TERMS OF REFERENCE

Engagement of Service provider for Stakeholder Engagement and Data Collection

Treated Wastewater Reuse Assessment — City-Level Pilot Programme

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1. About WASH Institute (WASHi)

WASH Institute (WASHi) is an India-focused water, sanitation and hygiene organisation working to build a water-secure India through data-driven research, technical assistance to Urban Local Bodies (ULBs) and state governments, and on-ground programme delivery. WASHi's work spans water supply and resource management, urban and rural sanitation, wastewater management, workforce development and policy advocacy, delivered in partnership with municipal corporations, parastatal boards and state departments, and supported by leading philanthropic and institutional funders.

This assignment forms part of WASHi's urban water security programme, which comprises of analysing a city's water balance and Treated Wastewater (TWW) Reuse. The programme aims to for structured assessment and reuse planning, beginning with 12-15 pilot cities selected to represent varied regions, city sizes and hydrological contexts, with a pathway to scale to over 200 cities and towns nationally.

2. Background

Rapid urbanisation, rising water demand and increasing climate variability are placing sustained pressure on India's freshwater resources. Over the past decade, national programmes — Swachh Bharat Mission-Urban, AMRUT, Namami Gange and the Smart Cities Mission — have substantially expanded sewerage networks and sewage treatment capacity across Indian cities. Despite this, a large share of treated effluent continues to be discharged into rivers, lakes, drains or coastal waters rather than productively reused — a missed opportunity to reduce freshwater abstraction, improve the financial sustainability of treatment infrastructure, and strengthen climate resilience.

Assessing a city's treated wastewater reuse potential requires more than identifying a handful of willing users. It requires understanding, ward by ward and sector by sector, how much treated wastewater is available, who could plausibly use it, what would need to change for them to adopt it, and how existing water use and freshwater dependence are structured across the city today. This calls for direct engagement across the full treated wastewater value chain — from the institutions that generate, collect and treat wastewater, through the infrastructure that could convey it, to the complete range of potential end-users: ecological, municipal, agricultural, industrial and residential.

WASHi is engaging a field service provider (or service providers, engaged regionally) to lead this stakeholder engagement and primary data collection effort in each selected city, working in close and continuous coordination with WASHi's technical team, which leads the analytical work, GIS-based opportunity assessment and reporting.

This study is limited to cities with at least one functional STP and a population tentatively between 1 and 8 lakh. The initial pilot cities have been named by WASHi; additional cities will be added to the pipeline as and when clearance is received from the relevant state governments.

3. Purpose of the Assignment

The purpose of this assignment is to enable WASHi to build an accurate, ground-validated picture, for each project city, of:

- current water usage and sources across households, industries, agriculture, and municipal/institutional users;
- the city's overall urban water balance;
- the quantity, quality and seasonal availability of treated wastewater that can be reliably reused;
- the feasible avenues and potential users for reuse across sectors; and
- the extent of reuse already taking place currently.

Critically, the service provider's role is not limited to data collection. WASHi expects the service provider to genuinely engage each stakeholder group — through structured surveys and key informant interviews — to surface attitudes, concerns and adoption readiness that a data form alone cannot capture: what each group's mindset is toward reusing treated wastewater, how likely they are to actually adopt it, and what kind of intervention would be needed to move them from awareness to adoption. WASHi will be responsible for analysing the data, drawing conclusions, solutioning and designing a detailed project report and business model for the city.

4. Objectives and Expected Outcomes

4.1 Objectives

- Establish, for each project city, an accurate picture of current water usage and sources across households, industries, agriculture, and municipal/institutional users via data collection at various levels.
- Support WASHi in constructing a city-level urban water balance, tracking freshwater supply, consumption, and wastewater generation, collection and treatment.
- Support estimation of the quantity, quality and seasonal availability of treated wastewater available for reuse.
- Identify, sector by sector, feasible avenues and potential users for treated wastewater reuse, and quantify existing reuse practices already underway.
- Assess the mindset, adoption readiness and intervention needs of each stakeholder group, so that the reuse plans WASHi develops are grounded in realistic uptake expectations rather than theoretical technical potential.

