## REQUEST FOR INFORMATION

| | | | |
|---|---|---|---|
| **RFI NUMBER:** | JW RFI 21/02/2024 | **CLOSING DATE:** | 07 March 2024 @ 16:00 |
| **DESCRIPTION:** | **DESIGN, CONSTRUCTION, OPERATION AND MAINTENANCE OF ALTERNATIVE NON-SEWERED BASIC SANITATION SERVICES FOR INDIVIDUAL HOUSEHOLDS IN INFORMAL SETTLEMENTS** | | |
| **ISSUE DATE** | 21 February 2024 | | |
| **Submit via Email to:** | tshilidzi.takalani@jwater.co.za | | |

| **ENQUIRIES MAY BE DIRECTED TO:** | | | |
|---|---|---|---|
| **Bidding procedure enquiries must be sent to** | | **Technical enquiries must be directed to** | |
| **CONTACT PERSON** | Tshilidzi Takalani | **CONTACT PERSON** | Malcolm Low |
| **TELEPHONE NUMBER** | 011 688 1772 | **TELEPHONE NUMBER** | 011 688 1872 |
| **E-MAIL ADDRESS** (Submissions must be made to this address) | tshilidzi.takalani@jwater.co.za | **E-MAIL ADDRESS** | malcolm.low@jwater.co.za |

| **SUPPLIER INFORMATION** | | | | |
|---|---|---|---|---|
| **NAME OF RESPONDENT** | | | | |
| **STREET ADDRESS** | | | | |
| **TELEPHONE NUMBER** | **CODE** | | **NUMBER** | |
| **CELLPHONE NUMBER** | | | | |
| **E-MAIL ADDRESS** | | | | |
| **VAT REGISTRATION NUMBER** | | | | |
| **CENTRAL SUPPLIER DATABASE MA No:** | MA | | | |
| **MANUFACTURER OR THIRD PARTY** | | | | |
| **CIDB GRADING & CRS NUMBER** | | | | |

## 1. PURPOSE OF THE REQUEST FOR INFORMATION

To assist Johannesburg Water with developing the technical specification of a 36-month tender panel for the design, construction, operation, and maintenance of an alternative non-sewered sanitation service for individual households in informal settlements. The request for information will assist with testing the market of the available technology leading to a clear understanding of the practical specifications and the budget required.

## 2. BACKGROUND

The City of Johannesburg embarked on a programme aligned with the Department of Human Settlement to upgrade informal settlements to improve the quality of life and provision of basic services. The provision of basic services applies to the in situ upgrading of informal settlements as well as the relocation of some communities for a variety of reasons. Part of the Upgrading of Informal Settlement Program involves an incremental provision of basic sanitation services as an interim measure before permanent services provision is achieved.

The primary objective of the project is to provide in the interim, an alternative to Ventilated Improved Pit latrines and chemical toilets and provide an upgradable non-sewered basic sanitation solution. The intention is to provide an improved sanitation technology for improved dignity, and environmental compliance, and reduce the frequency of desludging and total lifecycle costs (associated with the current frequency of desludging of VIPs or chemical toilets) in various informal settlements within the City of Johannesburg.

## 3. SCOPE OF WORK AND SPECIFICATIONS

### 3.1 REQUIREMENTS

Johannesburg Water seeks responses from parties that have successfully carried out, at least one project, in the design and construction of a non-sewered sanitation project which is an alternative to VIPs and chemical toilets. The technology must have been tested and accepted by CSIR/WRC. The respondent must provide proof with a certification/advisory note/letter of approval (The proof should be attached under Appendix B1).

The respondent (company) must provide a reference letter (Template as per Appendix B2) and completion certificate as proof of the required experience. The attached reference letter

must be completed by the referee/client and included in the respondent's submission. Alternatively, the client's letterhead may be used for this purpose provided it complies with the requirements as stated on this template. A separate form must be completed for each reference.

The respondent is to submit a technical proposal and supporting drawing/s to support the information/ specification provided by the respondent (must be attached under Appendix B3)

### 3.1.2 TECHNICAL PROPOSAL

The respondent is required to submit a detailed technical proposal that covers but is not limited to the headings as indicated below. (Refer to Tables 1 and 2 for further details)

- The technology
    - General Design Specifications
    - Performance Specifications
        - Treatment process of the proposed technology as approved by WRC/CSIR.
    - Material & structural integrity specifications
    - Operation & Maintenance
    - Unit design and drawings
- Environmental, health and safety considerations
- Future network integration
- Any other information deemed relevant for this submission.

