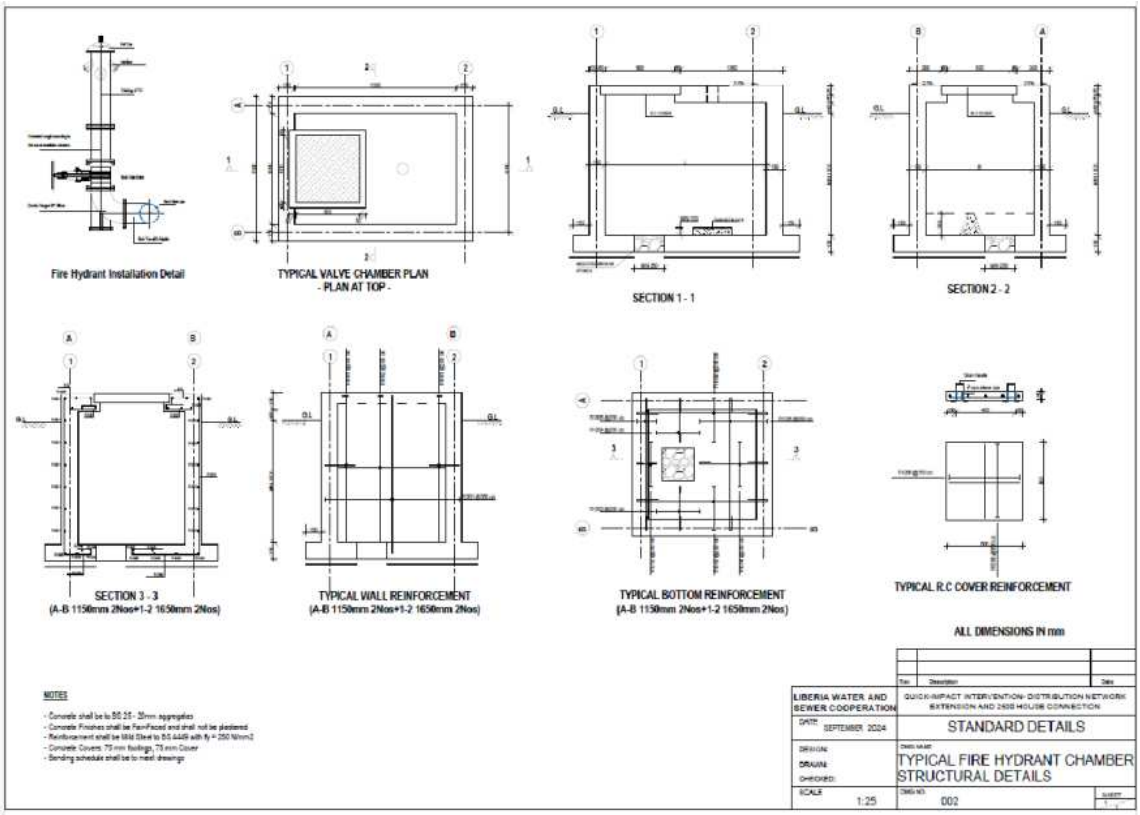


Figure 6: Drawings for proposed household water connection



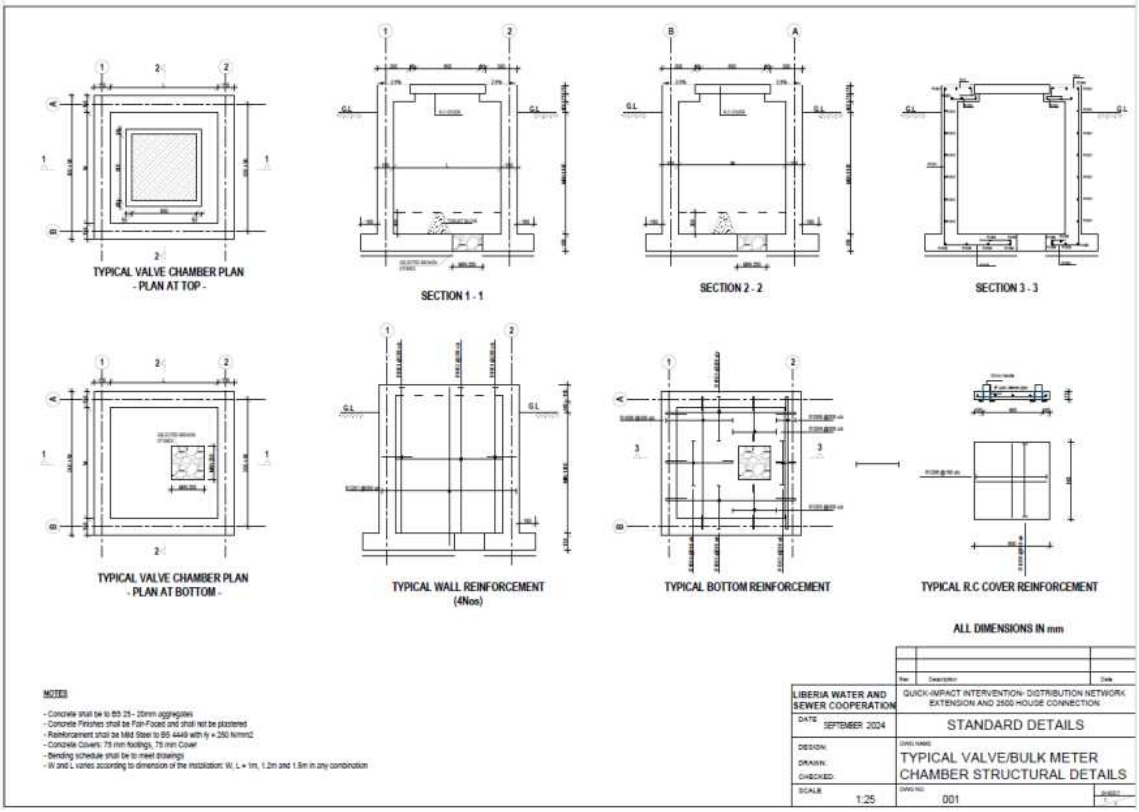


Figure 7: Sectional detailed designs for Typical Fire Hydrant Chamber & Valve/Bulk meter

2. Construction Phase:

This phase includes site clearing, preparation, trenching, verification, and supply of materials consistent with technical specification, pipe laying, installation, and backfilling of trenched materials. It also involves the installation of associated valve chambers and pipes, materials, handling, and the reinstatement of existing surfaces, pavements, footpaths, and other areas impacted during the works to their original state.

- **Site Preparation**

This includes removing bushes within the Omega area and grass within the other three locations to allow access and undisturbed construction work. The Contractor shall prepare the site or other areas, where ordered by the Engineer, by carrying out a general clearance of the ground to permit the proper execution of the works.

- **Trench Excavation for Pipe Installation**

Excavation shall include excavation in rocky and non-rocky soils and to the depths indicated in the drawings or BOQ, or as directed by the Engineer, regardless of character and sub-surface conditions.

All excavated material shall be deposited so that it will cause no damage or inconvenience to the public. The width of any trench for pipework of whatever diameter shall be the minimum required for the installation of the pipe and for the installation of temporary supports, should they be necessary. The Contractor shall safely dispose of excess excavated material at approved disposal sites.

The trench bottom shall be even and smooth so as to provide proper support for the pipe over its entire length, and shall be free from stones, lumps, roots and other hard objects that may damage the pipe. Holes shall be dug in the trench bottom to accommodate couplings, if any, to ensure continuous contact between the trench bottom and the pipe, between coupling holes. Holes made for the joints shall be of a minimum size and the pipework shall be supported uniformly over its full length. Wherever necessary to prevent caving-in, trench excavations in soils such as sand, shall be adequately sheeted and braced.

Materials taken from the trenches will be placed at the side of the trench except when in the opinion of the Engineer the materials will obstruct the passing of traffic or pedestrians. In such a case, the contractor shall excavate the trench in short lengths approved by the Engineer and shall keep the excavated material at a convenient distance.

The length of trench to be excavated in advance of pipe laying shall not exceed a day's work or as approved by the Engineer, whichever is less. If in the opinion of the Engineer and through the fault of the contractor the excavation has deteriorated before the installation of pipework all unsatisfactory material shall be removed and replaced by selected, compacted fill to the level of the original formation, all at the expense of the contractor. The contractor shall not proceed with pipe laying until the trench has been inspected and approved by the Engineer.

The contractor shall provide caution tapes to ward off any intruders from the trenches and prevent any accidents occurring, once the trenches have been excavated and not yet laid.

The Contractor shall provide, operate and maintain a system satisfactory to the Engineer of temporary drains, intercepting ditches, cut-off drains, sub-drains, sumps, well points, de-watering equipment and all other things necessary to keep surface water, sub-soil water or water from any other source out of the excavations and maintain the water table below the formation level. The Contractor shall keep all excavations clear of water. Where water forms or accumulates in the trench the contractor shall maintain the trench free of water during pipe laying

- Handling and Storing of Pipes

When handling, transporting and laying pipes and accessories, care must be taken to prevent cracks and other damage to the pipes and the accessories. uPVC pipes, rubber gaskets, glue, etc. shall always be stored under cover and in the shade. In storage, pipes shall be arranged in such a manner that the pressure of pipes placed on each other will not cause cracking or deformation or damage to the pipe. The interior and the machined ends of the pipes shall be always kept free from dirt and foreign matter. Pipes shall not be moved by dragging or rolling them on the ground but shall be lifted and placed carefully.

- Pipelaying
  - Pipe Installation

Pipes shall be laid to a minimum cover of 1200 mm under roads and footpaths and to a minimum invert of 1000 mm below ground level elsewhere.

Each pipe shall be separately laid upon an even bedding. No pipe shall be laid in wet trench condition that precludes proper bedding. Before pipes are jointed, they shall be thoroughly cleaned of all earth lumps, stones, or any other objects that may have entered the interior of the pipes.

When pipelaying is not in progress, the open ends of installed pipes shall be closed by approved means. The plugs shall be solid and shaped to close the pipe opening completely so water and foreign objects from the trench excavation shall not gain access into the pipeline. Whenever pipe is laid in water, water must be excluded from the pipe, and enough backfill shall be placed on the pipe to prevent it from floating. Any pipe that shall float shall be removed from the trench and re-laid. The procedure of working in water shall be approved by the Engineer. Where curves of a long radius are required, these shall be obtained by deflection at the joints; Contractor shall prove that such deflections are those recommended by the pipe manufacturer. Where a change of direction cannot be made by deflection at the joints or straight pipes, appropriate fittings shall be used.

- **Thrust Blocks**

Concrete thrust blocks shall be placed at all bends, reducers, tees, valves, etc., against undisturbed soil. The concrete mix ratio of these thrust blocks shall be able to withstand a pressure of 1.5 times the pipe's rated pressure. In order to ensure that the blocks fulfil their purpose, they must bear against undisturbed soil and therefore, where timbering has been used during excavation, it must be withdrawn as the concrete is cast. The thrust block must cure before testing of pipework.

- **Trench Backfilling**

All excavations shall be backfilled to the levels of the original ground surfaces, unless otherwise ordered by the Engineer. The backfill material shall contain no stones more than 150 mm in their largest dimension, and the backfill mixture shall not contain more than 25% stones. The contractor shall not permit excavation to be used for disposal of refuse.

The Contractor shall restore or replace all removed or damaged curbing, sidewalk paving, gutters, shrubs, fences, sod, and other disturbed surfaces or structures in a condition equal to what it was before the work began.

- **Testing of Pipelines**

Pressure test is to identify leakage and cracks in the laid pipe. The Contractor shall notify the Engineer 24 hours before a test is conducted.

The tests shall be carried out in sections of a length proposed by the Contractor but not exceeding 500 m or 100 joints whichever is less. Each section to be tested shall have been backfilled except the joints, which shall be left open for inspection. The Contractor may also backfill the joints but has to bear in mind that he will have to re-excavate them at his own cost if the section does not pass the test. All thrust blocks on each line to be tested must have been cast at least 72 hours before testing.

All valves shall be operated and examined, and a special check shall be made on the air valves for proper functioning. The Contractor shall take care to properly the valves at the two ends of each section to be tested. Chambers, if completed, shall be checked for proper finish and easy access.

Procedure to be followed for pipe testing shall be as follows:

a) All valves within the testing section shall be fully opened
b) The pipe section to be tested shall be cleaned using potable water
c) All temporary ends shall be closed
d) Fill test section slowly with potable water to expel all air from the pipeline and leave to stand for 24 hours before the start of the test
e) Apply the pressure in increments of 1.0 bar with a pause of one minute between each increment, until the requisite pressure (1.5 times the operating pressure in the network) or the nominal pressure of the pipe, whichever is higher or as directed by the Engineer

The pressure drop measured shall not exceed 0.2 bars for 500 m of test section in

30 minutes or 2 hours for pipe section exceeding 500 m, but not more than 1,500m.

For the test, the Contractor shall supply the following equipment:

a) A pressure gauge calibrated in bars
b) A low horsepower pump for filling of pipe
c) A high horsepower pump for pressurizing and performing the test

If a test fails, the Contractor shall locate and repair the leakage(s) then repeat the test following the first procedure, all at his own expense. The test on each section shall be repeated until the specified requirement of water tightness has been achieved. An allowance shall be made for static head between the lowest point and the point of measurement if both are not on the same level. The Contractor shall prepare and submit to the Engineer a report of the test. The water in the test section shall be discharged safely to a drain, stream or a river after the completion of the test on each section, without causing any harmful effects or flooding to residents.

The cost of preparing the pipelines for testing and execution of tests, including the supply of all necessary test equipment, supply of water for scouring, filling and testing the line, any work done in connection thereof shall be deemed to be included in the Contractor's rate for pipe-testing.

- Disinfection of Pipelines

All pipelines that have passed the pressure test as laid out, shall be flushed until the wash water runs clear. Disinfection of pipelines shall be done by introducing a chlorine solution, derived from a 1% solution of calcium hypochlorite or chlorinated lime, also called "bleaching powder' or liquid sodium hypochlorite known as "liquid laundry bleach"), in a concentration of 25mg/l into the pipeline so that there is a residual-chlorine of not less than 10mg/l (10ppm) in the water after 24 hours. All intermediate valves shall be operated at least once during the 24-hour period.

The point of measurement of the residual chlorine shall be the furthest from the point of injection of the solution. If the residual chlorine is less than 10mg/l, the disinfection process shall be repeated until this value is achieved or bacteriological tests are conducted in an approved laboratory showing that the pipeline is not contaminated. In all cases, bacteriological tests shall be conducted and results submitted to the Engineer before the system is commissioned.

Upon the issue of a satisfactory bacteriological test report, the chlorinated water shall be flushed out, the pipeline recharged with potable water and put into service. The Contractor shall dispose of the chlorinated water safely, avoiding pollution of natural waters, reservoirs and artificial watercourses.

3. Operational and Maintenance Phase:

The operational phase of the project involves maintaining and monitoring the pipelines to ensure it functions safely, efficiently and delivering the desire service

requirements. This includes routine inspections, maintenance, monitoring systems, complying with safety protocols, and having plans and procedures in place for rapid response to any incidents or emergencies.

4.Decommissioning Phase:

The decommissioning phase of the project involves several critical steps to ensure safety and environmental protection. These include the development of a detailed decommissioning plan that complies with existing regulatory requirements, approval and implementation of the plan. It would also include campsite demobilization and site rehabilitation or cleaning where necessary to ensure public

2.6 List of Equipment and Materials

The following equipment and materials are expected to be used during the project implementation:

Table 6: Materials for expanding the distribution network

Community	Pipe			Appurtenances				
	Material	Size (inch)	Length (m)	Gate Valve	Air Valve	Hydrant	Bulk Meter	NRV
Omega Market	uPVC	2"	8,761	13				
Omega Market	uPVC	4"	5,416	4	4	3	1	3
Bushrod Island	uPVC	2"	4,923	8				
Bushrod Island	uPVC	4"	1,776	4	3	3		3
Paynesville City	uPVC	2"	9,167	16				
Paynesville City	uPVC	4"	7,000	6	5		1	2
Central Monrovia	uPVC	2"	2,164	4				
Central Monrovia	uPVC	4"	1,368	6	2	3	1	1
		Total	40,575	61	14	9	3	9

Table 7: Equipment and additional materials Listing

Equipment	
Excavators	Fuel Tank
Electric Harmer	Service Truck
PVC Pipe Cutter	Water Tanker
Truck	Digger
Deburring Tool	Pipe rangers
Generators	PVC Cement
Welding Machine	Pavement/Concrete cutter
Pick-up 4x4	Ratcheting Pipe Cutter
Rotary Tool	Heat Gun
Miter Box	PVC Primer
uPVc ball valve	uPVC Faucet

Project Proponent

The Liberia Water and Sewer Corporation (LWSC) is the Project Proponent for the Quick Impact Intervention Project. The Project seeks to increase household connection thereby increasing access to piped borne water supply services and enhance the efficiency of sewer management services. The project aims to address water crises, improve sanitation, and enhance economic activities in the affected

communities.

CHAPTER 3: LEGAL AND INSTITUTIONAL FRAMEWORK

3.1 National Policy, Legal and Institutional Framework

This chapter outlines a range of national legal policies, acts and regulations relevant to the safe, efficient, and environmentally responsible development and management of water resources. The table below provides details of these legal frameworks.

Table 8: Related Environmental, Social and Occupational Health Legislation/Laws

Date	Subject	Content
2015	The Decent Work Act	The Act promotes the attainment of decent work in Liberia, by establishing a regulatory environment which facilitate; i) continuing and further creation of quality employment; ii) the ability of all to exercise their rights at work; iii) a measure of social protection; and iv) participation in institutions and processes of social dialogue; b) Ensure respect for, and the protection and fulfillment of fundamental rights at work in Liberia, including fundamental rights that are protected by the constitution of Liberia; C) Give effect to obligations incurred by Liberia as a member of the International Labor Organization; d) Establish transparent and accountable institutions and procedures of labor market governance; e) Contribute to the enhancement of the human capabilities of all who work in Liberia; f) Promote economic development and growth that can be shared throughout Liberia by; i) reducing obstacles to efficient and competition by business; and ii) extending the application of this Act, to the greatest extent possible, to all work in Liberia.
1976	Public Health Act	Provides comprehensive legislation on matters relating to public health, including control of diseases, environmental sanitation, and regulation of drugs.
1979	The Natural Resources Law of Liberia	It includes chapters on forests, fish, and wildlife, soil, water, and minerals.
2002	The Environment Protection and Management Law	The Act ensures that the environmental Protection Agency of Liberia is responsible for issuing guidelines and prescribes measures for the sustainable use and protection and management of all forests in Liberia. In addition, Section 78 contains provisions on re-forestation and afforestation. The quality standards set are within appendix A.
2009	Regulation on Environmental Impact Assessment	This regulation deals with the submission of the environmental management plans, the consultation and decision-making processes as well as the EIA processes. It also singles out provisions on monitoring.

Date	Subject	Content
2010	Public health law amendment	An Act to Amend the Public Health Law, Title 33, Liberian Code of Laws Revised (1976) to create a new Chapter 18 which provides for the control of Human Immunodeficiency Virus (HIV) and acquired immunodeficiency syndrome (AIDS).
2018	Land Right Act	The Land Right Act reflects the four categories of land ownership: Public Land, Government Land, Customary Land and Private Land and ensures that customary land is given protection equal to private land for all Liberians. The Land Rights Act prescribes the means by which land may be acquired, used, transferred and otherwise managed.
2017	National WASH Commission Act	The mandate of the Commission is to promote and regulate the development, management of water, sanitation and hygiene services and serves as the principal government entity on water, sanitation and hygiene (WASH) throughout the Republic of Liberia.

Table 9: Related Environmental, Social and Occupational Health Policies/Guidelines

Date	Subject	Content
2002	The National Environmental Policy Act	An Act to establish a legal framework for sustainable development, management and protection of the environment by the Environment Protection Authority in partnership with regulated Ministries and organizations and in close and responsive relationship with the people of Liberia; and to provide high quality information and advice on the state of the environment and for matters connected therewith.
2007	National Integrated Water Resources Management Policy	It covers two broad areas: (1) water resources management; (2) water resources use
2009	Water Supply and Sanitation Policy	Focuses on improving water supply and sanitation services, aims to rehabilitate and expand water supply and sanitation systems, emphasizes the right to safe drinking water and sanitation as fundamental human rights.
2010	Guidelines for Water and Sanitation Services	Provides standards for well and latrine construction, aims to create uniformity and centralize water governance, and addresses the high rate of non-functional WASH facilities and the need for effective maintenance.
2010	National Environmental and Occupational Health Policy	The policy aims to establish guidelines to protect the environment and the health of the population. The policy comes as a support to the national health laws, where it develops new guidelines to water quality control, sanitation, waste management as well as it provides guidelines to implement workers' wellness programs.

Date	Subject	Content
2011	Occupational safety and health and Welfare Policy	The policy comes as a support to the national health laws, where it aims to set guidelines for occupational health and safety as well as re-analyze the e health and social welfare to improve them
2013	Land Rights Policy	The policy divides the land rights into categories (Public Land, Government Land, Customary Land and Private Land) and a cross-cutting sub-category (Protected Areas).
2022	EPA 2022 Revised ESIA procedural Guidelines	One of the most important of all is the mandate of the EPA to develop administrative procedures for the preparation of EIA/ESIA reports that would ensure effective environmental governance (Part III Section 10, EPML, 2003). The guideline is prepared as an update of the 2017 ESIA procedural guideline. The objective of the document is to encourage all proponents, potential proponents, practitioners, and the general public seeking to obtain an environmental permit for new or existing projects, policies and programs in Liberia to use this instrument as a guide while planning.

3.2 Institutional Framework

3.2.1 The Environmental Protection Agency of Liberia

The Environmental Protection Agency (EPA) is an autonomous statutory body, established under the Act creating the Environmental Protection Agency of the Republic of Liberia 2003, and hereafter referred to as the EPA Act, to address the country's environmental problems. The EPA was established to "coordinate, monitor, supervise and consult with relevant stakeholders on all activities in the protection of the environment and sustainable use of natural resources" and as the lead national environmental agency is charged with executive authority for all environmental activities and programs relating to environmental management in Liberia. The EPA also has a key responsibility for matters relating to the issuing of an environmental impact assessment license and for compliance monitoring relating to environmental regulations and standards.

3.2.2 Liberia Water and Sewer Corporation

The Liberia Water and Sewer Corporation was created by an Act to amend the Public Utilities Law in 1973. The Corporation is empowered to construct, install, establish, operate, manage, supply safe drinking water and perform all sewerage services to all parts of Liberia, as well as to maintain such water and sewerage facilities. In line with this Act, Liberia Water and Sewer Corporation was duly established in 1973 under an Act of the Legislature as a legal public corporation.

3.2.3 Ministry of Finance and Development Planning

The Ministry of Finance and Development Planning was created in 2013 by an Act of the National Legislature, in line with international financial management best practices. The new MFDP effectively replaces the Ministry of Finance and the

Ministry of Planning and Economic Affairs, with the mandate to formulate, institutionalize and administer economic development, fiscal and tax policies for the promotion of sound and efficient management of financial resources of the government. This ministry combines public finance, development planning and economic management expertise and experience to effectively manage the economy.

3.2.4 National Public Health Institute of Liberia (NPHIL)

The National Public Health Institute of Liberia was established in December 2016 by legislative act. NPHIL's mission is to prevent and control public health threats by promoting healthy outcomes while serving as a source of knowledge and expertise. As the center of excellence for better health outcomes for Liberians through a strong health system, this institute aims to strengthen existing infection prevention and control efforts, laboratories, surveillance, infectious disease control, public health capacity building, response to outbreaks, and monitor diseases with epidemic potential.

3.2.5 National Water, Sanitation and Hygiene Commission

The Commission shall promote and regulate the development, management of water, sanitation and hygiene services and serves as the principal government entity on water, sanitation and hygiene throughout the Republic of Liberia. Their objective is to:

- Develop, promote and encourage a national agenda on the improvement of water, sanitation and hygiene services for the health, growth and development of the people of Liberia
- Oversee implementation of WASH Act and the Water Supply and Sanitation Policy
- Build the capacity of local communities on sanitation and hygiene
- Engage prospective domestic and foreign investors to invest in WASH
- Provide standards, guidelines and recommendations to municipal and local authorities on the disposal of waste and other hazardous substances that affect the quality of water and sanitation.

3.2.6 Ministry of Public Works

Predicated on the general outlook of Government to achieve National goals as a single unit, the Department of Public Works was created by an Act of the National Legislature in 1928, and was later changed to the Ministry of Public Works in 1972 to adequately administer the Engineering component of the State in terms of surveying, drafting/designing, construction and supervision, to improve and maintain, direct or by contract all highways, bridges, roads, streets, airport, seaport, and all other public infrastructure in the Republic of Liberia.

3.2.7 Ministry of Gender, Children, and Social Protection

The Ministry of Gender, Children, and Social Protection (MGCSP) was in 2001

established by an Act of the National Legislature and is mandated to "coordinate and ensure gender equality and equity, promote the survival, social protection and development of children, vulnerable and excluded and persons with disability and integrate fulfilment of their rights, empowerment and full participation into national development." The ministry works to promote gender mainstreaming throughout local and national government institutions and promotes programming to address social and economic inequalities and vulnerabilities in Liberia.

3.2.8 Ministry of Labor

Created by an Act of the Legislature in 1981; the Ministry of Labor has the statutory responsibility to regulate the labor sector through development and implementation of policies for adherence to the Labor Laws of Liberia and international labor conventions. The Ministry of Labor plays a pivotal role in shaping the socio-economic landscape of Liberia. It is the mandate of Labor Ministry to promote decent work, safeguard the rights of workers and employers, and ensure a balanced and just labor market that supports national development. The Ministry is charged with the responsibility to uphold the principles of equity, inclusion, and opportunity for all regardless of gender, age, background, or status.

3.2.9 Environmental and Social Standards (ESS) of the World Bank

The World Bank's Environmental and Social Standards (ESS) are designed to ensure that projects funded by the World Bank are environmentally and socially sustainable. Here are objectives and applications of each standard applicable to LURP, and those triggered by the Quick Impact Intervention Project.