4.2 Expected Outcomes

- A validated, city-specific stakeholder and end-user database covering the full treated wastewater value chain.
- Primary survey data of agreed sample size and geographic/sectoral spread to support statistically defensible demand and water-balance estimates.
- A clear, evidence-based read on which stakeholder segments are reuse-ready, which need convincing, and what would move each group toward adoption.

- A functioning, government-recognised local engagement channel in each city that WASHi can continue to draw on through the life of the programme.

5. Scope of Work

5.1 Phased Data Collection Approach

The data collection and survey will happen in three phases as detailed below:

- **Phase 1** — ULB Preliminary Survey and Nodal Service provider Identification (see Section 5.2): the service provider will conduct a preliminary survey at the ULB, using WASHi's detailed questionnaire, to (a) identify the relevant nodal agencies for that city — PWD, Agriculture Department, Irrigation Department, Industrial cluster/association, and others as applicable — and (b) verify basic ULB-level information like sewerage coverage, water supply sources, basic structure and demographics of the ULB, (c) basic STP related information. This, combined with WASHi's own secondary research, will be the decision point for Phase 2. Any gaps the in the secondary data or GIS information will be flagged by WASHi and will have to be added to data checklist during the preliminary survey and, where feasible, to be collected at this stage.
- **Phase 2** — Nodal Service provider Engagement and Sample-Size Finalisation (see Section 5.3): based on Phase 1 findings, WASHi and the service provider jointly finalise which nodal agencies require a Key Informant Interview — Agriculture Department, Irrigation Department (where present), Industrial clusters (where present), STP engineer/manager, and others as identified and deploy the survey to the identified bodied
- **Phase 3** — End-User Survey Execution (see Sections 5.3): based on Phase 1 and 2 findings, WASHi finalises the final end-user categories, sample sizes and ward/location coverage to be surveyed — households, housing complexes, farmers and FPOs, individual industries, and bulk users (e.g., railways, parks, hotels, hospitals) — together with STP-level data collection for the supply side. GPS data is geotagged via KoboCollect (WASHi’s data collection app) for every survey. End-users within a 2–5 km radius of each STP are prioritised for interview, to assess willingness to adopt and feasibility of uptake of treated wastewater. Tentative minimum sample sizes: 400 households per city, and 20–30 farmers per STP catchment where farmers fall within that catchment (final numbers to be confirmed with WASHi during Phase 2, per Section 5.3's indicative-numbers note). Every respondent is first administered the standard informed-consent script before the survey, FGD or KII begins.

5.2 ULB Consultation and stakeholder identification

WASHi will directly secure the requisite State-level and District/ULB-level permissions and approvals required to carry out this study. Where the service provider already has an existing, strong working relationship with a given ULB, WASHi may ask that service provider to take the lead on securing local permissions and access for that city, in coordination with WASHi.

The service provider will touch base with the ULB, and identify the governance of the city, various demand side stakeholders (industries, agriculture, municipal and ecological) as well as identify the supply side stakeholders (ULB, STP, and any other establishments like PWD,

PHED, Water and Sewerage Boards managing the ULB). The service provider will serve as WASHi's dedicated point of contact with government and institutional stakeholders in the project city, building on the initial stakeholder list WASHi provides and, where relevant, the service provider's own existing government relationships.

Key actions:

- Establish and maintain formal points of contact within the municipal corporation/council and relevant departments in the Urban Local Body (ULB) and identified governance bodies respectively.
- Secure the access, administrative support and data-sharing permissions required for field activities.
- Act as WASHi's primary point of contact for day-to-day coordination with ULB officials and government departments.
- Where no pre-existing relationship exists, demonstrate progress in establishing one from the start of the assignment.