### 3.2 GENERAL DESCRIPTION

Projects will be mainly located within informal settlements of the City of Johannesburg. The ultimate scope of works subsequent to this RFI will include the design, construction, operation and maintenance of a safe, adequate, upgradable, environmentally friendly non-sewered sanitation system that can service individual household units in informal settlements that are in the process of being upgraded. For individual household units, the scope entails the installation of a pour/low flush sanitation toilet unit.

### 3.3 LOCATION OF SITES

Earmarked projects that will require a non-sewered sanitation system will be located within informal settlements of the City of Johannesburg. The City of Johannesburg region map is attached as Appendix A.

### 3.4 SPECIFICATION & SCOPE OF WORK

The specifications provided are the preferred target requirements by Johannesburg Water. The respondents are to indicate the practicality of achieving the provided specification and also provide an alternative specification to the one provided by Johannesburg Water where required.

### 3.4.1 General Requirements to be considered:

Table1: General Requirements

| ITEM | REQUIREMENTS | DESCRIPTION |
|---|---|---|
| 1 | Individual Households | A shack / House occupied by one family (Normally 4-7 people occupy one household) |
| 2 | Definition of Non-sewered sanitation system (NSSS) for this scope | Non-sewered sanitation system is NOT connected to a grid (Sewer Reticulation), collects, conveys, and treats sewer input within its unit to allow for disposal of generated solid outputs at a minimum frequency (stated below under disposal frequency).<br><br>**Please note that this is not a communal package plant, but it is an alternative to Conventional / Traditional Ventilated Pit Latrine (VIP) or Chemical Toilet. In addition, the sewer treatment process should be done on-site at individual households/stands.** |
| 3 | Definition of Front-end | The superstructure/shelter consists of a toilet unit, water storage tank, and pedestal being used by households to urinate and relieve themselves. |
| 4 | Definition of Sludge Tank/Back End | It's a structure/ container connected to the Front-end structure which stores sludge and enhances the wastewater treatment process by breaking down the solids. |
| 5 | Scope | Design, install and maintain (for a specified period), a safe, adequate, environmentally friendly, NSSS that can service individual household units sanitation including operation and maintenance for a specified period. |

| ITEM | REQUIREMENTS | DESCRIPTION |
|---|---|---|
| 6 | Design Standards | Compliance with Department of Water and Sanitation Standards and scientific demonstration reports from industry certified by either the Water Research Commission (WRC) or CSIR will be acceptable. |
| 7 | Treatable Input | Sewer (Faeces, Toilet Paper, Urine) |
| 8 | Pour /Low Flush | The design must allow for a flushing upgrade option attached to a water-saving cistern in addition to being able to operate with just a 'pour' of water. |
| 9 | Sanitation Assembly & Components | • Front-end and back-end components - minimum components: - Toilet Unit including cistern, container for storing grey or clean water for flushing, pedestal with provision for children's seat, pipework, water meter, the waste treatment unit)<br>• The unit must be a local product and manufactured within the borders of South Africa.<br>• The system must allow for an incorporated child seat as part of the seating arrangement.<br>• The child seat must be easier to open than the pedestal lid to allow for ease of use by children, with a specific lifting recess positioned to prevent contact with the toilet seat.<br>• An internal or external mountable Demand Flush Tank must be present and have a capacity of 30L flushes or more.<br>• The tank must be able to be manually filled with clean/Grey/Rainwater to be used as a flushing medium.<br>• The tank must be fitted with filters to prevent large particles from entering the flush tank when manually filled. |

| ITEM | REQUIREMENTS | DESCRIPTION |
|---|---|---|
| 10 | Family size (average) | 7 people per household. |
| 11 | Safety and Security Requirements | Groundwater Protection, safety & protection from effluent contacts |
| 12 | Sewer Treatment Requirements | The sewer shall be treated on-site for safe disposal and to avoid ground contamination. |
| 13 | Odour emissions requirements | To be kept minimum. |
| 14 | Security - secure design | The design of the entire facility should be strong and robust to prevent vandalism and theft. |
| 15 | Information, Warnings and Markings | Must be included for safety. |
| 16 | Sludge Disposal Method | Honey sucking to avoid direct handling and should comply with Department of Water and Sanitation Requirements. Recycling on-site is not permissible. |
| 17 | Energy Source | None, system to operate under gravity. |
| 18 | OSHE | The proposed technology covers how it will conserve the environment, health, and safety aspects. |
| 19 | Maintenance and operation | Service provider to:<br>• Operate and maintain the system for a year from works completion or commissioning of each sanitation unit.<br>• Provide Chemicals /enzymes/biological additives required for biological treatment for 1 year from commissioning each unit. |

| ITEM | REQUIREMENTS | DESCRIPTION |
|---|---|---|
| | | • Train Johannesburg Water's Operations Team as part of handover takeover/skills transfer.<br>• Provide Operations and Maintenance Manuals |
| 20 | Project Implementation Plan | The project implementation plan must be in Gantt Chart format, and it must cover the installation of the proposed sanitation technology to service each of the 500 Households which should include duration and activities but not limited to Site Investigations, Design, submission of Contractual Documents (required as per contract data) Commencement of works, Procurement of the material, installation, and Practical Completion Date. |
| 21 | Future Network Integration | The upgradeability of the low/pour flush design to integrate with the future flushed sewer reticulation system |