Table 10: Applicable Environmental and Social Standards

ESS	Title	Objective	Application	Status
ESS-1	Assessment and Management of Environmental and Social Risks and Impacts	To ensure that Borrowers assess, manage, and monitor environmental and social risks and impacts throughout the project lifecycle.	Borrowers must conduct environmental and social impact assessments and develop management plans to mitigate identified risks.	**Relevant**
ESS-2	Labor and Working Conditions	To promote fair treatment of workers and ensure safe and healthy working conditions.	Borrowers must implement labor protection measures, including fair wages, safe working conditions, and non-discrimination policies	**Relevant**
ESS-3	Resource Efficiency and Pollution Prevention and Management	To minimize pollution and promote efficient use of resources.	Borrowers must implement measures to reduce pollution, manage waste, and use resources efficiently	**Relevant**

			throughout the project	
ESS-4	Community Health and Safety	To protect the health, safety, and security of project- affected communities.	Borrowers must identify and mitigate health and safety risks, with special attention to vulnerable groups.	Relevant
ESS-5	Land Acquisition, Restriction on Land Use, and Involuntary Resettlement	To minimize involuntary resettlement and mitigate its impacts.	Borrowers must develop resettlement plans and provide fair compensation and support to affected individuals and communities.	Not Relevant (Not applicable to the subproject due to the nature of work to be carry out under the emergency intervention)
ESS-6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	To conserve biodiversity and manage natural resources sustainability.	Borrowers must protect ecosystems and biodiversity, and ensure use of natural resources	Not Relevant (Not applicable to the subproject due to nature of the project locations and activities)
ESS-7	Indigenous People	To respect the rights and interests of Indigenous Peoples.	Borrowers must engage with Indigenous Peoples, obtain their free, prior, and informed consent, and ensure their rights are respected.	Not Relevant
ESS-8	Cultural Heritage	To protect cultural heritage and ensue that projects do not negatively impact cultural sites.	Borrowers must identify and protect cultural heritage sites and ensure that project activities do not harm them.	Not Relevant (Not applicable to the subproject, no cultural legacy will be affected)
ESS-9	Financial Intermediaries	To ensure that financial intermediaries manage environmental and social risks in subprojects they finance.	Financial intermediaries must implement environmental and social management systems and monitor subprojects for compliance.	Not Relevant
ESS-10	Stakeholder Engagement and Information Disclosure	To promote transparency and stakeholder participation.	Borrowers must engage with stakeholders, disclose relevant information, and establish grievance mechanism.	Relevant

3.3 Comparison of Liberia's Policies and Laws with the World Bank's ESS

Table 11: Comparison and gap analysis of Liberia's policies & World Bank's ESS

ESSESS Objectives	Applicable local legislation	Addressing gaps
Assessment & Management of Environmental & Social Risks	Environment Protection Agency Liberia Law 2002	The EPA Act caters for identifying and managing

ESSESS Objectives	Applicable local legislation	Addressing gaps
and Impacts *Identify, evaluate and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs.* **ESS1** requires that borrowers identify and manage environmental and social risks associated with a project, including through conducting an environmental and social assessment during the project preparation stage. Establishes a mitigation hierarchy which instructs borrowers first to anticipate and avoid risks and impacts; then to minimize or reduce risks and impacts to acceptable levels; then once risks and impacts have been minimized or reduced, mitigate; and finally, where significant residual impacts remain, compensate for or offset them. Instructs borrowers to ensure that project negative impacts do not fall disproportionately on those who might be disadvantaged or vulnerable, and to ensure that all groups have access to project benefits.	An Act to establish a monitoring, coordinating and supervisory authority for the sustainable management of the environment in partnership with regulated Ministries and organizations and in a close and responsive relationship with the people of Liberia; and to provide high quality information and advice on the state of the environment and for matters connected therewith. It **provides** for a wide-ranging responsibility for environmental management by the EPA. One of the most prominent issues is the need for development of administrative procedures for the preparation of EIA to ensure effective environmental governance. The required administrative procedures and how they are arranged to reflect the intent of the law is the subject of the following guidelines. **Environmental Impact Assessment Procedural Guidelines, 2006** It provides guidance on the EIA process and has been evident since the establishment of the EPA. It sets out the processes and procedures from applying for EIA to the EPA to the issuance of environmental permit.	Environmental and Social risks broadly and adequately. Where there are gaps relating to pollution standards and guidelines, those relating to ESS 1 will be adopted. EPA's EIA Process allows for adopting higher standards **Part 5, Section 37 of the EPA Act:** or conduct a project or activity for which an environmental impact assessment is required unless an environmental impact assessment has been concluded and an environmental regulation made there under
To adopt a mitigation hierarchy approach to anticipate and avoid risks and impacts; *Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels;* *Once risks and impacts have been minimized or reduced,*	Liberia EPA Act has no equivalent to the mitigation hierarchy. National law gives priority to the principle of environmental protection and pollution prevention, and not only to the mitigation or compensation of impacts. All new projects must carry out	LURP will apply the ESF

ESSESS Objectives	Applicable local legislation	Addressing gaps
mitigate; *Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.*	EIAs to prevent adverse impact and must obtain an environmental permit. No project or new structure that could harm, pollute or deteriorate the environment and natural resources is allowed and all new projects should use best available practices for clean production and apply environment protection/pollution prevention measures.	
To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project.	**Included in the EPA Act and regulations**	National requirements and ESF objectives are aligned and complement each other. LURP will apply both ESF and national requirements
To utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, whenever appropriate.	**The EPA Act 2003 specifies the procedures and process of undertaking ESIAs**	LURP will take into account national laws and regulations when applying the ESF requirements
To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity	**Included in the EPA Act and regulations**	LURP will take into account national laws and regulations when applying the ESF requirements
Labor & Working Conditions *To promote safety and health at work.* **ESS2** requires that borrowers ensure safe labor and working conditions in Bank-financed projects. Prohibits the use of forced or child labor in Bank-financed projects. Borrowers must provide a grievance mechanism for project workers, including sub-contracted workers.	**Labor Laws of Liberia** **Decent Work Act of Liberia, 2015** Provide a synopsis of applicable labor laws, occupational health and safety, conditions of service, contract etc.	Although some labor laws are old and outdated, existing labor laws have been applied to the project that are in line with requirements for ESS2. These will be acceptable to the Government of Liberia as the country also subscribes in principle to many of the labor laws of the ILO and the UN and many of the international Human

ESSESS Objectives	Applicable local legislation	Addressing gaps
The requirements are guided in part by a number of international conventions negotiated through the International Labour Organization (ILO) and the United Nations (UN). The specific objectives are: To promote the fair treatment, non-discrimination, and equal opportunity of workers. To establish, maintain, and improve the worker-management relationship. To promote compliance with national employment and labour laws. To protect workers, including vulnerable categories of workers such as children, migrant workers, workers engaged by third parties, and to promote safe and healthy working conditions, and the health of workers. To avoid the use of forced labour.		Rights Laws. Contractors will also be required to adopt many of the practical aspects of ESS2 implementation through stipulated requirements specified in the ESMPs and Contractor Labor Management Procedure.
Resource Efficiency and Pollution Prevention and Management **ESS3** recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services, and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention, and GHG emission	**Environment Protection and Management Law of Liberia, 2002** **EIA Procedural Guidelines, 2006** Sets out the processes and procedures involve in the conduct of Environment and Social Impact Assessment	Although there are gaps with ESS 3 and national regulations such as the EPML, management measures are also been sourced from ESS3. These measures will be acceptable to the Government of Liberia. Contractors will be required to adopt industry specific guideline to promote and support sustainable use of natural resources and complement them with appropriately developed modern technologies.
Community Health and Safety	**New Public Health Law of Liberia, Title 33, (2019)**	It is therefore the obligation of the Liberian

ESSESS Objectives	Applicable local legislation	Addressing gaps
ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable. It recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impact and must be eliminated, prevented, mitigated or reduced		government to create and promote safety policies aimed at protecting workers from workplace injuries, death, and other associated illnesses. Environmental health and safety management is an important component of a safe work environment because it protects human health and safety in the workplace. In cases where the New Public Health Law does not address an issue, the relevant provisions of ESS4 will be adopted which is allowable under the Liberian Governance system
Biodiversity Conservation and Sustainable Management of Living Natural Resources ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources, including inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. Biodiversity often underpins ecosystem services valued by humans. Impacts on biodiversity can therefore often adversely affect the delivery of ecosystem services.	**National Biodiversity Strategic Action Plan of Liberia, 2017** The Strategy considers key issues identified by stakeholders critical for biodiversity conservation and provides strategic direction to enhance biodiversity management.	ESS6 will be adopted to ensure the sustainable management of Living Natural Resources as the National Biodiversity Action Plan only addresses conservation of biological diversity and not sustainable use of resources.
Stakeholders' Engagement and Information Disclosure ESS10 recognizes the	**Environmental Protection and Management Law, 2002 -** The EPML provides the legal basis	The EPML do not required the preparation of a Stakeholders' Engagement

ESSESS Objectives	Applicable local legislation	Addressing gaps
importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. Stakeholder engagement is an inclusive process conducted throughout the project life cycle. Where properly designed and implemented, it supports the development of strong, constructive, and responsive relationships that are important for successful management of a project's environmental and social risks. Stakeholder engagement is most effective when initiated at an early stage of the project development process, and is an integral part of early project decisions and the assessment, management, and monitoring of the project's environmental and social risks and impacts.	on which stakeholders shall be consulted during and throughout the project life cycle. **EIA Procedural Guidelines,2006,** sets out the procedures involved in conducting stakeholder's consultation during the conduct of an Environmental and Social Impact Assessment	Plan (SEP). The project has adopted and prepared a SEP as part of the compliance process to ESS10.

3.4 Institutional Arrangements

Well-defined roles and responsibilities and adequate institutional arrangements are central to the effective implementation of the environmental and social mitigation measures outlined in this ESMP. Accordingly, the arrangement as well as the roles and responsibilities of the institutions that will be involved in the implementation, monitoring and review of the ESMP are outlined below.

3.4.1 Liberia Water and Sewer Corporation (LWSC):

- Proponent and beneficiary of the Project
- Responsible for coordinating with the Liberia Urban Resilient Project (LURP).
- Supports the supervision of the project

3.3.2 Liberia Urban Resilient Project (LURP):

- Funding partner, implementation entity and Client
- Responsible for all procurement processes to hire contractors and consultants
- Oversees the hiring, supervision, reporting and monitoring activities for all works.
- Responsible to prepare, review and submit project progress and final report to WB and share with LUWSP PIU.

3.3.3 Contractor

- Comply with the Project's environmental and social mitigation and management measures as specified in the ESMPs, and contract documents, as well as national and local legislation.
- Take all necessary measures to protect the health and safety of workers and community members, and avoid, minimize, or mitigate any environmental harm resulting from project activities.
- Evaluate and review the ESMP developed and internalize the provisions for implementation based on the realities of the project.
- Customize the project ESMP and generate a Contractor Environmental and Social Management Plan (C-ESMP), and other method statements and management plans according to requirements of the ESMP and get them approved by LURP PMU and the Supervision Consultant.
- Procure necessary equipment for environmental measurements or engage an appropriate expert personnel member for the activity in specific environment quality aspects including air quality, noise, water, and soil quality,
- Recruit qualified environmental and social safety officers to ensure compliance with environmental and social contractual obligations and proper implementation of the CESMP.
- Provide sufficient funding and human resources for proper implementation of the CESMP;
- Prepare monthly reports related to environmental and social management and monitoring for review and verification by the Construction Supervision Consultant.

- Executes the construction activities as per the project design and contract.
- Ensure compliance with the project technical specifications and E&S requirements.
- Manages all constructions activities, equipment, man-power, and environmental and social risks.
- Provides implementation reports, and briefings.

3.3.4 Supervision and Monitoring Consultant

- Directly responsible for contract administration and day-to-day project supervision including environmental and social management.
- The Construction Supervision Consultant will consist of an environmental and social unit that will advise the PMU on ESMP implementation and monitor the work of the contractors in the field.
- Engage environment and social specialists to ensure proper implementation of ESMP provisions.
- Undertake regular monitoring of the contractor's environmental performance, as scheduled in the ESMP.
- Prior to construction, review and approve C-ESMPs/method statements prepared by the contractors.
- Supervise site environmental management system of the contractors, and provide corrective instructions.
- Monitor the implementation of the C-ESMP and review the environmental management and monitoring reports prepared by the contractor.
- Review and report on C-ESMP implementation by the contractor.
- Prepare quarterly progress reports
- Provides oversight and monitoring of the Project's progress.
- Ensures that construction activities adhere to the Project designs, specifications and standards.
- Reports on the Project's status, quality, and compliance to the Client.

The commencement date for the project is subject to recruitment of both Contractor, and Supervision and Monitoring Consultant including official signing of Contracts.

3.4 Contractor's Environmental and Social Requirements

The Contractor shall commit to the principles of environmental protection, social responsibility, health and safety responsiveness. They commit to minimize the impacts of their operations and continually improve their performance by:

1. Effectively managing significant environmental impacts, monitor progress and review environmental performance against objectives and targets on a regular basis.
2. Complying with the relevant and applicable environmental legislation, contractual and other necessary requirements that are related to the project activities.

3. Driving continual improvement and meeting the requirements that are set within the ISO 14001 environmental management system standard as a part of the integrated business management system.
4. Ensuring that the company's policy is communicated to all its employees. In addition, the Contractor should strive to educate and train its employees to ensure competence in environmental management.
5. Preventing pollution and harm to the environment and cultural heritage, minimize the emissions to land, air and water and, reduce wherever possible the use of raw materials, supplies and energy.
6. Ethically procuring and responsibly delivering services, products and activities in such a manner that best balances the economic, environmental and social needs of the community.
7. Engaging with the relevant stakeholders and the surrounding community to achieve shared and lasting outcomes.

CHAPTER 4: DESCRIPTION OF THE BASELINE ENVIRONMENTAL AND SOCIAL CONDITIONS

This section provides a detailed overview of the current environmental and socio-economic conditions around the proposed project locations.

4.1 Description of the Environmental Baseline Conditions

Understanding the baseline conditions of the physical environment will help assess the likely environmental impacts of developing the Project.

4.1.1 Topography, Geology and Soil

Bushrod Island and Omega are characterized by its relatively low-lying and flat terrain and home to several important and highly populated Township and Communities. The geographical setting creates a low-lying area with a mix of wetlands, rivers and developed land. The area is prone to flooding and surface runoff during most time of the year thus impacting the quality of ground water.

Central Monrovia and Paynesville City are characterized by a diverse topography that includes low-lying lands, coastal plains, rolling hills, and river valleys. These low-lying lands and coastal plains are prone to flooding during heavy rains and high tides. The elevation in central Monrovia ranges from sea level along the coast to higher elevations of up to 73 meters (240 feet) asl in the hilly areas. Both cities are highly built environment with commercial centers and other livelihood facilities with no biodiversity population of high conservation value.

4.1.2 Meteorological Information

Meteorological parameters including rain, temperature, humidity, barometric pressure and wind direction and speed, are directly related to different aspects of the Project. Obtaining meteorological data is necessary for understanding the basis of environmental conditions in the area and for adequately assessing environmental impacts in a comprehensive approach. The proposed sites are noted to have two seasons, a long tropical rainy season from April to October and a dry season from November to March.

Average annual rainfall between 2019 and 2022 is 3,421.3 mm showing a decreasing trend. January is the driest month with an average monthly rainfall of 30 mm while June is the wettest with an average monthly rainfall of 638 mm.

Temperature is almost constant throughout the year and varies between 25 and 28 degrees Celsius on average. Humidity is generally high throughout the year with an average varying between 80% and 90% and reaching up to 100% for most of the wet season. Barometric pressure varies slightly between the dry and the wet season, where it is higher in the wet season due to higher humidity. It ranges on average between 1,008 and 1,013 mbar.

4.1.3 Hydrology

Greater Monrovia is surrounded by many water bodies including, rivers, creeks, water sheds, tributaries, and the Atlantic Ocean, the major water bodies that are

closer or within the project area are: the Saint Paul River, the Mesurado River, the Du River, Stockton Creek and the Atlantic Ocean.

4.1.4 Ecology and Biodiversity

The location of the projects is predominantly urban built environment, and this is a clear indication that sensitive vegetation and wildlife are absent from the area. Rapid urbanization and developmental activities in the past years have completely modified the natural environment thereby establishing human ecosystems. There are no sensitive habitats or endangered or threatened species of flora and fauna in this urban environment.

4.2 Description of the Socio-Economic Baseline Conditions

Understanding the Social and economic conditions of the physical environment in Greater Monrovia will help assess the expected Socio-economic impacts of developing the Project.

4.2.1 Demographic Characteristics of the Project Area

The proposed Project will be implemented in Greater Monrovia. Greater Monrovia is the capital region of Liberia and the nucleus of the country's economy. Greater Monrovia includes the City of Monrovia, City of Paynesville, the borough of New Kru Town and 9 townships including (Congo Town, Gardnerville, Barnersville, Garwolor, Johnsonville, Bensonville, Brewerville, and Cheesemanburg). It has a population of approximately 1 761 932 (Census 2022) million people with a growth rate of 3.4%. Over 40% of Liberians live in Greater Monrovia, which comprises the cities of Monrovia and Paynesville as well as 12 smaller townships and a Borough.

4.2.2 Existing Land Use

The land use in the Project area is essentially settlement including residential and commercial. Greater Monrovia comprises 18 administrative zones and houses about 188 communities, 10 of these zones constitute most of Monrovia "core" and have an urban character whereas the remaining eight zones ("periphery") lie on the outskirts and are semi-urban in nature, with largely lower population densities and less developed infrastructure and services. "Central Monrovia" also houses the main political and commercial districts and institutional establishments including industrial areas.

4.2.3 Sanitation and Solid waste Management

The specific project locations host the biggest commercial centers within Greater Monrovia and houses many manufacturing industries and commercials activities. Despites the economic viability of the area, it is faced with multi-faceted urban management challenges and weak urban management systems which has led to the limitation of basic social services like good sewer systems, proper waste management services, access to safe drinking and domestic water supply and other proper hygiene services. In general, waste generation and the need for disposal in Liberia's urban population is growing. The huge waste generation together with

the poor waste collection, and insufficient disposal facilities has led to improper solid wastes management and it is leading to increase pollution of surface and groundwater, soil, air and biodiversity in metropolitan settings. Inefficient sanitation and water supply services couple with the high population rate of the city has led to an increase in environmental pollution and degradation, poor living conditions, threatens health, and endangered the lives of Inhabitants in the project areas.

4.2.4 Gender Issues

Liberia faces significant gender disparities, particularly in women's access to productive assets and decision-making roles as noted in the National Gender Policy (2009). Despite progress post-civil war, deeply ingrained traditional and religious views still promote male superiority, sidelining women from economic opportunities and leadership positions. This is underscored by societal norms assigning strict roles based on gender across various sectors including education and employment.

4.2.5 Social Services (Education, Health, Religious)

The Project area inhabits numerous Schools/Educational systems, Health facilities, religious institutions, etc. At the secondary school level, Liberia's education system is divided into three categories: primary (elementary), middle (junior high), and secondary school (senior secondary education). Most of these facilities have direct access to roads and alleys in public places and communities that have been selected for water connections. Hence, project implementers need to be proactive in planning work activities and making decisions that will incorporate both beneficiary and affected intuitions.

4.2.6 Livelihood Strategies

Employment

Employment can be categorized as regular (formal) or non-regular (informal). Employment statistics generally cover persons aged 15 to 65, the recognized working age range globally. Regular employment involves a formal, often long-term contract in areas like companies, retail, or domestic work. Non-regular employment includes more short-term, informal jobs such as trading, running small shops, carpentry, and some paid farming activities. Liberia's official unemployment rate was 2.34% in 2016 (Statista, 2018).

4.2.7 Income and Expenditure

The predominant sources of income are businesses, fishing, and farming (gardening). In terms of expenditure, most households referred to education, health, and transportation as being some of their highest expenditures. However, Motorbike/Kekeh riding is another huge source of income generation in Greater Monrovia. This economic activity is occupied by young men who are dominantly

high school graduates. They commute with passengers, including marketers, from one point to another destination between PCAs and/or outwardly.

4.2.8 PACs Access Roads and Markets

Greater Monrovia features numerous market districts and commercial centers. In the affected project communities, Omega and Duala are prominent markets, with smaller markets like GSA Road also present. The region hosts various shops selling construction materials, pharmaceuticals, provisions, and food, along with entertainment venues and vehicle and petrol stations positioned along key streets. Commercial motorcycle riding is a significant income source, predominantly among young men who facilitate the movement of merchants and goods. When motorbike access is restricted, walking becomes an alternative.

4.2.9 Water Resources and Supply Sources

The water resources of Monrovia and its environs (Greater Monrovia as it is commonly called) are the St. Paul River on the western side, the Mesurado River in the central part, and the Du River on the eastern side; coupled with a locally extensive system of aquifers in a fluvial-marine sedimentary basin, a series of coastal lagoons and abundant rainfall.

The city's principal source of water supply is the St. Paul River; on the bank of which, the White Plains Water Treatment Plant is located. The average total annual flow of the St. Paul River, at Walker Bridge, is about 8.1 x 1010 m3; and the computed average discharge of the river is 215m3/s. Groundwater flow contribution to the total discharge, using baseflow separation estimation technique, is about 30%. (Source, LUWSP ESIA, April 2019)

In terms of ground water occurrence, Monrovia is situated in the Roberts Sedimentary Basin; which stratigraphy is represented by the following formations in order upwards from the granitic gneiss basement: Unconsolidated sand, silts and mud; Paynesville Sandstone; Edina Sandstone; and Farmington River Formation. The basement gneiss and Paynesville Sandstone are intruded by a swarm of igneous (Dolerite or Diabase) dikes and sills.

4.2.10 Water Demand

The present and projected water demand for Greater Monrovia is estimated as per table 1 below:

Table 12: Estimated water demand

Year	Daily Water Demand	
	Cubic meter	MGD
2015	124,316	32.80
2020	150,091	39.60

Year	Daily Water Demand	
2025	182,964	48.27
2030	225,191	59.41

(Source, LUWSP ESIA, April 2019)

4.2.11 Water Infrastructure

The basic source of potable water supply in Greater Monrovia is the White Plains Water Treatment Plant (WTP) distributed through a North-Southerly transmission mains and distribution network.

It was indicated in the 2019 ESIA report of the LUWSP that the Water Treatment Plant was in a state of disrepair and that the Plant was going to be entirely rehabilitated in 2015 and its capacity would increase to 16 MGD. With a lot of determined efforts by the Government of Liberia through LWSC, the White Plains Treatment Plant was rehabilitated to achieve the capacity of 16MGD in 2017 by the Liberia Urban Water Supply and Sanitation Project (LUWSSP). LWSC has managed to keep the plant operational in good condition since then.

In addition to complement the white plains, LWSC operates two Deep Wells in Paynesville and a plethora of not less than 1,500 manually operated Shallow Wells commonly managed by the communities where they are installed. Other water sources include private wells, boreholes and rainwater.

4.2.12 Access to Water Supply

Potential Project Affected Communities (PACs) have access to borehole wells, hand pumps, and vendor-sold sachet water, managed by the Liberia Water and Sewer Corporation in Greater Monrovia. These sources are primarily used for drinking and domestic purposes. Improved sources like piped water, boreholes, and hand pumps are considered safer, while non-improved sources such as unprotected wells and surface water are riskier and may negatively impact health.

Poor sanitation and unsafe water sources increase the risk of water-borne diseases such as dysentery, diarrhea, and typhoid fever. The lack of proper toilets and improper disposal of fecal matter exposes communities to health risks. Improved sanitation facilities significantly reduce disease contraction. Frequent exposure to feces, especially through practices like open defecation on beaches and dumpsites, poses significant health risks to all age groups, particularly children, the disabled, and the elderly. Few households have pit latrines, and public latrines, though provided, come at a considerable cost to community members.

CHAPTER 5: DESCRIPTION OF ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS

This chapter summarizes all potential positive and negative environmental and social risks and impacts related to the emergency water supply intervention project. The 2,500 household connections will be implemented in urban and suburban communities characterized by significant economic disparity, poor housing infrastructure, proliferation of waterborne diseases, water crisis, and unplanned livelihood challenges. Despite these underlining challenges, the project areas also possess few well-built private and public facilities and infrastructures.

There are four (4) main phases of the project anticipated; these include

- Pre-Construction Phase
- Construction Phase / Installation Phase
- Decommissioning Phase
- Operational and Maintenance Phase

The activities associated with these project phases will involve potential adverse environmental, social, health and safety risk and impacts on the environment and people. Mitigation measures will be proposed to offset these risks and impacts which are described in the subsequent chapters.

5.1 Impact Identification

Understanding the categories of potential environmental, social, and economic risks and impacts associated to the project, help develop strategies to enhance positive impacts while minimizing negative impacts. The following categories have been assessed; positive, negative, direct, indirect, cumulative, short-term, long-term, reversible, irreversible impact etc. See the table below for detail description.

Table 13: Impact Types and Description

No.	Impact Types	Descriptions
1.	**Positive Impacts**	**Environmental**: Benefits such as improved air or water quality, habitat restoration, and increased biodiversity.
		Social: Enhanced quality of life, job creation, improved health outcomes, increased access to piped borne water.
		Economic: Boosted local economy, increased investments, and improved infrastructure and local economic activities.
2.	**Negative Impacts**	**Environmental**: Adverse effects such as pollution, habitat destruction waste generation, and climate change.
		Social: Health risks, noise, disruption of socio-economic activities, disease transmission, conflict, competition for job & opportunity. GBV/SEA/SH and child labor, complaints
		Economic: disruption of movement and economic activities.
3.	**Direct Impact**	Immediate effects directly caused by the project, such as employment opportunities and economic/livelihood displacement
4.	**Indirect Impacts**	Secondary effects that occur as a result of the project, such as changes in local traffic patterns, induced economic growth, or long-term environmental changes.

5.	**Cumulative Impacts**	Combined effects of multiple projects or activities over time, which can be more significant than individual impacts. These might include cumulative air quality degradation or gradual social change.
6.	**Short-term Impacts**	Temporary effects that occur during the construction phase or initial implementation, such as noise, dust, and temporary displacement.
7.	**Long-term Impacts**	Permanent or prolonged effects that persist after the project is completed, such as habitat loss, long-term economic benefits, or community health improvements.
8.	**Reversible Impacts**	Effects that can be mitigated or reversed, such as temporary land disturbances that can be restored.
9.	**Irreversible Impacts**	Effects that are permanent and cannot be undone, such as species extinction or permanent landscape alteration.

