Republic of Liberia

Ministry of Public Works

South Lynch Street

Monrovia, Liberia

Liberia Urban Resilience Project

REQUEST FOR EXPRESSIONS OF INTEREST (REOI)

COUNTRY:	**Republic of Liberia**
NAME OF PROJECT:	**Liberia Urban Resilience Project**
PROJECT ID:	**P169718**
CREDIT/GRANT No.:	**IDA-7112-LR and E0410-LR**
ASSIGNMENT:	**Consultancy Services for Construction Supervision/Administration and Inspection of the Design-Build Cheesemanburg Landfill Development Contract**
REFERENCE No.:	**LR-MPW-365332-CS-CQS**
Place of Assignment:	**Montserrado County**

The Government of the Republic of Liberia has received financing from the World Bank toward the cost of the **Liberia Urban Resilience Project (LURP)** and intends to apply part of the proceeds for the **Consultancy Services for Construction Supervision/Administration and Inspection of the Design-Build Cheesemanburg Landfill Development Contract.**

The objective of the Consultancy services ("the Services") is to assist the PMU with the contract administration and inspection of the works, including Quality assurance (CQA) during the construction phase, Payment verification, Dispute resolution, Health and Safety Plan review, Environmental and Social Management Plan review, Preparing CQA reports and Assistance during commissioning. The **Consultant** shall provide field representation for the MPW/PMU to ensure that the contractor carries out the works during implementation according to the design documents (plans, specifications and bill of quantities).

For detailed terms of reference for this assignment with scope of assignment and specific tasks, qualifications and experience and other requirements, please visit the Ministry's website: https://www.mpw.gov.lr.

The Ministry of Public Works ("the Client") now invites eligible Individual Consultants to submit Expression of Interest (EOI) in providing the Services. Interested firm Consultants must provide their detailed profiles demonstrating that they meet the following shortlisting criteria:

- **Core business of the firm, JV or Consortium**
- **At least eight years' demonstrated experience in municipal engineering services, solid waste sectors, planning for solid waste management infrastructure development/investments, landfill development/ closure/ rehabilitation,**
- **Demonstrated experience in project management and construction supervision of works contracts, preparation of preliminary and detailed designs, cost estimates, bidding documents and project implementation schedules,**
- **Demonstrated evidence of successful completion of at least five (5) similar projects in the context of developing countries**
- **The technical and managerial capability of the firm. (Provide only the structure of the organization, general qualifications, and number of key staffs. Do not provide CV of staff. Key experts will not be evaluated at the shortlisting stage.)**

The attention of interested Consultants is drawn to the fact that Selection of Firm/Consortium will be done in accordance with the World Bank's "Procurement Regulations for IPF Borrowers ("Procurement Regulations") dated July 2016, revised in November 2017 and August 2018, and updated in November 2020.

Consultants may associate with other firms in the form of a joint venture or a sub consultancy to enhance their qualifications.

A Firm/Consortium of firms will be selected in accordance with the Consultant's Qualification Selection (CQS) method set out in the IPF Procurement Regulations.

Further information can be obtained at the address below during office hours 0900 to 1700 hours from Monday to Friday excluding lunch hour (1300 to 1400 hours) and public holidays.

The completed expression of interest documents in writing in three (3) copies must be delivered to the Tender Box located at the Ministry's Conference Room or sent to the address below so as to be received on or before **June 29, 2023,** at 1500 hours GMT. For Expressions of Interest (EoIs) that will be deposited at the tender box, the packages should be clearly marked: Contract No: **LR-MPW-365332-CS-CQS: CONSULTANCY SERVICES FOR CONSTRUCTION SUPERVISION/ADMINISTRATION AND INSPECTION OF THE DESIGN-BUILD CHEESEMANBURG LANDFILL DEVELOPMENT**; and addressed to:

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LIBERIA URBAN RESILIENCE PROJECT (LURP)
P169718

Component 2.0 Strengthening Integrated Resilient Urban Development Capacity

TERMS OF REFERENCE

OF THE

CONSULTANCY SERVICES

FOR

CONSTRUCTION SUPERVISION/ADMINISTRATION AND INSPECTION OF THE DESIGN-BUILD (DB) CHEESEMANBURG LANDFILL DEVELOPMENT CONTRACT

June 12, 2023

CONSTRUCTION SUPERVISION/ADMINISTRATION AND INSPECTION OF THE DESIGN-BUILD CHEESEMANBURG LANDFILL DEVELOPMENT CONTRACT

1 BACKGROUND

The Government of Liberia (GoL) has secured financing through the World Bank (WB) for the implementation of the Liberia Urban Resilience Project (LURP). The project has the development objective of increasing flood resilience and access to urban infrastructure in selected neighborhoods and to improve urban management in Liberia. Subcomponent 2.2 of the project will support Solid Waste Management (SWM) Operations and Financing.

Liberia's only sanitary landfill operated by the Monrovia City Corporation (MCC) has a useful lifespan of less than 2 years, serving MCC and Paynesville City Corporation (PCC) also. The government intends to construct a new landfill site in the Township of Cheesemanburg. The construction of the proposed new landfill will replace the Whein Town landfill in strengthening the Solid Waste Management (SWM) sector and enhance waste collection and disposal as a way of providing a cleaner and healthier environment mainly for residents of Monrovia, Paynesville, Brewerville, Virginia, Congo Town, Barnerville, Gardnerville and the Township of Cheesemanburg. See Figure 1.