Outcome: a. Stakeholder list – demand and supply side b. ULB preliminary survey responses

5.3 Stakeholder Engagement Framework

The service provider shall engage stakeholders across every node of the treated wastewater value chain — wastewater generation and collection, treatment, infrastructure and conveyance, end-users, and monitoring and compliance — as set out below. Four engagement modes are used, matched to the type of stakeholder:

- Consultation - Engage proactively with ULB functionaries to build consensus and secure acceptance of the study, undertake assessments and analyses in accordance with WASHi's methodology, and facilitate the identification of treated wastewater reuse solutions and sustainable business models for adoption by ULBs. The consultation will also involve representatives from industry and agriculture department.
- Key Informant Interview (KII) — a semi-structured interview with an institutional or technical stakeholder (a department, board, or facility operator), covering both factual/technical data and that institution's own capacity and willingness to support reuse.
- Individual Structured Survey — a digital questionnaire (via KoboCollect) administered to an individual respondent or facility (a household, farmer, industrial unit, or municipal facility manager), including adoption willingness and readiness. WASHi will provide the set of questionnaires to be administered. A household survey will take 15-20 minutes per form, other end-user surveys will take 10 minutes per form tentatively.
- Focus Group Discussion (FGD) — a facilitated group discussion with a community-level or collective stakeholder (e.g., a farmers' group), using a discussion guide to surface shared concerns, social and cultural considerations, and collective decision-making dynamics that a one-to-one interview would miss where necessary.

Indicative numbers below are suggestive starting points, not fixed targets. Actual numbers must be adjusted by city and STP catchment, depending on the number of STPs, the size of the agricultural/industrial command area, the number of wards, and what WASHi's ongoing secondary research identifies as relevant for that city. Final numbers for each city are to be

agreed with WASHi before fieldwork planning. The sample size should represent a substantial coverage of the ULB.

A. Water supply

Stakeholder	Mode	Indicative Number	Purpose / Data Sought	KoBo Form
ULB / parastatal responsible for water supply	Consultation + Structured Survey	1	Water production, distribution network, sewer network, collection efficiency, NRW	• ULB Primary Visit • ULB/ Parastatal – Water Supply
Private Water Tanker Vendors & Associations	Structured Survey	2	Fleet size, tanker capacities (KL), trips per day across peak summer vs. monsoon seasons, abstraction source points, and delivery pricing (INR/KL)	Private Water Tanker Vendors & Associations
Commercial Deep Well / Borewell Operators	Structured Survey	2	Well depth, pump capacity, running hours/day, daily yield (KL/day), and user distribution profile.	Borewell Operators

B. Wastewater Treatment

Stakeholder	Mode	Indicative Number	Purpose / Data Sought	KoBo Form
STP-operating authority	Structured Survey	1	STP capacity, performance history, O&M arrangement,	ULB Wastewater and STP

			expansion plan & budget	
Individual STP	Structured Survey	All functional STPs in the ULB	STP capacity, technology, performance history, O&M arrangement, disposal mechanism and waste-water reuse	Individual Sewerage Treatment Plat (STP)

C. End Users — Ecological

Stakeholder	Mode	Indicative Number	Purpose / Data Sought	KoBo Form
Individual water body managing authority (Lake, pond, wetland, reservoir)	Structured Survey	4 (depending upon waterbodies in the ULB)	Waterbody characteristics, status, pollution, inflow and outflow (if any)	Water Body specific – Ecological reuse

E. End Users — Municipal

Stakeholder	Mode	Indicative Number	Purpose / Data Sought	KoBo Form
Parks/ Gardens/ green belts	Structured Survey	5 (mix of municipal and RWA managed parks)	Irrigation demand, wastewater reuse capacity and willingness	Municipal Reuse – Landscaping -- Parks/Garden/Stadium/Roadside Plantation
Bulk Users (Construction, bus-station, airport, bulk institutional, hospitals,	Structured Survey	2 per category (as per availability)	Domestic demand, current wastewater treatment infrastructure,	

hotels, malls, RO plant)			reuse capacity and willingness	Municipal Reuse – Landscaping - Construction Sites - Railways, Bus Stations, Airport, Cantonment, hotels, institutions and other bulk users RO Plant operators

