**Annex 2\_Tenders Tasks, Timeline and Deliverables: Wastewater Management System in Ugljevik until 2050**

**General Project and the First Phase of Technical - Investment Documentation**

1. **DESCRIPTION OF THE CURRENT SITUATION**

In the municipality of Ugljevik, the infrastructure for wastewater collection and treatment is inadequate. The existing sewage infrastructure is limited to the urban center, covering approximately 26% of the population. The infrastructure is in satisfactory condition, with a total network length of 20 kilometers, serving 1,553 households and 261 legal entities. All wastewater is discharged untreated at a single outlet into the Janja River.The management and maintenance of the sewage system fall under the responsibility of the utility company AD „Kompred“ Ugljevik.

It is estimated that 585 households of Ugljevik municipality are not connected to the sewage network. The low percentage of population coverage by the sewage system indicates a high prevalence of septic tanks, which contribute significantly to diffuse pollution of water and soil. Rural settlements do not have a formal sewage system; wastewater is disposed of in septic tanks, or untreated wastewater is frequently discharged directly into watercourses. Septic tanks in rural settlements may be of poor quality, leading to environmental concerns.

The Municipality has the following documentation available:

1. Decision on the adoption of the subdivision plan of the new settlement in the area between the main road and the river Janja for plot 320 KO Ugljevik, No. 01-364-23/12 dated October 4, 2012 („Official Bulletin of the Municipality of Ugljevik“, No. 2/12),
2. Urban planning and technical conditions with the subdivision plan for the plot marked as lot No. 320 KO Ugljevik, No. UTU-14/11 dated February 17, 2011,
3. Street fecal collector with pumping station from Vojvoda Kerović Street to Kapetana Leka Street - Main project No. E:4-08/2004 from August 2004, carried out by „OLIGO KOMMERC“ Ltd. Suvo Polje-Bijeljina,
4. Purifier for the use of water from households in the Ugljevik settlement - Main project No. E:3-07/2004 from July 2004, carried out by „OLIGO KOMMERC“ Ltd. Suvo Polje-Bijeljina.

The Municipality does not have the necessary geological documentation. .

The construction of a wastewater treatment system is one of the strategic projects of the Municipality of Ugljevik as “the need for such a system has arisen in the terms of sustainable development, environmental protection and as a result of the economic growth and social living conditions within the municipality of Ugljevik.”

According to the Municipality of Ugljevik's Sustainable Transition Plan, it is projected that by 2035, up to 40% of the population will be covered by a sewage network with wastewater treatment. Further expansion of the network is planned, with the aim of achieving up to 95% coverage by 2050. To achieve that municipal coverage should include both well-designed and functional onsite systems (prefabricated small treatment plants or similar) and sewage network with treatment.

1. **PROJECT ASSIGNMENT DESCRIPTION**

The implementation of the activity **Wastewater management system in Ugljevik until 2050** includes the following key activities:

1. **General project** (containing Preliminary design and Feasibility study, and phased implementation plan)
2. **Investment and technical documentation –** Preliminary design for the first phase of the expansion of the public sewage system

**2.1 GENERAL PROJECT**

As stated in the Rulebook on the Content and Control of Technical Documentation („Official Gazette of the Republic of Srpska”, No. 101/13), Article 19, the General project is prepared for the construction of complex facilities and line infrastructure facilities, in accordance with valid planning documentation and project task. In Article 20 of the same Rulebook, it is stated that the General project is prepared in the form of an analysis of several solution variants, their multi-criteria evaluation and the selection of a conceptual design with graphic and textual data on fitting into the planned solutions provided for in valid spatial planning documents. In addition to environmental impact assessment the section should also include potential environmental benefits from circularity point of view - e.g. from recovery of nutrients, water, energy for a given technological option.

The documentation must include detailed information on:

1. microlocation,
2. general disposition of facilities,
3. technical-technological concept,
4. the method of providing infrastructure,
5. possible variants of spatial and technical solutions from the point of view of fitting into the space,
6. natural conditions,
7. environmental impact assessment,
8. engineering-geological and geotechnical characteristics of the terrain from the aspect of determining the general concept of justification for the construction of the object,
9. investigative works for the development of a conceptual project, the protection of natural and cultural-historical assets, the functionality and rationality of solutions,
10. analysis of technical and technological feasibility and justification of construction, and
11. analysis of socio-economic feasibility.

