**TERMS OF REFERENCE**

**Construction of Eleven (11) 4-seater KVIP latrines for schools in the Nandom and Lambussie Districts under Healthy Future for All Project**

**Background**

SNV is a not-for-profit international development organization that applies practical know-how to make a lasting difference in the lives of people living in poverty. We use our extensive and long-term in-country presence to apply and adapt our top-notch expertise in agriculture, energy, and WASH to local contexts. SNV has an annual turnover of €130 million, over 1,250 staff in more than 25 countries in Africa, Asia, and Latin America. We are proud to be a not-for-profit organization that uses project financing to implement our mission. This requires us to work efficiently and to invest in operational excellence.

SNV has been present in Ghana since 1992 and is currently implementing a Water, Sanitation and Hygiene and Nutrition in Ghana's Nandom and Lambussie Districts in the Upper West Region. The three-year project is called Healthy Future for All (HF4A) and it is aimed to improve the quality of life for all and specifically increase the number of children under 15 years growing up in a hygienic environment at home and in school. To improve access to sanitation facilities, the project will construct and rehabilitate institutional latrines in Nandom Municipality and Lambussie District. The intervention is fully funded by the Leona M. and Harry B. Helmsley Charitable Trust.

The Terms of Reference (TOR) sets out the scope of works for interested construction company or Civil Engineering Contractors to participate in the project. The rationale behind this TOR is to provide a basic framework to guide interested tenderers in their submissions to undertake the works described herein.

**Objective**

The main objective of the assignment is to;

Construct KVIP latrines for Schools in the Nandom Municipality and Lambussie District in the Upper West Region.

**Scope of Works**

The scope of works to be undertaken by the contractor shall include the following;

1. Construction of 4-seater KVIP latrines with urinal
2. Separate cubicle for girls as changing room

*NB: details of the works is spelt out in the bill of quantities (BOQ).*

**Tender Requirements**

1. Valid Ministry of Works and Housing Certificate of Financial Class D3, K3 or above
2. Valid Certificate of Incorporation
3. Valid Certificate to Commence Business
4. Valid Labour Certificate
5. Valid Tax Clearance Certificate
6. Valid SSNIT Clearance Certificate
7. Letter of Bid
8. Equipment holding with proof of ownership (as detailed in bid requirements)
9. Completed, signed and stamped bill of quantities (BoQ)
10. Detailed Program of works with specific start and completion dates.

**Similar Construction Experience**

Participation as contractor, management contractor or subcontractor, in at least two contracts of similar nature and evidence of works (award letters or completion certificates) should be submitted for verification.

**Key Personnel**

The Tenderer must demonstrate that it will have the personnel for the key positions that meet the following requirements:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Position** | **Minimum qualification** | **Years of**  **Experience (general)** | **Years of experience in proposed position** |
| 1 | Site Engineer | Bachelor’s degree | 5 | 3 |
| 2 | General Foreman | HND | 5 | 3 |
| 3 | Masonry Foreman | NVTI | 5 | 3 |
| 4 | Plumbing Foreman | NVTI | 5 | 3 |

**Equipment**

The Tenderer must demonstrate that it will have access (Ownership or leased) to the key Contractor’s equipment listed hereafter:

|  |  |  |
| --- | --- | --- |
| **No.** | **Equipment Type and Characteristics** | **Minimum Number required for contract** |
| 1 | Pick-up vehicle/Cargo Truck | 1 |
| 2 | Concrete mixer | 1 |
| 3 | Poker vibrator | 1 |

NB: Bidders should note that equipment holding with proof of ownership is highly recommended.

**Timing/Duration of Assignment**

The contract for the works will be within a period of three (3) calendar months from the date of contract signing.

**Reporting Line**

The contractor will report to the Project Manager of HF4A through WASH Advisor (Engineer) on the Project.

**Corporate Visibility/Branding**

The contractor will be required to brand sanitation facilities with SNV/Donor signages with recommended colors as directed by the SNV representative. A provisional sum will be provided in the bill of quantities.