5.2 Determination of Impact Significance

Determination of impact significance is a crucial step in impact identification and evaluation. It involves evaluating the importance of identified impacts to prioritize mitigation measures and make informed decisions. Determination of impact significance is based on two key criteria namely:

- Impact Significant Criteria
- Impact likelihood Criteria

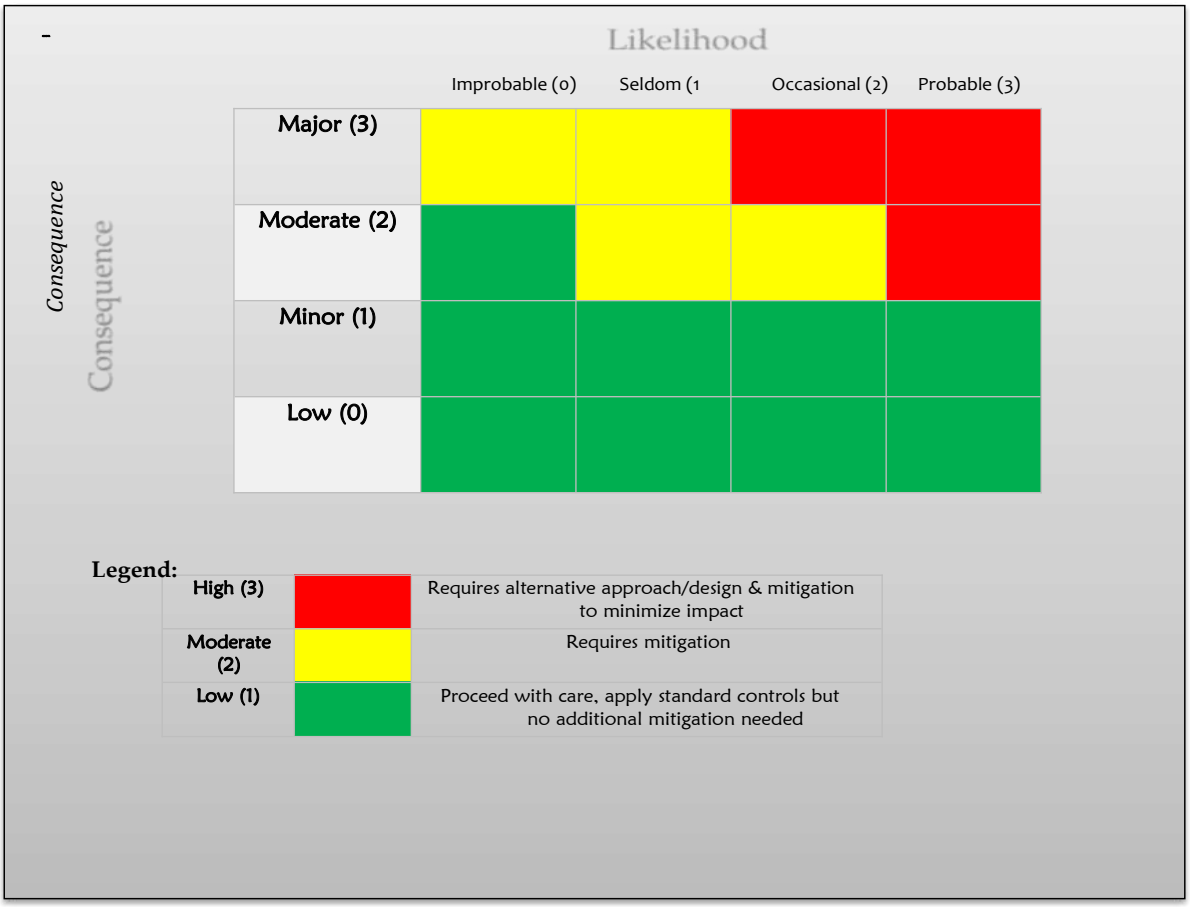
Table 14: Impact Significant Criteria

Consequence Level	Significance Criteria
Major (3)	**Workers Health & Safety:** one or more fatalities or life-threatening injuries/illness **Environmental & Social**: widespread modification or extraordinary severity in physical environment or economic resources or social structure lasting more than one year, with an area extent of impact > 1 percent of study area.
Moderate (2)	**Workers Health & Safety:** injury requiring medical attention, or illness requiring long-term medical care or > 2 lost time instances for same or recurring incident/illness during phase of work. **Environmental & Social:** local modification of measurable severity in physical environment or economic resources, lasting for a few months up to one year before recovery, with an area extent of impact extending from 01 to 1 percent of study area; or more widespread modification of lesser severity.
Minor (1)	**Workers Health & Safety:** 1-2 lost time instances for same or recurring illness/injury. **Environmental & Safety**: localized, relatively isolated change in physical environment or economic resources, lasting only a few days to a few months before recovery, with no observable residual effects; and with an area extending from 0.01 to 0.1 percent of study area; impacts less significant than exerted by nature.
Negligible (0)	**Workers Health & Safety**: Negligible first-aid case (no lost time) or near miss. **Environmental & Social**: Little or no change in physical environment, even temporarily, conditions consistent with background conditions.

Table 15: Impact Likelihood Criteria

Likelihood Level	Significance Criteria
Probable (3)	Impact or event can reasonably be expected to result from project, occur routinely for similar operations.
Occasional (2)	The Impact or event has occurred in similar operations in this country, or conditions could allow the impact/event to reoccur.
Seldom (1)	The impact or event has occurred once or twice in the company/industry, but conditions in this program are unlikely to allow the impact/event to occur.
Improbable (0)	The impact or event has never before occurred.

Figure 16: Impact Evaluation Matrix



5.4 Potential Positive Impacts

The implementation of the project will significantly contribute to the project affected communities by provision of clean and safe piped borne water, improve sanitation, creation of new job opportunities, capacity building, skill transfer etc. Below are some positive impacts described in detail.

5.4.1 Socio-Economic Positive Impacts

- **Uninterrupted Water Supply**

The Project aims to ensure that 2500 households have reliable access to safe and potable drinking water, reducing dependency on unsafe water sources. This effort will significantly reduce water borne diseases caused by poor sanitation, hygiene, and consumption of unsafe water. Consequently, the quality of life for the people in the affected communities will improve.

- **Improved Quality of Life**

The project will enhance living conditions, sanitation, and hygiene, leading to a better quality of life for residents. With easy access to clean water, residents, especially women and children can spend more time on education, work, and other productive activities.

- **Employment Opportunities**

The Project will create direct employment opportunities by hiring workers for construction activities, including engineers, laborers, and project manager. These opportunities will boost economic activity in the area, potentially leading to more jobs in local businesses, hospitality, and retail sectors. Additionally, the project will provide direct and indirect employment opportunities in the water and infrastructure sector. Individuals from project affected communities will be prioritized during recruitment.

- **Skills Transfer**

The project will offer an opportunity for transfer of skills between and amongst different professionals working on the project during the construction phases. This ensures knowledge transfer from experts other skill workers. Eg. The Supervising Consultant and other experts from LURP and LWSC will provide learning opportunities for Contractors' workers.

- **Increased Revenue**

The project aims to provide water supply services to communities in urgent need, building confidence in the service provider. This will attract more customers and significantly increase revenue. These efforts will help strengthen LWSC's capacity to decentralize services, enhance its ability to pay workers, and efficiently manage the water system.

- **Water Security**

The Project will alleviate poverty, water crisis and scarcity in the affected communities by restoring hopes and confidence in the water supply services. With regular water availability, local traders and businesspeople will be motivated to invest in commercial activities. As a result, the social livelihood of the residents, locals, and petite traders will be significantly enhanced.

5.5 Potential Adverse Impacts

5.5.1 Environmental Risks and Impacts

i. **Air Quality**

During construction, site clearing, trenching, vehicular movement of materials and equipment and operation of diesel generators will lead to potential dust, particulate and combustion emissions. Most of the project affected communities are unpaved and risk high level of air pollution during construction though these impacts are localized and not significant.

ii. **Noise & Vibration**

The use of drilling equipment, excavation can generate significant noise levels, potentially causing disturbance to nearby residents. Increased traffic from construction vehicles can contribute to elevated noise levels, especially in urban and residential areas. Excessive vibrations can lead to structural damage to buildings, roads, and other infrastructure.

iii.

iv. **Environmental Degradation:**

Potential for soil erosion, water pollution, and habitat disruption, impacting the local project affected communities. Mitigation measures should be implemented to ensure adequate management.

v. **Surface water contamination**

Surface water contamination as a result of sediment/pollutants runoff from spoils and exposed soil surfaces. Risk of water and soil contamination in case of spills or leaks of diesel or engine oil from heavy equipment, or sorting of lubricant on site. In addition, The Contractor may need to extract storm waters from the trenches and other construction works to ensure working conditions; the discharge of the pumped water can impact surface waters and drainage systems and cause erosion.

vi. **Clearing of Vegetation**

The trenching of pipe will require site preparatory activities like brushing of grass and clearing of scrubs from the way. This activity may lead to erosion especially during the wet season and will need to be assessed.

vii. **Generation of hazardous & non-hazardous construction waste**

The construction activities will necessitate temporary on-site storage of

construction materials and excavated materials; poor management of the stored materials and wastes can result in dispersion of materials in the nearby drainage systems and creeks, streets and adjacent properties. Appropriate disposal of construction wastes could minimize similar issues at the final disposal site.

viii. Water system leaks resulting in waste and loss of pressure

There a high possibility of encountering areas where old existing water lines are leaking due to erosions or other bad road conditions, leading to soil and water pollution, and loss of pressure in the water supply system. These issues should be identified, assessed and mitigation measure should be proposed

ix. Community Health and Safety including Traffic

The project is expected to affect the health and safety of the communities living within the project area, especially the ones that are very close to the proposed project sites. The water connection intervention will necessitate influx of workers, road cuttings, excavations of trenches, which will lead to blocking of access and livelihood disruption in the project communities for a period of time.

The construction activities may necessitate partial or total traffic interruption, and temporary road cuts and vehicle and pedestrian traffic deviations. These could result in traffic congestion and risk of accidents. Further, the supply of construction materials will generate circulation of trucks increasing the traffic load within project communities and corridors. There's a need to assess the project activities against community health and safety and provide appropriate mitigation measures.

x. Occupational Health and Safety

Excavations and other construction site activities such as the use of heavy equipment, transport of project materials, working on road corridors with active traffic and working under open climatic conditions, must be effectively managed to prevent poor health, injury to workers and disruption of the project;

The excavation of about 1.0 m-deep trenches for placement of pipelines and excavation for emplacement of foundations are potential risks to vehicles and workers; the vehicles and machine operations on site and a long pipe alignment can create health and safety risks for both workers and pedestrians.

5.5.2 Social & Economic Impacts

- **Potential Land Acquisition**

From the E&S screening conducted, the current design of the Project made resettlement (ESS5) relevant. However, to avoid resettlement, the designs were revised (a redesign of the project was made) to allow the connection of household that have direct access to road network along the project corridor to enable the water project to attract the additional financing from the Bank. In effect, ESS5 is no longer relevant as stated in the legal framework section of this

report.

Some temporary disturbances of livelihood sources and access will occur, which could be managed under this ESMP and the Contractor's ESMP.

The work phase of the project will avoid expansion and interference where community accessways and right of ways are restricted. However, additional homes can be connected by extending beyond the designed corridor in order to reach the potential 2,500 connections.

-
- Potential Health Risks

Excavation and trenching within communities that lacks proper latrine and drainage systems lead to increased risk of waterborne diseases and other health issues due to construction disruptions and inadequate sanitation. As a norm, the project could cause high influx of people from other places which could potentially result in social friction and alter social dynamic and possibly increasing the risk of occurrence of diseases and infections.

- Economic Disruption

Interruption of local businesses and livelihood activities during construction, affecting the local economy. Some of these interruptions may be in the form of traffic congestion, restrictions on movement of people, goods and services, etc.

- Waste Generation

During the course of construction, it is anticipated that the project will produce construction waste and other form of wastes. Construction wastes, packaging from construction materials, debris, excavation remnants and other will be generated which could contaminate both soil and water resources within the surrounding environment. Mitigation measures should be implemented to ensure adequate management.

- Social Tension

Competition for jobs, opportunities and resources can lead to conflicts and social tensions among project affected communities. Possible social unrest due to perceived inequalities in project benefits and disruptions, leading to community conflicts.

- Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH)

Sexual exploitation and abuse (SEA) and Sexual harassment are serious risks associated with project activities, especially within existing communities. These risks have significant impacts on individuals and communities, undermining trust and safety and promoting a culture of insecurity and abuse, molestation, stereotype, or death.

5.6 Summary of Potential Impacts and Ratings

Table17: Impact Matrix

Sources of Impacts/Risk	Affected Resource	Intensity	Receptor	Duration	Significance
Reduce air quality due to increase traffic flow	Air Quality	Reversible	Localized	Short-term	Moderate
Dust emissions from earthworks and transport of materials	Air Quality	Reversible	Localized	Short-term	Moderate
Pollutant emission from fuel generators and transport vehicles	Air Quality	Reversible	Localized	Short-term	Moderate
Reduced air quality due to unsustainable waste management practices	Air Quality	Reversible	Localized	Short-term	Moderate
Air pollution due to open burning of excavated substances	Air Quality	Reversible	Localized	Short-term	Moderate
Noise from construction equipment and activities	Noise Quality	Irreversible	Localized	Long-term	Moderate

accidental spills/leaks and incorrect handling of lubricants	Water Quality/ Resources	Reversible	Dispersed	Short-term	Moderate
Pollution of water bodies due to surface runoff from construction sites	Water Quality/ Resources	Reversible	Dispersed	Short-term	Moderate
Increase erosion from vegetation clearing and earthworks	Soil Quality	Reversible	Localized d	Short-term	Moderate
Risk of soil contamination from waste generation and accidental spills	Soil Quality	Reversible	Localized	Short-term	Moderate
Risk to biodiversity	ecosystem	Reversible	Localized	Short-term	Low
Increase sedimentation due to construction activities	Soil Quality	Reversible	Localized	Short-term	Moderate
Loss of fertile soil due to civil & engineering works	Soil Quality	Reversible	Localized	Short-term	Low
Potential soil and /or water contamination from mishandling of generated solid waste, construction waste	Public Health	Reversible	Localized	Long-term	Moderate

Increase risk of workers exposure to hazards due to lack of relevant PPEs	Employee/ Public Health	irreversible	Localized	9. Long-term	Moderate
Risk of injury during onsite construction, excavation and preparatory work	Employee/ Public Health	irreversible	Localized	10. Long-term	Moderate
Potential of intoxicated workers conducting delicate operations	Employee/ Public Health	irreversible	Localized	Long-term	Moderate
Increase risk of occurrence of infectious diseases from influx of employees	Employee/ Public Health	irreversible	Localized	Long-term	Moderate
Risk of injury and accident during operations	Employee/ Public Health	irreversible	Localized	Long-term	Moderate
Risk of fire explosion due to improper management of hydrocarbons (fuel, gas etc.)	Employee/ Public Health	irreversible	Localized	Long-term	Moderate
Risk of disturbance to traffic, petite traders & commercial activities	Socio-economic	Reversible	Localized	Long-term	High
Risk of workers exposure to high vibrating	Employee/ Public Health	irreversible	Localized	Long-term	Moderate

equipment					
Risk of accident from being struck by machinery or moving equipment	Employee/ Public Health	irreversible	Localized	Long-term	Moderate
Risk of child abuse and child labor	Employee/ Public Health	Irreversible	Localized	Long-term	Moderate
Potential threats to workers as the result of raising workplace concerns	Employee/ Public Health	Irreversible	Localized	Long-term	Moderate
Risk of discrimination on the basis of religion, race, ethnicity or creed	Employee/ Public Health	irreversible	Localized	Long-term	Moderate
Potential risk of disruption of utility lines	Public Utility	Reversible	Localized	Short-term	High
Increase number of grievances due to construction activities	Public	Reversible	Localized	Long-term	Moderate
Risk of loss of Cultural Heritage	Cultural Heritage	irreversible	Localized	Long-term	Low

due to civil & engineering works					
Increase in domestic violence due to economic and power imbalances within households	Employee/ Local Community	Irreversible	Localized	Long-term	Moderate
Increase vulnerability of women due to pressure from income earning Men especially in communities where social and economic disadvantages are high	Employee/ Local community	Reversible	Localized	Long-term	Moderate
Risk of disruption of social structures	Employee/ Local Community	Irreversible	Localized	Long-term	Low
Increase risks of SEA/SH prevalence	Employee/ Local Community	Irreversible	Localized	Long-term	Moderate
Increased risk of vehicular accident and frequent breakdown due to poor maintenance	Employee/ Public Safety	irreversible	Localized	Long-term	Moderate

CHAPTER 6: ENVIRONMENTAL AND SOCIAL MITIGATION & MANAGEMENT MEASURES

This chapter highlights the environmental and social mitigation and management measures that should be considered during implementation. These mitigation measures have been identified to reduce both existing and potential risks and impacts associated with the project during pre-construction, construction, operational & maintenance and decommissioning phases of the Water Connection Project. Based on the potential adverse risks and impacts, appropriate mitigation measures have been identified to prevent, minimize, mitigate or compensate for adverse environmental and/or social impacts.

The design and facilities shall take due recognition of the need to decommission the campsite and the ancillary facilities at the end of the operational life by preparing a Decommissioning Plan at least one month prior to decommissioning. In addition, enhancement measures have been developed to improve project environmental and social performance at all four stages of the project implementation.

The roles and responsibilities of implementing these measures are clearly defined and the budget for the measures estimated.

A summary of the proposed mitigation measures is provided in the table 18 below.

Table 18: Environmental and Social Mitigation Plan

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
1.0	E&S Risk and Impacts during Planning and Preparation/ Preconstruction Phase					
1.1	Environmental and Social Assessment/ Screening	E&S risks if no adequate E&S assessment is conducted	Conduct E&S Screening and prepare ESMP	**Responsibility:** PMU, WB **Frequency:** Once, prior to contract signing	November 2024 - March 2025	The PMU E&S team conducted the assessment at no additional cost
		Potential exclusion of households from access to the water connection due to lack of access ways	Engagement to identify households with potential restrictions due to lack of access ways & dissemination of criteria for access to the project for the provision of water; Consensus with neighbors to allow connection through their property during construction (Notarized written agreement)	**Responsibility:** PMU **Frequency:** Before and throughout construction	November 2024 - November 2025	The PMU E&S team & Engineers conducted the assessment and will continue coordination with Contractor, community Leaders and affected parties during construction at no additional cost
2.0	Potential Environmental Risk and Impacts during the Construction Phase					
2.1	Construction Activities (Site clearing, Earthworks, Excavation, trenching, pipes installation and backfilling)	Deterioration of local air quality due to the release of fugitive dust from land clearing activities.	Regularly water /spray surfaces to control dust emissions; Suspend activities during extreme rainfall events; Ensure to Provide drainage channels and silt traps for all parts of the topsoil storage areas; Ensure to grade or restore disturbed surfaces of existing roads; Install sediment and erosion controls;	**Responsibility:** Contractor: Through its E&S Officers	Throughout the construction phase of the project	Cost for water springling Equipment, and Noise masks are included in the lumpsum cost of the Project.
2.2		Risk of soil erosion and contamination during	Suspend activities during extreme rainfall events;	**Responsibility:** Contractor E&S	Throughout the	Costs included in overall amount for

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
		clearing, excavation, construction, handling, storage, and transportation of construction materials	Provide drainage channels and Install sediment traps as needed Prevent steep slopes, define optimum height of work evaluating the instability of soil, etc. Ensure to compact properly, or restore disturbed surfaces of existing roads.	Officer **Frequency:** Daily	Construction phase of the Project	excavation and construction cost of the Project.
2.3		Risk of Surface water contamination during construction, and through improper handling, storage, and transportation of construction materials and as a result of sediment/pollutants run off from spoils and exposed soil surfaces.	Install sediment, leakage, and erosion control measures; Follow guidelines and procedures for immediate cleanup of spillages (oil, fuel, chemicals); Cover open stockpiles of construction materials on site with tarpaulins during rainstorm events; Compact earthworks as soon as the final surfaces are formed to prevent erosion; Install natural or synthetic liners beneath chemical storage tanks. Compact earthworks as soon as the final surfaces are formed to prevent erosion especially during the wet season; Avoid dumping of construction waste illegally on land and into water bodies.	**Responsibility:** Contractor E&S Officer **Frequency:** Daily	Throughout the Construction phase of the Project	Costs included in overall amount for excavation and construction cost of the Project.
2.4		Risk of surface runoff from busted pipes draining into the	Inspect and determine pressure valves for disconnection where necessary to avoid runoff draining into	**Responsibility:** Contractor E&S Officer	Throughout the construction	**US$1,000.00** to cover the cost of identifying valves and mitigating

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
		nearby community during and after the trenching activities	communities	**Frequency:** Daily	phase of the project	surface runoff
2.5		Risk of generating construction waste and excavated materials within the communities living alongside the trenches	Use excavated materials/soil for backfilling. Excess materials should be disposed properly; Waste materials should not be left in close proximity to the trenches but immediately disposed at the Whein Town Landfill after excavation, to reduce odor intensity for surrounding inhabitants. Excess excavated materials should be reused to fill damage community road section; Prohibit the burning of refuse on the construction and operation site; Segregate chemical wastes and properly store and dispose hazardous waste according to the EPA's standards; Recycle onsite whenever feasible; Ensure regular and effective housekeeping within the site in line with best practice; Create awareness among the workers on the proper and safe disposal of waste; Get the support of the Monrovia City Corporation (MCC) and the Paynesville City (PCC) to effectively	**Responsibility:** Contractor's E&S Officer **Frequency:** Daily	Throughout the Construction Phase	Costs to dispose the waste is included in the overall amount for excavation and installation cost of the Project. ***The Contractor should counter check if the cost to place excess excavated materials on nearby community roads is included in the project cost. If not, the Contractor should submit the cost and negotiate with LURP PMU for inclusion into the contract.***

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
			and efficiently manage the disposal of waste at Whein Town Landfill.			
2.6		Risk of air pollution during construction, and through improper handling, storage, and transportation of construction materials	Avoid burning of materials resulting from onsite clearance; Ensure that persons working in areas prone to dust are provided PPEs; Ensure adequate maintenance and repair of equipment & machinery; Ensure that vehicles and machines are switched off when not in use; Maintain minimum traffic speed on-site and on access roads.	**Responsibility:** Contractor: Through its E&S Officers	Throughout the construction phase of the project	Cost for Equipment maintenance and Noise masks are included in the lumpsum cost of the Project.
2.6		Risk of Noise from equipment application and movement	Selection of equipment with low sound power level; Well-maintained equipment should be operated on-site; Installing suitable mufflers on engine exhausts and compressor components;	**Responsibility**: Contractor's E&S Officer **Frequency**: Daily	Throughout the construction phase of the project	The cost for noise management is embedded within the project's cost.
2.7		Risk of damage to public utility cables and pipes (water, telecommunication, electrical) and subsequent disruption of services due to excavation activities.	In case where public utilities are encountered during works, the Contractor shall notify the Client and the relevant Institution. Excavation activities will be carried out manually in most sections which will therefore minimize risks of damage to public utilities.	**Responsibility**: Contractor's E&S Officer & the Owners' Supervising Engineers **Frequency**: Daily	Throughout the construction phase of the project	The cost for repair of damaged utilities or diversion is embedded within the project's cost.
3.0	**Potential Social Risk and Impacts during the Construction Phase**					
3.1		Risk of community	The PMU shall include clause(s) in the	**Responsibility**:	First month	Cost to hire E&S Officer

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
	Mobilization	members not cooperating with the Project due to hiring of majority of laborers from outside the affected community	contract which will require contractors to utilize as much as possible the available labor within the affected communities. The PMU will also ensure that contractors have proper documentation system in place to track the performance of workers and the payments they receive for work done	Contractor's E&S Officer **Frequency:** Daily	of project implementation	is included within the Project cost
3.2	**Construction Activities (Site clearing, Earthworks, Excavation, trenching, pipes installation and backfilling)**	Occupational health and safety Risk to workers health and safety would be subjected to unsafe and hazardous working conditions without the availability of the required PPE, HSE Sensitization, emergency response, and first aid care	Procure and provide to all workers on site PPE items that are appropriate for the work at hand (i.e., durable hand gloves for construction works; reflective vest; Nose covers with respirators; safety boots; and Safety eye goggles). The contractor shall recruit an occupational health and safety officer to manage, document and report all health and safety issues (incidents and accidents) on site. The OHS officer shall conduct weekly toolbox talks for workers on the health and safety requirements of the different tasks that will be included in the assignment, and to sensitize workers on the spread of communicable	**Responsibility:** Contractor's OSH/E&S Officer Supervising Engineer **Frequency:** Daily	Throughout the contract period	Cost for the provision of the OSH Staff/E&S Officer, quality equipment, tools, and PPE items to be used by all project workers during work activities is embedded in the overall Lumpsum Project cost. See BoQ for Water Connection. The cost for provision of First Aid Kits at all sites is **US$2500.00** Cost to cover Environmental Health and Safety training for workers is covered

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
			diseases. However, an induction training will be delivered by the PMU E&S team prior to commencement of any onsite works. Key element of the training will include (*Purpose, objectives and content of the ESMP and OSH plan. Code of conduct. Gender based violence. Grievance redress mechanism. The outline of the operation/site/location; The individual's immediate line manager and any other key personnel; Any site-specific risks, for example access, contamination, hazardous substances; Control measures on the site, including any site rules, any permit-to-work systems, security arrangements and if necessary; emergency, Arrangements for first aid and for reporting accidents and other incidents; Information about the individual's responsibilities. Site rules. Sanitation, Alcohol and drug abuse etc.*) An induction register will be kept up to date with details of the staff inductions. Induction data will be given to the PMU monthly as a part of the regular report. Procure and make available on site First Aid Kits for use by workers as and when necessary. The Management of the Contractor will share the insurance policy for			under stakeholder engagement and will be carried out by the PMU

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
			addressing accidents on site (workers injury or death) with the PMU. All incidents will be reported through the Supervising Engineer within 24 hours. Moreover, it is the responsibility of everyone on site to report any incident to their direct site manager who will in turn forward it to the Engineer and then the Project E&S for proper action. The contractor will ensure to have on site emergency contacts from the nearest Police Station, National Fire and rescue service, and nearby Hospitals and clinics. In addition to ESS2 mentioned in this ESMP, the contractor shall refer to the Project's Labor Management Procedures (LMP) for guidance in dealing with issues related to the recruitment, organization, deployment, management and remuneration of workers, including resolving work related complaints and grievances. The Contractor will ensure that the community is aware of the available GRM and keep a GRM log			