F. End Users — Agriculture

Stakeholder	Mode	Indicative Number	Purpose / Data Sought	KoBo Form
Agriculture Department/	Structured Survey	1	Cropping pattern, irrigation practice, department view on reuse	Agriculture Department
Individual farmers and FPOs	Structured Survey and FGD	10–15 (minimum) agricultural pumping sites	Total operational agricultural tube wells in the peri-urban belt, average pumping capacity (HP), daily pumping schedules across seasons, and canal off-take/lift pump discharge rates, cropping patterns, usage capacity and willingness to adopt treated wastewater	Agricultural Reuse Questionnaire – Farmer oriented

Sample sizes are indicative and should be adjusted to the actual size of the agricultural command area and number of farm holdings within reuse range of each STP (2-5 kms radius), to be confirmed with WASHi before phase 3.

G. End Users — Industries

Stakeholder	Mode	Indicative Number	Purpose / Data Sought	KoBo Form
Industry/ Cluster authority	FGD/ Structured Survey	1–2 (Industrial parks/ clusters)	Aggregated industrial demand and reuse appetite	Industrial Cluster Authority
Individual industrial units	Structured survey	15-20	Existing water source and cost, quality requirements, process compatibility, willingness to adopt,	Industrial Cluster Authority – • Industry Specific • Thermal Power Plant

Prioritise bulk / high water-consuming units first (thermal, textile, paper, chemical, tanneries, and similar) when selecting sampling units.

H. End Users — Households

This calculates baseline domestic per capita water consumption (LPCD) across socio-economic classes. It establishes the exact volume consumed across various daily activities (drinking, sanitation, outdoor use) and measures reliance on supplementary sources (private borewells, tankers, and RO reject water losses).

Stakeholder/ Entity	Survey Mode	Indicative Sample Size	Data Sought	KoBo Form
Urban Households (Stratified: EWS/LIG, MIG, HIG)	Structured Survey	~ 400 HH	Per capita consumption breakdown (LPCD), supply duration/frequency, piped vs. private well/tanker volume ratio, monthly water expenditure	HH Survey

5.4 Stakeholder Consultation Workshop

At the close of the assignment, the service provider shall organise and conduct an online Stakeholder Consultation Workshop in each city with the ULB and the other stakeholders identified in the city's stakeholder list. These include the relevant nodal departments, STP

operators and representatives of industry, agriculture and other end-user groups. The workshop will present the findings and treated wastewater reuse scenarios from WASHi's analysis, which will be shared with and approved by the ULB before the workshop. It will gather the stakeholders' feedback, concerns and commitments on the proposed reuse options and next steps. The service provider shall fix the date and time in consultation with the ULB and WASHi, arrange the video-conferencing platform, issue invitations with the joining link, and ensure the participation of the identified stakeholders. It shall also facilitate the proceedings, record attendance through the platform's participant log, and capture the discussion, feedback and any agreed actions. The workshop shall be recorded only with the participants' consent. A workshop report with the attendance log, minutes and screenshots of the session shall be submitted to WASHi within [5] working days of the workshop. WASHi will provide the analysis, presentation material and technical inputs, and the service provider is not expected to conduct or interpret the analysis. Completion of the workshop and acceptance of the workshop report constitute the Final Stakeholder Workshop milestone.