**Mode of Application**

Qualified firms/Individual should submit the following by close of business on **May 14th, 2024**, to [**ghanaprocurement@snv.org**](mailto:ghanaprocurement@snv.org)

* Cover letter highlighting the individual / firm capability in delivering the assignment including evidence of performing similar assignments preferably in the water and sanitation sector.
* Interested firms should prepare a detailed work plan to execute the works.
* Interested qualified firms with business offices in the ***Upper West Region*** are encouraged to apply.
* **NOTE: Interested qualified contractors can obtain detailed bill of quantities and drawings via mail through** [**ghanaprocurement@snv.org**](mailto:ghanaprocurement@snv.org). Contractors are strictly entreated not to apply for more than a maximum of 5 Lots.

**Bid Data Sheet (BDS)**

**A. Introduction**

|  |  |
| --- | --- |
| **1** | The Employer is: **SNV Netherlands Development Organization** |
| **2** | The name of the bidding process is shown below:  **LOT N**   |  | | --- | | Lot N1: Construction of 2No 4-seater KVIP latrine at Ko A & B Primary School in the Nandom Municipality the Upper West Region | | Lot N2: Construction of 2No 4-seater KVIP latrine at Zimuopare Primary School in the Nandom Municipality the Upper West Region | | Lot N3: Construction of 2No 4-seater KVIP latrine at Kandemegagn Basic School in the Nandom Municipality the Upper West Region | | Lot N4: Construction of 2No 4-seater KVIP latrine at Gengenkpe Primary School in the Nandom Municipality the Upper West Region | | Lot N5: Construction of 2No 4-seater KVIP latrine at Kogle Primary School in the Nandom Municipality the Upper West Region | |
|  | **LOT L**   |  | | --- | | Lot L1 : Construction of 2No 4-seater KVIP latrine at St. Mary's RC Primary School at Hamile in the Lambussie District of the Upper West Region | | Lot L2: Construction of 2No 4-seater KVIP latrine at Lambussie T.I Basic School in the Lambussie District of the Upper West Region | | Lot L3: Construction of 2No 4-seater KVIP latrine at Karni Dampuo Basic School in the Lambussie District of the Upper West Region | | Lot L4: Construction of 2No 4-seater KVIP latrine at Banguor Basic School in the Lambussie District of the Upper West Region | | Lot L5: Construction of 2No 4-seater KVIP latrine at Piina RC Primary School in the Lambussie District of the Upper West Region  Lot L6: Construction of 2No 4-seater KVIP latrine at Dindee Basic School in the Lambussie District of the Upper West Region | |  | |
| **3** | Name of the Project: **Healthy Future for All (HF4A)** |
| **4** | The individuals or firms in a JV **SHALL BE** jointly and severally liable. |

**B. Bidding Documents**

|  |  |
| --- | --- |
| **5** | For **Clarification purposes** only, the Employer’s address is:  **The Country Director**  **SNV Netherlands Development Organisation**  **No. 10 Maseru Street, East Legon**  **P. O. Box KA 30284 Airport, Accra -Ghana** |
| **6** | A Pre-Bid meeting **SHALL NOT** take place.  Bidders are advised to visit proposed sites to better inform costing |

**C. Preparation of Bids**

|  |  |
| --- | --- |
| **7** | The language of the bid is: **ENGLISH** |
| **8** | The following schedules or documents shall be submitted.   1. Letter of Bid 2. Equipment holding with proof of ownership (as detailed in bid requirements above) 3. Methodology (describing approach to deploy all materials and labour / method statement / material schedule) 4. Completed, signed and stamped bill of quantities (BoQ) 5. Detailed Program of works with specific start and completion dates |
| **9** | Alternative times for completion **SHALL NOT BE** permitted. |
| **10** | The prices quoted by the Bidder **SHALL NOT BE** subject to adjustment during the performance of the Contract. |
| **11** | The prices shall be quoted by the bidder in: **GHANA CEDIS** and nationality of bidders shall be Ghana. |
| **12** | The evaluation shall consider any discounts offered by the bidder |

