

GEORGIAN WATER AND POWER LLC

GWP | შპს გორჯიან უოთერ ენდ ფაუერს

TERMS OF REFERENCE

Pre-Design Study and Detailed Design Documentation

Water Supply and Wastewater Sewerage Systems — Tbilisi Sea Development Area

Client:	Georgian Water and Power LLC (GWP) ID: 203826002
Client Address:	10 Medea (Mzia) Jugheli St., Tbilisi, Georgia
Project Area:	Tbilisi Sea Development Area — boundary defined in Annex A
Contract Type:	Fixed-price, milestone-based (one fixed price per milestone)
Duration:	15 months
Version:	Rev. 01 May 2026
Language:	English (Georgian translation attached)

REVISION HISTORY

Rev.	Date	By	Description
01	May 2026	GWP	Initial issue

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SECTION 1 — GENERAL INFORMATION & BACKGROUND

1.1 Client

The Client is Georgian Water and Power LLC (GWP), registration ID 203826002, 10 Medea (Mzia) Jugheli Street, Tbilisi, Georgia.

1.2 Project Background

The Tbilisi Sea Development Area is being prepared for urban development. It currently has no water supply or wastewater sewerage infrastructure. GWP requires a Consultant to carry out a pre-design study and prepare complete detailed design documentation for both systems.

NOTE: This contract covers water supply and wastewater (sanitary) sewerage systems only. Stormwater drainage is excluded.

1.3 Project Objectives

- Obtain the urbanization plan from Tbilisi City Hall and estimate water and wastewater demand.
- Carry out topographic and utilities surveys.
- Identify points where geotechnical investigation is needed; GWP will procure this separately.
- Develop and compare schematic design options for both systems.
- Prepare complete detailed design documentation, Bill of Quantities, and cost estimate.
- Obtain a positive expert review conclusion from the National Bureau of Forensic Expertise (Levan Samkharauli).
- Support GWP in obtaining required environmental permits.

1.4 Project Area

The project area is the Tbilisi Sea Development Area, within Tbilisi's administrative boundaries. The exact boundary is defined in Annex A.

NOTE: Although the design territory covers only the Tbilisi Sea Development Area, the Consultant must design all main infrastructure systems (transmission mains, main sewer collectors, reservoirs, pump stations) to accommodate future expansion beyond the current territory. See Section 2.6 for details.

SECTION 2 — SCOPE OF SERVICES & APPLICABLE STANDARDS

2.1 Structure

The services are delivered in four sequential milestones:

Milestone	Title
1	Urbanization Plan & Preliminary Demand Estimation
2	Surveys, Hydraulic Calculations & Schematic Design
3	Detailed Design Documentation
4	Expert Review & Final Submission

2.2 Deliverable Matrix

The table below shows every deliverable required under this contract and who is responsible for it. The Consultant is responsible for all items in the Consultant column. GWP is responsible for all items in the Client column.

Deliverable	Consultant	GWP (Client)	Milestone
MILESTONE 1			
Official urbanization & land-use plan (obtained from Tbilisi City Hall)	✓		1
Preliminary demand estimation report (water & wastewater)	✓		1
Cadastral map overlay with parcel ownership status	✓		1
Sanitary Protection Zone assessment and map	✓		1
Existing GWP network coverage map	✓		1
Land acquisition identification list (facility sites only)	✓		1
GWP GIS base of existing water & wastewater network		✓	Start
Available hydraulic data (operating pressures, flow records)		✓	Start
Project area boundary map (Annex A)		✓	Start
GWP Internal Technical Standards (Appendix D)		✓	Start
Written confirmation of designated connection points (water & wastewater)		✓	After M1
MILESTONE 2			
Topographic survey report + digital plans (DWG & PDF)	✓		2
Existing utilities survey report + overlay plans (incl. GPR results)	✓		2
Geotechnical Brief (for GWP's separate procurement)	✓		2