The general project includes:

1. Conceptual design,
2. Preliminary Feasibility study,
3. Feasibility study,
4. Preliminary Environmental Impact Assessment, and
5. Economic Viability Study for the construction of the facility.

**The Conceptual Design** contains the development of a conceptual project that includes a conceptual solution for the wastewater collection and treatment system for the entire municipality of Ugljevik, taking into account the current situation, future needs, principles of environmental protection and synergies within the development pathways defined by the Sustainable Transition Plan until 2050.

The expected results of creating project documentation are:

* Guideline on the optimal solution for the long-term, phased construction of infrastructure for the collection and treatment of wastewater until 2050,
* Environmentally acceptable municipal wastewater disposal (and potentially reuse), both from areas connected to the sewage system and from areas using on-site systems, i.e. compliance with environmental protection goals and in accordance with the development pathways defined by the Sustainable Transition Plan until 2050,
* Preservation (both quantitative and qualitative) of groundwater resources and the environment,
* Improvement of living conditions and economic development.

Within the planned scope of the municipality, it is necessary to design sewage network for the following types of wastewater:

* Wastewater from residential, institutional, commercial and industrial sources (if connected to the sewerage network), with an appropriate sewage network and wastewater treatment plant,
* Stormwater (precipitation or atmospheric) that occurs during precipitation from roads and drainage areas (together with oil and grease separators).

**The Conceptual Design primarily needs to consider:**

* The current state (number of residents, individual residential and commercial buildings),
* The planned number of residents and residential buildings for the development of the municipality for a period of 20 years,
* Sewage networks with the possibility of connecting all existing, newly designed residential, business and other buildings, as well as areas that currently use septic tanks if feasible,
* The solution of surface water from the existing slopes, roads and buildings,
* The number of equivalent residents to determine the size of the treatment plant,
* Determining the most suitable location and/or locations for the establishment of a wastewater treatment plant for the municipality with a defined scope,
* Considering the expected further urbanization of the municipality, the conceptual solution should address and foresee the possibility of upgrading the sewage network with clearly defined locations for sewer manholes,
* Consider the possible options for resource recovery (of water, energy, organic matter, nutrients) from the wastewater treatment and the possible pathways for the reuse of these resources),
* If possible, provide a minimum of two solutions (centralized and decentralized systems of various scales) that are reflected in solving drainage and wastewater treatment. If it is established that it is not possible to build one waste water treatment plant for the entire area, the conceptual solution should consider the possibility of building more treatment plants for smaller areas.

**Preliminary Feasibility Study**: The feasibility study includes detailed analysis of technical, economic and environmental aspects of proposed solutions, including analysis of costs, benefits, potential for resource recovery (recovery of resources such as nutrients, organic matter, water can be recovered and reused depending on option)”), risks and long-term sustainability. The study will analyze the needs and possibilities of collecting wastewater from the population, as well as pollutants from the social (institutions, schools, etc.), commercial and industrial sectors, and define which areas of the municipality will be improved in phases with separate sewers until 2050. In addition, when it comes to wastewater treatment, this study will cover at a conceptual level the application of decentralized wastewater treatment plants. The preparation of the Feasibility Study begins after the finalization of the Conceptual Design and the approval of the same by the Municipality of Ugljevik. As part of the Preliminary Feasibility study, **a Preliminary Environmental Impact Assessment is also carried out.**

**Feasibility Study**: This study is being prepared for the selected option from the Preliminary Feasibility study, which includes a cost-benefit analysis, elaborates economic justifications and proposes a phased approach.