A Design-Build contractor has already been engaged, and final detailed design and ESIA are undergoing final reviews. In view of the above, the project is desirous to hire the service of a landfill engineer to supervise the landfill contractor during works implementation.

The Design-Build (DB) Contract will be based on the FIDIC Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works, designed by the Contractor, Second Edition 2017. In terms of the above General Conditions of Contract (GCC) the LURP is seeking to appoint an Engineering Firm as defined by GCC 1.1.35 and Section 3 of the GCC to assist the City. As the Employer, the Ministry of Public Works (MPW) will sign a contract with the **Consulting Engineer** (the **Consultant**) based on the FIDIC Employers/Consultants Model Service Agreement Fifth Edition 2017 (White book) form of agreement.

The **Consultant** (through this consultancy) will act as the Employer's representative during the construction and commissioning phases by conducting construction administration and inspection and finally the commissioning of the facility.

The landfill development will be executed in 2 phases. This ToR for the Construction Supervision/Administration and Inspection of the Design and Build Cheesemanburg Landfill Development Contract will deal with the Phase I Construction contract which will consist of the following aspects:

1. Preliminaries
2. Topographic Survey
3. Geotechnical Investigations
4. Master plan layout of the entire landfill site and the detailed designs of the proposed elements of Phase I
5. Construction of the Access Road till the limit of peripheral road of Cell 1a (Road1): Excavation and backfilling, rough grading, subgrade preparation and Aggregate Sub-Base (50% of total quantities).
6. Excavation, backfilling and 10cm sand layer for levelling and protection of base and slopes of landfill (Cell 1a)
7. Installation of Lining System for 55% of (Cell 1a) (Geo-synthetic Clay Liner, HDPE membrane 2mm, nonwoven geotextile 800g/m2)
8. Construction of peripheral Road of (Cell 1a) (Internal Road 1) (Excavation, backfilling, rough grading and subgrade preparation).
9. Installation of Leachate Collection system for part of the Cell 1a till Leachate Pond
10. Construction of two leachate ponds, 4,500 cum each.

The performance of the **Consultant** will be scrutinized closely during the execution of the phase I construction contract with the view that, should the consultant's performance be acceptable, they could be considered to continue the supervision of the phase II construction contract. The extent of the Phase II contract is shown in the Annexure.

1.1 Legal and Regulatory Requirements

The relevant Liberia regulatory framework and applicable international standards that set the context within which the Project will operate are the following:

The statutory bodies to be consulted during the design process would be:

- The **Environmental Protection Agency (EPA)** – The environmental regulatory authority in charge of issuing environmental guidelines and reviewing the Environmental Impact Assessment process.
- **Monrovia City Corporation (MCC)** – The Public Health Law of 1975 granted the MCC the responsibility of ensuring clean and sanitary environmental conditions in Monrovia. The MCC is responsible for environmental management including sanitation primarily in the form of beautification, street cleaning, and solid waste collection and disposal.
- **Ministry of Health and Social Welfare (MHSW)** – The Division of Environmental and Occupational Health of the MHSW is responsible for handling matters related to water and sanitation.
- **Ministry of Public Works (MPW)** – Responsible for the design, construction and maintenance of roads and highways, bridges, storm sewers, public buildings and other civil works in the country.
- The **Ministry of Mines and Energy (MME)** – Statutory responsibility for the development of mineral, water and energy resources in Liberia; it administers and regulates the use of mineral resources through granting of operation licenses and regulates beach sand mining.
- The **Ministry of Agriculture** – Regulates the forestry as relate to plant quarantine, agro-forestry and food crop related plantations; fishery and agriculture sectors and has specific responsibilities for soil conservation.
- The **Forestry Development Authority (FDA)** – Responsible for the protection, management and conservation of government-owned forests and wildlife on a sustainable basis.
- Other governmental institutions with environment-related responsibilities include the

Ministry of Education, Ministry of Foreign Affairs, and the Liberia Water and Sewer Corporation (LWSC).

- To decentralize environmental management, the Environmental Protection Agency Act authorizes the establishment of **County and District Environmental Committees**. Each County Committee is composed of county and district officials, traditional leaders, private citizens, and two local representatives to the national legislature.
- **Liberia Land Authority (LLA) T**he primary mandate of the Authority is to develop policies on a continuous basis, undertake actions and implement programs in support of land governance, including land administration and management.

1.2 Development Standards

Liberia conforms mostly to the American and other international standards except the British Standards. Typical standards that would be applicable to the project are the following:

- For Construction of Buildings reference is made to the ASTM, ASCE, ACI, AASHTO and AISC Codes.
- For Roads and bridges reference is made to the AASHTO and ACI codes.
- For Dams and Earth Embankments reference is made to the ASTM, AASHTO (PROCTOR) and ACI codes.
- For Electricity reference is made to the IEC & IEEE.
- For piping reference is made to ACI, ASME, API and ISO.
- For water quality reference is made to the US EPA standards and WHO guidelines based on ASTM Water Testing Standards.
- Geosynthetic materials guided by the ISO, ASTM, and GEOSYNTHETIC INSTITUTE (GSI) – Geosynthetic Research Institute (GRI) codes and specifications.

1.3 Functional and/or Performance Requirements

A landfill is by nature a source of pollution. The necessary environmental barrier systems would therefore be required as part of the design, construction and after care of both the landfill and leachate containment structures.

Guided by the Project Environmental Social Impact Assessment, Geohydrological, Geotechnical baseline information and a Topographical Survey, the design and maintenance plan of the waste facilities compiled by the Design and Build (DB) Contractor will be expected to mitigate any potential negative impacts while enhancing potential positive impacts through design and operations.