Hydraulic calculations report — water supply & wastewater (model files + Excel summary)	✓		2
Schematic Design Report with completed MCA table and recommended solution	✓		2
Schematic layout plans and technology flow diagrams (DWG & PDF)	✓		2
Reservoir volume calculations and pump station preliminary sizing	✓		2
Electrical supply concept (coordination letter from Energo-Pro or equivalent)	✓		2
Environmental Screening Report (submitted to MEPA)	✓		2
Geotechnical investigation data (from separately procured investigation)	✓	✓	For M3
MILESTONE 3			
Environmental Impact Assessment Management for separate contractor (if necessary)	✓		3
Geotechnical investigation Management for separate contractor	✓		3
Complete detailed design drawings — water supply (all elements)	✓		3
Complete detailed design drawings — wastewater sewerage (all elements)	✓		3
Water hammer prevention solution (transmission mains)	✓		3
Structural calculations report	✓		3
Energy efficiency assessment for pump stations	✓		3
Construction technical specifications (civil, mechanical, electrical, control)	✓		3
Bill of Quantities for construction (13-column resource BoQ + tender BoQ)	✓		3
House / service connections design — water supply and wastewater (all plots)	✓		3
Cadastral measurement drawings for facility sites requiring acquisition	✓		3
Drawing register	✓		3
MILESTONE 4			
Positive Expert Review Conclusion — Levan Samkharauli (original, signed & sealed)	✓		4
Final revised design package (incorporating all expert review changes)	✓		4
Final Bill of Quantities and Detailed Construction Cost Estimate (revised per expert review)	✓		4
Full project documentation in Georgian and English (PDF + native software formats)	✓		4

2.4 Applicable Standards

INCLUDING BUT NOT LIMITED TO:

GEORGIAN LEGISLATION & TECHNICAL REGULATIONS:

- Georgian SNIP 2.04.02-84 — Water Supply: External Networks and Structures
- Georgian SNIP 2.04.03-85 — Wastewater Sewerage: External Networks and Structures
- Georgian SNIP 2.04.01-85 — Internal Water Supply and Sewerage of Buildings
- Georgian Government Decrees No. 52 and No. 55 — Construction cost estimation
- Georgian Technical Regulation on Sanitary Protection Zones
- Georgian Fire Protection Norms (fire flow calculation)
- Georgian Environmental Assessment Code (2017)
- All other applicable Georgian SN/SP technical standards

EUROPEAN STANDARDS:

- EN 805 — Water supply outside buildings
- EN 752 — Drain and sewer systems outside buildings (wastewater)
- EN 1295-1 — Structural design of buried pipelines
- EN 1991, 1992, 1997, 1998 (Eurocodes 1, 2, 7, 8) — Actions, concrete, geotechnical, seismic
- EN 13476, EN 12201 — Plastic piping for sewerage and water supply

OTHER:

- WHO Guidelines for Drinking Water Quality (latest edition)
- GWP Internal Technical Standards — Appendix D (takes precedence over other standards except Georgian law)

2.5 Environmental Permitting

The Consultant shall manage all environmental permitting required for construction. This is part of the contract scope. Specifically:

- Carry out environmental screening under the Georgian Environmental Assessment Code and submit to the Ministry of Environmental Protection and Agriculture (MEPA).
- If MEPA's screening decision confirms no full EIA is required: include the decision in the deliverables. No further EIA work is due from the Consultant.
- If MEPA determines a full EIA is required: the client will purchase this service separately. Consultant shall notify GWP immediately upon receiving the screening decision and shall not proceed with EIA preparation.
- The consultant will manage a full EIA works of separate service.
- Prepare all required documentation for crossing permits (Roads Department, Georgian Railway, other authorities).
- Regulatory authority and other communication utility permits will be managed by the client with the documentations prepared by the consultant.

2.6 Future Enlargement Requirements

The current design territory covers only the Tbilisi Sea Development Area. However, all main infrastructure elements shall be designed with physical space and structural capacity to accommodate future expansion. The Consultant shall apply the following minimum requirements:

- Reservoirs: the site layout and civil design shall provide physical space and structural foundations to add a second reservoir unit of equal capacity in the future, without demolishing or significantly modifying the first unit.
- Pump stations: the building and wet well dimensions shall accommodate double the number of pumps required for the current design flows, leaving half the pump positions as unequipped stubs for future installation.
- Transmission water mains: pipe diameters shall be calculated for the ultimate demand of the full development area (including land beyond the Tbilisi Sea Development Area boundary as indicated in GWP's long-term master plan), not only current territory demand.
- Main sewer collectors: pipe diameters and gradients shall be designed for the ultimate population of the full potential catchment area.

- The Consultant shall state clearly in all hydraulic calculation reports the current design flows and the ultimate design flows used for pipe sizing.

2.7 Geotechnical Investigation

Geotechnical investigation is not included in the Consultant's scope. GWP will procure it separately under a different contract. The Consultant's responsibilities are:

- During Milestone 2, identify the minimum geotechnical investigation points that are strictly necessary: foundation points for each reservoir and pump station; and a limited number of representative points along the pipeline network solely to define general soil categories. The Consultant must keep the number of points to a minimum.
- Prepare a Geotechnical Investigation Brief for each identified point specifying: location (coordinates); required borehole depth; type of laboratory tests needed; and justification demonstrating why the point is strictly necessary.
- GWP will procure and deliver the geotechnical investigation data. The Consultant shall use this data in Milestone 3 for structural and pipeline design.
- The consultant will manage the geotechnical investigation works of separate service.