5.5 Data Collection Protocol

- Detailed instructions and SOP for KoBo app will be provided. All enumerators are expected to have Android phone with functional camera.
- Ensure offline field data capture, daily cloud synchronisation, and daily data audit.
- Collect high-accuracy GPS coordinates (minimum accuracy ±5 metres) for all surveyed locations, captured live within the same KoboCollect form as the survey response — not as a separate exercise.
    - Collect high-accuracy GPS coordinates for STPs, discharge points, conveyance corridors and all surveyed end-user locations, captured live with each field visit.
    - Obtain relevant GIS datasets — ULB/ward boundaries, STP locations, and other layers specified by WASHi.
    - Maintain a GIS folder and data sheet with all the metadata information.
- All raw data and documentation to be handed over to WASHi in editable, non-proprietary formats or uploaded on WASHi’s servers.
- Identify, engage and manage an NABL-accredited laboratory, as approved by WASHi, and coordinate sample collection, transportation, testing and reporting — indicatively 2 treated-wastewater samples per STP, as indicated in **Annexure 1**.

  Deliverables: Completed and validated submissions for every questionnaire and checklist, validated GIS data, NABL-accredited lab report per city.

5.6 Support to WASHi's Analysis, Validation and Reporting Stages

Data analysis and gap assessment will be carried out by WASHi's own technical team; the service provider is not expected to conduct analysis. The service provider shall, however, remain available at each of WASHi's key analysis milestones to:

- Clarify or supplement field data where WASHi's analysis identifies gaps.

- Support in validating WASHi's analysis to confirm draft findings and reuse scenarios.

5.7 WASHi's support to the service provider

WASHi will support the service provider with the following -

- A formal letter of introduction/authorisation to support government liaison in each city.
- Finalised questionnaires, checklists and discussion guides and training on their use.
- KoboCollect account setup and technical training.
- The list of assigned ULBs/STPs/cities and any secondary data pertaining to stakeholder, ULB, demographics, water supply etc. WASHi already holds for them.
- Translated versions of instruments and consent scripts for the relevant regional language(s), where WASHi is providing translation centrally.

6. Summary of Deliverables

Scope Section	Key Deliverables
Stakeholder Engagement and identification	Identification of various stakeholders/ users of treated wastewater, engaging with them, gauging the adoption willingness of treated wastewater
ULB and State level Consultation	Established formal contacts, administrative support, and obtain data-sharing permissions from Urban Local Body (ULB) officials, ensure smooth day-to-day coordination, State-level and district level consultations where needed.
Structured Survey	Completed and validated submissions for all survey form questionnaires and field verification checklists
GIS Data	GIS data / spatial data; clean ULB and ward boundary shapefiles;
TWW Quantity & Quality	Compiled STP inflow/outflow data; laboratory test reports and other documents as required
Analysis Support	Validation consultation reports; supplementary field data as requested by WASHi

7. Duration and Timeline

Initial fieldwork per city — covering government liaison set-up, the full stakeholder engagement framework (Section 5.2), and primary field surveys (Section 5.3) is expected to run approximately 8–12 weeks from mobilisation in that city, comprising: fieldwork itself (tentatively 5–6 weeks), plus buffer time for ULB/nodal-service provider access delays, data cleaning and validation, WASHi/QA back-checks and final data submission and sign-off.

8. Reporting Requirements

- Updates every two weeks to the designated contact at WASHi, covering fieldwork progress against plan, consultations/FGDs completed, and survey submission counts by instrument.
- Immediate flagging of any access issues, delays, or risks affecting government liaison, stakeholder engagement, or field data collection.
- All raw data completed survey records, discussion-guide notes, supporting documents, field records and GIS datasets shall be handed over in editable, non-proprietary formats.

9. Quality Assurance and Data Validation Protocol

- WASHi will back-check a minimum of 5–10% of all submitted surveys, through telephonic re-verification, physical revisit, or both.
- GPS timestamps and coordinates will be cross-verified against the reported survey date and location as a standard fraud check.
- Submissions found to be fabricated, duplicated, or materially inconsistent with back-check findings will be rejected without payment and returned to the service provider for rework at the service provider's cost; repeated instances may result in termination of the engagement.
- WASHi reserves the right to conduct independent spot audits of fieldwork at any time during the assignment.
- In addition to WASHi's back-checks above, the service provider shall maintain its own internal quality-control process at every stage of data collection — including field supervisor spot-checks, daily submission review, and logic/consistency checks — and shall document this process as part of its Plan of Action.
  Review and acceptance: WASHi shall review each batch of submitted data/deliverables and communicate acceptance or required corrections within 5 working days of submission. Where corrections are required, the service provider shall resubmit corrected data within 5 working days of receiving WASHi's feedback, unless a different timeline is agreed for a specific batch.