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
			The contractor shall also refer to the Project's Stakeholder Engagement Plan (SEP) to help him/her hold meaningful consultations with workers, community members and other people who may be affected by or have interest in the project activity			
3.3		Temporary livelihood disruption, which means that project activities will disrupt sales and income of traders on site	1. Engagement with PAPs to agree on mitigation measures; 2. Find temporary alternative sites for traders at Johnson Street and Omega Market. 3. Find temporary alternative route for travelers at Dula Market Bushrod Island Apply the weekend and night shift as concurrent measure	**Responsibility:** Contractor's OSH/E&S Officer PMU E&S, and Community Engagement Specialist Specialists **Frequency:** As need be	Prior to start of work and throughout construction and completion	Covered under the project stakeholder engagement cost.
3.4		Risk to Traffic Management in work zones and access restrictions including impacts from traffic congestion during mobilization of equipment to sites, excavation, construction and carrying away of	The Contractor is required to put road safety signs at all critical work sites to control traffic at work zones and limit risks. The Contractor should prepare a detailed site-specific traffic management plan indicating how the work activities will be carried out along roads and within congested areas without restricting access for road users, and include it as an annex	**Responsibility:** Contractor E&S Team **Frequency:** Daily	Throughout the contract period	The cost for the road safety signs at all critical work sites is estimated at US$5000.00. Training of the workers in traffic management will be done together with the health, safety & GBV training and carried out by the PMU

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
		wastes, especially along sites that may not be accessible by good roads	within the CESMP. Risk from restricting access should be identified and measures to mitigate impacts should be proposed especially for pipes crossings in critical zones as described in Table 14. Implementation of Contractor's Site-Specific Traffic management plan The Contractor should designate a Traffic Management Supervisor who will oversee traffic management along major roads and critical sections within the subproject target areas.			E&S team. Cost to prepare the Contractor's CESMP is embedded in the Contractor's cost to carry out the assignment. Cost to hire a Traffic management Supervisor is included in the Lump sum Project cost.
3.5		Risk of violation of workers' rights, including various forms of discrimination	Workers shall make use of the Labor Management Procedures including the Code of Conduct and the Project's Grievance Mechanism to seek redress to their grievances. The workers' rights would be guaranteed and protected under the contract of engagement signed between the worker and the contractor. Periodic update of labor statistics in sex/gender disaggregated format. Conduct age verification as a measure to prevent child labor	**Responsibility:** Contractor's OSH/ E&S Officer **Frequency:** Daily	Mobilization throughout, Construction period	Training on LMP and Code of Conduct to be combined with GBV and Health/Safety training and carried out by the PMU. Hence, the above- mentioned trainings budget covers the cost of trainings in this section.
3.6		Risk associated with restrictions of access to	Implement adequate traffic management measures to regulate	**Responsibility:** Contractor's	During construction	Cost for Safety Signs is indicated under item

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
		homes, schools and businesses due to project activities carried out at Critical Locations (Deep curves, Bends, cutting through pavements, etc.) to connect households to LWSC water supply network.	traffic flow; Notify key stakeholders within the corridor at least 48 hours prior to commencement of works; Provision of alternative access routes; Continuous engagement and meaningful consultation with project affected parties to reach consensus on acceptable options; Work on weekends and nights where feasible.	E&S Officer **Frequency:** Daily	and throughout completion	3.4; Cost for engagement is Covered under the project stakeholder engagement cost.
3.7	Health and Safety Concerns of Project Communities and the general Public	Exposure of the community and the Public to the risks of opened excavated trenches, movement of equipment, prolonged safety risk due to delay in execution of works, contaminated water, and contact of contagious diseases/infections (STIs) from Workers	Adequate protection and signaling of work sites in particular during the night, with clear marking of the safety borders on the works perimeter. Barricade sensitive or dangerous areas and/or equipment within the work zone to prevent community exposure to danger and harm; • Prohibition of access to work sites by any person having no work permit in particular where it concerns areas marked as restricted. The latter should include at least places occupied by operation mechanical and electrical equipment • Civil work should be minimized at night except where necessary and clear signs should be placed around and along site of operation to avoid accidents.	**Responsibility:** Contractor's E&S Officer **Frequency:** Daily	Throughout the construction phase	Cost for Safety Signs is indicated under item 3.4; Cost for engagement is Covered under the project stakeholder engagement cost.

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
			• Barricades and road diversions should be installed boldly and clearly. Warnings can be installed around and along project implementation sites to ward off visually impaired members of the public. • Comply with timelines and schedules of works to avoid delays. • Avoid leakages during pressure testing, backfilling and ensure proper waste management and sanitation on site. Comply with the Project's GBV action plan.			
3.8	Protection of Community Dwellers and workers against GBV/SEA&H during the entire period of the Project	Risk of gender-based violence (GBV), sexual exploitation and abuse (SEA), and sexual harassment (SH) due to influx of workers and empowerment of community workers, occurring at different levels among workers, and between workers and community dwellers	Contractor shall include in its workforce a GBV/Gender Specialist who will monitor and ensure compliance to the Project's GBV Action Plan. The PMU Social Safeguard and Gender Specialist / E&S Staff in the absence of the SSGS, will monitor to ensure that the contractor is operating in compliance with the GBV Action Plan and provide guidance for proper implementation. The Contractor shall include in its workforce a GBV/Gender Specialist	**Responsibility** The Contractor (Through her GBV/Gender Specialist) **Frequency:** Weekly	Throughout the contract period	**US$ 2,500.00** as estimated cost of hiring a GBV/ Gender Specialist to manage GBV and sexual risk on the Project. **US$8,750.00** as cost to cover major E&S training including GBV/SEA&H training costs for workers; during the cost breakdown is as

S/N	Activity	Potential Environmental & Social Impacts	Mitigation Measures	Responsibility & Frequency	Timeframe	Cost of Mitigation (US$)
			who will monitor and ensure compliance to the Project's GBV Action Plan. The PMU Social Safeguard and Gender Specialist will monitor to ensure that the contractor is operating in compliance with the GBV Action Plan and provide guidance for proper implementation.			follows: **$5,000.00** for participants meals; **$3,000.00** for participants' transportation reimbursement (based on distance from training venue), and **$750.00** for hall rental (two times) The training will be done two times (beginning & Mid-term) PMU E&S monitoring will not require additional costs
3.9	Discovery of Cultural Inheritance	Risk of destroying cultural heritage site	No cultural properties will be affected as the work locations are limited to the right-off-way in road corridors. However, if any items of cultural value are accidentally found, the work shall be halted and the finding reported to the proper authority. Contractor will then provide report of archeological monitoring.	**Responsibility**: Contractor. Supervising Engineer, with support from PMU's E&S Team **Frequency**: Daily	Throughout the construction phase of the project activities	The cost for noise management is embedded within the project's cost.
3.10	Stakeholder	Risk of ignoring	In accordance with the SEP, ensure that	**Responsibility:**	Prior to the	The proposed total

	Engagement	stakeholders and their engagement regarding project implementation causing the stakeholders harboring undue expectations and distrust due to lack of engagement and inadequate awareness raising about the project	consultations with stakeholders are planned and carried out before and during work activities at regular intervals throughout the contract period Continuous engagement with residents throughout the implementation of the civil works. Residents, traders and affected and Adjourning communities to be notified in advance of the project before mobilization to site Ensure effective communication strategy for excavation plan to communities especially In congested zones like the market areas; Fully sensitizing residents around proposed construction sites and the expected impacts such as noise, air quality deterioration, blocking of accessway, traffic congestions etc.	Contractor's E&S Officer and the **PMU** through its E&S Team **Frequency:** Before, during and at end of contract. And as the need arise.	start of work and throughout the contract period	budget for engagements is **US$15,000.00**. The PMU will finance the before and after contract engagements. The Contractor is responsible to finance all engagements during the construction and stage of the project.
4.0	**Environmental and Social risks and impacts during the Decommissioning Phase**					
	Decommissioning	Risk of not Removing of all Contractor's equipment and tools from site, restoring all areas that earthworks were done to disturbed the soil and ensuring proper cleaning of the entire project site	Contractor to prepare a decommissioning and abandonment Plan, to govern this activity, at least a month prior to decommissioning; The abandonment plan shall take due note of the current national and international legislative requirements. Relocate all unused tools and equipment to the contractor company storage facility;	**Responsibility:** Contractor **Frequency:** Once	After the completion of all civil works as required by the contract	The decommissioning cost is included in the overall project cost

			Demolish any additional structures that were constructed/installed by the Contractor; Dispose of all the generated waste in accordance with the waste management plan and waste management regulations. Clean up the site and handover the site to the Client and demobilize/withdraw all personnel that had been posted to the site including the security personnel.			
5.0	**Potential E&S Risk and Impacts during Operation and Maintenance Phase**					
4.1	Pipes Leakages	Risks due to leakages from busted pipes	✓ Have a regular monitoring system in place to detect leaks in pipes and water distribution networks. ✓ Conduct timely repairs of identified leaks and maintain pipes in good condition to prevent water loss. ✓ Replace old or damaged pipes with more durable materials to 4.2reduce the likelihood of leakage. ✓ Optimize water pressure in the system to minimize stress on pipes, which can lead to leaks. ✓ Carry out proper backfilling and compaction to avoid continuous ✓ Leak Detection Technology: Use advanced technologies such as sensors, telemetry, or earth observation systems to identify and locate leaks efficiently. ✓ Public Awareness: Educate stakeholders and users about	**Responsibility:** LWSC Maintenance Team **Frequency:** Carryout monitoring Every three Months	During Operation	Cost to be determined during Operation & Maintenance phase

			reporting leaks promptly to ensure quick action.			
4.2	Soil erosion	Impacts from Soil erosion leading to pipe exposure	✓ Backfill pipelines and compact earthworks properly as soon as the final surfaces are formed to prevent erosion especially during the wet season; ✓ Install sediment, leakage, and erosion control measures;	**Responsibility:** LWSC Maintenance Team **Frequency:** Immediately after repair works	During Operation	Cost to be determined during Operation & Maintenance phase
4.3	Occupational health and safety	Occupational health and safety risk during repair work	Provide appropriate PPE items to all workers during works, (i.e. durable hand gloves for construction works; reflective vest; Nose covers with respirators; safety boots; and Safety eye goggles, rain coats and boots during the rainy season). LWSC shall appoint an occupational health and safety officer to oversee, document and report all health and safety issues (incidents and accidents) on site. The OHS officer shall conduct toolbox talks for workers on the health and safety requirements of the different tasks that will be included in the assignment, and to sensitize workers on the spread of communicable diseases. Procure and make available on site First Aid Kits for use by workers as and when necessary. LWSC OSH Officer should hold meaningful consultations with	**Responsibility:** LWSC Maintenance Team **Frequency:** Immediately after repair works	During Operation	Cost to be determined during Operation & Maintenance phase

			community members and other people who may be affected by or have interest in the project activity			
4.4	Excavation, pipes repair, Backfilling and compaction		Install sediment, leakage, and erosion control measures; Compact earthworks as soon as the final surfaces are formed to prevent erosion; Avoid dumping of construction waste illegally on land and into water bodies.		During Operation	Cost to be determined during Operation & Maintenance phase
	TOTAL COST					**US$39,750.00**

CHAPTER 7: ENVIRONMENTAL & SOCIAL MONITORING PLAN

7.1 Environmental and Social Monitoring Program

This chapter describes the monitoring program for the emergency water supply intervention project. Monitoring involves the continuous measurement or periodic review of mitigation activities and their effectiveness. The overall responsibility of implementing the monitoring program rests with LURP PMU as the project proponent. However, the various monitoring activities will be conducted by the Contractor implementing the respective management actions (combined with compliance monitoring by the Owner's Engineer).

The monitoring program also outlines the reporting responsibilities, both LURP PMU requirements towards the Contractors and the PMU's statutory responsibilities towards LWSC and The World Bank.

The objective of the monitoring plan is to:

i. Provide checks on the implementation of the mitigation measures (activity monitoring) and early
ii. indications of progress, or lack thereof, with respect to achievement of objectives (outcome of monitoring)
iii. Identify corrective measures or the redesign of mitigation measures (proactive action), if the originally planned mitigation measures are not sufficiently effective
iv. The total timeframe of the monitoring period is not time-bound and it should last until the project impacts have been mitigated or fully compensated.

Overall, the plan will protect the health and safety of the project communities, promote sustainable natural resources, enhances socio-economic conditions and foster transparency and accountability by regularly monitoring and reporting on environmental and social performance, building trust with stakeholders and the communities. The table below highlights the potential negative impacts, mitigation measures, monitoring parameters, frequency, responsibility, timeframe and associated cost for implementation.

Table 19: Environmental and Social Monitoring Plan

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
1.0	**E&S Risk and Impacts during Planning and Preparation/ Pre-Construction Phase**						
1.1	E&S risks if no adequate E&S assessment is conducted	Conduct E&S Screening and prepare ESMP	Visual Observation, LURP E&S screening checklist Literature review & stakeholder's engagements	Environmental and social indicators (Air, water, soil, biodiversity, Land use, People)	Once, prior to contract signing	LURP PMU, LUWSC PIU/LWSC & WB	The PMU E&S team conducted the assessment and prepare the report at no additional cost
1.2	Potential exclusion of households from access to the water connection due to lack of access ways	Engagement to identify households with potential restrictions due to lack of access ways & dissemination of criteria for access to the project for the provision of water; Consensus with neighbors to allow connection through their property during construction (Notarized written agreement)	Household Survey report, Site inspection, stakeholder engagement	Household Access to roadways Willingness of neighbors for access to water supply	Before and throughout construction	Supervising Engineer supported by LURP PMU & LWSC	The PMU E&S team & Engineers will carry out monitoring at no additional cost
2.0	**Potential Environmental Risk and Impacts during the Construction Phase**						
2.1	Deterioration of local air quality due to the	Regularly water /spray surfaces to control dust	Air quality measuring	Observation of air borne	Throughout the contract period	Supervising Engineer	PMU monitoring cost is included

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
	release of fugitive dust from land clearing activities.	emissions; Suspend activities during extreme rainfall events; Ensure to Provide drainage channels and silt traps for all parts of the topsoil storage areas; Ensure to grade or restore disturbed surfaces of existing roads; Install sediment and erosion controls;	equipment such as AeroQual S500 series, AeroCet 531 Etc. Results compared to baseline readings in this ESMP	particulates (dust) and exhaust fumes; Records of dampening of roads; Complaints from the public regarding dust pollution Air quality monitoring records PM2.5 and PM10 SPM, PM2.5, PM10, CO, NOx, VOC, CH4, N2O and SO		supported by LURP PMU & LWSC	in the overall LURP Project cost
2.2	Risk of soil erosion and contamination during clearing, excavation, construction, handling, storage, and transportation of	Suspend activities during extreme rainfall events; Provide drainage channels and silt traps for all parts of the topsoil storage areas; Install sediment and erosion	Observation Soil quality testing	PH, turbidity, heavy metals	Daily Throughout the Construction phase of the Project	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost.

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
	construction materials	controls; Ensure to grade or restore disturbed surfaces of existing roads.					The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring
2.3	Risk of Surface water contamination during construction, and through improper handling, storage, and transportation of construction materials and as a result of sediment/pollutants run off from spoils and exposed soil surfaces.	Install sediment, leakage, and erosion control measures; Follow guidelines and procedures for immediate cleanup of spillages (oil, fuel, chemicals); Cover open stockpiles of construction materials on site with tarpaulins during rainstorm events; Compact earthworks as soon as the final surfaces are formed to prevent erosion; Install natural or synthetic liners beneath chemical storage tanks. Compact earthworks as soon as the final surfaces are formed to prevent erosion	Observation Water quality testing equipment such as Silt Density Index (SDI) Testers,	Water quality parameters including TDS, BOD, COD, pH, temperature etc.	Weekly Continuous throughout the Construction phase of the Project	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		especially during the wet season; Avoid dumping of construction waste illegally on land and into water bodies.					
2.4	Risk of surface runoff from busted pipes draining into the nearby community during and after the trenching activities	Inspect and determine pressure valves for disconnection where necessary to avoid runoff draining into communities	Pressurizing Pipes	Pipes testing reports Quantity of leakage pipes	Daily throughout the construction phase of the project	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring
2.5	Risk of generating construction waste and excavated materials within the communities living alongside the trenches	Use excavated materials/soil for backfilling. Excess materials should be disposed properly; Municipal Waste materials should not be left in close proximity to the trenches but	Visual observations Complaints from community dwellers	Waste littering Visual observation of surroundings Waste	Weekly throughout the construction phase of the project	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost.

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		immediately disposed at the Whein Town Landfill after excavation, to reduce odor intensity for surrounding inhabitants. Excess excavated materials should be reused to fill damage community road section; Prohibit the burning of refuse on the construction and operation site; Segregate chemical wastes and properly store and dispose hazardous waste according to the EPA's standards; Recycle onsite whenever feasible; Ensure regular and effective housekeeping within the site in line with best practice; Create awareness among the workers on the proper and safe disposal of waste; Get the support of the Monrovia City Corporation (MCC) and the Paynesville City (PCC) to effectively and	Desk review of reports	Management Plan (WMP) implementation			The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		efficiently manage the disposal of waste at Whein Town Landfill.					
2.6	Risk of air pollution during construction, and through improper handling, storage, and transportation of construction materials	Avoid burning of materials resulting from onsite clearance; Ensure that persons working in areas prone to dust are provided PPEs; Ensure adequate maintenance and repair of equipment & machinery; Ensure that vehicles and machines are switched off when not in use; Maintain minimum traffic speed on-site and on access roads.	Air quality measuring equipment such as AeroQual S500 series, AeroCet 531 Etc. Results compared to baseline readings in this ESMP	Observation of air borne particulates (dust) and exhaust fumes; Records of dampening of roads; Complaints from the public regarding dust pollution Air quality monitoring records PM2.5 and PM10 SPM, PM2.5, PM10, CO, NOx, VOC, CH4, N2O and SO	Daily	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring
2.6	Risk of Noise from	Selection of equipment with	Using	Noise levels	Daily	Supervising	The supervising

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
	equipment application and movement	low sound power level; Well-maintained equipment should be operated on-site; Installing suitable mufflers on engine exhausts and compressor components;	vibration and noise metre Readings compared to EPA standard	and vibrations Complaints on noise nuisance Noise level monitoring records Vehicle maintenance records		Engineer supported by LURP PMU & LWSC	Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring
2.7	Risk of damage to public utility cables and pipes (water, telecommunication, electrical) and subsequent disruption of services due to excavation activities.	In case where public utilities are encountered during works, the Contractor shall notify the Client and the relevant Institution. Excavation activities will be carried out manually in most sections which will therefore minimize risks of damage to public utilities.	Observations Complaints	Progress report Quantity of public utilities damaged	Daily	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring
3.0	Potential Social Risk and Impacts during the Construction Phase						

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
3.1	Risk of community members not cooperating with the Project due to hiring of majority of laborers from outside the affected community	The PMU shall include clause(s) in the contract which will require contractors to utilize as much as possible the available labor within the affected communities. The PMU will also ensure that contractors have proper documentation system in place to track the performance of workers and the payments they receive for work done	Grievances reported; lack of cooperation from the project communities; Observation of employment listing;	Project Communities, Number of complaints on not hiring community members; Dissatisfactions and limited cooperation from community members	daily during Mobilization & Weekly afterwards	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring
3.2	Occupational health and safety Risk to workers health and safety would be subjected to unsafe and hazardous working conditions without the availability of the required PPE, HSE Sensitization, emergency response, and first aid care	Procure and provide to all workers on site PPE items that are appropriate for the work at hand (i.e., durable hand gloves for construction works; reflective vest; Nose covers with respirators; safety boots; and Safety eye goggles). The contractor shall recruit an occupational health and safety officer to manage, document and report all health and	Observations Desk reviews of records, reports and programs	Workers' awareness of Contractor's health and safety policy and programs Availability and proper use of PPEs Availability and proper use of warning signs	Daily	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		safety issues (incidents and accidents) on site. The OHS officer shall conduct weekly toolbox talks for workers on the health and safety requirements of the different tasks that will be included in the assignment, and to sensitize workers on the spread of communicable diseases. However, an induction training will be delivered by the PMU E&S team prior to commencement of any onsite works. Key element of the training will include (*Purpose, objectives and content of the ESMP and OSH plan. Code of conduct. Gender based violence. Grievance redress mechanism. The outline of the operation/site/location; The individual's immediate line manager and any other key personnel; Any site-specific risks, for example access,*		Availability of first aid kit Contractor Adherence to health and safety procedures Records on frequency, type and source of illness/ accident/ injury Records on noncompliance			LWSC monitoring

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		contamination, hazardous substances; Control measures on the site, including any site rules, any permit-to-work systems, security arrangements and if necessary; emergency, Arrangements for first aid and for reporting accidents and other incidents; Information about the individual's responsibilities. Site rules. Sanitation, Alcohol and drug abuse etc.) An induction register will be kept up to date with details of the staff inductions. Induction data will be given to the PMU monthly as a part of the regular report. Procure and make available on site First Aid Kits for use by workers as and when necessary. The Management of the Contractor will share the insurance policy for addressing accidents on site (workers injury or death) with					

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		the PMU. All incidents will be reported through the Supervising Engineer within 24 hours. Moreover, it is the responsibility of everyone on site to report any incident to their direct site manager who will in turn forward it to the Engineer and then the Project E&S for proper action. The contractor will ensure to have on site emergency contacts from the nearest Police Station, National Fire and rescue service, and nearby Hospitals and clinics. In addition to ESS2 mentioned in this ESMP, the contractor shall refer to the Project's Labor Management Procedures (LMP) for guidance in dealing with issues related to the recruitment, organization, deployment, management and remuneration of workers,					

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		including resolving work related complaints and grievances. The Contractor will ensure that the community is aware of the available GRM and keep a GRM log The contractor shall also refer to the Project's Stakeholder Engagement Plan (SEP) to help him/her hold meaningful consultations with workers, community members and other people who may be affected by or have interest in the project activity					
3.3	Temporary livelihood disruption, which means that project activities will disrupt sales and income of traders on site	Engagement with PAPs to agree on mitigation measures; Find temporary alternative sites for traders at Johnson Street and Omega Market. Find temporary alternative route for travelers at Dula Market Bushrod Island Apply the weekend and night	Stakeholders' consultations	Market areas, Petit Traders; Grievances reported	Prior to start of work and throughout construction and completion	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		shift as concurrent measure					Project cost No cost is budgeted for LWSC monitoring
3.4	Risk to Traffic Management in work zones and access restrictions including impacts from traffic congestion during mobilization of equipment to sites, excavation, construction and carrying away of wastes, especially along sites that may not be accessible by good roads	The Contractor is required to put road safety signs at all critical work sites to control traffic at work zones and limit risks. The Contractor should prepare a detailed site-specific traffic management plan indicating how the work activities will be carried out along roads and within congested areas without restricting access for road users, and include it as an annex within the CESMP. Risk from restricting access should be identified and measures to mitigate impacts should be proposed especially for pipes crossings in critical zones as described in Table 14. Implementation of Contractor's Site-Specific Traffic management plan	Observation, Traffic management report against Traffic management Plan	Traffic management report Complaints from public Traffic congestion	Daily	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		The Contractor should designate a Traffic Management Supervisor who will oversee traffic management along major roads and critical sections within the subproject target areas.					
3.5	Risk of violation of workers' rights, including various forms of discrimination	Workers shall make use of the Labor Management Procedures including the Code of Conduct (CoC) and the Project's Grievance Mechanism to seek redress to their grievances. The workers' rights would be guaranteed and protected under the contract of engagement signed between the worker and the contractor. Periodic update of labor statistics in sex/gender disaggregated format. Conduct age verification as a measure to prevent child labor	Monitoring Reports; Grievances reported on violation of workers' rights.	Number of Workers trained in LMP, GRM and CoC (Number of workers who Signed CoC)	Daily	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
3.6	Risk associated with restrictions of access to homes, schools and businesses due to project activities carried out at Critical Locations (Deep curves, Bends, cutting through pavements, etc.) to connect households to LWSC water supply network.	Implement adequate traffic management measures to regulate traffic flow; Notify key stakeholders within the corridor at least 48 hours prior to commencement of works; Provision of alternative access routes; Continuous engagement and meaningful consultation with project affected parties to reach consensus on acceptable options; Work on weekends and nights where feasible.	Observation, Consultations with affected people, record grievances, monitor the implementation of the site specific TMP	Project sites, minutes of meeting from community engagements Progress, completion and monitoring reports	Daily	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring
3.7	Exposure of the community and the Public to the risks of opened excavated trenches, movement of equipment, prolonged safety risk due to delay in execution of works, contaminated water, and contact of contagious diseases/infections	Adequate protection and signaling of work sites in particular during the night, with clear marking of the safety borders on the works perimeter. Barricade sensitive or dangerous areas and/or equipment within the work zone to prevent community exposure to danger and harm; • Prohibition of access to work sites by any person	Monitoring and observing work areas; Incident Reporting	At Project Sites, Project communities, along project corridors	Daily during Construction Phase	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
	(STIs) from Workers	having no work permit in particular where it concerns areas marked as restricted. The latter should include at least places occupied by operation mechanical and electrical equipment • Civil work should be minimized at night except where necessary and clear signs should be placed around and along site of operation to avoid accidents. • Barricades and road diversions should be installed boldly and clearly. Warnings can be installed around and along project implementation sites to ward off visually impaired members of the public. • Comply with timelines and schedules of works to avoid delays. • Avoid leakages during pressure testing, backfilling and ensure proper waste					No cost is budgeted for LWSC monitoring