SECTION 3 — MILESTONE STRUCTURE & DELIVERABLES

Each milestone must be formally accepted by GWP in writing before the next milestone starts and before the associated payment is made. GWP will not pay for a milestone that has not been formally accepted.

MILESTONE 1 — Urbanization Plan & Preliminary Demand Estimation

Trigger:	Signed contract
Duration:	8 weeks
Accepted when:	GWP written acceptance of the Milestone 1 Report

Scope:

- Coordinate with Tbilisi City Hall to obtain the official urbanization and land-use development plan for the Tbilisi Sea Development Area, including planned building densities, zoning categories, and road layouts.
- Check planned road infrastructure: alignments, hierarchy, widths, and any approved construction programmes that may affect pipeline routes.
- Calculate preliminary water demand and wastewater flow estimates using GWP's metered consumption data (where available) or Georgian SNIP norms. This is a preliminary estimate only; detailed hydraulic calculations are done in Milestone 2.
- After GWP accepts the Milestone 1 Report, present the confirmed population and demand figures to GWP. GWP will then confirm in writing the designated water supply and wastewater connection points to the existing GWP network within 14 calendar days. These confirmed points are mandatory for Milestone 2 design.
- Map all cadastral parcels in the project area (registered and unregistered) with ownership status.
- Map the existing GWP water supply and wastewater network coverage in and around the project area.
- Identify sanitary protection zones (SPZs) that apply to any existing or proposed water infrastructure in the area, per the Georgian Technical Regulation on Sanitary Protection Zones. Confirm that proposed facility sites comply with SPZ restrictions.
- Identify any land parcels that GWP may need to acquire for facility sites (reservoirs, pump stations).

NOTE: Payment for Milestone 1 requires that the official Tbilisi City Hall urbanization plan is obtained and included in the report. If the Consultant cannot obtain the plan, Milestone 1 will not be accepted and GWP will not make the Milestone 1 payment. GWP will provide reasonable assistance, but the obligation rests with the Consultant.

Deliverables:

- Urbanization & Land-Use Assessment Report (Georgian and English)
- Preliminary Demand Estimation Report: estimated water and wastewater flows with supporting assumptions and data sources
- Cadastral map overlay with parcel status
- SPZ Assessment: map of existing zones; SPZ requirements for proposed facilities
- Existing GWP network coverage map
- Land acquisition identification list (parcels needed, cadastral codes, ownership)
- Copy of the official urbanization plan from Tbilisi City Hall

MILESTONE 2 — Surveys, Hydraulic Calculations & Schematic Design

Trigger:	Written acceptance of Milestone 1 by GWP + GWP written confirmation of connection points
Duration:	12 weeks
Accepted when:	GWP written acceptance of the Schematic Design Report

2a. Topographic Survey

- All surveys in UTM coordinate system using the Geo-Cors reference network. Horizontal accuracy: ± 30 mm; vertical accuracy: ± 10 mm.
- Install permanent benchmarks at stable, accessible locations.
- Within streets: survey full road width (curb to curb / fence to fence).
- In undeveloped areas: survey corridor of minimum 20 m either side of the pipeline centreline.
- Facility sites (reservoirs, pump stations): survey the full site including SPZ boundary + 50 m buffer and access road.
- Capture all features: terrain relief, road edges, kerb lines, channels and their invert levels, building footprints with number of storeys, manholes, poles, traffic signals, trees.
- Plans shall include: conventional symbols, scale bar, north arrow, surface type (asphalt, concrete, cobblestone, gravel, earth).
- Drone photogrammetry or LiDAR is permitted for open terrain areas, subject to GWP approval, provided accuracy requirements are met and ground control points are established.

2b. Existing Utilities Survey

- Collect all available as-built records for existing underground utilities: water, wastewater, drainage, gas, power cables (MV/LV), telecom, fibre optic.
- Record for each utility: location, diameter, depth, material, operating pressure or voltage, owner.
- In built-up and paved areas, use electromagnetic detection or ground-penetrating radar (GPR) where records are unavailable or unreliable.
- Obtain preliminary crossing conditions from all utility owners.
- For road crossings under the Roads Department of Georgia: obtain a stamped written coordination letter.
- Plot all utilities on the topographic base map.