### 3.4.2 Johannesburg Water Preferred Specification:

Table 2: Market Available Specification

| ITEM | REQUIREMENTS | PREFERRED SPECIFICATION | PREFERRED SPECIFICATION ACHIEVABLE (WHERE APPLICABLE) | | RESPONDANT SPECIFICATION |
|---|---|---|---|---|---|
| | | | YES | NO | |
| **1** | **General Design Requirements** | | | | |
| 1.1 | Sludge Tank/Back-end Design | • Each Soakaway Design should be guided by Percolation Tests as per SANS10400-Q:2011.<br>• The capacity of the Sludge Tank/Back-end Tank shall not be less than 3 x ADDWF/stand.<br>• The minimum design desludging capacity shall not be less than 48 months. | | | |
| 1.2 | Minimum Daily Treatment Capacity (L/day) | 21 flushes per day per household (Approximately 84 L/day). | | | |

| ITEM | REQUIREMENTS | PREFERRED SPECIFICATION | PREFERRED SPECIFICATION ACHIEVABLE (WHERE APPLICABLE) | | RESPONDANT SPECIFICATION |
|---|---|---|---|---|---|
| | | | YES | NO | |
| 1.3 | Cistern maximum capacity | 4 litres, a flow meter to be installed to measure water consumption. | | | |
| 1.4 | Overload Protection | Indicate the safety factor in the design to prevent overload of treatment capacity. Provide a visual indicator to notify that the system is nearing overload and system cannot be used. | | | |
| 1.5 | Unit footprint | Size and compactness of the proposed design to reduce footprint (must attach the drawings) | | | |
| **2** | **Performance Requirements** | | | | |
| 2.1 | Treatment Process Performance Assurance | The service provider is to provide details of how this is to be monitored. | | | |
| 2.2 | Design Life (Minimum) | 10 years | | | |

| ITEM | REQUIREMENTS | PREFERRED SPECIFICATION | PREFERRED SPECIFICATION ACHIEVABLE (WHERE APPLICABLE) | | RESPONDANT SPECIFICATION |
|---|---|---|---|---|---|
| | | | YES | NO | |
| 2.3 | Recycle/Reuse of wastewater | Optional | | | |
| **3** | **Material Requirements & Structural Integrity** | • Durable,<br>• Fire resistance<br>• UV light and corrosion protection/resistant<br>• Connections and jointing<br>• The main component's material should comply with SANS standards. | | | |
| **4** | **Maintenance** | | | | |
| 4.1 | Desludging Frequency (minimum) | The minimum design desludging capacity shall not be less than 48 months | | | |
| 4.2 | Discharging of effluent | It is preferred that the effluent should be discharged to daylight provided that the effluent quality is safe for disposal. | | | |

| ITEM | REQUIREMENTS | PREFERRED SPECIFICATION | PREFERRED SPECIFICATION ACHIEVABLE (WHERE APPLICABLE) | | RESPONDANT SPECIFICATION |
|---|---|---|---|---|---|
| | | | YES | NO | |
| 4.3 | Frequency of adding chemicals or biological additives/enzymes | Guideline to be provided but not less than a month | | | |

**Table 2 above can be replicated should more writing space be required, however, to cover the entire range of specifications as indicated.*
***(Attach under Appendix B4)***

### 3.5 QUALITY ASSURANCE

All materials and components used in the design should comply with the preferred specifications or the respondent is to provide an alternative. To ensure the competency of the respondent the experience will be checked as per **3.1 REQUIREMENTS**. Additionally, the technology must be tested and accepted by CSIR/WRC with the respondent providing proof of the certification/advisory note/letter of approval.

### 3.6 PAYMENT

No payments will be made for the information provided by the respondents for this request for information.

### 3.7 STATUTORY, REGULATORY AND OHSA REQUIREMENTS

The Occupational Health and Safety and Environmental Specifications will be provided during tender stage.