10. Coordination, Governance and City Allocation

Under this engagement, WASHi has identified a primary list of target cities. Service Provider must submit specific financial proposals for the following locations:

- **Andhra Pradesh:** Guntur, Kurnool, Ananthapur, Rajamahendravaram, Tadipatri, and Eluru

- **Kerala:** Kannur, Kozhikode, Guruvayoor, Kochi, and Thiruvananthapuram
- **Puducherry**
- **Jharkhand:** Ranchi, Phusro, Sahibganj, Chas and Rajmahal
- **Uttar Pradesh:** Shahjahanpur

Additional Quotes and Proposed Cities In addition to the primary list above, proposals must include the following:

1. **Quotes for Future Cities:** A standardized rate card or unit pricing for additional cities that WASHi may incorporate into the project scope at a later date.

2. **Service provider-Proposed Cities:** Service providers are encouraged to propose alternative or additional cities where they possess strong existing networks, field access, and established working relationships with the local municipal authorities. WASHi may factor these into future city allocations to leverage the service provider's existing on-ground goodwill.

The assignment will be implemented through an iterative coordination process: WASHi will progressively communicate city/town-specific data requirements, stakeholder engagement requirements, and information gaps based on its ongoing secondary research, field assessment and analysis. The service provider will undertake the corresponding field-level liaison, engagement and data collection, and provide information back to WASHi for further analysis. Additional field requirements may be communicated by WASHi during the course of the assignment.

11. Service provider Eligibility and Required Capacity

The service provider submitting proposals must demonstrate the following minimum qualifications:

Institutional Experience

Minimum 5 years of operational existence, with a track record of executing field surveys, stakeholder engagements, urban infrastructure/environmental assessments, or related field-based assignments. Experience in water and sanitation is desirable but not mandatory.

Municipal Access and Regional Reach

Documented history of working with Urban Local Bodies or Parastatals including — where applicable — a specific list of ULBs the service provider has previously worked with and currently has a working relationship with. Also, having an experience working with State level agencies.

Data Collection and Quality Protocols

Proven capacity to execute digital data collection (preferably KoboCollect) with established real-time quality assurance/quality control protocols; an in-house or reliable field enumerator

network with local-language capability appropriate to the assigned region(s); secondary data collection and desk research experience.

Community and Stakeholder Engagement, including Qualitative Facilitation

Demonstrated experience facilitating stakeholder consultations, and specifically facilitating and documenting Focus Group Discussions and Key Informant Interviews — not only structured meetings — ideally on water, sanitation, urban infrastructure, agriculture or environment-related programmes.

Team and Infrastructure

A named Team Lead / City Coordinator/ State Coordinator (with CV) accountable to WASHi for each city and State with experience in government liaisoning, and adequate field supervisory staff; smartphones/tablets with internet (Android 10.0 or later) and logistics sufficient to complete fieldwork within the stipulated timeframe.

12. Proposal Submission Requirements

Each service provider's proposal must include:

A. Plan of Action (POA)

- A city-wise work plan and timeline for the pilot cities being proposed mapped to the deliverables.
- Proposed team deployment per city, including the named City Coordinator, Team Lead and CVs of key personnel.
- The service provider's approach to government liaison in cities where it has no pre-existing relationship, including a time-bound access plan.