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		management and sanitation on site. Comply with the Project's GBV action plan.					
3.8	Risk of gender-based violence (GBV), sexual exploitation and abuse (SEA), and sexual harassment (SH) due to influx of workers and empowerment of community workers, occurring at different levels among workers, and between workers and community dwellers	Contractor shall include in its workforce a GBV/Gender Specialist who will monitor and ensure compliance to the Project's GBV Action Plan. The PMU Social Safeguard and Gender Specialist / E&S Staff in the absence of the SSGS, will monitor to ensure that the contractor is operating in compliance with the GBV Action Plan and provide guidance for proper implementation. The Contractor shall include in its workforce a GBV/Gender Specialist who will monitor and ensure compliance to the Project's GBV Action Plan. The PMU Social Safeguard and Gender Specialist will monitor to ensure that the contractor is operating in compliance with	GBV/Gender Specialist hired by contractor to track GBV occurrences; Observation, GBV Complaints Report, and GRM reports	GBV incidents reported in E&S reports	Weekly	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		the GBV Action Plan and provide guidance for proper implementation.					
	Risk of destroying cultural heritage site	No cultural properties will be affected as the work locations are limited to the right-off-way in road corridors. However, if any items of cultural value are accidentally found, the work shall be halted and the finding reported to the proper authority. Contractor will then provide report of archeological monitoring.	Number of PCR / chance finds	Project sites and along the corridors where works will be carried out	When discovered	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring
	Risk of improper stakeholders' engagement regarding project implementation causing the stakeholders harboring undue expectations and distrust; Could lead to grievances, Disruption	In accordance with the SEP, conduct continuous consultations with stakeholders (especially users of the water) during repair work activities at regular intervals throughout the operation phase of the project	Review of Reports; Recording of grievances; Community meetings etc. Observation	GRM records, meetings reports including attendance Concerns raised in community meetings	Before, during and at end of contract. And as the need arise.	Supervising Engineer supported by LURP PMU & LWSC	The supervising Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
	and Delay in Project implementation						Project cost No cost is budgeted for LWSC monitoring
4.0	Environmental and Social risks and impacts during the Decommissioning Phase						
	Risk of not decommissioning the site by removing of all Contractor's equipment and tools from site, restoring all areas that earthworks were done to disturbed the soil and ensuring proper cleaning of the entire project site	Contractor to prepare a decommissioning and abandonment Plan, to govern this activity, at least a month prior to decommissioning, get it approve by the PMU, and implement it. Demobilize all equipment and personnel, Clean up the site and handover the site to the Client	Site inspection Use decommissioning plan to rate compliance		Once after completion of all civil works	Supervising Engineer supported by LURP PMU & LWSC	Engineer cost is included in the Project's implementation cost. The PMU monitoring cost is included in the overall LURP Project cost No cost is budgeted for LWSC monitoring
5.0	Potential E&S Risk and Impacts during Operation and Maintenance Phase						
4.1	Risks due to leakages from busted pipes	✓ Have a regular monitoring system in place to detect leaks in pipes and water distribution networks. ✓ Conduct timely repairs of identified leaks and maintain pipes in good condition to prevent water	Observation of the entire project corridor Recording Complaints	Grievance reports	Carryout monitoring Every three Months And set-up system for receiving	LWSC Maintenance Team	Cost to be determined during Operation & Maintenance phase

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		loss. ✓ Replace old or damaged pipes with more durable materials to 4.2reduce the likelihood of leakage. ✓ Optimize water pressure in the system to minimize stress on pipes, which can lead to leaks. ✓ Carry out proper backfilling and compaction to avoid continuous ✓ Leak Detection Technology: Use advanced technologies such as sensors, telemetry, or earth observation systems to identify and locate leaks efficiently. Public Awareness: Educate stakeholders and users about reporting leaks promptly to ensure quick action.			complaints including pipes leakages		
4.2	Impacts from Soil erosion leading to pipe exposure	✓ Backfill pipelines and compact earthworks properly as soon as the final surfaces are formed to prevent erosion especially during the wet season;	Soil Quality Test	PH, Turbidity, heavy Metals	During repair works/maintenance Immediately after repair	LWSC Maintenance Team	Cost to be determined during Operation & Maintenance phase

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		Install sediment, leakage, and erosion control measures;			works		
4.3	Occupational health and safety risk during repair work	Provide appropriate PPE items to all workers during works, (i.e. durable hand gloves for construction works; reflective vest; Nose covers with respirators; safety boots; and Safety eye goggles, rain coats and boots during the rainy season). LWSC shall appoint an occupational health and safety officer to oversee, document and report all health and safety issues (incidents and accidents) on site. The OHS officer shall conduct toolbox talks for workers on the health and safety requirements of the different tasks that will be included in the assignment, and to sensitize workers on the spread of communicable diseases. Procure and make available on site First Aid Kits for use by workers as and when	Observations, Desk review of records, reports and programs	Workers' awareness of Contractor's health and safety policy and programs Availability and proper use of PPEs Availability and proper use of warning signs Availability of first aid kit Contractor Adherence to health and safety procedures Records on frequency, type and source of illness/	As need be during operation	LWSC Maintenance Team	Cost to be determined during Operation & Maintenance phase

S/N	Potential Environmental & Social Impacts	Mitigation Measures	Method Used	Parameters to be Measured	Frequency of Measurement	Responsibility	Cost of Monitoring (US$)
		necessary. ✓ LWSC OSH Officer should hold meaningful consultations with community members and other people who may be affected by or have interest in the project activity		accident/ injury Records on noncompliance			
4.4	Impacts from work activities during pipes repair (excavation Backfilling and compaction)	Ensure Workers health and safety by providing PPEs, first aid, training and awareness of all risk and impacts, Install sediment, leakage, and erosion control measures; Compact earthworks as soon as the final surfaces are formed to prevent erosion; Avoid dumping of construction waste illegally on land and into water bodies. Ensure community health and safety	Assigned an E&S Officer to manage all E&S risks during repair works, Training and awareness of impacts and risks, record all incidents and grievances;	PPE usage, signed CoC by all workers, Repair Works report including E&S activities; incidents and grievances reported;	As need be during Operation	LWSC Maintenance Team	Cost to be determined during Operation & Maintenance phase
	TOTAL COST						**Monitoring cost is covered under PMU Operational budget.**

7.2 Training and Capacity Building Plan

Capacity building and strengthening are required to ensure effective and efficient implementation of the ESMP. The PMU will undertake internal training to ensure that project expectations regarding environmental and social performance are achieved. Specific training on the ESMP components and mitigation measures are required to enhance the capacity of field officers to deliver their responsibilities. Consequently, the PMU will arrange environmental and social training for relevant agencies, consultants and contractor staff. The estimated budget for capacity building is USD$ 8,750.00 in table 20.

Table 20: Training Program

Training required	Target participant to train	When	By Who	Institutional responsibility to organize the training	Training type	Estimated training logistics cost (USD)
Training on LURP ESMP, roles and responsibilities. Environmental and social impacts mitigation measures implementation and monitoring. Training in public and occupational health and safety	Contractors , Consultant, and MPW Resident Engineers	During project implement ation	PMU	PMU	Workshop	6,000.00
Grievance Mechanisms Procedures.	Contractors Consultants , and MPW Resident Engineers	During project implement ation	PMU	PMU a	Workshop	2750.00
TOTAL						**8,750.00**

7.3 Budget for ESMP Implementation

The budget covers the mitigation, monitoring measures and capacity building plan for the proposed activities identified in each of the implementation phases of the project. It covers the pre-construction, the construction and the operation phase's mitigation measures. The details of the proposed mitigation measures are as outlined in Table 21 The total estimated cost for implementing the ESMP is Forty-one thousand seven hundred thirty-seven United States Dollars and Fifty Cents Only (US$41,737.050)

Table 21: Estimated Budget for the Implementation of ESMP

Activity	Responsibility	**Amount (US$)**
Mitigation	Contractor, PMU	**31,000.00**
Monitoring	PMU	Monitoring cost is covered under PMU Operational budget
Training and Capacity Building	PMU	8,750.00
SUB-TOTAL		**$39,750.00**
Contingency (5% of Total)		**1,987.5**
TOTAL		**$41,737.50**

7.4 Reporting Plan and Schedule

The type of report that shall be produced is described in ***Table 22***. Reports shall be produced through the course of implementation and monitoring programs, collecting incident/grievances forms, consulting with local community and checking performance of proposed mitigation measures within the ESMP. Site inspections are to be conducted based on the requirements stipulated in the monitoring plan to ensure compliance with the set standards, identify potential impacts on the environment and communities, and implement effective mitigation measures.

The team members will have monthly meetings with the project manager to discuss all results of the site inspections, incidents, non-conformities, resource allocation for the CESMP implementation. Reporting and notification associated with implementation of the ESMP will cover the following:

Table 22: Environmental Social Health and Safety (ESHS) Reporting Requirement

RESPONSIBILITY	TYPE OF REPORTS	PURPOSE OF REPORTING	FREQUENCY OF REPORTING	REPORT SUBMITTED TO
Contractors' Environmental and Social Officer	Daily ESHS Compliance Checklist	Checklist of environmental, social, health and safety compliance of work activities	Daily Supervision	Supervising Consultant
Contractor / Supervision consultant	Accidents/Incident Report	Filing/notification of accidents or unplanned events	Within 1-3 hours of the incident	Supervising Consultant
LURP PMU	Accidents/Incidents Reports	Filling/notification of accidents or unplanned events	Within 24 hours of the incidents	LURP PMU
Supervising Consultant	Non-Compliance Report	Detail the cause, nature, and effect of environmental/ or social-economic non-compliance act performed	Within 1 day of events	LURP PMU
Contractor	Monthly Compliance Report	Report of compliance and noncompliance issues and measures	Monthly	LURP PMU
LURP PMU	Weekly Compliance Checklist including grievance recorded	Checklist of environmental and social compliance of all Construction/ work activities	Weekly	Internal/LURP PMU
Environmental, and Social Safeguard & Gender Specialist	Monthly ESHS Compliance Report	Monthly report of ESHS compliance within eight days of receipt of	Monthly	World Bank

			report from contractor		
	Third Party Compliance Validation	Mid-term and yearly	Quarterly third-party monitoring reports to be submitted quarterly during construction, and annually during project operations	Mid-Term and Annually (Will be done during LURP regular audit)	Third Party Monitor

CHAPTER 8: STAKEHOLDER ENGAGEMENT & INFORMATION DISCLOSURE

Consistent with the World Bank's Environmental and Social Standard (ESS10) Guidelines, stakeholder engagement and information disclosure are designed to establish an effective platform for productive interactions with potentially affected parties, disadvantaged groups, and other interested parties. The stakeholder engagement procedure outlines the principles, objectives, type of stakeholder and engagement process undertaken as part of the project development and implementation. The SEP is regarded as a live document that will be consistently reviewed and updated as required by throughout the life cycle of the Project.

8.1 Principles for Effective Stakeholder Engagement

Common principles for effective stakeholder engagement based on "International Best Practice" include Commitment, Integrity, Respect, Transparency, Inclusiveness and Trust. Here is a brief explanation of each principle:

1) **Commitment**: This principle refers to the organization's commitment to engaging with stakeholders in a meaningful way. It involves dedicating resources, time, and effort to building relationships with stakeholders and ensuring that their needs and concerns are taken into account.
2) **Integrity**: This principle refers to the organization's commitment to being honest, ethical, and transparent in its interactions with stakeholders. It involves being open and truthful about the organization's goals, values, and practices, and avoiding conflicts of interest or other unethical behavior.
3) **Respect**: This principle refers to the organization's commitment to treating stakeholders with respect and dignity. It involves valuing their opinions, perspectives, and experiences, and ensuring that they are heard and understood.
4) **Transparency**: This principle refers to the organization's commitment to being open and transparent about its activities, decisions, and performance. It involves providing stakeholders with clear and accurate information about the organization's goals, strategies, and operations, and being responsive to their questions and concerns.
5) **Inclusiveness**: This principle refers to the organization's commitment to engaging with a diverse range of stakeholders and ensuring that their voices are heard. It involves being inclusive of different perspectives,

experiences, and backgrounds, and creating opportunities for stakeholders to participate in decision-making processes.

6) **Trust**: This principle refers to the organization's commitment to building and maintaining trust with stakeholders. It involves being reliable, consistent, and accountable in its interactions with stakeholders, and following through on commitments and promises.

Effective stakeholder engagement requires a commitment to these principles, as well as a willingness to listen, learn, and adapt to the needs and concerns of stakeholders. By following these principles, organizations can build strong relationships with stakeholders, enhance their reputation, and achieve better outcomes for all involved.

8.2 Stakeholder Analysis

The water supply project involves a variety of stakeholders with varying interests. Among these, on one hand representing national institutions, are principally the Liberia Water & Sewer Corporation, the Ministry of Public Works, and the Environmental Protection Agency. On the other hand, is a cluster of community groups comprising of community chairpersons, elders, youths, residents disadvantaged individuals and businesses owners. The interest of national institutions is high and is aimed at ensuring compliance of the E&S governance framework across the project implementation. Project affected communities are more concerned with the benefits that come with their connection to the water supply system, but also how the connections are carried out to avoid trespassing on their properties. The LURP Stakeholder Engagement Plan is explicit on processes and actions to be rolled out during project implementation.

8.3 Purpose of the Stakeholder Engagement Plan

The purpose of the stakeholder engagement and information disclosure is to ensure that a consistent, comprehensive and coordinated approach is taken to stakeholder engagement and Project disclosure throughout the project throughout the project implementation cycle. It further demonstrates the commitment of the Project to ensure accountability, information disclosure and grievance mitigation.

The quick impact intervention project will adapt LURP's Stakeholder Engagement Plan and communication strategy. Stakeholder engagement seeks to ensure that stakeholders and project affected communities are given sufficient opportunity to voice their opinions, concerns, perceptions and participate in the project design and implementation.

8.4 Objectives of the Stakeholder Engagement Plan

The objectives of the stakeholder engagement plan include the followings.

- To create ownership of the Project - Carrying stakeholders along throughout the Project life span creates the reality that they are an integral part of the Project.
- To develop the procedure and process for effective stakeholder engagements throughout the Project's lifecycle – a laid down procedure will create transparency and willingness for the stakeholders to participate in the project
- To identify the key stakeholder groups and resources needed and timeframe to achieve effective participation in each stage of the process – A plan without adequate budgeting will not work. Hence this is important.
- Establish a platform for equal participation of all affected groups in the consultation process; Provide timely and appropriate information prior to and during construction to enable informed mitigation
- Disclose the project impacts and proposed mitigations measures, provide ongoing information on the implementation of the mitigation measures; and facilitate open and continuous communication and consultation between various groups including construction con tractors, stakeholders, and the general public.
- **Ensuring Understanding**: An open, inclusive and transparent process of engagement and communication will be undertaken by the QIIP/LURP to ensure that stakeholders are well informed about the proposed development. Information will be disclosed as early and as comprehensively as possible.
- **Building Relationships**: Through supporting open dialogue, engagement will help to establish and maintain a productive relationship between the QIIP/LURP Team and Stakeholders. This support and collaboration do not only present an effective implementation outcome; however, it further strengthens the future relationships between the Quick Impact Intervention Project, Project Management Unit/LURP and relevant stakeholders.
- **Managing Expectations:** it is important to ensure that the proposed Project does not create or allow unrealistic expectations to develop amongst stakeholders about potential project benefits. The SEP process will serve as a mechanism for understanding and managing stakeholder and community expectations, by disseminating accurate information in an easily understandable manner.
- **Ensuring Compliance:** The Stakeholder Engagement process is designed to ensure compliance with both local regulatory requirements and international best practice.

8.5 Engagement Methods

Table 23: Engagement Methods

STAKEHOLDERS	DESCRIPTION	LANGUAGE	METHODS	TOPIC
Civil society groups and NGOs that pursue environmental and socio-economic interests and may become partners of the project	Non-for-profit organizations in Montserrado County, local level that pursue environmental and socio-economic interests and may become partners of the project	English and colloquial (simple Liberian English)	Emails. Social media Platform, website, etc.	Donor funding to contribute to emergency response procedures
The media and social media platforms	Users of Facebook, Instagram, WhatsApp, Twitter, etc., active internet users	English	Social media	Reliable information sources, timely updates on distribution of good and legibility of households
MPW, EPA, LWSC	Other interested parties that might either directly or indirectly be affected by the project	English	Emails, telephone calls, social media, the media, news papers	Reliable information sources, timely updates on distribution of good and legibility of households
Vulnerable and Disadvantaged Groups				
Women headed households, single mothers	Vulnerable groups	English and colloquial (simple Liberian English)	Through self-help groups, community coordinators, local authority	Meetings aligned with meeting schedule of self-help groups, community leaders and other CBOs; within their habitations
Disadvantaged and vulnerable households, including landless and disabled households	Vulnerable and disable	English and colloquial (simple Liberian English)	Through self-help groups, community, representative and local NGOs, CBOs	Special Meetings organized with advance notice organized at suitable timings and in accessible places;

8.6 Issues Articulated

As part of efforts leading to the development of this ESMP, the joint project team (LURP and LWSC) planned and carried out a preliminary stakeholders' engagement exercise in the form of consultations with the population in the target project areas. About 650 persons (including women, community leaders, elders, youth, people with

disabilities, and other vulnerable groups) were targeted for a series of consultation meetings conducted in the project locations of Northern Bushrod Island, Central Monrovia, Southern Paynesville, and Omega between December 13 and 18, 2024. The stakeholders' engagement exercise was designed to:

- Introduce the project to the stakeholders and clarify its scope
- Inform stakeholders of the potential environmental and social impacts (both positive and negative) of the project and mitigating measures
- Encourage stakeholders' ownership of the project as well as solicit their active involvement in its implementation
- Clarify roles and responsibilities of all stakeholders in ensuring successful project implementation and sustainability
- Address stakeholders' concerns and feedback and further consider them during project implementation

During the exercise, participants expressed several concerns and proffered a number of valuable recommendations, which were relatively similar across the different project locations. In summary, the target beneficiary and potential project affected persons were concerned about:

- The sustainability of the water supply under the current project, given that some other GOL's water projects in the past have been unsustainable
- Whether the project intends to install new connections or to rehabilitate existing water supply lines. Many of the participants, especially residents of Central Monrovia, expressed fear about potential displacements or the risk to their properties, as many of them have encroached upon the existing water lines
- Whether the water would be free or paid for, and if the latter, whether payment would be on a flat rate or through a meter system
- The pressure of the water to be supplied, as some participants (especially those in Central Monrovia) complained about the low pressure of water being discharged from the Ducor Reservoir
- The limited scope of the target project beneficiaries (2,500 households) and the need to construct kiosks in some communities in order to accommodate more people
- The procedures and criteria used in deriving the target beneficiaries and whether leaders from the various communities were involved in the selection process. Some believe that the selection process was unfair.
- The potential of losing revenues due to customers inability to pay as has been experienced in some quarters. Some participants recommended a pre-pay system as with the system used by the Liberia Electricity Corporation (LEC) to avoid any potential revenue losses.
- When the project is expected to begin and the overall implementation duration. Many expressed fear over delayed implementation, making

references to some other projects which raised expectations and either delayed significantly or never implemented.

- The security and maintenance of the pipes to be installed, as exposure of pipes are common in many existing connected communities, due to the perceived failure of LWSC to prioritize maintenance
- Employment of skilled and unskilled community members. There was a huge expectation about temporary employments through the project.
- Decentralization of the LWSC operations and revenue collection system. Some participants attributed the LWSC revenue loses to that fact revenue collection is centralized, and accessing the few centers becomes a burden for customers.
- Potential corruption during the water connection exercise, with the fear that the project team or contractor's employees would create conditions to extort money for residents before connecting them
- Whether additional connections will be made beyond the 2,500 households already targeted
- Whether one may commercialize the water or share it with one's neighbors
- The security of the meter; some were concerned that installing the meter outdoor increases the risk of theft, and wanted to know if the meter could rather by installed indoor
- The safety and quality of the water to be provided
- Representation of the local government officials and community leaders in the project implementation
- Whether public facilities such as government offices and community halls will be connected free of charge
- How to channel grievance and receive redress under the project

8.7 Summary of Findings from Consultations

As much as possible, the team endeavored to address the concerns raised by the communities. The specific feedback and the responses are catalogued in the table below.

Table 24: Summary of Findings

Nature of Concerns/ Recommendations	Details Description of Concerns/Recommendations	Responses Provided
Sustainability	Concerns were raised regarding the sustainability of the current project, given that some other GOL's water projects in the past have been unsustainable. In some cases, the water supply stopped after only a few weeks, after customers had heavy amounts for the connections.	The project will be sustained. Funding is available
Potential displacement	Whether the project intends to install new connections or to rehabilitate existing water supply lines. Many of the participants, especially residents of Central Monrovia, expressed fear about potential displacements or the risk to their properties, as many of them have encroached upon the existing water lines.	The project will provide new connections, using galvanized pipes, and not use the pre-war supply lines. However, water lines that were recently disconnected would be repaired.
Payment	Whether the water would be free or paid for, and if the latter, whether payment would be on a flat rate or through a meter system	The water is not free. While the project will cover the cost of the initial connections, customers will be billed and be required to pay for water used. Meters will be installed to calculate the water bill.
Water pressure	Some participants (especially those in Central Monrovia) complained about the low pressure of water being discharged from the Ducor Reservoir and asked if the water to be provided through the project would have improved pressure.	The new system comes with a booster to strengthen the water pressure.
Target beneficiaries/ inclusion	The limited scope of the target project beneficiaries (2,500 households) and the need to construct kiosks in some communities in order to accommodate more people	Kiosks do not necessarily reduce the time spent for collecting water. They are more useful in clustered communities. Besides, kiosk construction requires land acquisition, which is not considered under this quick-impact intervention.
Beneficiary selection processes and methods	What were the procedures and criteria used in deriving the target beneficiaries and whether leaders from the various communities were involved in the selection process? Some believe that the selection process was unfair.	The selection was informed by LWSC's existing distribution network and the project design. A mapping exercise was conducting by the LWSC project team and residents living in homes within seven meters along the access roads who were available during the mapping exercise were considered for the project.

Nature of Concerns/ Recommendations	Details Description of Concerns/Recommendations	Responses Provided
Potential revenue loss/non-revenue water	The potential of losing revenues due to customers' inability to pay as has been experienced in some quarters. Some participants recommended a pre-paid system as with the system used by the Liberia Electricity Corporation (LEC), to avoid any potential revenue losses.	The LWSC is considering introducing the prepaid system in the near future. That a customer fails to pay water bills cannot be considered a revenue loss. All water bills are collectable, even if it requires going through the legal system for debt collection.
Project implementation timeline	When is the project is expected to begin and what is the overall implementation duration? Some participants expressed fear over delayed implementation, making references to some other projects which raised expectations and either delayed significantly or were never implemented.	The project is expected to commence in the first quarter of 2025. Implementation is expected to last for six months.
Security and maintenance of pipes	Many participants were concerned about the security and maintenance of the pipes to be installed, complaining that exposure of pipes was common in many existing connected communities, which they attributed to LWSC's failure to burry water pipes properly or to prioritize maintenance.	In line with LWSC standards, water pipes will be buried at required depths. However, communities have the responsibility to guard against some behaviors and practices that typically cause damages to the pipes or their exposure. Such practices include sand digging along the roads where the pipes are buried and ad hock road construction undertaken by individual citizens, mostly politicians, which pay little or no attention to public utilities or other infrastructure along the road corridors.
Work/employment through the project	Employment of skilled and unskilled community members. There was a huge expectation about temporary employments through the project	The contractors will come with their skilled workers, and their ability to present such a team is one of the criteria to be used for their selection. However, as per the work demand, community members will be recruited largely for casual labor. Skilled persons in the communities (i.e. plumbers) could be hired at the discretion of the contractors. The contractors will carry out a transparent and inclusive recruitment process in collaboration with the community leaders and the project teams from MPW and LWSC.
Accessibility of services/revenue collection system	Some participants attributed the LWSC revenue loses to that fact revenue collection is centralized, and accessing the few centers becomes a burden for customers. They recommended decentralization of the LWSC operations and revenue collection system.	The LWSC has a plan to decentralize services and operations.

Nature of Concerns/ Recommendations	Details Description of Concerns/Recommendations	Responses Provided
Potential corruption in the process	Some participants were concerned about potential corruption during the water connection exercise, with the fear that the project team or contractor's employees would create conditions to extort money for residents before connecting them.	Both the Bank and the government do not tolerate corruption. All are strongly advised to report any cases of corruption to the LURP grievance committees.
Additional connections	Whether additional connections will be made beyond the 2,500 households already targeted	There may be similar projects in the future, but the current project is limited to 2,500 households. However, once the project takes the water connection within the communities, those interested may apply for connection with LWS at a cost to them.
Sharing or commercializing the water	Some participants asked whether one may commercialize the water or share it with one's neighbors.	One may share the water with neighbors. However, customers should know that the LWSC looks up to only registered customers for bill payments. All connections under the project fall under domestic consumption. However, customers wishing to commercialize the water are required to first update their status with the LWSC as commercial, which will require a different tariff.
Security of the meters	Some were concerned that installing the meter outdoor increases the risk of theft and wanted to know if the meter could rather be installed indoor.	The LWSC meter readers may not have ready access to the meters when installed in door. Besides, in the past when meters were installed indoor, customers came with volleys of complaints about missing items in their homes, implicating LWSC staff monitoring the meters. Based on lessons learned, the LWSC's new approach is to install meters outdoor, but there are ways to protect them against theft.
Water safety and quality	The safety and quality of the water to be provided	Water from the LWSC system undergoes so many layers of purification and testing and is therefore pure and safe.
Local government representation	In almost all of the meetings, it was recommended that the local government officials and community leaders have a strong representation in the project implementation.	The team noted that recommendation and assured of the involvement of the communities and local government as much as possible.
Grievance channels		The team responded and indicated that a Grievance committee is already set-up at the community level through which

Nature of Concerns/ Recommendations	Details Description of Concerns/Recommendations	Responses Provided
		all grievances from the project communities will be channeled to the project office. The Grievance committee will be introduced to the community before work starts.

8.8 Additional Engagement Sessions in High-Risk Areas

Apart from the initial stakeholder engagement activities detailed above, a social impact assessment of the project areas conducted from March 26-28, 2025 recommended that the PMU conducts additional engagement and consultation exercises in critical project areas where there are high risks of social disturbances.

The three areas identified are the Rally Time Market on Johnson Street, the Duala Market on Bushrod Island, and the Omega Market in Paynesville. Given the concentration of economic activities in those areas, the assessment established that there is a high risk that the project activities would cause temporary livelihood disruptions, affecting sales and income of traders on these sites.

Hence, from April 1-2, 2025, additional stakeholder engagement and consultation sessions were held at those three locations, enabling the PMU and the PAPs to discuss and agreed on a range of recommended mitigation measures, which include in part, the temporary relocation of marketers as well as identifying alternative routes for motorists during trenching and pipe installation. The exercise was intended to ensure mutual understanding and cooperation crucial for successful project implementation. Stakeholders who participated in the exercise included municipal authorities (MCC, PCC, Office of the Governor of New Kru Town), local community leaders, PAPs (including road-side traders at those three locations), the Liberia Marketing Association (LMA), and the Liberia National Police.