#### 3.7.1 Construction Industry Development Board (CIDB)

For this RFI purposes, Johannesburg Water seeks to understand the CIDB standing of respondents.

The ultimate project scope will contain aspects of construction which is regulated by CIDB. Therefore, Johannesburg Water seeks to understand the extent of respondents that are registered with CIDB and the CIDB grading of the respondents. Respondents are to submit their CIDB certificate, and CRS number or make mention that they are not registered with CIDB with their submission. (Attach under Appendix B5)

## 4. PRICE SCHEDULE

The pricing below is for Johannesburg Water to understand the market, it is to be noted that there will be no appointment made from this Request for Information. (Attach under Appendix B6)

### 4.1 Non Sewered System Unit

| ITEM DESCRIPTION | UNIT PRICE ZAR (EXCL VAT) |
|---|---|
| **Supply** of an alternative non-sewered sanitation system Unit including Front end & back-end Structures, Toilet Unit including cistern, water storage container, pedestal with provision for Children Seat, toilet paper holder, sludge tank/back-end, overload protection, flow meter, flooring, pipe work & fittings and all other accessories to render the unit complete and operational | |
| **Delivery** of an alternative non-sewered sanitation system Unit including Front end & back-end Structures, Toilet Unit including cistern, water storage container, pedestal with provision for Children Seat, toilet paper holder, sludge tank/back-end, overload protection, flow meter, flooring, pipe work & fittings and all other accessories to render the unit complete and operational | |
| **Installation** of an alternative non-sewered sanitation system Unit including Front end & back-end Structures, Toilet Unit including cistern, water storage container, pedestal with provision for Children Seat, toilet paper holder, sludge tank/back-end, overload protection, flow meter, flooring, pipe work & fittings and all other accessories to render the unit complete and operational | |
| Any other item/s (specify the item to include) …… | |
| **TOTAL COSTS (EXCL VAT) R** | |

## 4.2 Maintenance and Operation

| ITEM DESCRIPTION | UNIT PRICE ZAR (EXCL VAT) |
|---|---|
| Maintenance and operation of the Non Sewered Unit to ensure that the system operates as per the design including the addition of all chemicals, biological additives, enzymes etc which will be required during the operation and maintenance period.<br><br>(Unit/12 months) | |
| Provision of Training to Johannesburg Water's Operations team after completion of the project as and when required. The training is to be held at the Johannesburg Water Depot and it should cater for 10 personnel in each training session. The service provider must provide all required manuals for the training. | |
| Compilation and submission of 3 X copies (including USB with soft copy) of Operation and Maintenance Manuals to Johannesburg Water | |
| Any other item/s (specify the item to include) …… | |
| **TOTAL COSTS (EXCL VAT) R** | |