2c. Geotechnical Investigation Brief

- Identify the minimum number of geotechnical investigation points that are strictly necessary for the design. The Consultant shall not propose investigation points beyond absolute necessity. Required points are limited to: (a) foundation points for each reservoir and pump station; and (b) a small number of representative points along the pipeline network, selected only to define general soil categories for the area — not at every pipe section.
- Prepare a Geotechnical Investigation Brief for GWP specifying for each identified point: coordinates; required borehole depth (minimum 15 m for reservoir and pump station foundations; minimum 4 m below pipe invert for network soil-category points); required laboratory tests; and justification. The brief must demonstrate why each point is necessary.
- GWP will procure the geotechnical investigation separately based on this brief. The Consultant shall use the GWP-provided data in Milestone 3.

2d. Hydraulic Flow Calculations

- Water supply: calculate average daily demand, maximum daily demand, peak hourly demand, fire demand (per Georgian fire norms), and minimum night flow. Apply the Darcy-Weisbach equation; the Darcy friction factor λ shall be determined using the Prandtl-Colebrook equation.
- Wastewater sewerage: calculate average dry-weather flow and peak dry-weather flow using the population equivalent method and peaking factors per SNIP 2.04.03-85. Apply the Manning-Strickler equation. Minimum sewer self-cleansing velocity: 0.7 m/s at peak flow.

- GWP's standard service pressures: minimum 1.5 bar at the consumer connection; maximum 6.0 bar in distribution mains.
- All calculations shall be performed using appropriate hydraulic calculation software. Model files and an Excel calculation summary shall be submitted.

2e. Schematic Design & Alternatives Analysis

The Consultant shall develop a minimum of two technically distinct alternatives for: water supply configuration; wastewater sewerage configuration; pump station type and location; reservoir location and capacity. Each alternative shall be evaluated using the following Multi-Criteria Analysis (MCA):

Criterion	Weight	Alt. A (1-5)	Alt. B (1-5)	Alt. C (1-5)
Capital Cost	25%	—	—	—
O&M Cost (20-year NPV)	20%	—	—	—
Energy Consumption	15%	—	—	—
System Reliability	20%	—	—	—
Construction Risk	10%	—	—	—
Environmental & Social Impact	10%	—	—	—
TOTAL WEIGHTED SCORE	100%	—	—	—

Score 5 = most favourable, 1 = least favourable. A third alternative may be developed as a Variation if instructed by GWP.

- Prepare schematic layout plans showing proposed pipe routes, facility sites, pressure zones, and connection points to the GWP network.
- Prepare technology flow diagrams for both systems showing all components and flow directions.
- Calculate reservoir volumes and pump station preliminary sizing.
- Coordinate with Energo-Pro Georgia (or the relevant distribution company) for preliminary grid connection conditions for pump stations.

2f. Environmental Screening

- Submit Environmental Screening Report to MEPA under the Georgian Environmental Assessment Code for both systems.
- Obtain and include MEPA's screening decision in the deliverables. If MEPA requires a full EIA, notify GWP immediately for a separating tender.

Milestone 2 Deliverables:

- Topographic Survey Report + digital plans (DWG and PDF)
- Existing Utilities Survey Report + overlay plans (including GPR/detection results)
- Geotechnical Investigation Brief (for GWP's separate procurement)
- Hydraulic Calculations Report — water supply and wastewater (model files + Excel summary)
- Schematic Design Report with completed MCA table and recommended solution
- Schematic layout plans and technology flow diagrams (DWG and PDF)
- Reservoir volume calculations and pump station preliminary sizing
- Electrical supply concept (coordination letter from Energo-Pro or equivalent)
- Environmental Screening Report + MEPA decision

MILESTONE 3 — Detailed Design Documentation

Trigger:	Written acceptance of Milestone 2 by GWP
Duration:	14 weeks
Accepted when:	GWP written acceptance of the complete design package

Water Supply System:

- Transmission mains and distribution network: all pipe routes, diameters, materials per Appendix D, depth, bedding, and jointing.
- Storage reservoirs: complete civil, structural, architectural, MEP, and instrumentation design. Include physical provision for a second reservoir unit of equal capacity in the future (site layout, structural stubs, pipework connections).
- Pump stations: complete civil, structural, mechanical, electrical, instrumentation, and control design. Minimum N+1 pump redundancy. Building and wet well sized for double the current pump count, with half the positions as unequipped stubs for future installation.
- Network appurtenances: pressure reducing valves, air valves, washout valves, flow meters, isolation valves, fire hydrants — locations, types, chambers, and access details.
- Water hammer prevention system shall be performed for all transmission mains. Where water hammer risk is identified, an appropriate prevention system shall be designed and included in the drawings and Bill of Quantities.
- House / service connections: individual service connections from the distribution main to the property boundary for each plot, including meter chamber, stop valve, and connection saddle details. Number of connections based on the cadastral map and urbanization plan.
- Cathodic protection for metallic pipeline sections where required.