**D. Submission and Opening of Bids**

|  |  |
| --- | --- |
| **13** | Bidders **SHALL** be submitted electronically through [ghanaprocurement@snv.org](mailto:ghanaprocurement@snv.org) |
| **14** | Bidding Documents:  Bidders should ensure documents are submitted in 2 separate **PDF files** named **“Technical proposal”** and **“Financial proposal”** accordingly. The subject of the email should take this format; “*Name of bidding company \_Lot number\_ HF4A”*.The body of the email shall contain the lot number and details of the works.  Deadline for the bid submission is May 14th, 2024, at 16:00 hours GMT |
| **15** | **Bid opening and review.**  SNV will evaluate bids with an internal committee without the presence of Bidders. Therefore, the Bidder's initial offer should contain the Bidder's best proposals in terms of price and technical submissions. |
| **16** | A Contract award will be executed, and the conditions and terms will be the final binding document. |
| **17** | Bidders CAN bid for a maximum of (3) Lots but are advised to bid for works for which they have proven experience.  ***SNV however reserves the rights to award a maximum of one (1) Lot regardless the number of bids submitted by a firm.*** |

|  |
| --- |
| **Letter of Bid** |
| INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT  The Bidder must prepare this Letter of Bid on stationery with its letterhead clearly showing the Bidder’s complete name and business address. | |

**Date of this Bid submission**: [*insert date (as day, month and year) of Bid submission*]

**Request for Bid No**.: [*insert identification*]

To:

**The Country Director**

**SNV Netherlands Development Organisation**

**No. 10 Maseru Street, East Legon**

**P. O. Box KA 30284 Airport**

**Accra -Ghana**

We, the undersigned, declare that:

1. We have examined and have no reservations to the Bidding Documents, including Terms of Reference issued.
2. We offer to execute in conformity with the Bidding Documents the following Works: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;
3. The total price of our Bid, excluding any discounts offered in item (d) below is: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;
4. If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document;
5. Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries;
6. We, including any subcontractors or suppliers for any part of the contract, do not have any conflict of interest.
7. We are not participating, as a Bidder or as a subcontractor, in more than one bid in this bidding process.
8. We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive, and evaluation shall be done by your Bids Committee without our presence.
9. If awarded the contract, the person named below shall act as Contractor’s Representative:

|  |  |
| --- | --- |
| Name: |  |
| In the capacity of: |  |
| Signed: |  |
| Duly authorized to sign the Bid for and on behalf of: |  |
| Date: |  |

**EVALUATION CRITERIA**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **KEY CRITERIA** | **EXPLANATION** | **SCORE** |
| **S/NO** |
| **1** | Tender Requirements and /or Business Registration Documents | Evidence of business registration/legal documents of firm as spelt out in the TOR *(certificate to commence business, incorporation, Ministry of Works & Housing Certificate, Tax clearance etc)* |  |
|  |  |  |  |
| **2** | Certification (signature and stamped) letter of bid and bill of quantities | Letter of bid *(written in appropriate language as directed*) and all pages of bill of quantities should be signed and stamped |  |
|  |  |  |  |
| **3** | Equipment Holding and Key Personnel | Evidence of CVs and certificates of key personnel to undertake the assignment (this should be checked vis-à-vis the number of years as specified in the TOR and have the experience and skill to execute the assignment with reference to works of similar nature). Evidence of equipment holding i.e whether owned or leased |  |
|  |  |  |  |
| 4 | Demonstrated experience and expertise in setting up similar assignments in the water and sanitation sector | Demonstrated examples of similar assignment performed by the applicant(s), preferably in the WASH sector. *NB: check the evidence of works of similar nature executed by the firm(check for certified award letters or completion certificates). Similar works in the Upper West Region and/or Project district* |  |
|  |  |  |
|  |  |  |  |
|  |  |  |  |

NB: Firms must obtain a score of not less than 65 to meet the requirement for evaluation of financial proposal.