1.4 Quality Assurance Requirement

The **Consultant** will oversee the construction works of the DB Contract and to ensure quality control to hand over an acceptable facility in line with the approved designs to the MCC upon completion of the works. More specifically, the work to be conducted by the **Consultancy** should follow the functional and technical program in the DB contract.

Material Quality and Construction Quality Control / Assurance (CQC/A) will form an essential part of the inspection during the construction process in line with the environmental and social management plan (ESMP), health and safety plans and Contractor's design specifications. The responsibility of the CQC will remain with the Contractor while the CQA will be the responsibility of the **Consultant**. The employer (MPW) supported by the EPA will only be involved as observers and external auditors.

2 OBJECTIVE OF THE ASSIGNMET

The consulting services will essentially be to assist the PMU with the contract administration and inspection of the works. The **Consultant** will thus function as a technical advisor throughout the project by providing such services as:

- Quality assurance (CQA) during the construction phase
- Payment verification
- Dispute resolution
- Health and Safety Plan review
- Environmental and Social Management Plan review
- Preparing CQA reports
- Assistance during commissioning.

The **Consultant** shall provide field representation for the MPW/PMU to ensure that the contractor carries out the works during implementation according to the design documents (plans, specifications and bill of quantities). The task will include: (i) Ensure that the construction methods proposed by the contractor for carrying out the works are satisfactory; (ii) Inspection of contractor's construction equipment, results of material and soil tests, safety of the works, property and personnel and report any issue promptly to the PMU; (iii) Ensure that road safety requirements are implemented in accordance with the contract; (iv) Establish efficient procedures for verifying contractor performance and reporting progress and problems in a timely manner, including quality control reports, quantity survey records, requests for variation or change orders, and contractor's claims and invoices; (v) Undertake project performance monitoring and evaluation; (vi) Ensure that the contractor adheres to environmental and social safeguard provisions, child labour, sexual harassment, and H&S measures in accordance with the provisions of the contract agreement; (vii) Provide recommendations to the MPW/PMU regarding any request related to invoices, variation orders; (viii) prepare and properly file field reports summarizing work progress, findings and issues encountered; (ix) report any complaint by neighboring communities to the MPW/PMU and MCC for immediate action.

3 SCOPE OF WORK

The scope of services to be provided is defined by the following theme:

Contract Administration and Construction Inspection of the Design-Build Cheesemanburg Landfill Development Contract.

The work to be conducted by the Consultancy should follow the functional and technical program in the DB contract. The design phase of the DB Contract will have been concluded before the award of this contract with the construction phase of the contract remaining which will be the focus of this contract. All design matters are to be referred to the PMU.

Typical deliverables provided mostly by the DB Contractor during the design phase will include:

- Detailed design and documentation programme
- Record of all meetings
- Approval by the Employer to proceed to next phase
- Design development drawings.
- Outline technical specifications.
- Local and other authority submission drawings and reports.
- Detailed estimates of construction costs.

The following **Consulting** services shall thus be rendered during the phases of the project as listed below:

3.1 Construction Phase

The **Consultant** shall provide field representation for the MPW/PMU to ensure that the contractor carries out the works during implementation according to the bidding documents (plans, specifications and bill of quantities). The task will include:

(i) Ensure that the construction methods proposed by the contractor for carrying out the works are satisfactory;
(ii) Inspection of the DB contractor's construction equipment, results of material and soil tests, safety of the works, property and personnel and report any issue promptly to the PMU;
(iii) Ensure that earthworks and building safety design requirements are implemented in accordance with the contract and the works detailed design drawings;
(iv) Establish efficient procedures for verifying contractor performance and reporting progress and problems in a timely manner, including quality control reports, quantity survey records, requests for variation or change orders, and contractor's claims and invoices;
(v) Undertake project performance monitoring and evaluation;
(vi) Ensure that the contractor adheres to environmental and social safeguard provisions, child labour, sexual harassment, and EH&S measures in accordance with the provisions of the contract agreement;
(vii) Provide recommendations to the MPW/PMU regarding any request related to invoices and variation orders;
(viii) Prepare and properly file field reports (at least monthly) summarizing work progress, findings and issues encountered, deficiencies that needs to be addressed before project closeout;
(ix) Participate in progress meetings as per MPW/PMU request;
(x) Report any complaint by neighbouring communities to the MPW/PMU and MCC management for immediate action.

Continuous fieldwork inspections services shall inter alia include:

(i) Facilitate in providing the DB Contractor with the necessary data, benchmarks, coordinates and any other relevant information for setting out the works; and subsequently checking and approving the detailed setting out;
(ii) Checking and approving the Contractors' work plans and implementation for the most efficient and expeditious methods of carry out works;
(iii) Issuing all necessary instructions to the DB Contractor and continuously inspecting the works to ensure that they are carried out in accordance with the contract documents;
(iv) Inspect/monitor implementation of the Construction Environmental and Social Management Plan (CESMP) by the DB Contractors and submit monthly Environmental Monitoring Reports to the Employer.
(v) Checking and approving materials used and examining Contractor's installations, accommodation, construction equipment and laboratories used to ensure that these conform to agreed specifications and proposals;
(vi) Checking and approving all working drawings prepared by DB Contractors;
(vii) Checking DB Contractor's work measurements and certifying payment claims;
(viii) Negotiating with DB Contractor any contractually permissible changes in price or rate for which the need may arise and making recommendations on these to the Employer.