Wastewater Sewerage System:

- Gravity sewer network and collector mains: all pipe routes, diameters, gradients, materials, depths, and bedding. All pipes shall be routed within public road corridors.
- Sewage pump stations where gravity is not feasible: complete civil, structural, mechanical, electrical, and control design. Duty/standby pump arrangement with automatic changeover. Building sized for future capacity per Section 2.6.
- Force mains: pipe route, material, air valve and washout locations.
- Manholes and inspection chambers at all changes of direction, gradient, diameter, and at maximum intervals per SNIP 2.04.03-85.
- Road and other crossings: structural and hydraulic design.
- House / sewer connections: connection from public sewer to property boundary for each plot.
- Connection to existing GWP sewer network: detailed tie-in design including flow measurement and access structures.

Civil & Structural:

- Road reinstatement design for all surfaces disturbed by construction, matching the existing surface standard.
- Access roads to facilities where none currently exists.
- Structural calculations for all major structures using appropriate structural analysis software.

Construction Phasing Plan:

- Divide the works into logical construction phases based on the urbanization plan phasing and GWP's operational needs.
- For each phase: list of works; confirmation that pipe sizes are adequate for ultimate demand (not just phase demand); any temporary connections or bypasses required.
- Hydraulic confirmation that each phase is independently operable.
- The Bill of Quantities shall be structured by construction phase.

Land Acquisition Documentation (where required):

Where a facility site (reservoir, pump station) must be built on land that GWP does not currently own, the Consultant shall prepare for each such parcel:

- Cadastral Measurement Drawing prepared by a licensed cadastral engineer, compliant with National Agency of Public Registry (NAPR) submission requirements, showing: exact parcel boundary with coordinates; and the footprint of the proposed facility within the parcel.

NOTE: All water and wastewater pipelines shall be routed within existing public road corridors.

Drawings:

- All plans in UTM coordinates with north arrow and scale bar.
- Plan and profile drawings for all pipelines: minimum 1:500 (plan), 1:100 horizontal / 1:100 vertical (profile).
- Structural drawings for all civil structures: architectural, structural, MEP.
- Process/P&ID drawings for pump stations.
- Standard details: water service connections; sewer connections; road reinstatement by surface type; manholes by size and depth; valve chambers.
- Drawing register (full list of drawings with revision status).
- Title block on every drawing: project name; Client; design organization; drawing number; scale; designer and checker signatures; revision table.
- All drawings in DWG and PDF formats.

Reports & Calculations:

- Final hydraulic calculation files and Excel summary for all phases (water supply and wastewater).
- Water hammer analysis report for all transmission mains.
- Structural calculations report.
- Energy efficiency assessment for pump stations (specific energy consumption, pump efficiency curves, annual operating cost estimate).
- Construction technical specifications (civil, mechanical, electrical, control and instrumentation).
- Bill of Quantities for construction — 13-column resource BoQ per Decrees No. 52/55, structured by construction phase; plus tender BoQ format.
- Detailed Construction Cost Estimate, broken down by construction phase and by system, using current market unit rates.
- Environmental permit application submissions (crossing permits) with proof of submission.

Milestone 3 Deliverables:

- Complete detailed design drawing set (all disciplines, DWG + PDF) with drawing register
- Structural calculation report
- Final hydraulic model files + Excel summary (all phases)
- Water hammer analysis and surge prevention design report
- Energy efficiency assessment
- Construction technical specifications
- Bill of Quantities (13-column resource BoQ by phase + tender BoQ)
- Detailed Construction Cost Estimate (by phase and by system)
- Construction Phasing Plan
- Cadastral measurement drawings for parcels requiring acquisition (where applicable)
- Environmental permit application submissions.

MILESTONE 4 — Expert Review & Final Submission

Trigger:	Written acceptance of Milestone 3 by GWP
Duration:	4 weeks Consultant preparation + expert review body processing time
Accepted when:	Positive expert review conclusion received + Final Documentation submitted to GWP

NOTE: The 15-month contract duration includes allowance for Levan Samkharauli expert review processing time (typically 2-4 months). The Milestone 4 duration clock pauses during: expert review body processing.

Scope:

- Submit the complete Milestone 3 design package to the National Bureau of Forensic Expertise named after Levan Samkharauli for expert review. No other expert body is acceptable.
- Expert review shall cover all required sections: technological (including verification of hydraulic calculations), structural, electrotechnical, engineering-geological, and cost estimation. The expert conclusion shall explicitly confirm consistency between drawings and the Bill of Quantities.
- Respond to all expert review comments in writing; revise and resubmit as required until a positive conclusion is obtained. All revision rounds are included in the Milestone 4 fixed price.
- Pursue all environmental and construction permits initiated in Milestone 3 through to final decision. Where a permit decision is still pending at the time of final submission through no fault of the Consultant, demonstrate to GWP's satisfaction that the application is correctly submitted and actively under review.
- Incorporate all expert review revisions into the final design package.
- Prepare and submit the complete Final Project Documentation to GWP.