**FINANCIAL PROPOSAL**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **KEY CRITERIA** | **EXPLANATION** | **SCORE** |
| **S/NO** |
| 6 | Relevance of budget to scope of the assignment | Cost effectiveness of budget; Technical relevance and within reasonable project budget |  |
|  |  |  |
|  |  |  |  |

**TECHNICAL SPECIFICATIONS**

**1.0 GENERAL PROVISIONS**

**CONSTRUCTION**

Siting and preparation of site

The latrine shall be sited as directed by the Employer’s Representative and should be sited not less than 50m from any well, borehole or spring unless specifically requested by Employer’s Representative.

**Excavation**

Excavation of pit

The depth of the pit shall be the recommended depth in the bill of quantities. Excavation should not be continued below the water table.

Excavated material shall be placed not less than 2m from the edge of the pit.

**Lining pit**

Casting footings

All concrete footings shall be cast in-situ using a mix of 1:3:6

The depth of all concrete footings shall be 150mm.

**Masonry lining**

Pits shall be lined using solid sandcrete blocks of dimensions 150 x 225 x 450mm made with a mixture of 1:5 cement to hard sand and shall be cured by keeping the blocks continuously moist for at least 7 days. The first 2 courses and top 3 courses shall be fully mortared using a 1:5 cement/sand mortar. The vertical joints shall be left dry in the remaining parts of the lining walls with a gap of 50mm between each block. There shall be no straight joints and no block cut to less than ¾ will be permitted. The space between the pit lining and the wall of the excavation shall be filled with coarse well-tamped material from the excavation the morning after the blocks has been laid. The lining shall be continued to 300mm above the original ground level.

The partition walls between each compartment of the pit are constructed using the same blocks laid on edge to give a wall thickness of 225mm. The partition walls should be constructed at the same time as the lining walls and should be bonded to them. The partition walls have fully mortared joints.

**Cast reinforced concrete beam**

The beam shall be cast in-situ using a concrete mix of 1:2:4. 8mm diameter mild steel bars are used for the main bars and links. The links shall be spaced at 150mm centres.

Care shall be taken to ensure a cover of 40mm of concrete from the lower surface and sides of the beam to the reinforcement and air bubbles removed by tapping the formwork with a hammer.

**Precast reinforced concrete slabs**

All slabs shall be precast on the site in wooden or steel moulds. The slabs are cast reinforced with mild steel and have a thickness of 75mm of concrete 1:2:4.

Care shall be taken to ensure a cover of 30mm of concrete from the lower surface of the slabs to any reinforcement. Slab reinforcement shall be of 10mm diameter for main bars and 6mm diameter for distribution bars.

The slabs are removed from the formwork 2 days after casting and are cured by covering with white polythene sheets for 14 days and watered daily.

The edges of slabs shall be straight to within 5mm along their length.

Slab placement

The slabs shall be set in a 1:8 cement/sand mortar

The cover slabs shall have a gentle slope towards the back of the pit.

All loose soil and foreign materials shall be removed from the pit compartments before placing the cover slabs.

**Superstructure**

Floor of privy

The floor shall be cast with a thickness of 75mm of concrete 1:3:6 and the surface given a trowelled finish.

**Walls**

The walls shall be made of 100mm solid blocks (mix 1:8 cement/sand), laid with a 1:5 cement/sand mortar.

Cracks in walls shall be opened up to 25 – 50mm wide, and sealed with 1:4 mix of cement-sand mortar. Where cracks are very large chicken mesh of 150mm wide shall be fixed in the joint before filling with cement sand mortar.

**Door and doorframe**

The door and doorframe shall be made of odum. The door and frame shall be given 1 coat of wood primer before fitting and then 2 coats of blue oil paint.

**Roofing**

The roofing members shall be of odum treated with solignum and the roofing sheets are of aluminium type of length 2.4m. There shall be 5-roof nails/metre run of purlin.

**Plastering**

The interiors of all privies shall be plastered and smooth finished with cement, sand mix 1:5.