(ix) Informing the Employer of any problem which arises or might arise in connection with civil works contracts and making recommendations for their solution;
(x) Evaluating all claims during the contract periods for additional payments and time extensions submitted by Contractor, and making recommendations on these to the Employer;
(xi) Assisting the Employer in any dispute during contract period that may arise with the contract and providing all information on which the judgments are based;
(xii) Organise monthly site meetings and submit minutes of meetings one week after site meetings;
(xiii) Prepare and submit to MPW, through the LURP Project Coordinator monthly progress and CQA reports one week after the reporting month.

Contract Administration and Inspection

As the core aspect of the consultancy the **Consultant** shall be responsible to manage, administer and monitor the construction contract and processes including preparation and coordination of procedures and documentation to facilitate practical completion of the works.

(i) Arrange site handover to the contractor
(ii) Establish construction documentation issue process
(iii) Agree and monitor, issue and distribution of construction documentation
(iv) Monitor the appoint process of subcontractors
(v) Conduct and record regular site meetings
(vi) Review, approve and monitor the preparation of the construction programme by the contractor
(vii) Regularly monitor performance of the contractor against the construction programme
(viii) Adjudicate entitlements that arise from changes required to the construction programme
(ix) Receive, co-ordinate and monitor approval of all contract documentation provided by contractor(s)
(x) Agree quality assurance procedures and monitor implementation thereof by the other consultants and contractors
(xi) Monitor preparation and auditing of the contractor's health and safety plan and approval thereof by the health and safety consultant
(xii) Monitor preparation of the environmental management plan by the environmental consultant
(xiii) Establish procedures for monitoring scope and cost variations
(xiv) Monitor, review, approve and issue certificates
(xv) Receive, review and adjudicate any contractual claims
(xvi) Monitor preparation of financial control reports by the other consultants
(xvii) Prepare and submit progress and CQA reports
(xviii) Co-ordinate, monitor and issue practical completion lists and the certificate of practical completion
(xix) Facilitate and expedite receipt of the occupation certificate where relevant.
(xx) Carry out contract administration procedures in terms of the contract.
(xxi) Prepare schedules of predicted cash flow.
(xxii) Prepare pro-active estimates of proposed variations for Employer decision making.
(xxiii) Attend regular site, technical and progress meetings.
(xxiv) Review the DB Contractor's quality control programme and advise and agree a quality assurance plan.

(xxv) Inspect the works for quality and conformity to contract documentation, on average once every 2 weeks during the course of the works as described below for periodic construction monitoring.
(xxvi) Review the outputs of quality assurance procedures and advise the contractor and Employer on the adequacy and need for additional controls, inspections and testing.
(xxvii) Adjudicate and resolve financial claims by contractor(s).
(xxviii) Assist in the resolution of contractual claims by the contractor.
(xxix) Establish and maintain a financial control system.
(xxx) Clarify details and descriptions during construction as required.
(xxxi) Prepare valuations for payment certificates to be issued by the principal agent.
(xxxii) Instruct witness and review all tests and mock ups carried out both on and off site.
(xxxiii) Check and approve contractor drawings for design intent.
(xxxiv) Review and comment on operation and maintenance manuals, guarantee certificates and warranties.
(xxxv) Arrange for the delivery of all test certificates, statutory (regulatory) and other approvals, as built drawings and operating manuals

Typical deliverables during the construction phase will include:

- Signed contracts
- Approved construction programme
- Construction documentation
- Progress and CQA reports
- Record of meetings
- Financial control reports.
- Valuations for payment certificates.
- Progressive and draft final account(s)
- Certificate(s) of practical completion and coordination of defects list
- All statutory certification and certificates of compliance as required by the Local and other Statutory Authorities
- Facilitate and expedite receipt of occupation certificates

Construction Monitoring

The **Consultant** shall agree a satisfactory arrangement in respect of construction monitoring that suits the type of work, the project location and the duration of the critical aspects of the works. The **Consultant** has a duty of care responsibility while the Employer should strive to ensure quality and minimize life-cycle costs.

The level of construction monitoring by the **Consultant** and the frequency and duration of the site visits will be agreed with the Employer prior to commencement of the works and should be recorded in the agreement with the Employer. The level of construction monitoring and activities related to the quality assurance plan may change during the course of the works to reduce quality related risks and this will require an amendment of the agreement.

Two levels of construction monitoring are required of the identified personnel resources for the project and described as follows:

A. Periodic Construction Monitoring

The **Consultant's** staff as listed in the resource schedule shall:

(i) Visit the works at a frequency of once a month on average over the duration of the works, with additional visits for works completion inspections and inspections for works defects lists.

(ii) Review random samples of material and work procedures that will coincide with the normal frequency visits, for conformity to contract documentation, and review random samples of important completed work prior to covering up, or on completion, as appropriate.

B. Full-time Construction Monitoring

The full time construction monitoring staff as listed in the resource schedule shall:

(i) Maintain a full time presence on site to constantly review samples of materials and work procedures, for conformity to contract documentation and review completed work prior to covering up, or on completion, as appropriate.

(ii) Assist with the preparation of as-built records and drawings to the extent required in the agreement with the Employer

(iii) Where the consulting engineer is the sole professional service provider or principal agent, carry out such administration of the project as is necessary on behalf of the Employer.

3.2 Close-Out Phase

The **Consultant** shall be responsible for the fulfilment and completion of the project close-out including necessary documentation to facilitate effective completion, handover and operation of the project.