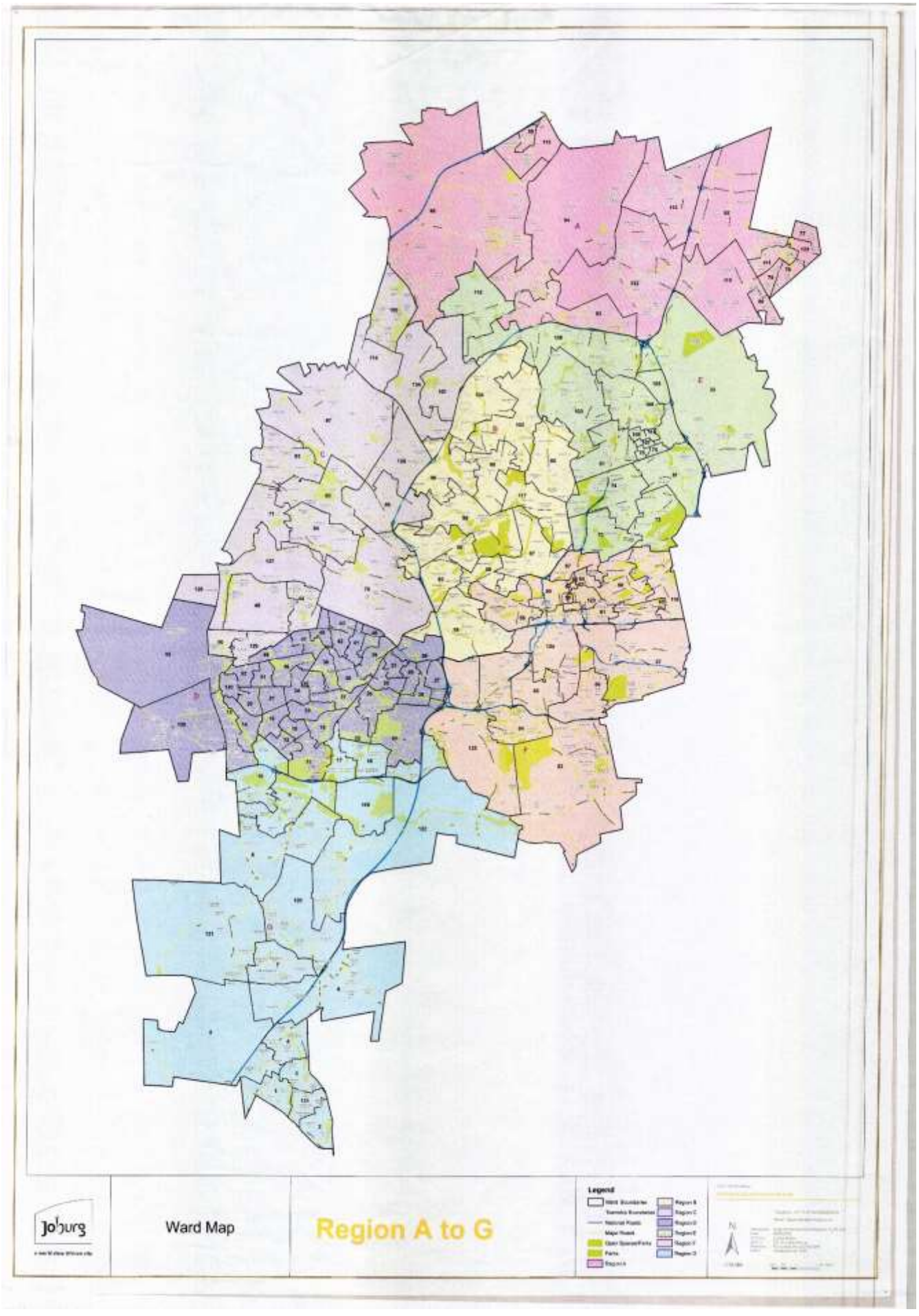
## 5. RETURNABLE CHECKLIST

| Item No. | Description | Appendix | Attached | |
|---|---|---|---|---|
| | | | Yes | No |
| 1 | RFI Cover page | | | |
| 2 | WRC/ CSIR certification/advisory note/letter of approval | B1 | | |
| 3 | Reference letter/s and completion certificate/s | B2 | | |
| 4 | Technical proposal | B3 | | |
| 5 | Table 2: Market Available Specification | B4 | | |
| 6 | CIDB Certificate and CRS Number | B5 | | |
| 7 | Pricing Schedule | B6 | | |

# APPENDIX A:

Joburg

Johannesburg Water



# APPENDIX B1:

# WRC/ CSIR certification/advisory note/letter of approval

# APPENDIX B2:

# Reference letter/s and/or completion certificate/s

**Contactable Reference Template**

To Johannesburg Water (SOC) Ltd

I, the undersigned being duly authorised to do so, hereby furnish a reference to Johannesburg Water relative to RFI No**. JW RFI 21/02/2024** for the **Design, Construction, Operation and Maintenance of Alternative Non-Sewered Basic Sanitation Technology Services for Individual Households in the Informal Settlements**

**Name of Responent: ……**

**Description of Alternative Non-Sewered Basic Sanitation Project Implemented:**

……

……

**Scope:**

……

……

**Contract Value:** ……

**Duration: Year-Month-Day when the Goods / Services were provided**

**Start date (Year- Month -Day) when the above was provided**:
……/……/……

**End date (Year- Month -Day) when the above was provided**:
……/……/……

**Name of authorised person (Referee): ……**

**Signature: …….. Date: ……**

**Telephone/Mobile: ……**

**Email: ……**

**Completed on behalf (Name of Client) ……**

*NB: This document must be completed by the referee and included in the tender submission. Alternatively, the client's letterhead may be used for this purpose provided it complies with the functional criteria requirements. A separate form must be completed for each reference as required in the evaluation criteria. Information provided will be verified and if found to be false or misrepresented, punitive measures will be instituted against the respective party including blacklisting and restriction from participating in any future government tender.*
***IF THE RESPONDENT WAS A SUBCONTRACTOR ON THE PROJECT – PROOF OF SUBCONTRACTING AGREEMENT BETWEEN THE RESPONDENT AND MAIN CONTRACTOR PLUS A REFERENCE LETTER TO BE SUBMITTED AS STATED ABOVE***

# APPENDIX B3:

# Technical proposal

# APPENDIX B4:

# Table 2: Market Available Specification

# APPENDIX B5:

# CIDB Certificate

# APPENDIX B6:

# Pricing Schedule