Walkway. The interiors of the WC latrines shall be finished with recommended wall tiles as specified in the bill of quantities.

The walkway shall be cast in-situ with concrete 1:3:6. The walkway shall slope to the dwarf wall to provide adequate drainage.

Dwarf wall

The dwarf wall shall be constructed of solid sandcrete blocks made of a 1:8 cement/sand mix.

The wall shall be laid 100mm thickness and have maximum height of 1.5m

**Painting**

The exterior of the superstructure including both sides of the dwarf wall shall be painted with recommended emulsion paint.

**QUALITY OF MATERIALS**

**General**

Contractors shall, at their own cost, remove all defective and unsuitable materials from the site.

**Materials for concrete**

**Aggregates**

Aggregates shall be hard, clean and free of all organic material. They should conform to the appropriate Ghana standards. Samples of all aggregates to be used shall be brought to the Employer’s Representative for approval before use.

Coarse aggregates shall be comprised of well-graded material of between 6mm and 15mm in size.

Sand used for concrete shall consist of hard material of size less than 4mm and shall contain no more than 5% silt.

Sand used for cement mortar shall be fine grained and if required shall be screened through a 3mm sieve.

**Cement**

Cement shall be normal Portland cement delivered in 50kg bags. The bags shall be in perfect condition when delivered to the site and shall be not more than 3 months old at the time of use. All broken bags or bags showing evidence of dampness or caking shall be immediately removed from the site. Reuse of spilt cement is not permitted.

**Steel reinforcement**

Plain mild steel bars shall be used for the reinforced beam and slabs. The Contractor shall remove any loose rust from the bars by brushing with a steel brush.

**Water**

The Contractor shall provide all water needed on the site. Water used for mixing concrete shall be clean and of a quality suitable for drinking.

**Concreting**

Concrete mixes

The following concrete mixes are specified:

|  |  |  |  |
| --- | --- | --- | --- |
| Use | Minimum cement content kg/cu.m | Mix ratio | Coarse aggregate size |
| In-situ footing and floor | 200 | 1:3:6 | < 38mm |
| In-situ beam | 325 | 1:2:4 | < 19mm |
| Precast slabs | 325 | 1:2:4 | < 19mm |

**Curing**

All concrete works, including beam and slabs shall be protected from rapid drying for 14 days by covering with white polythene sheets and watered daily.

**Formwork**

Slab formwork shall have a maximum deviation from straightness of 5mm over the full length of the slab.

Slab formwork shall be square and flat.

**Mixing, placing and compaction**

Casting of concrete slabs and mixing of concrete shall be carried out adjacent to the latrine and hand mixing shall be carried out on a wooden or metal sheet or cement platform. Concrete shall be mixed in the correct proportions by mixing aggregates measured in a gauge box of 33 litres capacity with one bag of cement.

**Cement mortar**

Cement mortar for all block laying shall be made by mixing 5 parts sand with 1 part cement by volume.

Cement mortar shall be mixed on a clean surface such as a cement platform or wooden or metal sheet. Mortar shall be mixed in small quantities and used within 1 hour. Mortar that has already hardened shall not be knocked up and remixed for use.

The Contractor shall keep a works diary on the site at all times, which must be shown to the Employer’s Representative if he requests it. The following information shall be recorded in the works diary on a daily basis:

- weather conditions

- daily record of workers employed

- deliveries of materials to the site

- details of concrete mixes used and quantity of cement used

- other occurrences, eg. accidents, strikes, storms etc.

- visitors to the site

Written instructions by the Employer’s Representative and minutes of site meetings will also be recorded in the works diary.

An A4 size duplicate book shall be provided by the contractor for use as the works diary.

At certain stages during the execution of the works the Contractor must have the approval of the Employer’s Representative before proceeding. In each case it is the responsibility of the contractor to inform the Employer’s Representative at least 48 hours in advance, that his presence is required on the site.