(i) Inspect and verify the rectification of defects and deficiencies
(ii) Manage procurement of operations and maintenance manuals, warranties guarantees and warranties
(iii) Manage preparation of record drawings and documentation
(iv) Manage procurement of outstanding statutory certificates
(v) Receive, comment and approve relevant payment valuations and completion certificates
(vi) Manage agreement of final account(s)
(vii) Prepare and present the project close-out report

Typical deliverables will include:

- Valuations for payment certificates
- Works and final completion lists
- Operations and maintenance manuals, guarantees and warranties
- As-built drawings and documentation
- Final accounts
- Completion certificates
- Record of necessary meetings
- Project close-out report
- Construction quality assurance report

4 ENVIRONMENTAL, SOCIAL HEALTH AND SAFETY

4.1 ESHS performance

The **Consultant assisted by his ESHS Specialist** is to ensure that the DB Contractor's ESHS performance is in line with the World Bank's Group Environmental, Health and Safety guidelines,

relevant country regulations and other best practice to deliver the DB Contractor's ESHS obligations.

4.2 ESHS services

The ESHS related services include but are not limited to:

a. Review and approve the DB Contractor's Environment and Social Management Plan (CESMP), including all updates and revisions (not less than once every 6 months);
b. Review and approve ESHS provisions of method statements, implementation plans, drawings, proposals, schedules and all relevant Contractor's documents;
c. Review and approve contractor labour management plans including provisions for preventing and responding to GBV/SEA risks (i.e. GBV/SEA prevention and response action plan) and mechanisms to collect and respond to worker-specific complaints and grievances. Ensure any GBV/SEA instances and complaints that come to the attention of the Consultant are registered in the grievance redress mechanism
d. Review and consider the ESHS risks and impacts of any design change proposals and advise if there are implications for compliance with ESIA, ESMP, consent/permits and other relevant project requirements;
e. Undertake audits, inspections and/or inspections of any sites where the Contractor is undertaking activities related to the Works, to verify the Contractor's compliance with ESHS requirements including its GBV/SEA obligations, with and without contractor and/or Employer's relevant representatives, as necessary, but not less than once per month;
f. Undertake audits and inspections of Contractor's accident logs, community liaison records, monitoring findings and other ESHS related documentation, as necessary, to confirm the Contractor's compliance with ESHS requirements;
g. Agree remedial action/s and their timeframe for implementation in the event of a noncompliance with the Contractor's ESHS obligations;
h. Ensure appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree appropriate actions to ensure compliance with ESHS obligations;
i. Check that the Contractor's actual reporting (content and timelines) is in accordance with the Contractor's contractual obligations;
j. Review and critique, in a timely manner, the Contractor's ESHS documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;
k. Undertake liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential ESHS issues;
l. Establish and maintain a grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality e.g. of those reporting allegations of GBV/SEA.
m. The Consultant shall provide immediate notification to the Employer should any incident in the following categories occur while carrying out the Services. Full details of such incidents shall be provided to the Employer within the timeframe agreed with the Employer.
    (i) confirmed or likely violation of any law or international agreement;
    (ii) any fatality or serious (lost time) injury;
    (iii) significant adverse effects or damage to private property (e.g. vehicle accident); or
    (iv) any allegation of gender-based violence (GBV), sexual exploitation or abuse (SEA), sexual harassment or sexual misbehaviour, rape, sexual assault, child abuse or defilement, or other violations involving children,

The CESMP shall inter alia include the proposed detailed mitigation and action plan for middle management, consultants and contractors/operators and is broken down into two phases, viz:

- Construction phase
- Operational phase

The mitigation measures shall deal with issues such as: Contractor's establishment, Safety awareness, Emergency procedures and response, Local employment, Site clearance activities, Noise control, Dust control, Erosion/pollution of streams, Site aesthetics and Traffic control. Each issue shall be dealt with in terms of the Objective of the mitigation measure, what the target is and what action have to be taken to deal with the mitigation measures.

The CESMP shall deal with the identified impacts and required management actions, responsibilities and monitoring actions at Upper Management Level. Monitoring actions should also be based on a monitoring plan.

4.3 Occupational Health and Safety

The Employer will require the **Consultant** to undertake Occupational Health and Safety duties on behalf of the Employer, the additional services may include the following:

(i) The consulting engineer must arrange, formally and in writing, for the DB contractor to provide documentary evidence of compliance with all the requirements of the relevant Occupational Health and Safety Act/Regulations.

(ii) The **Consultant** must execute the duties of the Employer, as his appointed agent, as contemplated in the Construction Regulations to the above Occupational Health and Safety Act.

(iii) Apart from the Health and Safety Plan drafted by the DB Contractor and Approved by the **Consultant**, the consultant must ensure emergency systems are in place and fully functional at all times.

5 OUTPUTS AND REPORTS

5.1 Outputs

The outputs of the project will apart from the above listed deliverables be the inception report; draft detail design, drawings and report, final detail designs, drawings and report; bidding documents and bidding report; construction inspection; progress reports and final completion report including record or as-built drawings. All reports shall be provided in electronic format along with one hardcopy of all documents as and when they are produced.