Milestone 4 Deliverables:

- Positive Expert Review Conclusion (original, signed and sealed by Levan Samkharauli) - all required sections
- Final Revised Design Package incorporating all expert review changes (DWG + PDF + native calculation files)
- Final Bill of Quantities (revised per expert review)
- Final Detailed Construction Cost Estimate (revised per expert review)
- All obtained environmental and construction permits (original or certified copies)
- Full project documentation in Georgian and English, in PDF and native software formats

SECTION 4 — CONTRACT PRICES

Each milestone has one fixed price covering everything listed in that milestone's scope. GWP will not pay for a milestone that has not been formally accepted. Additional payments are only made for formally agreed Variations.

MILESTONE 1 — Urbanization Plan & Preliminary Demand Estimation	Fixed Price (GEL)
Scope covered by this price:	
• Coordination with Tbilisi City Hall; obtaining urbanization and road infrastructure plan	
• Preliminary demand estimation (water and wastewater)	
• SPZ assessment and mapping	
• Cadastral boundary study and mapping	
• Existing GWP network coverage mapping	
• Land acquisition identification list	
FIXED PRICE — MILESTONE 1 (excl. VAT)	_____

MILESTONE 2 — Surveys, Hydraulic Calculations & Schematic Design	Fixed Price (GEL)
Scope covered by this price:	
• Topographic survey (all areas; drone/LiDAR where approved)	
• Existing utilities survey including GPR/electromagnetic detection	
• Geotechnical Investigation Brief for GWP's separate procurement	
• Water supply hydraulic calculations (Darcy-Weisbach / Prandtl-Colebrook)	
• Wastewater sewerage hydraulic calculations (Manning-Strickler)	
• Multi-Criteria Analysis of alternatives	
• Schematic layout plans and technology flow diagrams	
• Reservoir sizing and pump station preliminary sizing	
• Electrical supply concept coordination	
• Environmental Screening Report submission and MEPA decision	
FIXED PRICE — MILESTONE 2 (excl. VAT)	_____

MILESTONE 3 — Detailed Design Documentation	Fixed Price (GEL)
Scope covered by this price:	
• Detailed engineering drawings — water supply (all elements incl. transmission mains, reservoirs, pump stations)	
• Water hammer analysis for all transmission mains	
• Detailed engineering drawings — wastewater sewerage (all elements)	
• House/service connections — water supply and wastewater (all plots)	
• Construction Phasing Plan	

• Structural drawings and calculations	
• Electrical & instrumentation design for all pump stations	
• Final hydraulic model files (water supply and wastewater, all phases)	
• Construction technical specifications	
• Bill of Quantities for construction (13-column resource BoQ by phase + tender BoQ)	
• Cadastral measurement drawings for facility sites requiring acquisition	
• Environmental permit application submissions (crossing permits, etc.)	
FIXED PRICE — MILESTONE 3 (excl. VAT)	_____

MILESTONE 4 — Expert Review & Final Submission	Fixed Price (GEL)
<i>Scope covered by this price:</i>	
• Submission to Levan Samkharauli National Bureau of Forensic Expertise	
• Responding to expert review comments; all revision rounds	
• Final documentation revision incorporating all expert review changes	
• Final documentation package preparation and submission to GWP	
FIXED PRICE — MILESTONE 4 (excl. VAT)	_____

TOTAL CONTRACT VALUE (GEL, excl. VAT)	_____
VAT (18%)	_____
TOTAL CONTRACT VALUE (GEL, incl. VAT)	_____

NOTE: 5% retention is withheld from each milestone payment. Third-party permit fees are reimbursed separately at actual cost on receipt.

SECTION 5 — GENERAL OBLIGATIONS OF THE CONSULTANT

5.1 General

The Consultant is responsible for the completeness, accuracy, and fitness-for-purpose of all deliverables. All applicable Georgian laws, technical regulations, and GWP standards (Appendix D) must be followed. Unfamiliarity with a standard is not grounds for additional payment.

5.2 Key Personnel

Signed CVs for all key personnel listed in Appendix B must be submitted with the tender offer. CVs must demonstrate the minimum required experience. GWP may reject a tender that does not meet the requirements.