**Safety Precautions**

The Contractor shall ensure that the following safety precautions are observed:

Boots and safety helmets shall be worn by persons working in the pit.

A ladder shall be provided so that workers may quickly escape from the pit.

At night or when work in the well has been suspended access to the site shall be closed off.

When workers are in the pit one person shall watch them from the top of the pit.

When workers are in the pit no other work shall be carried out within 2m from the edge of the pit.

**TECHNICAL SPECIFICATIONS (compliance with EMP)**

**Safety, Security and Environmental Management**

**General**

1. Before the order to commence any works, the contractor is required to implement the Environment Plan (EMP) for the project as specified in the Environment & Social Management Framework (ESMF) and Resettlement Policy Framework (RPF) prepared for this particular project. The plan shall spell out how the contractor should achieve environmental targets and objectives specified in the EMP (Excerpts available for reference). The plan shall include, to the extent practicable and reasonable, all steps to be taken by the Contractor to protect the environment in accordance with the current provisions of national environmental regulations and or the EMP established for this project.
2. Notwithstanding the contractor’s obligation under the above clause, the Contractor shall implement all measures necessary to restore the sites to acceptable standards and abide by environmental performance indicators specified under the EMP to measure progress towards achieving objectives during execution or upon completion of any works. These measures shall include but not limited to the following:
3. Minimize the effect of dust on the surrounding environment resulting from earth mixing sites, dispersing coal ashes, vibrating equipment, temporary access roads, etc to ensure safety, health and the protection of workers and communities living downwind of dust producing activities
4. Ensure that noise levels emanating from machinery, vehicles and noisy construction activities are kept at a minimum for the safety, health and protection of workers within the vicinity of high noise levels and communities near rock – blasting areas.
5. Ensure that existing water flow regimes in rivers, streams and other natural or irrigation channels is maintained and/or re-established where they are disrupted due to civil works being carried out.
6. Prevent bitumen, oils, lubricants and waste water used / produced during the execution of works from entering into rivers, streams, irrigation channels and other natural water bodies/reservoirs and also ensure that stagnant water in uncovered borrow pits is treated in the best way to avoid creating possible breeding grounds for mosquitoes. Regarding the adequacy or inadequacy of rehabilitation measures carried out on the bio-physical environment and compensation for socio-economic disruption resulting from implementation of any works.
7. If the Contractor fails to implement the approval Environmental Management Plan after written instruction by the Engineer to fulfill his obligation within the requested time, the Client reserves the right to arrange through the Engineer for execution of missing action by third party on account of the Contractor.

**SPECIFIC ENVIRONMENTAL ISSUES TO BE CONSIDERED**

**Worksite/Camp Site Waster Management**

* All vessels (drums, containers, bags, etc.) containing oil/fuel/surfacing materials and other hazardous chemicals must be bunded in order to contain spillage. All waste containers, litter and any other Waste Management Regulations of the Environmental Protection Agency of Ghana
* All drainage and effluent from storage areas, workshops and camp sites shall be captured and treated before being discharged into the drainage system in line with the Water Pollution Control Regulations of the Environmental Protection agency of Ghana.
* Used oil from maintenance shall be collected and disposed off appropriately at designated sites or be re-used or sold for re-use locally.
* Entry of runoff to the site shall be restricted by constructing diversion channels or holding structures such as banks, drains, dams, etc. to reduce the potential of soil erosion and water pollution.
* Construction waste shall not be left in stockpiles along the road. Waste and other excess material shall be used for rehabilitating borrow areas and landscaping around the road.
* If other spoil disposal sites are necessary, they shall be located in areas, approved by the engineer, of low land use value and where they will not result in material being easily washed into drainage channels. Whenever possible, spoiled materials should be placed in low-lying areas and should be compacted and planted with species indigenous to the locality.
* Stockpile areas shall be located in areas where trees can act as buffers to prevent dust pollution. Perimeter drains shall be built around stockpile areas. Sediment and other pollutant traps shall be located at drainage exist from workings.