5.2 Reports and Documents

Bid Evaluation Report

(a) These documents will be taken care of prior to the appointment of the **Consultant**

(b) Reporting Requirements during Construction Inspection and Contract Management Phase undertaken by the **Consultant under this contract.**

The submission of monthly progress reports indicating progress on all sites. These reports will include amongst others:

(i) Records of site meetings and site visits, progress of work (actual and planned);

(ii) Delays, technical and administrative problems;

(iii) List of DB Contractor's personnel, plant, equipment, inspection staff etc.;
(iv) Staff activities, including training activities;
(v) Weather conditions;
(vi) Photographs of the construction works;
(vii) Description and status of possible claims by the Contractor, approved extras and impact from unforeseen events;
(viii) Present financial status/planned future expenditures;
(ix) Work schedule tracking and progress to-date;
(x) Environmental, social, health and safety issues, including Accidents and near misses;
(xi) List of deficiencies (punch list);
(xii) Other information deemed relevant to PMU.

a. Construction completion reports

The Consultant will prepare and submit an interim completion report at substantial completion of the construction of the Cheesemanburg Landfill and taking over of the project. The report will describe briefly the following:

(i) The report will describe in detail the constructed works as they have been executed.
(ii) The report will necessarily include a financial report of the project detailing the original estimated cost, the actual completion cost, the cost overruns if any and reasons for the overruns.
(iii) Lessons learnt and recommendations for subsequent phases of LURP.
(iv) The interim completion report would be submitted to the Employer for his comments.
(v) Towards the end of the maintenance period the Consultant would prepare and submit a Draft Final Completion Report to the Employer.

A Final Completion Report will be prepared and submitted at the end of the Maintenance period incorporating all the comments by the Employer. Preparation and issuance of Final Acceptance Certificate:

(i) Performance of the Contractor(s)
(ii) Recommendations relating to operation and maintenance
(iii) Employer/Consultant interaction.
(iv) Final Payment Certificate.

5.3 ESHS reporting

ESHS reporting shall be ongoing throughout the execution process in line with the ESMP

(i) Ensure that contractor's immediate notifications on ESHS aspects are shared with the Employer immediately;
(ii) Immediately inform and share with the Employer any immediate notification related to ESHS incidents provided to the Consultant by the Contractor, and as required of the Contractor as part of the Progress Reporting;
(iii) Share with the Employer in a timely manner the Contractor's ESHS metrics, as required of the Contractor as part of the Progress Reports."

5.4 Record/As Built Drawings of the environmental barrier system

The **Consultant** shall ensure that the Contractor produces record drawings which shall show:

(i) The location of all geomembrane joints and the types of joints
(ii) Geomembrane panel and roll numbers and geomembrane type

(iii) The location of all geomembrane repairs and the types of repairs
(iv) Toes of slopes
(v) Crests of slopes
(vi) Location of anchor trenches
(vii) Location and numbers of any geomembrane destructive test sample sites
(viii) Construction details that differ from as-designed details

5.5 Quality Assurance System

Where the Employer requires that a quality management system or quality assurance services, over and above construction monitoring services, be applied to the project, these are in addition to normal services provided by the **Consultant** and to be specifically defined and separately agreed in writing prior to commencement thereof.

The consultant shall be responsible for Construction Quality Assurance (CQA) by ensuring that the DB Contractor performs all necessary Construction Quality Control (CQC) in line with the specifications listed in their ToR. A final report will cover the following aspects:

- Introduction
- Parties Involved with Construction Quality Assurance
    - Owner/Operator
    - Project Manager
    - Design Engineer
    - CQA Engineer and CQA Monitor(s)
    - Geosynthetics Manufacturer
    - Geosynthetic Installer
    - Earthworks Contractor
    - Independent CQA Laboratory
- Meetings
    - Pre-Construction Meeting
    - Progress Meetings
    - Resolution Meetings
- Earthwork Construction Quality Assurance
    - Construction Monitoring and Testing
        - Engineered Fill and Anchor Trench Backfill
        - Compacted Clay Liner
            - Test Pad Construction
            - Compacted Clay Liner Construction Monitoring and Testing
        - Drainage Gravel and LCS Drainage Layer Placement
        - Operations Soil Layer Placement
    - Surveying
- Geosynthetics Construction Quality Assurance
    - Review Quality Control Submittals
    - Conformance Testing
    - Geosynthetics Construction Monitoring and Testing
        - Geomembrane
        - GCL
        - Geotextile
        - HDPE Pipe and Fittings
- Documentation
    - Daily Record Keeping
    - Contractors' procurement Plan

- Workplan and schedules
- Cash Flow Projections
- Work Methodology (Method statements)
- Review Technical Specifications
- Soils Observation and Testing Data Sheets
- Geosynthetic Observation and Testing Forms
- Construction Problem and Resolution Documentation
- Photo Documentation
- Design and Specification Changes
- Certification Report

- List of Tables
  - Engineered Fill and Anchor Trench Backfill Construction Testing
  - Compacted Clay Liner Test Pad Construction Testing
  - Compacted Clay Liner Construction Testing
  - Drainage Gravel and LCS Drainage Layer Construction Testing
  - Operations Soil Layer Construction Testing

The **consultant** will be expected to sign the undertaking that the environmental barrier system was constructed and inspected in line with the Construction Quality Assurance undertaking.

6 REQUIRED CONSULTANT'S AND KEY EXPERTS' QUALIFICATIONS AND EXPERIENCE

The consulting company or consortium should have significant experience in delivering the objectives of this assignment. The company / consortium should have at least eight years' experience in municipal engineering services, solid waste sectors, planning for solid waste management infrastructure development/investments, landfill development/ closure/ rehabilitation, project management and construction supervision works, preliminary and detailed designs, cost estimates, bidding documents and project implementation schedules as well as having successfully worked on at least 5 similar projects in developing countries context.

The entire team is not expected to be involved on a full-time basis over the duration of the contract. Team members shall be mobilized as required for particular tasks.