The mitigation measures agreed by the parties during the various meetings, expressed as a social agreement and signed by all parties, are attached as Annex D.

CHAPTER 9: GRIEVANCE REDRESS MECHANISM/ PROCEDURE

Grievances/complaints shall be handled and managed using grievance procedures outlined in the Liberian Urban Resilience Project's Grievance Redress Mechanism (GRM) and will be rolled out using the established GRM system set-up within the project communities. In addition, the SEP will be used as part of the grievance redress tool for engaging workers and community stakeholders during the household connection and pipe borne water supply Project. The contractor's health and safety officer assigned on site will be responsible to receive, register and report workers' grievances/complaints, and incidents and accidents. Based on the kind of work activities to be carry out, it is likely that issues will arise from employment and contractual arrangements within the project communities, environmental impacts from excavation of trenches, marginalization/lack of inclusive participation including ethical violations. It is possible for community members to present issues regarding alleged trespassing within their property boundaries due to temporary access blockage. These concerns must be noted and properly handled as quickly as possible through the Project's GRM pathway.

9.1 Capacity Building

The PMU will organize and conduct capacity building training for the contractors, their site engineers, environmental, social and safety officers and workers during the initial stages of implementation of the assigned works. The training will, inter alia, sensitize them on: a) the Bank's Environmental and Social Framework (ESF), b) the management of environmental, social, health and safety risks associated with the execution of the works, including trenching, pipes installation, backfilling and compaction, waste management, site restoration activities, and c) the provisions of the ESMP and the M&E/reporting responsibilities of the contractor. The training program will help build and/or strengthen the requisite capacities within the contactors' organizations. The PMU will use its E&S staff to provide the capacity building training. Such training will be provided periodically as may be deemed necessary throughout the subproject implementation period.

CHAPTER 10: CONCLUSION

The environmental, social and health risks associated with the Emergency Water Supply Intervention Project are expected to be moderate, particularly concerning soil, water, and air. However, socio-economic disturbances and disruptions are eminent but can be mitigated through implementation of management measures and consideration of redesigning, especially for areas requiring land acquisition for service connections.

The 2,500 household connections and associated works will generate noise, dust, risk of accidents, discharge of waste with the risks associated with public health and safety, including increased infection rates of STD/HIV/AIDS. These effects can be controlled if the provisions of this ESMP and other Management Strategies and Implementation Plans (Waste Management Plan, Traffic Management Plan & Emergency Preparedness and Response Plan, Occupational and Community Health and Safety Plan) are rigorously planned and implemented rigorously by the Contractor.

The benefits of the project outweigh the anticipated environmental and social issues, making the project sustainable. The anticipated impacts are localized and site-specific and can be mitigated through the measures specified in the ESMP. The ESMP will guide the assessment and mitigation of potential adverse environmental and social impacts of the project activities.

The Project is environmentally and socially feasible for implementation, provided the recommended mitigation and monitoring measures are implemented and the proposed implementation arrangement are upheld.

ANNEX A: PHOTOS FROM FIELD ASSESSMENT

ANNEX B: E&S SCREENING FORMS

As required for the conduct of an ESMP, Environmental and Social Screening were conducted in the corridors for the Water Connections in Central Monrovia, Bushrod, Paynesville and Omega Community. The screening is an exercise to generate essential data on potential environmental and social risks associated with the subproject. The completed Screening Forms are annexed to this ESMP.

See a sample screening for selected communities in Paynesville attached below.

Environmental and Social Screening
Pipe-Borne Water Supply to Selected Communities Paynesville

Paynesville

Omega Community

October 17, 2024 @ 11:15 pm)

Please type or print clearly, completing this form in its entirety. You may provide additional information on a separate sheet of paper if necessary. This will guide in the identification and categorization of the project accordingly.

Component under LURP	Component 1
Name of Subproject	Quick Intervention for Urban Water Supply
Project Objective	Connection of 2,500 households
Expected Commencement Date	June 2025
Proposed Main Project Activities	Trenching, water pipes installation and households' connection
Location (District, Community)	Paynesville (Omega Community)
Name of Evaluator	Harriett Peal-Keamu (Environmental Specialist-LURP/MIDP) Kawusu M. Toure Environmental & Social Safeguard Expert Liberia Urban Water Supply Project Project Implementation Unit Samson Wonnah Communication & Community Engagement Specialist Liberia Urban Resilience Project/Monrovia Integrated Development Project Eugene S. Caine Environmental Specialist for Solid Waste

BRIEF DESCRIPTION OF THE PROPOSED PROJECT

Installation of water distribution lines and connections to households are the two main activities outcomes under the project. These would start with the digging through soil to identification of LWSC water source lines and the connection of a 4" pipe that would be extended along road-alleys through neighborhoods and branched off with 2" pipe to connect selected adjacent households along the corridors. The work activities on site will consist of manual or motorized excavation through soil, rocks and in some cases through concrete in dimensions of approximately 1 meter depth and .5-meter width for the installation of the water pipes.

The entire exercise would last for approximately (x days). During this time, the contractor is expected to ensure the safety of pedestrians by erecting signs and providing awareness on public safety for the works.

EMPLOYEES AND LABORERS

Number of people to be employed: Employees and Laborers	During Construction	During Routine Operation /Maintenance
FULL-TIME		
PART-TIME /Temporary Persons		XX

DESCRIPTION OF PROCESS THAT COULD BE IMPLEMENTED

Briefly describe the type and nature or type of the project at the site:

The installation of water distribution lines and connections to households are the two main activities outcomes under the project. The work would start with identification of LWSC water source lines and the connection of a 4" PVC pipe that would be extended along road-alleys through neighborhoods and branched off with 2" pipe to connect adjacent households along the corridors. Water connections to households are expected to be metered. Long the pipes will be installed hydrants and valves to control the distribution system. The entire exercise would last for approximately (x days). During this time, the contractor is expected to ensure the safety of pedestrians by erecting signs and providing awareness on public safety for the works. The contractor is expected to encounter solid waste either when digging through the soil or on the surface where the water distribution lines are expected to pass. Solid waste recovered from the excavation will be delivered to designated locations identified by PCC.

List the type and quantity of raw materials to be used in the project and highlight their sources

Material/Tools/Equipment	**Quantity**	**Source**
Sand		
Cement		

POTENTIAL ENVIRONMENTAL IMPACTS

Please indicate environmental impacts that may occur as a result of the proposed project.

A. The Biological Environment

The Natural Environment

Describe the habitats and flora and fauna in the project area and in the entire area expected to be affected by the sub-project (e.g., downstream areas, access roads):

Omega Community is a sub-urban community situated mostly in a low land topography. The soil condition of the community is mostly sandy and clay and is wet especially during rainy season. Trees rarely exist along the routes where the water lines are expected to be installed. The digging of tranches for installation of the water lines poses the risk of further erosion of the soil along the routes and for downstream locations.

Will the project directly or indirectly affect?

Natural forest types? **No**

Swamps? **No**

Wetlands (i.e., lakes, rivers, swamps, seasonally inundated areas)? **No**

Natural critical habitats (parks, protected areas)? **No**

Other habitats of threatened species that require protection under Liberia laws and/or international agreements?

YES _____ NO ___**X**____

Are there according to background research/observations any threatened/ endemic species in the project area that could be affected by the project?

YES _____ NO ___**X**_____

Will vegetation be cleared? If yes, please state the distance/length of affected area

YES _____ NO ____**X**_____

Will there be any potential risk of habitat fragmentation due to the clearing activities?

YES _____ NO ____**X**_____

Will the project lead to a change in access, leading to an increase in the risk of depleting biodiversity resources?

YES _____ NO ____**X**_____

Provide an additional description for "yes" answers:

_____

Protected Areas

Does the subproject area or do subproject activities?
Occur within or adjacent to any designated protected areas?
YES _____ NO ___**X**____
Affect any protected area downstream of the project?
YES _____ NO ___**X**____
Affect any ecological corridors used by migratory or nomadic species located between any protected areas or between important natural habitats (protected or not) (e.g., mammals or birds)?
YES _____ NO ___**X**____
Provide an additional description for "yes" answers:

_____

Invasive Species

Is the sub-project likely to result in the dispersion of or increase in the population of invasive plants or animals (e.g., along distribution lines)?
YES _____ NO ___**X**___
Provide an additional description for a "yes" answer:

_____

B. The Physical Environment

Geology/Soils

Will slope or soil stability be affected by the project? YES _____ NO ___X_
Will the subproject cause physical changes in the project area (e.g., changes to the topography)?
YES _____ NO ___**X**___
Will local resources, such as rocks, wood, sand, gravel be used?
YES ____ NO __**X**__
Could the subproject potentially cause an increase in soil salinity in or downstream the project area? YES _____ NO ___**X**___
Could the soil exposed due to the project potentially lead to an increase in lixiviation of metals, clay sediments, or organic materials? YES _____ NO ___**X**____

_____

Landscape / Aesthetics

Is there a possibility that the sub-project will adversely affect the aesthetics of the landscape?
YES _____ NO __**X**__

_____

Pollution

Will the sub-project use or store dangerous substances (e.g., large quantities of hydrocarbons)?
YES _____ NO ___**X**____
Will the subproject produce harmful substances? YES _____ NO __**X**___
Will the subproject produce solid or liquid wastes? YES___X__ NO _____ The activities will generate piles of soil excavated to give way for the installation of water lines. The soil will be used for backfilling the trenches after the installation of the pipes. In some cases, the excavation will encounter solid waste. Solid waste will be removed are taken to designated locations identified by PCC.
Will the subproject cause air pollution? YES _____ NO ___ **X** ___
Will the subproject generate noise? YES __X___ NO _____ Where motorized excavation is carried out, noise will be generated for that moment.
Will the subproject generate electromagnetic emissions? YES ____ NO __**X**___
Will the subproject release pollutants into the environment? YES ____ NO __**X**__

_____

C. The Social Environment

Land Use, Resettlement, and/or Land Acquisition

Describe existing land uses on and around the sub-project area (e.g., community facilities, agriculture, tourism, private property, or hunting areas):

Omega Community is sparsely populated but fast growing without proper urban planning. Some inner parts of the community are occupied by squatters, other parts are huge public market structures, whilst the rest are privately owned residential quarters. The project is expected to be carried out along routes where the market, shops, homes and residential quarters are. When the digging of trenches starts, access through the market area will be impossible and this may disrupt trading along the routes.

_____

Are there any land use plans on or near the sub-project location, which will be negatively affected by subproject implementation? YES ____ NO __**X**__

Are there any areas on or near the subproject location, which are densely populated which could be affected by the sub-project? YES _____ NO ___**X**__

Are there sensitive land uses near the project area (e.g., hospitals, schools)?

YES __X__ NO____

Will there be a loss of livelihoods among the population? YES ____ NO __**X**__

Will the sub-project affect any resources that local people take from the natural environment? YES _____ NO ___**X**___

Will there be additional demands on local water supplies or other local resources?

YES _____ NO ___**X**___

Will the sub-project restrict people's access to land or natural resources?

YES ____ NO __**X**__

Will the project require resettlement and/or compensation of any residents, including squatters?

YES _____ NO __ **X** ___

Will the subproject result in construction workers or other people moving into or having access to the area (for a long-time period and in large numbers compared to permanent residents)?

YES ____ NO __ **X** ___

Who is/are the present owner(s)/users of resources/infrastructures in the subproject area?

_____Community Residents_____

Loss of Crops, Fruit Trees, and Household Infrastructure

Will the subproject result in the permanent or temporary loss of?

Crops? **No**

Fruit trees / coconut palms? **No**

Household infrastructure? **No**

Any other assets/resources? **No**

Occupational Health and Safety, Health, Welfare, Employment, and Gender

Is the sub-project likely to safeguard worker's health and safety and public safety (e.g., occupational health and safety issues)? YES __**X**___ NO _____

How will the project minimize risk of HIV/Aids? By conducting regular HIV/AIDS awareness during the implementation stage.

How will the sub-project minimize the risk of accidents? How will accidents be managed when they do occur? By carrying out regular toolbox talks on health, occupational safety and risk management, and establishing a First Aid management system on sites.

_____

Is the project likely to provide local employment opportunities, including employment opportunities for women? YES ___**X**___ NO _____

Provide an additional description for "yes" answers:

The mobilization of labor and other resources which is a key component of the community engagement activities will be incorporated under a service contract with qualified construction Firms. However, the PMU will provide

oversight and ensure that the Communities are prioritized in the labor mobilization. Additionally, the Contractor will enter a memorandum of understanding (MOU) with the community leaders that encapsulates labor arrangements.

Historical, Archaeological, or Cultural Heritage Sites

Based on available sources, consultation with local authorities, local knowledge and/or observations, could the sub-project alter?

Historical heritage site(s) or require excavation near the same? YES ____ NO __**X**___

Archaeological heritage site(s) or require excavation near the same? YES ____ NO __ **X** __

Cultural heritage site(s) or require excavation near the same? YES _____ NO __ **X** __

Graves, or sacred locations (e.g., fetish trees or stones) or require excavations near the same? YES _____ NO ___ **X** ___

N.B For all affirmative answers (YES) Provide description, possible alternatives reviewed and/or appropriate mitigating measures.

RECOMMENDATIONS

Environmental category: (tick where applicable)

NO	**Category**	**Justification**
1	Does not require further environmental or social studies	NO The information gathered from the Environmental and Social Screening Exercise justifies that there is no need for a deeper E&S study of the project due to non-substantial environmental and social risks.
2	Requires submission of only a Project Brief	NO This is not applicable in an ESMP process
3	Requires a full ESIA to be submitted on date	NO The E&S screening process justifies that there are no substan tial adverse environmental and social risks to the project implementation
4	Requires an ESMP to be submitted on date	The project activities involve the use of labor-based methods with basic hand tools to carry out the excavation. There won't be a need to prepare an ESIA or other detailed E&S management documents. It is however recommended that a short and simple E&S management plan be prepared to guide the contractor in carrying out the agreed activities, as well as to ensure safety of people and the environment and compliance with the requirements of the Project's Environmental and Social Management Framework (ESMF) and the Bank's Environmental and Social Framework (ESF) and its associated Environmental and Social Standards (ESSs) that may be relevant or applicable to any aspects of the planned activities.
5	Requires a RAP to be submitted on date	No The project implementation does not affect people or either displace properties of economic value and will therefore not require a resettlement action plan.
6	Requires an Indigenous Peoples Plan (IPP)	No An IPP does not apply in implementation of this project.
7	Requires a Physical Cultural Resources Plan	No The project does not have a magnitude on Physical Cultural

		Resources and therefore have no need for a plan of that sought.

CERTIFICATION

We certify that we have thoroughly examined all the potential adverse impacts of this subproject.
Prepared by: Environmental and Social Specialists, Communications and Community Engagement Specialist.

Name: Harriett Peal-Keamu, Eugene S. Caine, Kawusu M. Toure, & Samson Z. Wonnah

Signatures: .....

Date: October 17, 2024

Environmental and Social Screening
Pipe-Borne Water Supply to Selected Communities Paynesville

Paynesville

Whein Town Community to MCC Disposal Site

October 17, 2024 @ 14:07 pm)

Please type or print clearly, completing this form in its entirety. You may provide additional information on a separate sheet of paper if necessary. This will guide in the identification and categorization of the project accordingly.

Component under LURP	Component 1
Name of Subproject	Quick Intervention for Urban Water Supply
Project Objective	Connection of 2,500 households
Expected Commencement Date	March 2025
Proposed Main Project Activities	Trenching, water pipes installation and households' connection
Location (District, Community)	Paynesville (Whein Town Community – MCC Disposal Site)
Name of Evaluator	Harriett Peal-Keamu (Environmental Specialist-LURP/MIDP) Kawusu M. Toure Environmental & Social Safeguard Expert Liberia Urban Water Supply Project Project Implementation Unit Samson Wonnah Communication & Community Engagement Specialist Liberia Urban Resilience Project/Monrovia Integrated Development Project Eugene S. Caine Environmental Specialist for Solid Waste

BRIEF DESCRIPTION OF THE PROPOSED PROJECT

Installation of water distribution lines and connections to households are the two main activities outcomes under the project. These would start with the digging through soil to identification of LWSC water source lines and the connection of a 4" pipe that would be extended along road-alleys through neighborhoods and branched off with 2" pipe to connect selected adjacent households along the corridors. The work activities on site will consist of manual or motorized excavation through soil, and in some cases through concrete in dimensions of approximately 1 meter depth and .5-meter width for the installation of the water pipes.

The entire exercise would last for approximately (x days). During this time, the contractor is expected to ensure the safety of pedestrians by erecting signs and providing awareness on public safety for the works.

EMPLOYEES AND LABORERS

Number of people to be employed: Employees and Laborers	During Construction	During Routine Operation /Maintenance
FULL-TIME		
PART-TIME /Temporary Persons		XX

DESCRIPTION OF PROCESS THAT COULD BE IMPLEMENTED

Briefly describe the type and nature or type of the project at the site:
The installation of water distribution lines and connections to households are the two main activities outcomes under the project. The work would start with identification of LWSC water source lines and the connection of 2" pipe to connect the Whein Town Landfill Site. Along the pipes line hydrants and valves will be installed to control the distribution system. The entire exercise would last for approximately (x days). During this time, the contractor is expected to ensure the safety of pedestrians by erecting signs and providing awareness on public safety for the works.

List the type and quantity of raw materials to be used in the project and highlight their sources

Material/Tools/Equipment	Quantity	Source
Sand		
Cement		

POTENTIAL ENVIRONMENTAL IMPACTS

Please indicate environmental impacts that may occur as a result of the proposed project.

A. The Biological Environment

The Natural Environment

Describe the habitats and flora and fauna in the project area and in the entire area expected to be affected by the sub-project (e.g., downstream areas, access roads):
Whein Town Community is a hilly landscape. However, the route for the installation of the water pipe line is a long stretch of land extending from the point of water source to the MCC owned solid waste management disposal site. The soil condition of the community is mostly clay and is wet especially during rainy season. Trees rarely exist along the routes where the water lines are expected to be installed. The digging of tranches for installation of the water lines poses no risk erosion of the soil along the routes and for downstream locations.

_____

Will the project directly or indirectly affect?
Natural forest types? **No**
Swamps? **No**
Wetlands (i.e., lakes, rivers, swamps, seasonally inundated areas)? **No**
Natural critical habitats (parks, protected areas)? **No**
Other habitats of threatened species that require protection under Liberia laws and/or international agreements?
YES _____ NO ___**X**____

Are there according to background research/observations any threatened/ endemic species in the project area that could be affected by the project?
YES _____ NO ___**X**_____
Will vegetation be cleared? If yes, please state the distance/length of affected area
YES _____ NO ____**X**_____
Will there be any potential risk of habitat fragmentation due to the clearing activities?
YES _____ NO ____**X**_____
Will the project lead to a change in access, leading to an increase in the risk of depleting biodiversity resources?
YES _____ NO ____**X**_____
Provide an additional description for "yes" answers:

_____

Protected Areas

Does the subproject area or do subproject activities?
Occur within or adjacent to any designated protected areas?
YES _____ NO ___**X**____
Affect any protected area downstream of the project?
YES _____ NO ___**X**____
Affect any ecological corridors used by migratory or nomadic species located between any protected areas or between important natural habitats (protected or not) (e.g., mammals or birds)?
YES _____ NO ___**X**____
Provide an additional description for "yes" answers:
_____

Invasive Species
Is the sub-project likely to result in the dispersion of or increase in the population of invasive plants or animals (e.g., along distribution lines)?
YES _____ NO ___**X**___
Provide an additional description for a "yes" answer:
_____

B. The Physical Environment
Geology/Soils
Will slope or soil stability be affected by the project? YES _____ NO ___X_
Will the subproject cause physical changes in the project area (e.g., changes to the topography)?
YES _____ NO ___**X**___
Will local resources, such as rocks, wood, sand, gravel be used?
YES ____ NO __**X**__
Could the subproject potentially cause an increase in soil salinity in or downstream the project area? YES _____ NO ___**X**___
Could the soil exposed due to the project potentially lead to an increase in lixiviation of metals, clay sediments, or organic materials? YES _____ NO ___**X**____
_____

Landscape / Aesthetics
Is there a possibility that the sub-project will adversely affect the aesthetics of the landscape?
YES _____ NO __**X**__
_____

Pollution
Will the sub-project use or store dangerous substances (e.g., large quantities of hydrocarbons)?
YES _____ NO ___**X**____
Will the subproject produce harmful substances? YES _____ NO __**X**___
Will the subproject produce solid or liquid wastes? YES___X__ NO _____ The activities will generate piles of soil excavated to give way for the installation of water lines. The soil will be used for backfilling the trenches after the installation of the pipes. In some cases, the excavation will encounter solid waste. Solid waste will be removed are taken to designated locations identified by PCC.
Will the subproject cause air pollution? YES _____ NO ___ **X** ___
Will the subproject generate noise? YES __X___ NO _____ Where motorized excavation is carried out, noise will be generated for that moment.
Will the subproject generate electromagnetic emissions? YES ____ NO __**X**___
Will the subproject release pollutants into the environment? YES ____ NO __**X**__
_____

C. The Social Environment
Land Use, Resettlement, and/or Land Acquisition
Describe existing land uses on and around the sub-project area (e.g., community facilities, agriculture, tourism, private property, or hunting areas):

Omega Community is sparsely populated but fast growing without proper urban planning. Some inner parts of the community are occupied by squatters, other parts are huge public market structures, whilst the rest are privately owned residential quarters. The project is expected to be carried out along routes where the market, shops, homes and residential quarters are. When the digging of trenches starts, access through the market area will be impossible and this may disrupt trading along the routes.

Are there any land use plans on or near the sub-project location, which will be negatively affected by subproject implementation? YES ____ NO __**X**__
Are there any areas on or near the subproject location, which are densely populated which could be affected by the sub-project? YES _____ NO ___**X**__
Are there sensitive land uses near the project area (e.g., hospitals, schools)?
YES __X__ NO____
Will there be a loss of livelihoods among the population? YES ____ NO __**X**__
Will the sub-project affect any resources that local people take from the natural environment? YES _____ NO ___**X**___
Will there be additional demands on local water supplies or other local resources?
YES _____ NO ___**X**___
Will the sub-project restrict people's access to land or natural resources?
YES ____ NO __**X**__
Will the project require resettlement and/or compensation of any residents, including squatters?
YES _____ NO __ **X** ___
Will the subproject result in construction workers or other people moving into or having access to the area (for a long-time period and in large numbers compared to permanent residents)?
YES ____ NO __ **X** ___
Who is/are the present owner(s)/users of resources/infrastructures in the subproject area?
_____Community Residents_____

Loss of Crops, Fruit Trees, and Household Infrastructure
Will the subproject result in the permanent or temporary loss of?
Crops? **No**
Fruit trees / coconut palms? **No**
Household infrastructure? **No**
Any other assets/resources? **No**

Occupational Health and Safety, Health, Welfare, Employment, and Gender
Is the sub-project likely to safeguard worker's health and safety and public safety (e.g., occupational health and safety issues)? YES __**X**___ NO _____
How will the project minimize risk of HIV/Aids? By conducting regular HIV/AIDS awareness during the implementation stage.
How will the sub-project minimize the risk of accidents? How will accidents be managed when they do occur? By carrying out regular toolbox talks on health, occupational safety and risk management, and establishing a First Aid management system on sites.

Is the project likely to provide local employment opportunities, including employment opportunities for women? YES ___**X**___ NO _____
Provide an additional description for "yes" answers:
The mobilization of labor and other resources which is a key component of the community engagement activities will be incorporated under a service contract with qualified construction Firms. However, the PMU will provide oversight and ensure that the Communities are prioritized in the labor mobilization. Additionally, the Contractor will enter a memorandum of understanding (MOU) with the community leaders that encapsulates labor arrangements.

Historical, Archaeological, or Cultural Heritage Sites

Based on available sources, consultation with local authorities, local knowledge and/or observations, could the sub-project alter?

Historical heritage site(s) or require excavation near the same? YES ____ NO __**X**___

Archaeological heritage site(s) or require excavation near the same? YES ____ NO __ **X** __

Cultural heritage site(s) or require excavation near the same? YES _____ NO __ **X** __

Graves, or sacred locations (e.g., fetish trees or stones) or require excavations near the same? YES _____ NO ___ **X** ___

N.B For all affirmative answers (YES) Provide description, possible alternatives reviewed and/or appropriate mitigating measures.

RECOMMENDATIONS

Environmental category: (tick where applicable)

	Category	**Justification**
	Does not require further environmental or social studies	NO The information gathered from the Environmental and Social Screening Exercise justifies that there is no need for a deeper E&S study of the project due to non-substantial environmental and social risks.
	Requires submission of only a Project Brief	NO This does not apply in an ESMP process
	Requires a full ESIA to be submitted on date	NO E&S screening process justifies that there are no substantial adverse environmental and social risks
	Requires an ESMP to be submitted on date	The project activities involve the use of labor-based methods with basic hand tools to carry out the excavation. There won't be a need to prepare an ESIA or other detailed E&S management documents. It is however recommended that a short and simple E&S management plan be prepared to guide the contractor in carrying out the agreed activities, as well as to ensure safety of people and the environment and compliance with the requirements of the Project's Environmental and Social Management Framework (ESMF) and the Bank's Environmental and Social Framework (ESF) and its associated Environmental and Social Standards (ESSs) that may be relevant or applicable to any aspects of the planned activities.
	Requires a RP to be submitted on date	No The project implementation does not affect people or either displace properties of economic value and will therefore not require a resettlement action plan.
	Requires an Indigenous Peoples Plan (IPP)	No An IPP does not apply in implementation of this project.
	Requires a Physical Cultural Resources Plan	No The project does not have a magnitude on Physical Cultural Resources and therefore have no need for a plan of that sought.

CERTIFICATION

We certify that we have thoroughly examined all the potential adverse impacts of this subproject.
Prepared by: Environmental and Social Specialists, Communications and Community Engagement Specialist.

Name: Harriett Peal-Keamu, Eugene S. Caine, Kawusu M. Toure, & Samson Z. Wonnah

Signatures: …….

Date: ……..……..