Once the contract is signed, the Consultant must not replace any key personnel without GWP's prior written approval. If a replacement is unavoidable (resignation, illness), the Consultant must notify GWP in writing within 5 working days and propose a replacement of equal or higher qualification for GWP's approval before the replacement starts work. Replacing key personnel without GWP's approval is a material breach of contract.

GWP may require the removal of any Consultant personnel whose performance or conduct is unsatisfactory. The Consultant must comply within 5 working days and propose a suitable replacement.

5.3 Compliance with Laws & Regulations

The Consultant must comply with all applicable Georgian laws, regulations, and technical codes. The Consultant must obtain all permits needed for field work (traffic management, access to land) and bear all associated costs, which are included in the milestone fixed prices. All taxes and duties are the Consultant's responsibility.

5.4 Sufficiency of Prices

By submitting a tender, the Consultant confirms that the fixed prices cover everything needed to complete the scope, including all subcontract costs, travel, software, and contingencies. No extra payment will be made beyond the accepted milestone prices, except for formally agreed Variations and permit fee reimbursements.

5.5 Client Data

GWP will provide the following at the start of the contract:

- GWP GIS base of the existing water supply and wastewater network
- Available hydraulic data (operating pressures, flow measurements)
- Geotechnical investigation data (delivered during Milestone 3, from GWP's separate procurement)

NOTE: The GWP GIS base is for reference only and may not be fully accurate. The Consultant must field-verify all GIS data before using it in any design. GWP accepts no liability for design errors from unverified use of GIS data.

SECTION 6 — QUALITY ASSURANCE

6.1 Internal Review

All drawings, calculations, and reports must be internally checked and approved by a senior engineer before submission to GWP. Evidence of internal review must appear on all documents (checker's name, signature, and date).

6.2 Kick-Off Meeting

Within 10 calendar days of the Contract signature, the Consultant shall organize a kick-off meeting with GWP to confirm: scope; project area; programme; communication protocols; key personnel; and any open questions.

6.3 Document Submission

All documents shall be submitted in PDF and in original software format (DWG, Word, Excel, calculation model files, etc.). All deliverables shall be in Georgian and English. Hard copies shall be provided in quantities required by the expert review body and regulatory authorities.

6.4 GWP Review

GWP has 14 calendar days to review each milestone submission and respond in writing. If revisions are needed, the Consultant has 10 calendar days to resubmit. Milestone acceptance is only by GWP's written notification.

SECTION 7 — PAYMENT CONDITIONS

7.1 Milestone Payments

Payment is made only after GWP formally accepts a milestone in writing and receives a valid VAT invoice from the Consultant. Payment is due within 30 calendar days of acceptance and invoice receipt. All payments are in Georgian Lari (GEL) by bank transfer.

7.2 Advance Payment

GWP may, at its option, make an advance payment of between 10% and 20% of the total contract value to the Consultant at the start of the contract. The advance payment percentage, if any, shall be agreed and stated in the contract.

The advance payment shall be recovered by deducting an equal percentage from each milestone payment until the full advance has been repaid. For example, if a 15% advance is made, each milestone payment will be reduced by 15% until the advance is fully recovered.

7.3 Retention

GWP retains 5% from each milestone payment as retention money. Retention is released as follows:

- Half of the total retention is released within 60 calendar days of Milestone 4 final acceptance.
- The remaining half is released upon practical completion of the construction works built using this design, or 24 months after Milestone 4 final acceptance, whichever comes first.

7.4 Variations

GWP may instruct changes to the scope by written Variation Order. No varied work shall proceed without a written Variation Order. The Variation value shall be agreed in writing before work starts.