It is envisaged that the key staff in the following disciplines would be required for the **Consultancy** assignment:

Position	**Qualifications**	**Anticipated involvement**
Team Leader/ Project Manager	The Team Leader must be an experienced professional civil/environmental engineer, with a minimum of a Bachelor of Science degree in civil or geotechnical engineering. A postgraduate qualification, ideally in solid waste management would be beneficial. Must have at least 15 years of cumulative international experience related to civil engineering, solid waste management and landfill engineering.	Part time throughout the full project period duration

Resident Engineer	Experienced and qualified resident civil engineer (construction inspection) with a minimum of a Bachelor of Science degree in civil engineering and at least 10 years of international related work in earthworks and geotechnical design including full proficiency of stability of geotechnical materials.	Full time during the construction phase only
Clerk of Works/ Assistant resident engineer	He must have a minimum qualification of a Higher National Diploma in Construction Management or similar and have at least five (5) years' experience in inspection of construction and/or working in the management of transfer stations and/or landfill/dumpsites.	Full time during the construction phase only
Office Administration/ Health and Safety	Office Admin assistant, experienced in office administration, reporting, and familiar with general construction health and safety requirements	Full-time
Environmental and Social (E&S) Scientist	The Environmentalist shall have a degree in environment management or related discipline. He/she must have cumulative experience of at least eight (8) years in environment and social impact assessments or similar. The Environmentalist will responsible for preparing Environmental and Social Management Plan based on already prepared environmental and social impact assessment of the project. He/she must be experience in environmental and social management plans monitoring, inspection and reporting in construction works of donor funded projects. Experience with (WB) safeguards is a requirement. Must have experience in contracts of similar size and nature.	Full time during the construction phase
Mechanical/ Electrical Engineer	The Mechanical/Electrical Engineer must be a professional engineer or possess an equivalent qualification and have at least ten (10) years in project management and construction inspection. Postgraduate qualifications in a similar field will be an added advantage. Must have experience in the inspection of weighbridges and water treatment plant contracts and projects of similar size and nature.	Part-time during the construction phase

7 PROJECT SCHEDULE

The preliminary and detailed engineering design services by the DB Contractor is anticipated to be completed at the start of this contract. The duration for Inspection and Monitoring of the Construction phase is anticipated to be 11 months.