**Material Deposit**

* The Contractor shall deposit any excess material in accordance with the principles of the EMP at areas approved by local authorities and/or the Engineer.
* The Contractor has in advance of the commencement of work clarify with the local authorities dumpsites or areas for hazardous deposits for contaminated liquid and solid materials, that cannot be used any longer as backfill.

**Rehabilitation and Soil Erosion Prevention**

* To the extent practicable rehabilitate the site progressively so that the rate of rehabilitation is similar to the rate of construction.
* Always remove and retain topsoil for subsequent rehabilitation. Soils shall not be stripped when they are wet as this can lead to soil compaction and loss of structure.
* Topsoil shall not be stored in large heaps. Low mounds of no more than 1 to 2m high are recommended.
* Re-vegetate the stockpile to protect the soil from erosion, discourage weeds and maintain an active population of beneficial soil microbes.
* Locate stockpiles where they will not be disturbed by future construction activities.
* To the extent practicable reinstate natural drainage patterns where they have been altered or impaired.
* Remove toxic materials and dispose of them in designated sites. Backfill excavated areas with soils or overburden that is free of foreign material that could pollute ground water and soil.
* Identify potentially toxic overburden and screen with suitable material to prevent mobilization of toxins.
* Site spoils and temporary stockpiles shall be located away from the drainage system and surface run off shall be directed away from stockpiles to prevent erosion.

**Traffic Management**

* Location of access roads/detours shall be done in consultation with the local community especially where access road shall traverse important ecosystem component. Access roads shall not traverse wetland areas.
* Upon the completion of civil works, all access roads shall be ripped and rehabilitated.
* Access roads shall be sprinkled with water at least five times a day in settled areas and three times in unsettled areas to suppress dust emissions.

**Disposal of Relocated Elements**

* In some areas, no longer usable materials and construction elements will have to be disposed of, such as electro-mechanical equipment, pipes, accessories and demolished structures.
* The Contractor has to agree with the local administration of the Client, which of these elements are to be surrendered to the Clients premises, or in which way they could be recycled best.
* As far as possible unused pipelines shall remain at their current position. Where for any reason no alternative alignment for the new pipeline is possible, the old pipes have to be stored at a safe place to be agreed upon with the Client and the local authorities concerned.
* AC-pipes as well as broken parts thereof have to be treated as hazardous material and deposed subsequently as indicated before.
* Unsuitable and demolished elements shall be dismantled to size fitting on ordinary trucks to be transported for the purpose of recycling to an official scrap-yard.
* For each area where exists the probability of disposal of AC debris, the Contractor has to make arrangements with the Local Authorities for adequate disposal areas.

**Health and Safety**

* The contractor in advance of the construction work shall mount an awareness and hygiene campaign. Workers and local residents shall be sensitized on health risks particularly of AIDS
* Adequate road signs to warn pedestrians and motorists of construction activities, diversions, etc. shall be provided at appropriate points.
* Construction vehicles shall not exceed maximum speed limit of 40km per hour.

**Repair of Private Property**

Wherever the Contractor, whether deliberately or incidentally damages private property it has to be repaired. For each repair the contractor has to obtain from the owner the certificate, that the damage has been made good satisfactorily in order to indemnify the Client from subsequent claims.

In case where compensation for inconveniences, damage of crops etc. are claimed by the owner, the Client has o be informed by the Contractor through the Engineer. This compensation is in general be settled under the responsibility of the Client along with the particular EMP or even before signing the Contract. In unforeseeable cases the respective administrative entities of the Client will take care of compensation.

**Cost of Compliance with the EMP**

It is anticipated that the compliance with the EMP is already part of standard good workmanship and state of art as generally required under this Contract. However, the awareness has to be conveyed to the Contractor’s staff. In addition, some costs are arising from establishing an individual EMP for each subproject or site respectively, as well as the related monitoring and reporting. The item “Compliance with the EMP” of the BOQ covers these costs. No other payments will be made to Contractors for compliance with any request to avoid and/or mitigate an avoidable negative environmental impact.