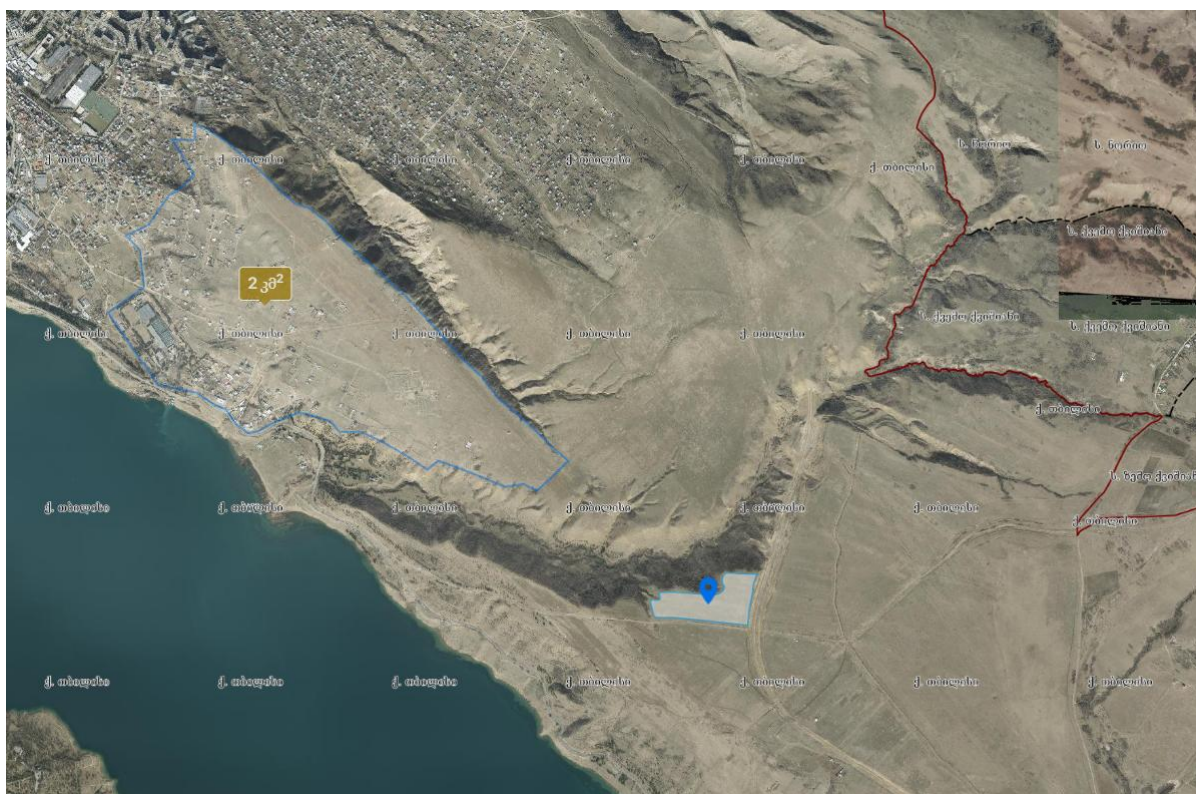
7.5 Withholding Payment

GWP may withhold payment if submitted deliverables are incomplete, disputed, or non-conforming. GWP will explain the reason for withholding in writing within the 30-day payment period.

7.6 Final Account

Within 7 days of GWP's request after all obligations are complete, the Consultant shall submit a final account statement accompanied by a written confirmation that the total represents full and final settlement of all amounts due under this contract.

APPENDIX A — PROJECT AREA MAP



APPENDIX B — KEY PERSONNEL MINIMUM REQUIREMENTS

Signed CVs for all personnel below must be submitted with the tender offer. Replacement without GWP's prior written approval is a material breach of contract.

Position	Min. Experience	Key Requirements
Project Manager	10 years	Senior PM experience in water/wastewater infrastructure projects
Lead Water Supply Engineer	8 years	Water distribution & transmission design; knowledge of EN 805 and SNIP 2.04.02-84; hydraulic calculation software
Lead Sewerage Engineer	8 years	Gravity sewer and force main design; hydraulic calculation software; knowledge of EN 752 and SNIP 2.04.03-85
Electrical / I&C Engineer	5 years	Pump station electrical and control design; P&ID preparation
Structural Engineer	7 years	Reinforced concrete design of reservoirs and pump stations; structural calculation software

APPENDIX C — DRAWING & DOCUMENTATION STANDARDS

- Coordinate system: UTM (WGS-84), Geo-Cors reference network

- Pipeline plan scale: 1:500 minimum; structures: 1:100; details: 1:50 or 1:20
- Pipeline profile: horizontal 1:500, vertical 1:100
- Calculation software: appropriate hydraulic, structural, or hydraulic transient analysis software (specific software not mandated; model files and Excel summaries must be submitted)
- Drawing format: DWG (latest AutoCAD-compatible version) and PDF
- File naming: [ProjectCode]-[Discipline]-[DrawingNo]-Rev[XX].dwg
- Discipline codes: WS (Water Supply), SW (Sewerage), ST (Structural), EL (Electrical & I&C), EN (Environmental)
- Title block (mandatory on every drawing): project name; Client; design organization; drawing number; scale; north arrow; designer name and signature; checker name and signature; revision table
- Drawing register: maintained throughout the project, showing drawing number, title, revision, date, and approval status
- Reports: Word or PDF; calculations: Excel or PDF with model files
- Language: Georgian (primary); English (full translation on all deliverable reports and drawings)

APPENDIX D — GWP INTERNAL TECHNICAL STANDARDS

[To be attached by GWP]

Covers: approved pipe materials and pressure classes. Appendix D takes precedence over all other referenced standards except Georgian law.