Annexures

Figure 1: Map of site

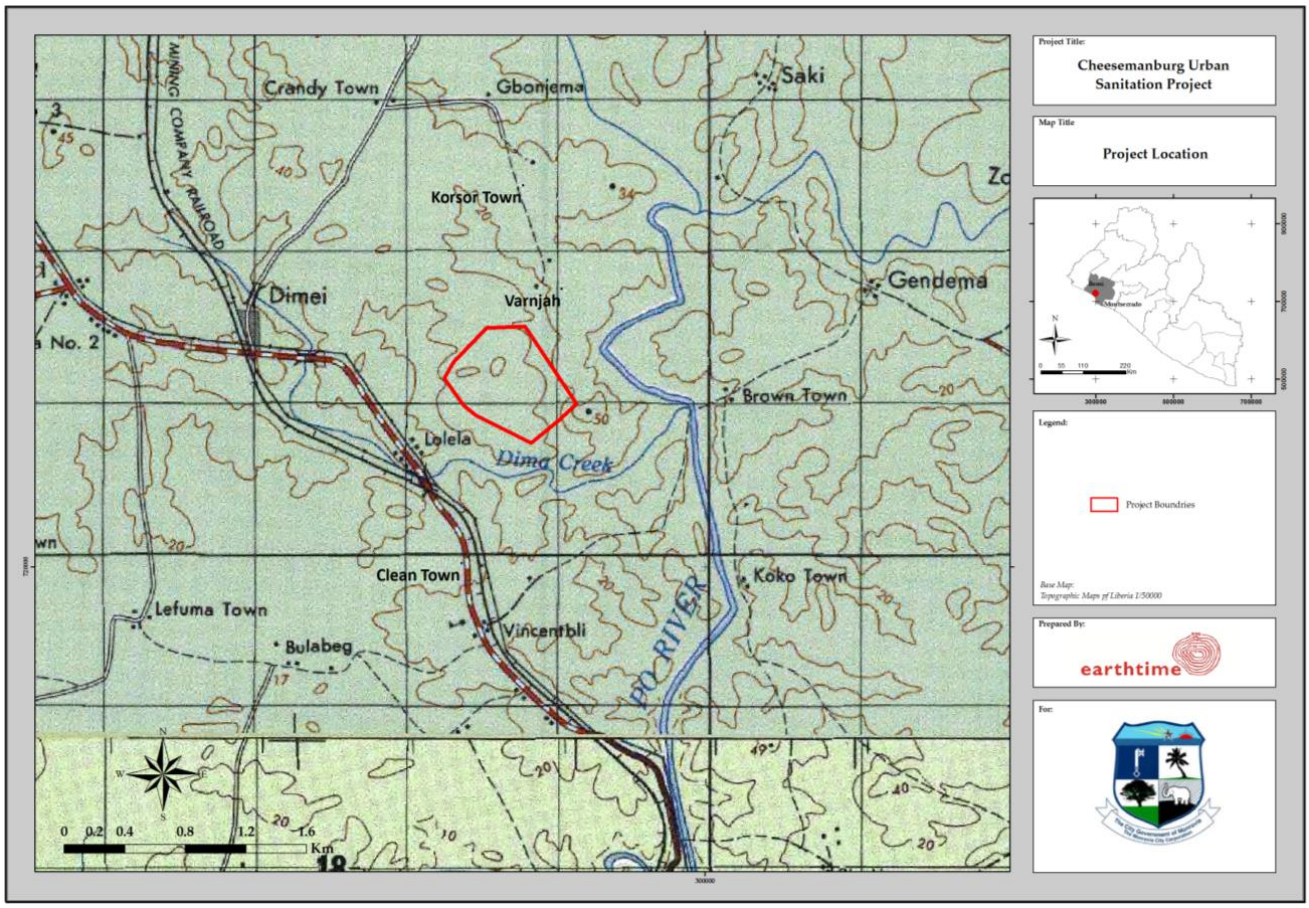
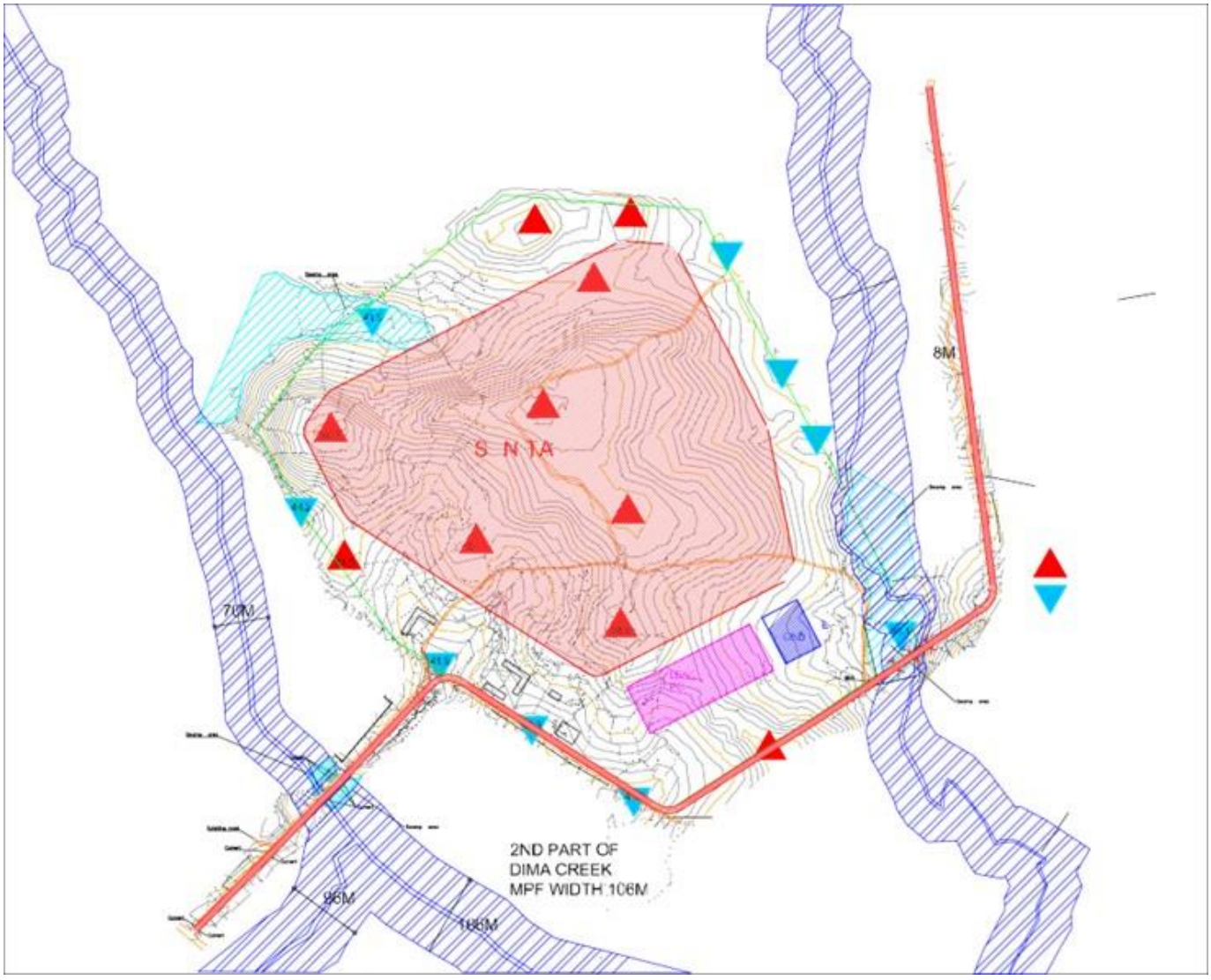


Figure 2: Detail layout of the proposed landfill development

The layout shows the landfill footprint, the community access road around the site, the adjacent waste courses and the location of the leachate dam and stormwater pollution dam. It also shows the future site buildings development such workshops, administration building, ablution block and weighbridge control building.



Phase II development

Phase II will consist of the following components:

The scope covers the remaining works of the original offer, noting that the scope and associated costing of Phase II will be finalized during the detail design stage of Phase I.
It mainly consists of the following:

Proposed Scope of Work:

- Preliminaries
- Lining system and Leachate Collection system for the remaining part of the Landfill (Cell1a)
- Construction of the remaining part of Access Road
- Construction of the remaining part of Internal Road
- Drainage Channels
- Construction of Site Plant Area, Leachate Treatment Area, Storage Area, Fence and Gates, Weighbridge, Water, Drainage, Sewer and Electrical Distribution Networks
- Execution of Aggregate Base Course, Prime Coat, Binder Course, Tack Coat, and Wearing Course layers, Road Marking and signs.
- Transformer 10KVA, MV distribution Network with connection to local Electricity Network, LV distribution network, Street lighting Poles with fixtures