B. Financial Proposal

- Bidders may choose to bid on one or multiple States. Please note that eligible target cities are strictly limited to those with a population between 1 Lakh and 8 Lakhs. In case of multiple bidders for a particular State, lowest bidder will be allocated the State.
- Logistical costs may vary by region, thus bidders may submit a separate financial rate card (Annexure 2) for each State they propose to work in. The unit costs quoted in a state’s rate card will apply to the eligible target cities within that specific State.

C. Payment Milestone

The payment will be disbursed in the following proportion after the satisfactory completion and finalisation of each milestone as defined below—

Sr. No.	Particular	Timelines	Payment (as a percent of the Total final quote)	Deliverables
1	Signing advance	T0	15%	
2	Training of the methodology and kobo collect. Identifying and establishing the informant base with ULB and parastatls	T0+1weeks		1. Successful completion of training provided by WASHi 2. Formal ULB contacts, access and data-sharing permissions, and State/district consultations where needed
3	All Nodal, STP survey and other end user survey completed and verified by WASHi (apart from Bulk users HH surveys)	T0+4weeks	35%	1. Completed ULB Preliminary visit and survey, collection of various documents and details as per WASHi's list, identification of Nodal agencies and possible stakeholders 2. Completed and accurately updated surveys with updated KoBo forms with parastatal bodies as identified 3. Completed and accurately updated KoBo forms with Stakeholders like STP Operator, Tankers, Borewell operators, Municipal parks/ gardens/ meridians, identified water bodies, farmers, industries along with various GIS points
4	Corrective actions to be taken as per WASHi feedback and analysis if needed after M3	T0 + 5 weeks		
5	Completed and verified Bulk users and HH surveys as per finalised sample size	T0 + 8 weeks	35%	1. Completed and accurately filled KoBo forms for various bulk users identified and approved by WASHi 2. Completed and accurately filled KoBo forms for Households, sample size and locations identified and approved by WASHi
6	Corrective actions to be taken as per WASHi feedback and analysis if needed afterM4 data submission	T0 + 9 weeks		
7	Final Stakeholder Workshop	T0 + 12 weeks	15%	Workshop report with the attendance log and Minutes of the meeting
	Total		**100%**	
8	Laboratory identification, sample collection and testing in a NABL accredited		On Submission of bills	1. Complete lab reports for each STP in the ULB being studied

	laboratory (to be completed by Week 4)			

D. Support Required from WASHi

The service provider should explicitly state what it will need from WASHi to execute the assignment.

Annexure 1

Wastewater Sampling and Analysis from an NABL accredited laboratory

1. Project Overview & Scope of Work

- Objective: Assess physical, chemical, and microbiological characteristics of wastewater to determine suitability for sustainable non-potable reuse strategies.
- Sampling Standards & Protocols:
  - Internationally accepted codes of practice for sample collection, precautions, and preservation.
  - Integrated grab sampling carried out under dry weather conditions—strictly after a minimum of three consecutive rain-free days to avoid dilution.
  - All sampling spots mapped using GIS, with GPS coordinates recorded by the laboratory.
- Quality Control & Duplicate Samples: Each sample must be divided into duplicate samples to validate analytical precision, variation, and repeatability, as well as to serve as a back-up.
- Safety & Equipment: Error-free equipment must be used. The sampling team must wear required safety gear (safety shoes, goggles, masks, hand gloves, overalls).
- Reporting: The contractor will provide a comprehensive report covering sampling methodology, locations, analysis of results with remarks, and personnel details.

2. Sampling Procedures at STP (Inlet and Outlet)

- STP Inlet: Samples collected from the *inlet of the STP*
- STP Final Outlet: Samples collected from the final treated effluent outlet immediately after treatment and prior to discharge or reuse.
- Method & Timing: Collected as a grab sample using a suitable wastewater sampler from well-mixed, representative, and accessible locations (avoiding stagnant zones). Sampling should preferably happen during peak operating hours (between 8am to 10am) under representative loading conditions.
- Handling: Collected using proper sampling bottles (cans prohibited), ensuring containers are filled until overflowing to eliminate air bubbles, pointing bottle mouths against water flow where applicable, and storing in an ice box.