ANNEX C: MINUTES OF MEETINGS FROM STAKEHOLDER ENGAGEMENT

Liberia Urban Resilience Project (LURP)
in collaboration with the
Liberia Urban Water Supply Project (LUWSP)

Minutes of Stakeholders' Engagement Meetings for the Liberia Water and Sewar Corporation Water Distribution Network and Household Connection

Note: *These are consolidated minutes of five different sessions of stakeholders' engagement meetings held in the various project target locations as per the venues, dates and times specified below. The minutes have been so combined because the meetings share the same agenda, with the same introductory elements (i.e., project overview, environmental and social risks and mitigation measures) although the issues raised from the actual discussions vary slightly. The issues raised have been catalogued by project areas/communities to allow for an understanding of the unique situations and views at the individual project locations.*

Meeting Venues, Dates and Times	○ Central Monrovia (Sonin): December 13, 2024 @ 3:00 pm ○ Paynesville 1(Shara Community): Dec 16, 2024 @ 10:00 am ○ Paynesville 2 (Zinnah Hill): Dec 16, 2024 @ 3:00 pm ○ Bushrod Island (New Kru Town) Dec17, 2024 @ 10:00 am ○ Omega Area (Novlen Town): Dec 18, 2024 @ 3:00 pm
Attendance	○ Central Monrovia (Soninwein): 155 persons attended ○ Paynesville 1 (Shara Community): 148 persons attended ○ Paynesville 2 (Zinnah Hill) : 121 persons attended ○ Bushrod Island (New Kru Town): 166 persons attended ○ Omega Area (Novlen Town) : 87 persons attended **Total Attendance : 677 persons** **Note:** *The attendance included residents from the target project communities and project team members from LURP and LUWSP.*
Agenda	The major agenda items were: 1) An overview of LURP 2) Background of the water project 3) Discussion of project related environmental and social issues

	4) Feedback from the project affected communities – concerns and recommendations and response from the project team

1) Overview of LURP

Each meeting started with words of prayer, introduction of the project team (MPW and LWSC), and a welcome remark from the chairperson of the host community. Following that, the LURP Communication and Community Engagement Specialist Samson Wonnah set out to provide an overview of LURP. In summary, he explained that the project was a GOL's initiative financed by the World Bank in the tone of $40 million, 50% of which is a loan and the remaining 50% a grant. He further explained that the project development objective was to increase flood and climate resilience, enhance access to infrastructure in selected neighborhoods, and improve urban management in Liberia. He disclosed that the project focus is Monrovia with four potential geographical target locations, namely Northern Bushrod Island, Central Monrovia, Southern Paynesville, and the Omega Area. He added that the Ministry of Public Works (MPW) was the project lead implementing agencies, supported by other government ministries, agencies and commissions, including among others, MFDP, MCC, PCC, LLA, EPA, MIA, LISGIS, and NDMA. The LURP Communication Specialist then highlighted that the proposed water project was a part of several quick-impact interventions being undertaken by LURP while a series of studies and procurement of a contractor for the core project activities are ongoing. He concluded that LURP was collaborating with LWSC to implement this project, since the latter is the appropriate government with mandate in the area and encouraged the full participation of the residents in the various target communities.

2) Background of the Water Project

Next, the LUWSP Water Specialist provided Acquoi provided a brief background of the current water project. Mr. Acquoi explained that the project would be an extension of the Liberia Urban Water Supply Project, also financed by the WB and which has been implementing since 2020. He disclosed that about 2,500 households are targeted to benefit from the project and that those target beneficiaries have already been identified through an earlier mapping exercise conducted by the LWSC. He explained that the mapping exercise targeted households along access roads within the LURP corridors. He further clarified that although the number of target project beneficiaries is 2,500 households, about 3,600 households were mapped. The goal for that was to provide a leverage for some of those placed on the standby to be considered for connection in the event any of those 2,500 primary target beneficiaries were no longer available or interested in being connected.

3) Discussion of Project Related Environmental and Social Riks and Impacts

During each meeting at the various locations, LUWSP Environmental Specialist Kawusu M. Toure spearheaded this session alongside LURP Environmental Specialists Harriet Peal-Keamu and Eugene Caine. Mr. Toure's presentations focused on informing the participants of the potential positive and negative environmental and social impacts related to the project and mitigation measures for associated risks and negative impacts. Among other things,Mr. Toure elaborated on the following potential positive and negative impacts of the project:

Potential Positive Impacts

- Employment opportunities
- Water security
- Skills enhancement
- Improved economic activities
- Improved quality of life
- Knowledge transfer

Potential Negative Impacts

- Air quality deterioration
- Noise pollution /noise hazards
- Environmental degradation
- Social tension / conflicts
- GBV/SEA/SH
- Potential health risks

Harriet and Eugene buttressed Kawusu's presentations, weighing in heavily on Gender-Based Violence, Sexual Exploitation and Abuse, and Sexual Harassment (GBV/SEA/SH) and the appropriate referral pathway and support system available under the project. They discussed appropriate mechanisms available under LURP to either minimize occurrences of those practices and behaviors or address their impacts. These include requiring all contractor's staff and employees, including casual workers, to sign a Code of Conduct (COC), committing to the principle of ethical standards and good behaviors, as well as strict implementation of the project Gender-Based Action Plan. They also discussed the grievance redress process under the LURP and recognized members of the project Grievance Redress Committee (GRC), some of whom were present in the meetings.

4) Feedback from the Project Affected Communities/Concerns Raised

During these sessions, coordinated by LURP Communication and Community Engagement Specialist Samson Wonnah, participants in the various meetings provided feedback on the project. The feedback came in different forms, including questions, comments, and recommendations. Each feedback was recorded and addressed by the project team. In each meeting, between eight (8) to twelve (12) participants provided feedback. On the overall, concerns raised were relatively the same across the five different meeting locations, although there were a few that were unique to particular communities. The feedback from the communities and the responses provided by the project team are catalogued below by each meeting.

Central Monrovia Meeting (Soninwein)	1. A question was asked concerning whether the project intends to install new connections or to rehabilitate existing water supply lines. Many of the participants, especially residents of Central Monrovia, expressed fear about potential displacements or the risk to their properties, as many of them have encroached upon the existing water lines. It was clarified that the project would provide new connections, using galvanized pipes, and not use the pre-war supply lines. However, water

	lines that were recently disconnected would be repaired. 2. There was a question about what the project plans to do about water lines that recently disconnected. It was clarified that water lines that were recently disconnected would be repaired. 3. There was a concern about the sustainability of the project, given that some other GOL's water projects in the past have been unsustainable. One participant complained that he had spent up to US$300 to procure materials for a previous water project, only for the water to discontinue just three weeks after he was connected. It was clarified that plans are in place for the sustainability of the project and that individual beneficiaries will not be required to cover the cost of the connections. 4. There was a question about whether payment for the water would be communal or on an individual basis. It was clarified that meters will be installed to calculate the water bills. 5. Someone recommended introducing a pre-paid system, to avoid the potential of losing revenues due to customers inability to pay as has been experienced in some quarters. It was clarified that the LWSC is considering introducing the prepaid system in the near future. That a customer fails to pay water bills cannot be considered a revenue loss. All water bills are collectable, even if it requires going through the legal system for debt collection. 6. Someone asked if the water will be free or paid for. It was clarified that the water will not be free. While the project will cover the cost of the initial connections, customers will be billed and be required to pay for water used. 7. A concern was raised regarding the pressure of the water to be supplied. Some participants complained about the low pressure of water being discharged from the Ducor Reservoir. It was clarified that the new system comes with a booster to strengthen the water pressure.
Paynesville 1 (Shara Community)	1. Someone recommended introducing a pre-paid system, to avoid the potential of losing revenues due to customers inability to pay as has been experienced in some quarters. It was clarified that the LWSC is considering introducing the prepaid system in the near future, but that a customer fails to pay water bills cannot be considered a revenue loss. All water bills are collectable, even if it requires going through the legal system for debt collection 2. A question was asked concerning the procedures and criteria used in deriving the target beneficiaries and whether leaders from the various communities were involved in the selection process. It was clarified that the

	selection was informed by LWSC's existing distribution network and the project design. A mapping exercise was conducting by the LWSC project team and residents living in homes within seven meters along the access roads who were available during the mapping exercise were considered for the project. 3. Someone asked regarding the project start date and duration. Some participants expressed fear over delayed implementation, making references to some other projects which raised expectations and either delayed significantly or were never implemented. It was clarified that the project is expected to commence in the first quarter of 2025. Implementation is expected to last for six months. 4. A participant complained that the number of targeted households was inadequate compared to the population in the targeted communities and recommended the construction of kiosk in some communities in order to accommodate more people. It was clarified that kiosks do not necessarily reduce the time spent for collecting water. They are rather more useful in clustered communities. Besides, kiosks construction requires land acquisition, which is not considered under this quick-impact intervention. 5. There was a question about whether the project is going to employed skilled people within the communities. It was clarified that the contractors will come with their skilled workers, and that their ability to present such a team is one of the criteria to be used for their selection. However, as per the work demand, community members will be recruited largely for casual labor. Skilled persons in the communities (i.e. plumbers) could be hired at the discretion of the contractors. The contractors will carry out a transparent and inclusive recruitment process in collaboration with the community leaders and the project teams from MPW and LWSC. 6. Someone asked whether there was going to be compensation to the communities for any environmental degradation. It was clarified that there is going to be no such compensation. However, the project has in place measures to mitigate social and environmental risks and impacts. 7. A concern was raised regarding the security of the pipes. Some participants voiced the belief that LWSC is negligent about maintenance of its infrastructure as there are many burst pipes in several connected communities. It was clarified that in line with LWSC standards, water pipes will be buried at required depths. However, communities

	have the responsibility to guard against some behaviors and practices that typically cause damages to the pipes or their exposure. Such practices include sand digging along the roads where the pipes are buried and ad hock road construction undertaken by individual citizens, mostly politicians, which pay little or no attention to public utilities or other infrastructure along the road corridors. 8. Someone asked if the recruitment for casual labor will be restricted to those that are present for the stakeholders' engagement meeting. The response was no; recruitment will be inclusive and transparent. 9. Someone recommended that the water should be equally distributed and not restricted only those were mapped. It was clarified that there will be no further adjustments in the target beneficiaries for the current project, but once the water lines are within close proximity, individuals interested may go to LWSC to apply for connection. This will be at a cost to them.
Paynesville 2 (Zinnah Hill)	1. There was a question regarding the payment method for the water; whether it would be on a flat rate or whether through meter calculation. It was clarified that meters will be installed and be used to calculate the water bills. 2. Someone asked if there will be additional connections beyond the 2,500 persons targeted. It was clarified that there will be no further adjustments in the target beneficiaries for the current project, but once the water lines are within close proximity, individuals interested may go to LWSC to apply for connection. This will be at a cost to them. 3. A question was asked if one could sell the water or share it with neighbors. It was clarified that one may share the water with neighbors. However, customers should know that the LWSC looks up to only registered customers for bill payments. All connections under the project fall under domestic consumption. However, customers wishing to commercialize the water are required to first update their status with the LWSC as commercial, which will require a different tariff. 4. A concern was raised regarding the potential of exploitation. A participant expressed the fear that project staff or contractor's employees could create conditions to take money from residents before connecting them. It was clarified that both the Bank and the government do not tolerate corruption. All are strongly advised to report any cases of corruption to the LURP grievance committees. 5. Someone recommended the full involvement of the community leaders in the recruitment process for labor and during the entire project implementation. That

	recommendation was noted. 6. Someone asked if any communities which were the first to be connected could deny other communities from getting connected. They cited cases involving LEC connection in which some communities objected to the expansion of electricity to other communities on grounds that they facilitated the electricity and should be settled first. It was confirmed that each project beneficiary will fill in a commitment from consenting that they will not deny others from getting connected. 7. A question was asked about the project start date and duration. It was clarified that the project is expected to commence in the first quarter of 2025. Implementation is expected to last for six months. 8. Someone recommended that the meters should be installed in door and not outdoor for security. It was clarified that the LWSC meter readers may not have ready access to the meters when installed in door. Besides, in the past when meters were installed indoor, customers came with volleys of complaints about missing items in their homes, implicating LWSC staff monitoring the meters. Based on lessons learned, the LWSC's new approach is to install meters outdoor, but there are ways to protect them against theft.
Northern Bushrod Island (New Kru Town)	1. Some asked regarding the safety of the water. It was clarified that the LWSC meter readers may not have ready access to the meters when installed in door. Besides, in the past when meters were installed indoor, customers came with volleys of complaints about missing items in their homes, implicating LWSC staff monitoring the meters. Based on lessons learned, the LWSC's new approach is to install meters outdoor, but there are ways to protect them against theft. 2. A question was asked regarding whether individual beneficiaries would cover the cost of the connections. It was clarified that the project would fully cover the cost of the connections. Customers will only pay for water used. 3. Someone recommended the full representation of the community leaders and local government official during the project implementation. That recommendation was noted. 4. Someone asked if they could sell the water or share it with their neighbors. It was clarified that one may share the water with neighbors. However, customers should know that the LWSC looks up to only registered customers for bill payments. All connections under the project fall under domestic consumption. However, customers wishing to commercialize the water are

	required to first update their status with the LWSC as commercial, which will require a different tariff. 5. There was concern raised about whether the community leaders were involved in the selection of the project target beneficiaries. It was clarified that the selection was informed by LWSC's existing distribution network and the project design. A mapping exercise was conducting by the LWSC project team and residents living in homes within seven meters along the access roads who were available during the mapping exercise were considered for the project. 6. A question was asked regarding whether the project would recruit skilled workers from the communities. It was clarified that the contractors will come with their skilled workers, and their ability to present such a team is one of the criteria to be used for their selection. However, as per the work demand, community members will be recruited largely for casual labor. Skilled persons in the communities (i.e. plumbers) could be hired at the discretion of the contractors. The contractors will carry out a transparent and inclusive recruitment process in collaboration with the community leaders and the project teams from MPW and LWSC. 7. A question was asked if the project would provide free connection to public facilities (i.e., community townhalls and municipal buildings). 8. Someone asked if there were any plans to roll out additional connections beyond the 2,500 targeted. The response was that there will no additional connections under the current project.
Omega Area (Yonvlen Town)	1. A concern was raised regarding limiting the selecting criteria to households along access roads. A participants complained that many communities within the Omega Area lacks roads and would therefore be excluded from the project on the basis of that. 2. A concern was raised regarding the potential for politicizing the project. A participant said similar other government projects have taken a political trend where the ruling party supporters are prioritized. It was clarified that the Bank does not tolerate that and that all such practices should be reported to the project grievance committees. 3. Someone asked regarding the project start date and duration. It was clarified that the project is expected to commence in the first quarter of 2025. Implementation is expected to last for six months. 9. Someone asked if the project would employ people from the implementing communities. It was clarified that the

	contractors will come with their skilled workers, and their ability to present such a team is one of the criteria to be used for their selection. However, as per the work demand, community members will be recruited largely for casual labor. Skilled persons in the communities (i.e. plumbers) could be hired at the discretion of the contractors. The contractors will carry out a transparent and inclusive recruitment process in collaboration with the community leaders and the project teams from MPW and LWSC. 4. A concern was raised regarding the security of the pipes. Some participants voiced the belief that LWSC is negligent about maintenance of its infrastructure as there are many burst pipes in several connected communities. It was clarified that in line with LWSC standards, water pipes will be buried at required depths. However, communities have the responsibility to guard against some behaviors and practices that typically cause damages to the pipes or their exposure. Such practices include sand digging along the roads where the pipes are buried and ad hock road construction undertaken by individual citizens, mostly politicians, which pay little or no attention to public utilities or other infrastructure along the road corridors.

5) The Way Forward

At the end each meeting, the potential target project communities expressed support for the project. They agreed that the potential positive impacts and benefits of the project outweigh the negative ones. They pledged full cooperation with the project and expressed eagerness for the actual start date of the project.

PHOTOS TAKEN DURING THE STAKEHOLDERS' CONSULTATIONS

Cross-sections of participants during the consultation meeting held in Soniwein Community, Central Monrovia

The three pictures above show different views of the consultation meeting held in the Shara Community, Southern Paynesville 1

The photos above show different cross sections of participants during the consultation meeting held in New Kru Town, Northern Bushrod Island

ANNEX D: SOCIAL AGREEMENT

A4 (III D) *Republic of Liberia*
Montserrado County
Cell :+231-886 528084 /0880312359/ 0776030897/0555448403

Office of the Notary Public
Monrovia, Liberia

NOTARY CERTIFICATE

Personally Appeared before me in my Office within the City of Monrovia, Montserrado County, REPUBLIC OF LIBERIA, this 14TH day of APRIL 2025 duly qualified and commissioned Notary Public of and in the county of Montserrado and in the Republic aforesaid the Parties to the attached DOCUMENTS:

VOLUNTARY AGREEMENT
BETWEEN
KEY PROJECT STAKEHOLDERS, INCLUDING PROJECT AFFECTED PERSON (PAPS) ON POSSIBLE MITIGATION MEASURES FOR POTENTIAL SOCIAL IMPACTS OF THE LIBERIA WATER & SEWER CORPORATION'S 2500 HOUSEHOLD WATER CONNECTION PROJECT, ON PAPS IN RALLY TIME MARKET, JOHNSON STREET, MONROVIA

Did In My Presence And In The Presence Of Each Other Execute And Sign Their Genuine Signature(S) On The Said Instrument(S) To Person(S) They Represent And That The Same Was Made In My Presence And Declared By Each Of Them To Be Their Own Handwriting(S).

Therefore, I, S. PETER DOE-KPAR Notary Public Aforesaid Have Attached My Official Signature And Notary Seal To Avail When And Where Necessary.

I Have Affixed My Genuine Signature Attesting
To This Transaction By The Power Vested In Me
This 14TH day of APRIL 2025

SEAL

S. PETER DOE-KPAR
NOTARY PUBLIC, MONTSERRADO COUNTY, R. L.

REPUBLIC OF LIBERIA * NOTARY S. PETER DOE-KPAR PUBLIC * MONTSERRADO COUNTY

Republic of Liberia
Ministry of Public Works
Liberia Urban Resilience Project

Voluntary Agreement Between
Key Project Stakeholders, Including Project Affected Persons (PAPs)
on Possible Mitigation Measures for Potential Social Impacts
of the Liberia Water & Sewer Corporation's 2500 household Water Connection Project, on
PAPs in Rally Time Market, Johnson Street, Monrovia

I. Introduction

These commitments were reached by stakeholders to minimize social impacts of the Liberia Water & Sewer Corporation (LWSC) Water Connection Project in the Rally Time Market area on Johnson Street, Monrovia. The LWSC project seeks to expand access to pipe borne water in Greater Monrovia by connecting 2,500 households in Northern Bushrod Island, Central Monrovia, Southern Paynesville, and Omega. The project is supported by the World Bank-financed Liberia Urban Resilience Project (LURP) being implemented by the Ministry of Public Works (MPW).

A recent social impact assessment of the intervention areas established that Rally Time Market and two other locations – Duala Market and Omega Market – face a high risk of social disturbances compared to other project locations. These risks include livelihood disruptions in the form of temporary interruptions in sales and loss of income by traders due to the project activities.

II. Stakeholder Engagement and Consultation

On April 1, 2025, the project team organized a stakeholder engagement and consultation meeting to enable all relevant stakeholders, including the Project Affected Persons (PAPs) to jointly discuss and agreed mitigation measures to the identified risks. The meeting held in the Rally Time Market brought together representatives from the following stakeholders:

- Liberia Marketing Association (LMA) National Leadership
- Leadership of the LMA Rally Time Chapter
- Road-side Traders at the Rally Time Market (representing different segments)
- Leadership of the local community (Soninwein)
- The LURP project team
- The LWSC project team
- Liberia National Police, and
- The Monrovia City Corporation

III. Key Commitments/Mitigation Measures

The stakeholders identified the following mitigation measures and committed to undertaking them:

1) The stakeholders underscored that timely and accurate information dissemination is crucial to the success of the project.

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14 APR 2025

a) The LMA leadership as well as the Soninwein Community leadership committed to intensify awareness raising on the project and to inform all PAPs (including road-side-traders) about the outcome of the meeting and the agreements reached.
b) It was agreed that before starting work at any given road segment/project corridor, the contractor gives advanced notice (at least two days) to PAPs along that road segment, to enable them make the necessary adjustments. The project team committed to work with the contractor to ensure such notices are given.
c) It was agreed that the appropriate health and safety signs be provided/displayed in all active work areas to help minimize inconveniences to motorists and pedestrians, as well as to reduce the risk of accidents and other hazards. The project team committed to work with the contractor to ensure provision of the appropriate health and safety signs.

2) The contractor should ensure that no trench is left uncovered for more than 24 hours. All work engaged at a particular road segment must be completed within at most 24 hours.
3) PAPs (road-side traders in this case) committed to cooperate with the project by relocating temporarily or staying home for not more than two days during work along specific road segments on which they sell.
4) Alternatively, in certain areas deemed critical, work will take place at night or on Sundays. In those cases, the contractor must mark the specific work areas in the day and inform PAPs of the night work to allow them make the necessary adjustments.
5) All stakeholders agreed to adhere to the project Traffic Management Plan (TMP), including among other measures, creating detours during work. The police authorities present committed to support the implementation of the TMP.

IV. Term of the Agreement

This agreement will remain in force during the duration of the project, not exceeding one year as of the date the parties sign this document.

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NOTARY PUBLIC
S.PETER DOE-KPAR
MONTSERRADO COUNTY
1 APR 2025

14 APR 2025

V. Signature

In affirming their agreement, representatives of the various stakeholders have affixed their signatures below:

Sn	Name of Representative	Position	Phone Number	Signature	Date
LURP Project Management Unit					
1.	Samson Wonnah	Communications & Community Engagement Spe	0770116038		09-04-25
2.	Harriett P. Keamu	Environmental Specialist	0770479866	Keamu	10-04-25
Liberia Water and Sewer Corporation					
3.	Kawusu M. Toure	E+S Safeguard Expert	0776556839		10-04-25
4.	Akoi Moiwai	NRW/GIS Consultant	0886824749		10-04-25
Local Community Leadership					
1					
2	Tarlor Johnson	Chairman Eldo Gn	077575-278		09-04-25
3	Bob Sheriff	Supervisor on	~~0777802~~16-89	B. Sheriff	09-04-25
Liberia Marketing Corporation National Leadership					
1	John S. Babor	Asst Manager Ops	0775220434		4/9/2025
2.	Gbeleap Wah	Techial Director	0777215464	pp G.P. Wah	4/9/2025
	Alieu Kromah	Field Supervisor	0776585184	pp A. Kromah	4/9/2025

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MONTSERRADO COUNTY

Liberia Marketing Association Local Leadership in Rally Time Market					
1)	Varney O. Horton	O. P. S	0777 349739		04-09-2025
2.	Mulbah S. Sando	Asst. Secretary	0775319484		04/09/25
Liberia National Police					
Project Affected Persons / Road-Side Traders					
1.	Ellen Bea	Palm seller	0777926479		09-04-25
2.	Sam D. George	Seller	0776179333 0770641323		09-04-25
3	Sayah Willie	Drink seller	0776903730		09-04-25
4.	Barry Edwin	Drink Seller	0770-032159		09-04-25
Monrovia City Corporation					
	James A.B. Boovulu	MCC	0886479221		04/14/25
	Meke M. Tarr	MCC	0770181700		04/14/25

A4 (III D) *Republic of Liberia*
Montserrado County
Cell :+231-886 528084 /0880312359/ 0776030897/0555448403

Office of the Notary Public
Monrovia, Liberia

NOTARY CERTIFICATE

Personally Appeared before me in my Office within the City of Monrovia, Montserrado County, REPUBLIC OF LIBERIA, this 14TH day of APRIL 2025 duly qualified and commissioned Notary Public of and in the county of Montserrado and in the Republic aforesaid the Parties to the attached DOCUMENTS:

VOLUNTARY AGREEMENT
BETWEEN
KEY PROJECT STAKEHOLDERS, INCLUDING PROJECT AFFECTED PERSON (PAPS) ON POSSIBLE MITIGATION MEASURES FOR POTENTIAL SOCIAL IMPACTS OF THE LIBERIA WATER & SEWER CORPORATION'S 2500 HOUSEHOLD WATER CONNECTION PROJECT, ON PAPS IN DUALA MARKET, BUSHROD ISLAND, MONROVIA

Did In My Presence And In The Presence Of Each Other Execute And Sign Their Genuine Signature(S) On The Said Instrument(S) To Person(S) They Represent And That The Same Was Made In My Presence And Declared By Each Of Them To Be Their Own Handwriting(S).

Therefore, I, S. PETER DOE-KPAR Notary Public Aforesaid Have Attached My Official Signature And Notary Seal To Avail When And Where Necessary.

I Have Affixed My Genuine Signature Attesting
To This Transaction By The Power Vested In Me
This 14TH day of APRIL 2025

SEA L

REPUBLIC OF LIBERIA ★ MONTSERRADO COUNTY ★ NOTARY PUBLIC S. PETER DOE-KPAR

S. PETER DOE-KPAR
NOTARY PUBLIC, MONTSERRADO COUNTY, R. L.

Republic of Liberia
Ministry of Public Works
Liberia Urban Resilience Project

Voluntary Agreement Between
Key Project Stakeholders, Including Project Affected Persons (PAPs)
on Possible Mitigation Measures for Potential Social Impacts
of the Liberia Water & Sewer Corporation's 2500 household Water Connection Project, on
PAPs in Duala Market, Bushrod Island, Monrovia

I. Introduction

These commitments were reached by stakeholders to minimize social impacts of the Liberia Water & Sewer Corporation (LWSC) Water Connection Project in the Rally Time Market area on Johnson Street, Monrovia. The LWSC project seeks to expand access to pipe borne water in Greater Monrovia by connecting 2,500 households in Northern Bushrod Island, Central Monrovia, Southern Paynesville, and Omega. The project is supported by the World Bank-financed Liberia Urban Resilience Project (LURP) being implemented by the Ministry of Public Works (MPW).

A recent social impact assessment of the intervention areas established that Duala Market and two other locations – Rally Time Market and Omega Market – face a high risk of social disturbances compared to other project locations. These risks include livelihood disruptions in the form of temporary interruptions in sales and loss of income by traders due to the project activities.