3. Parameter List & Test Methods

A. Physical Parameters

- Total Solids (TS): Mg/L | 2540 B APHA 22nd Ed. 2012
- Total Volatile Solids: Mg/L | 2540 E APHA 22nd Ed. 2012
- Total Suspended Solids (TSS): Mg/L | 2540 D APHA 22nd Ed. 2012
- Volatile Suspended Solids: Mg/L | IS 10158-1982
- Electrical Conductivity: Mg/L |

- Colour & Odour: IS 3025 Part 4 (Colour), IS 3025 Part 5 (Odour)
- Temperature: °C| IS 3025 Part 9
- Turbidity: NTU | IS 3025 Part 10

B. Chemical Parameters

- COD (Chemical Oxygen Demand): Mg/L | 5220 B APHA 22nd Ed. 2012
- BOD (Biological Oxygen Demand): Mg/L | 5210 B APHA 22nd Ed. 2012
- Dissolved Oxygen (DO): Mg/L
- pH: 4500 H+ - B APHA 22nd Ed. 2012
- Chloride & Nitrate: Mg/L
- Total Nitrogen: Percentage by weight | 4500 N APHA 22nd Ed. 2012
- Total Phosphorus: Percentage by weight | 4500 – P D APHA 22nd Ed. 2012
- Total Kjeldahl Nitrogen (TKN) & Ammonia-Nitrogen: 4500 – Norg – B & 4500 NH3 C APHA 22nd Ed. 2012
- Alkalinity & Grease: 2320 B & 5520 B APHA 22nd Ed. 2012

C. Heavy Metals ($\mu g/L$)

- Arsenic (As): IS 3025 Part 37
- Cadmium (Cd): IS 3025 Part 41
- Chromium (Cr): IS 3025 Part 52
- Copper (Cu): IS 3025 Part 42
- Iron (Fe): IS 3025 Part 53
- Lead (Pb): IS 3025 Part 47
- Manganese (Mn): IS 3025 Part 59
- Mercury (Hg): IS 3025 Part 48
- Nickel (Ni): IS 3025 Part 54
- Zinc (Zn): IS 3025 Part 49
- Cobalt (Co) & Silver (Ag): Standard laboratory methods

D. Biological Parameters

- E. Coli: Number/100 mL | Membrane filtration using M-FC broth or Membrane Lauryl Sulphate broth
- Coliform: CFU per 100 ml | IS 1622

Annexure 2

State Bidding for: _____

Instruction: Submit a separate copy of this table for each State you are bidding on.

#	Particulars	Cost per unit	Comment
HUMAN RESOURCES			
1	Total manpower cost quoted (INR) and basis (per city)		Attach detailed team break-up (roles, headcount, rates) as an annexure if useful. This segment should be quoted for management personnel on effort basis.
PER STAKEHOLDER INTERVIEWS (PER COMPLETED FORM)			
1	STP		Individual STP survey
2	HH (minimum 400 per city)		Household survey
3	Industry		Industry and Industry Cluster survey
4	Farmers		Includes FPO respondents
5	Bulk user		Construction, bus station, airport, institutional, hospitals, hotels, malls, RO plant, etc.
6	ULB/State/Department		Per completed stakeholder form (KII with ULB officials, State departments, nodal agencies, etc.)
NABL LAB TESTING			
1	Indicative cost per sample set — 2 samples per STP, full parameter panel as specified in Annexure 1		Reimbursed at actuals per lab invoice submitted against a completed test report.

Annexure 3

The applicants must submit their completed technical and financial bids by **18th October 2026 5:00 PM IST.** They can send their proposals to puja.rambhiya@washinstitute.org and pavan.kumar@washinstitute.org with the subject: Application for Treated Waste Water reuse pilot programme. Please feel free to write to us in case of any queries.