II. Stakeholder Engagement and Consultation

On April 1, 2025, the project team organized a stakeholder engagement and consultation meeting to enable all relevant stakeholders, including the Project Affected Persons (PAPs) to jointly discuss and agreed mitigation measures to the identified risks. The meeting held in the New Kru Town Hall brought together representatives from the following stakeholders:

- Liberia Marketing Association (LMA) National Leadership
- Leadership of the LMA Duala Market Chapter
- Road-side Traders at the Duala Market (representing different segments)
- Office of the Governor of the Borough of New Kru Town
- Leadership of the local community (Karpeh Street and Trowein)
- The LURP project team
- The LWSC project team
- Liberia National Police, and
- The Monrovia City Corporation

III. Key Commitments/Mitigation Measures

The stakeholders identified the following mitigation measures and committed to undertaking them:

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14 APR 2025

1) The stakeholders underscored that timely and accurate information dissemination is crucial to the success of the project.
   a) The LMA leadership as well as the Governor's Office and Community leadership committed to intensify awareness raising on the project and to inform all PAPs (including road-side-traders) about the outcome of the meeting and the agreements reached.
   b) It was agreed that before starting work at any given road segment/project corridor, the contractor gives advanced notice (at least two days) to PAPs along that road segment, to enable them make the necessary adjustments. The project team committed to work with the contractor to ensure such notices are given.
   c) It was agreed that the appropriate health and safety signs be provided/displayed in all active work areas to help minimize inconveniences to motorists and pedestrians, as well as to reduce the risk of accidents and other hazards. The project team committed to work with the contractor to ensure provision of the appropriate health and safety signs.
2) The contractor should ensure that no trench is left uncovered for more than 24 hours. All work engaged at a particular road segment must be completed within at most 24 hours.
3) PAPs (road-side traders in this case) committed to cooperate with the project by relocating temporarily or staying home for not more than two days during work along specific road segments on which they sell.
4) Alternatively, in certain areas deemed critical, work will take place at night or on Sundays. In those cases, the contractor must mark the specific work areas in the day and inform PAPs of the night work to allow them make the necessary adjustments.
5) All stakeholders agreed to adhere to the project Traffic Management Plan (TMP), including among other measures, creating detours during work. The police authorities present committed to support the implementation of the TMP.

IV. Term of the Agreement

This agreement will remain in force during the duration of the project, not exceeding one year as of the date the parties sign this document.

14 APR 2025

REPUBLIC OF LIBERIA
NOTARY PUBLIC
SAYTEDOE-KPAR
MONTSERRADO COUNTY

V. Signature

In affirming their agreement, representatives of the various stakeholders have affixed their signatures below:

Sn	Name of Representative	Position	Phone Number	Signature	Date
LURP Project Management Unit					
1.	Samson Wonnal	CCES	0770115088		09-04-25
2.	Harriet P. Keamu	Environmental Specialist	0770479866	Keamu	10-04-25
Liberia Water and Sewer Corporation					
3.	Kawusu M. Toure	E+S Safeguard Expert	0776556839		10-04-25
4	Akoi Moiwai	WRM/GIS Consultant	0886824749		10-04-25
Local Community Leadership					
1	P. Howard Washington	Co-Chair Krowm Comm	0770546812		09/04/25
2.	Marcus S.W. Dixon	Chairman PMC	0777391540	Marcus Dixon	09/04/2025
Liberia Marketing Corporation National Leadership					
1.	John S. Barbor	Asst Manager for Ops	0775220434		4/9/2025
	Gbelee P. Weh	Technical Director	07772154 64	P.P. G.P. Weh	4/9/2025
	Alieu Kromah	Field Supervisor	07768,5814	PP. A. Kromah	4/9/2025

14 APR 2025

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Liberia Marketing Association Local Leadership in Duala Market					
	Alphonso I Mack	Market Director	0775610053		April 9-2025
	Marie J Johnson	Security	0771644219		April 9 2025
Liberia National Police					
1	ELVISS. STEVENS	Deputy Com. (NKT)	0770800545		April 9, 2025
Project Affecter Persons / Road-Side Traders					
1	Gabriel S. Ganarah	Building Masters	0776243662		April 9, 2025
2	Angeline George	Building Materials	0770428163		09-04-25
3	Hawa Bah	Coal Seller	0773817 32		09-04-25
4	Beauty mason	Dry Good seller	0774304880	Bms	4, 9, 2025
Office of the Governor – Borough of New Kru Town					
1	Tetee Jackson	Community Services	0777518551	T.	0904 25
2	Romeo Martee	Secretary General	0778528363	R.	09/04/2025
Monrovia City Corporation					
	James AB Brown, III	MCC	0886479221		04/14/25

14 APR 2025

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NOTARY PUBLIC
S. PETER DOE-KPAR
MONTSERRADO COUNTY

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Email: spd41946@gmail.com

Office of the Notary Public
Monrovia, Liberia

NOTARY CERTIFICATE

Personally Appeared before me in my Office within the City of Monrovia, Montserrado County, REPUBLIC OF LIBERIA, this 14TH day of APRIL A.D. 2025 duly qualified and commissioned Notary Public of and in the county of Montserrado and in the Republic aforesaid the Parties to the attached DOCUMENTS:

VOLUNTARY AGREEMENT
BETWEEN
KEY PROJECT STAKEHOLDERS, INCLUDING PROJECT AFFECTED PERSONS (PAPS) ON POSSIBLE MITIGATION MEASURES FOR POTENTIAL SOCIAL IMPACTS OF THE LIBERIA WATER & SEWER CORPORATION'S 2500 HOUSEHOLD WATER CONNECTION PROJECT, ON PAPS IN THE OMEGA MARKET AREA, PAYNESVILLE CITY, LIBERIA

Did In My Presence And In The Presence Of Each Other Execute And Sign Their Genuine Signature(S) On The Said Instrument(S) To Person(S) They Represent And That The Same Was Made In My Presence And Declared By Each Of Them To Be Their Own Handwriting(S).

Therefore, I, S. PETER DOE-KPAR Notary Public Aforesaid Have Attached My Official Signature And Notary Seal To Avail When And Where Necessary.

I Have Affixed My Genuine Signature Attesting
To This 14TH day of APRIL A.D. 2025

S.PETER DOE-KPAR
NOTARY PUBLIC, MONTSERRADO COUNTY, R.L

REPUBLIC OF LIBERIA
NOTARY
S.PETER DOE-KPAR
PUBLIC
MONTSERRADO COUNTY

Republic of Liberia
Ministry of Public Works
Liberia Urban Resilience Project

Voluntary Agreement Between
Key Project Stakeholders, Including Project Affected Persons (PAPs)
on Possible Mitigation Measures for Potential Social Impacts
of the Liberia Water & Sewer Corporation's 2500 household Water Connection Project, on
PAPs in the Omega Market Area, Paynesville City, Liberia

I. Introduction

These commitments were reached by stakeholders to minimize social impacts of the Liberia Water & Sewer Corporation (LWSC) Water Connection Project in the Omega Market area in Paynesville, Liberia. The LWSC project seeks to expand access to pipe borne water in Greater Monrovia by connecting 2,500 households in Northern Bushrod Island, Central Monrovia, Southern Paynesville, and Omega. The project is supported by the World Bank-financed Liberia Urban Resilience Project (LURP) being implemented by the Ministry of Public Works (MPW).

A recent social impact assessment of the intervention areas established that Omega Market and two other locations – Duala Market and Rally Time Market – face a high risk of social disturbances compared to other project locations. These risks include livelihood disruptions in the form of temporary interruptions in sales and loss of income by traders due to the project activities.

II. Stakeholder Engagement and Consultation

On April 2, 2025, the project team organized a stakeholder engagement and consultation meeting to enable all relevant stakeholders, including the Project Affected Persons (PAPs) to jointly discuss and agreed mitigation measures to the identified risks. The meeting held at the Omega Market brought together representatives from the following stakeholders:

- Liberia Marketing Association (LMA) National Leadership
- Leadership of the LMA Omega Chapter
- Road-side Traders at the Omega Market (representing different segments)
- Leadership of the local community (Omega and Duport Road Shara)
- The LURP project team
- The LWSC project team
- Liberia National Police, and
- The Paynesville City Corporation

III. Key Commitments/Mitigation Measures

The stakeholders identified the following mitigation measures and committed to undertaking them:

1) The stakeholders underscored that timely and accurate information dissemination is crucial to the success of the project.

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14 APR 2025

a) The LMA leadership as well as the Omega Community leadership committed to intensify awareness raising on the project and to inform all PAPs (including road-side-traders) about the outcome of the meeting and the agreements reached.
b) It was agreed that before starting work at any given road segment/project corridor, the contractor gives advanced notice (at least two days) to PAPs along that road segment, to enable them make the necessary adjustments. The project team committed to work with the contractor to ensure such notices are given.
c) It was agreed that the appropriate health and safety signs be provided/displayed in all active work areas to help minimize inconveniences to motorists and pedestrians, as well as to reduce the risk of accidents and other hazards. The project team committed to work with the contractor to ensure provision of the appropriate health and safety signs.

2) The contractor should ensure that no trench is left uncovered for more than 24 hours. All work engaged at a particular road segment must be completed within at most 24 hours.
3) PAPs (road-side traders in this case) committed to cooperate with the project by relocating temporarily or staying home for not more than two days during work along specific road segments on which they sell. They advised that working at night was not feasible in the vicinity for security concerns and promised to cooperate with the day work by either relocating temporarily or staying home for a few days.
4) All stakeholders agreed to adhere to the project Traffic Management Plan (TMP), including among other measures, creating detours during work. The police authorities present committed to support the implementation of the TMP.

IV. Term of the Agreement

This agreement will remain in force during the duration of the project, not exceeding one year as of the date the parties sign this document.

REPUBLIC OF LIBERIA
NOTARY PUBLIC
S.PETER DOE-KPAR
MONTSERRADO COUNTY
14 APR 2025

V. Signature

In affirming their agreement, representatives of the various stakeholders have affixed their signatures below:

Sn	Name of Representative	Position	Phone Number	Signature	Date
LURP Project Management Unit					
1	Samson Wennah	CCES	0770115038		09-04-25
2	Harriett P. Keamu	Environmental Specialist	0770479866	Keamu	10-04-25
Liberia Water and Sewer Corporation					
	Kawousu M. Toure	E&S Safeguard Expert, LWSC/PIU	0776556839		10-04-25
	Akoi Moinei	NRW/GIS Consultant	08868247 49		10-04/25
Local Community Leadership					
	Diame M. Boldy	Gen Chairlady	0776243154		10-04-25
	Peter S. Ward	Gen Chairman	0777593408		10-04-25
	Godfrey Johnson	Col Chairman	0776207124		10-04-25
Liberia Marketing Corporation National Leadership					
1	John S. Barbo	Asst Manager for OPS	0775220434		4/9/2025
	Gbeloe P. Wah	Techal Director	0777215464	P.P G.P Wah	4/9/2025
	Alieu Kromah	Field Supervisor	0776858 84	M. A. Kromah	4/9/2025

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Liberia Marketing Association Local Leadership, Omega Market					
1.	Mary G. Walker	Sup	077757356		04/09/25
2.	mama B Vicefar	OPS	088082900 3		04/09/25
Liberia National Police					
1.	Mariah Diggs	Gen. Commander	07708007 05	PP.	04/09/2025
2.	Wesley L. Doe	Traffic comman.	07708006 22	"	04/09/2025
Project Affecter Persons / Road-Side Traders					
1.	Theresa Smith	Seller	07784615	TS	04/09/25
2	Eunice T Boah	Seller	07802804 0		04/09/25
	Okee F. Pratt	Seller	07725637 2		04/09/2025
	Patricia Tyler	Tyler	07783225 6		04/09/25
Paynesville City Corporation					
	James Mulu Kennedy	urban planning Director	07704 18626		04/16/25
	Mekei M. Tarr	MCC	07701 81700		04/14/25

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ANNEX E: SAMPLE TRAFFIC MANAGEMENT PLAN

This Traffic Management Plan (TMP) has been prepared to address the following key issues related to the subproject:

- **MOBILITY** - including interruptions to pedestrians, cyclists and vehicular traffic; and
- **COMMUNITY** - including interruptions to surrounding businesses and residents from digging of trenches and installation of pipes, valves, hydrants and waste transportation.

The objective of this TMP is to provide safe passage for pedestrians, cyclists and vehicular traffic along the proposed intervention sites

General Traffic Management Measures

Based on the various activities described in the ESMP, urban water supply installation activities will involve the digging of trenches to install water lines from LWSC water source to connect homes. To do this safely, it may necessitate cordoning off the road, along the target locations and this will generate minor traffic issues. In the following, an overview of traffic management requirements and plans are described.

Components of the Traffic Management Plan

The Contractor should designate a TMP Supervisor who will oversee traffic management along major roads within the subproject target locations.
The TMP Supervisor will address the following:

- **Safety Signage:** Safety signage will be put up in locations where trenching activities are ongoing and when waste is removed and transferred from workstation bins to trucks. This signage will indicate that there are "Men at Work". Caution is most required by motorists, cyclists and pedestrians who transverse the project areas.
- **Liaisons with Government Traffic Agencies.** The TMP will ensure liaisons with the relevant traffic control agency. In situations where heavy traffic impacts are envisaged, the Contractor will liaise with the relevant traffic control agency to ensure traffic coordination and mitigate adverse traffic impacts.
- **Movement of project vehicles** will be timed to coincide with off-peak periods of traffic.
- **Strict speed limits** shall be enforced on all truck drivers working on this project and non-compliance shall be addressed by the contractor, supervision engineer and PMU. Measures will be taken to educate the

drivers during weekly pep talks.

- Vehicle breakdowns could occur, and this could cause bottlenecks and snarls. Therefore, in the event of such an occurrence, there should be provision to immediately assist with evacuating such vehicles to alternative routes while tow vehicles will be contacted from the nearest point.
- Adequate number of well-trained flagmen should be deployed to manage the traffic situation.

The contractor should ensure that all rehabilitation activities are performed in accordance with the approved Traffic Management Plan.
Adequate dewatering of waste material before transport to Whein Town disposal site.

- Maintain cleanliness of trucks for transporting solid waste materials.
- All vehicles transporting solid waste to final dump sites must be covered completely with tarpaulin.
- Provide notification about the trenching and installation activities on roads that will be and are currently affected by the activities.
- The contractor shall adopt best practices for transporting the solid waste materials to prevent soil/mud spilling on the roads or environment.

Every Vehicle used for the transportation of waste shall:

- Be registered with the relevant Authority
- Have a hauling body constructed of metal, or any other approved material and all joints in the hauling body shall be effectively sealed and smoothened to avoid drippings or leakages of liquids
- Be provided with a tight metal hood having adequate openings fitted with smoothly operating loading and unloading doors.
- Have a means of covering the waste to be hauled and keep such waste secured within the hauling body to prevent dispersal
- Have covers made with appropriate material such as tarpaulin, canvas cover fitted with proper eyes, grommets and tie ropes and hooks whereby the cover can be held securely over the loaded wastes
- Not be loaded with garbage to a level above the side wall height if it does not have permanent covers
- Be thoroughly washed and steamed regularly and kept in good working condition
- Conduct collection and transportation of waste in such a manner that will not cause scattering, escaping, flowing out of the waste
- Be in such a state that shall not cause scattering, escaping, flowing out of the waste or emitting of noxious smells from the waste
- Collect waste from designated areas of operations and shall deliver such waste to the designated station, disposal sure or plant.
- Equipment and vehicles that have all auxiliary (Water retaining facility, etc.) functional shall be engaged.

- Registered sand haulage Vehicles with the government should not be used for this exercise for the activities to be well regulated.
- The vehicles in use must be in good order.
- The haulage trucks will be adequately secured to prevent dust pollution and prevent solid waste material from falling onto the access routes
- Contractor flagmen will work collaboratively with relevant traffic management authorities to prevent traffic congestion along the route to the approved disposal site.
- Health and safety of the communities living in the influence area of the anticipated trenching sites will be prioritized along material disposal transport routes and sites and road safety and traffic constraints.

S/N	Aspects	Descriptions	Responsible Party	Cost (USD)
1	Traffic/ Safety Signage	▪ Safety signage should be put at both ends of the road to warn road users of the ongoing digging of trenches and installation activities.	Contractor	Included in ESMP Table 7
		▪ Mobilization of equipment and materials should be done at off-peak period (10am – 4pm). ▪ Enforce speed limit.	Contractor	$1,000.00 is allocated in each BoQ for all three Lots
2	Training	▪ Hire drivers with appropriate driver's license. ▪ Ensure drivers are familiar with TMP	Contractor	Training cost covered ESMP Table 7
3	Communication	▪ All Traffic and Safety signages should be boldly written in English languages ▪ Any incident/ accidents should be reported immediately to the PMU	Contract or PMU	
	Cost	All cost included have been embedded in the ESMP Matrix Table		

ANNEX F: OCCUPATION HEALTH AND SAFETY MANAGEMENT PLAN

PURPOSE	This table describes the Project Occupational Health and Safety (OHS) plan for the proposed project and the specific management controls, risk control systems and workplace and safeguards required to ensure compliance with Occupational Health and Safety Laws and Standards.
SCOPE	The Project Occupational Health and Safety (OHS) plan covers the scope of work defined in the contract. This includes the digging of trenches at the preparatory, implementation, and maintenance phase.
OBJECTIVES OF THE PLAN	• Adopt a positive Health & Safety Culture. • Adopt the principles of prevention to avoid risk. • Complete the project without incident (Zero fatalities, Zero Lost Time Injury or occupational illness).
OBLIGATIONS	• Participation of all personnel and the management in executing, maintaining and continually improving OHS processes is vital to the successful completion and achievement of quality objectives set by the management. • All project personnel shall therefore be required to be familiar with the content of the OHS plan and shall participate in implementing, maintaining and improving the management system • It is the responsibility of the project coordinator and all key personnel to ensure that the requirements for quality are fulfilled for works under their responsibility. • All new staff and staff who are given new responsibilities are to be inducted into the requirements set out in the plan in general and into their function and responsibilities in particular
POLICIES	• Workplace Health and Safety: all workers shall adhere to all workplace health and safety rules and the management will ensure the safety of the workers on site. • Rehabilitation Policy • Drug and Alcohol Policy: Prohibiting the consumption or possession of narcotics, drugs, alcohol and other banned substances

DUTIES AND RESPONSIBILITIES	**Safety Officer Responsibilities include:** • Maintain communication link between the contractor and the PMU Project Coordinator and PMU E&S Team. • Review daily work to be assigned to workers in line with ESMP • Inspect all work areas on a daily basis. • Respond immediately to all unsafe conditions. • Control of and distribution of all workers personal protective equipment. • Ensure deficiencies are corrected and reported to site manager. • Complete all incident/Non-conformance reports as required • Complete all orientation of all new or transferred employees. • Ensure that all required training is given or made available to all employees • Ensure Public health, Safety during the digging of trenches and proper handling of waste during the transport of waste materials; **Workers' roles and responsibilities for Health and Safety** • Carry out their work in a manner that will not create a hazard to the health and safety of self or other employees. • Have the right to refuse unsafe work and report all job specific hazards to their manager. • Take care, an active role in the elimination and control of workplace hazards. • Assist site managers in reducing and controlling accident producing conditions and unsafe acts on the work sites. • Report any accidents/incidents, near misses and/or injuries immediately to the manager. • Report any anticipated loss of work time to the manager as soon as possible after being treated by a physician following injury. • Providing suggestions to improve the overall health and safety program. • Using all safety equipment provided. • Participating as required, in accident/incident investigations and assisting in the completing of the accident/incident forms. • Ensure co-workers are advised of unsafe conditions or acts that may cause injury or illness. • Demonstrate a professional attitude towards all projects OHS efforts.

COMMUNICATION RESOURCES	This may include project management meetings; inductions; training; and outcomes from inspections
RULES FOR WORKPLACE SAFETY	**BEHAVIOR:** Consuming or being in possession of or under the influence of alcohol or illegal drugs on project site and environs premises, is prohibited and disciplinary action will be taken. Fighting, horseplay, practical jokes or otherwise interfering with other workers is prohibited and disciplinary action will be taken. Theft, vandalism or any other abuse or misuse of equipment is prohibited and may be cause for immediate dismissal. "Strike Anywhere" matches are prohibited. Running is not permitted anywhere, except in the case of extreme emergency. Riding on any hook, hoist or other material handling equipment which is used strictly for handling material and not specifically designated to carry riders is prohibited. First Aid and Injury Management Emergency Procedures i. Render first aid immediately, first aid kits should be made available in all vehicles and all sites. All serious first aid injuries should be attended to by a trained first aid attendant only. i. For all serious injuries, these general directions should be followed: • If you do not have first aid training send or locate a trained first aid attendant immediately • Apply artificial respiration if the patient is not breathing (by trained first aid attendants only) • Stop any severe bleeding, by applying pressure to the immediate wound area • Send someone for a doctor • Keep victim lying down: never move injured personnel unless the potential for further injury is immediately present ii. Stay calm. If the patient is breathing and no artery is spurting blood, giving first aid is usually unnecessary, and is often harmful iii. Do not attempt to remove foreign objects from eyes or any other part of the body or allow anyone else to do so, except a first aid attendant or a doctor iv. Call for assistance; be ready to give the following information: • Accurate directions to the location of the injured person. • Nature of the injury. • Any assistance that may be required. • Give information slowly and clearly. • Report back to the scene of the accident; report to the superintendent or first aid attendant that help is on the way. If no one can be contacted at the office call/Inform operator which of the following is required: a) Ambulance. b) Police. c) Fire Department. d) Electrical Power Company. e) Gas utility company. f) Hospital. g) Restrict the immediate area of the accident, check if further danger exists
TRAINING OF CONTRACTOR'S PERSONNEL	The Contractor shall provide sufficient training to his own personnel to ensure that they are all aware of the relevant aspects of these general conditions and the ESMP and are able to fulfil their expected roles and functions. Specific training should be provided to those employees that have particular responsibilities associated with the implementation of the ESMP. The topics to be covered are OHS in general (working procedures), emergency procedures, and social and cultural aspects (awareness raising on social issues).

ANNEX G: EMERGENCY PREPAREDNESS PLAN

Emergency procedures and response plan shall be developed by the contractor prior mobilizing to site. The procedures shall be communicated to all staff and all workers shall be trained to avoid and respond to emergencies appropriately. Also, each site shall always have at least a trained first aider on site.

Aspects	Requirements
Competency	All personnel required to operate or work with any equipment or machine must be competent, be tested for each equipment that he/she shall be operating. All personnel who as part of their profession require licensing or certification must obtain the necessary certification before he/she shall be allowed to work on the site. All personnel working on site shall be required to be certified medically fit to do so by an approved medical facility or Medical Doctor (pre-employment medical examination)
Induction/ Orientation	Every new or rehired employee must undergo mandatory OHS orientation / induction. The purpose of the Induction is to educate workers and make them aware of the major potential hazards he or she shall come into contact with while working on the site; also, it is one more opportunity to stress the importance of HSE being the first priority in the operations. The content of the HSE orientation / induction shall cover the following subjects: • Manual handling. • Emergency Prevention, Preparedness and Response • First Aid training (for site First Aiders) • Lifting and Rigging • Safe Driving techniques (for drivers)
Major Hazards	The major hazards identified for the proposed project include the general OHS risks of dogging of trenches and installing the water supply network
Personal Protective Equipment (PPE)	The basic PPE required for the project shall be hand gloves (Impermeable and Chemically resistant); hooded reflective overalls (Impermeable and Chemically resistant); Nose covers with respirators; Rain/safety boots; Safety eye goggles, helmet). Any other PPE shall be used as applicable. The contractor is responsible for the provision of PPE and usage shall be enforced at all times. PPE shall be provided in circumstances where exposure to hazards cannot be avoided by other means. Information, instruction & training shall be given to all employees on safe use, maintenance and storage of PPE. Employees shall, in accordance with instructions given, make full use of all PPE provided and maintain it in a serviceable condition and report its loss or defect immediately to the maintenance department where it shall be replaced. PPE shall be replaced when it is no longer serviceable and returned on a new for old basis. Employees

	shall sign to state that they have received PPE when issued.
Signage	Adequate provision for warning and directional signs shall be made.
Reporting	All accidents must be reported to the PMU after which investigation shall commence and recorded so that appropriate corrective actions shall be implemented to prevent any re-occurrence and report findings shall be forwarded to the PMU. Reporting requirements shall include notification of incident, investigation report, and monthly report. Notification of Incident form shall be developed which shall be filled and submitted to the PMU for investigation.

ANNEX H: WASTE MANAGEMENT PLAN (WMP)

S/N	Potential Source	Waste Type	Waste Streams	Management	Responsibility	Cost
A	MOBILIZATION					
1	Movement of vehicles on unpaved surface and engine exhaust	Emission	CO_2, SO_2, NO_2, CO, Dust	Use water suppression to prevent dust emission. Maintain vehicles and machinery to reduce emission. Maintain low speed to reduce dust and gaseous emission.	Contractor	Cost is already embedded in the project cost through the provision of equipment. Dust emission will be an issue during this dry season in Liberia.
B	DIGGING OF TRENCHES					
1	Use of motorized equipment to dig trenches and engine exhaust	Emission	CO_2, SO_2, NO_2, CO, Dust, PM2.5, PM10	See A1	Contractor	Cost is already embedded in the project cost Dust emission will be of issue during this dry season in Liberia.
2	Trenching works	Non-Hazardous /Industrial	• Sand, silts, debris • Plastic bottles, plastic bags • Domestic-type	Soil excavated from trenching will be used for backfilling. Solid waste collected	Contractor	Cost is estimated in BoQ and also provided in ESMP Table 27

			waste: wastepaper and food scraps, metal cans • Liquid waste/feces	from trenching will be placed in smaller waste bins at congested areas and transported by workers to the bigger Bins and then to the Skip Bucket which will be stationed at a major collection point. The Waste collection vehicle will collect the skip bucket with waste from the collection point and transport it to Whein Town for disposal			
3	Installation of water pipes and accessories	Hazardous Waste	Water spillage and leaks	Manage control valves to reduce water spillage in and around workstation	Contractor	Included in the cost of managing water spillage. See ESMP Matrix – Table 27	
4	Worker areas during breaks	Domestic and Sanitary	• Food remnant, kitchen wastes. Food packaging etc. Domestic Sewage	See B2	Contractor	Usually, in such casual work or daily hire arrangements, the contractor does not provide food or resting area for workers. Workers leave site as soon as they complete their assigned individual task (specified distance) for the day.	
C	**MAINTENANCE**						
	To be specified in overall project ESIA and Umbrella Waste Management Plan and Site-Specific Waste Management Plans						
	During the recent E&S site screening consultations, community members suggested the inclusion of their members in the workforce to help them get income, own the project intervention and monitor the work during and after completion.						
	Cost (Also captured in the relevant sections of the ESMP Table)						

ANNEX I: LURP's GRIEVANCE REDRESS MECHANISM

See the Liberia Urban Resilience Project's Grievance Redress Mechanism.