The outline content, which will be adjusted depending on the available documentation and in agreement with the representatives of the Municipality of Ugljevik, is given below

1. **GENERAL DOCUMENTATION** (basic information about the project, company registration, relevant authorization, the decision on the appointment of designers, and project terms of reference)
2. **INTRODUCTION**
3. Basic information about the project. Background of the project - Overview of the project task, and expected project goals. All projections should include a time frame up to 2050
4. Approach and Methodology of the Study
5. Legal framework
   * + Legal framework the municipality of Ugljevik and the Republic of Srpska
     + Compliance with relevant EU directives
6. Strategic - planning institutional framework (strategic framework, planning documentation, competent institutions and end users)
7. **CONCEPTUAL SOLUTION FOR WASTEWATER COLLECTION AND TREATMENT UNTIL 2050**
8. **General data** 
   * + Project area (location)
     + Description of the physical characteristics of the project (relief, geological characteristics and soil, hydrographic characteristics of the area, climatic characteristics of the area)
     + Population and projection unitl 2050
     + Service coverage and projections (water supply coverage, water consumption, sewer connections, description of the existing sewer network, type, age, etc.)
     + Existing construction of sewerage (length, type of network, areas without sewerage)
9. **Technical and technological solutions of wastewater management variants**

* Analysis of wastewater collection and treatment options. The analysis should include centralized and decentralized wastewater collection and treatment options at the Conceptual design level, along with drawings of the situational presentation and technological solution of the treatment options.

**IV PRELIMINARY FEASIBILITY STUDY OF WASTEWATER COLLECTION AND TREATMENT UNTIL 2050**

* 1. Preliminary capital and operating costs, and cost comparison (for each option)
  2. Preliminary Environmental Impact Assessment (for each option)
  3. Proposal of the best solution

**V FEASIBILITY STUDY OF WASTEWATER COLLECTION AND TREATMENT UNTIL 2050**

1. Economic analysis (cash flow)
2. Risk analysis
   1. Sensitivity analysis
   2. Elasticity analysis
   3. Identification of „switching values“
   4. Scenario analysis
   5. Qualitative risk analysis
   6. Impact of climate change on planned infrastructure
3. Overview of possible financial arrangements
4. Benefits
   1. Social justification
   2. Environmental justification
   3. Economic justification
5. A proposal for a phased approach
6. Based on the results of the prepared and approved Feasibility study, it is necessary to provide a dynamic plan for the implementation of the complete project through the stages of design, construction and investment.

## **2.2 PRELIMINARY DESIGN OF THE FIRST PHASE**

The phases of project implementation will be defined in the Feasibility Study and the Phased Implementation Plan, which will also outline the scope of the first phase, requiring the development of the

Preliminary design.

**Legal framework**

The selected Contractor should prepare project documentation in accordance with the legal regulations of the Republic of Srpska, specifically:

1. According to the Directive (91/271/EEC) on the treatment of municipal wastewater, systems for the collection and transport of wastewater and other water are defined, and depending on the size of the agglomeration and the type of recipient (sensitivity of the area), the required degree and parameters of treatment for urban wastewater are specified. Any recast or amendment of this directive have to be taken in consideration, in line with 2050 perspective of the referenced project. In November 2024, the Council of the EU gave the final green light for a revised EU directive on urban wastewater treatment. The revised directive extends the scope to smaller agglomerations, covers more pollutants, including micropollutants, and contributes to energy neutrality (Official site of European Councile, Press releases, November 5, 2024).
2. As part of the regulations of the Republic of Srpska: Law on spatial planning and construction („Official Gazette of the Republic of Srpska“, No. 40/13, 106/15, 3/16, 84/19), Law on environmental protection („Official Gazette of the Republic of Srpska“, No. 71/12, 79/15, 70/20), Law on nature protection („Official Gazette of the Republic of Srpska“, No. 20/14), Law on waste management („Official Gazette of the Republic of Srpska“, No. 111/13, 106/15, 16/18, 70/20, 63/21), Water Law („Official Gazette of the Republic of Srpska“, No. 50/06, 92/09, 121/12, 74/17), Regulation on classification of water and categorization of watercourses („Official Gazette of the Republic of Srpska“, No. 42/01), Rulebook on conditions for discharge of wastewater into surface waters („Official Gazette of the Republic of Srpska“, No. 44/01), Rulebook on conditions for discharge of wastewater into public sewers („Official Gazette of the Republic of Srpska“, No. 44/01), Rulebook on methods of determining the degree of pollution of waste water as a basis for determining the water fee („Official Gazette of the Republic of Srpska“, No. 79/11, 25/12 and 36/12), Law on air protection („Official Gazette of the Republic of Srpska“, No. 124/11, 46/17), Law on communal activities („Official Gazette of the Republic of Srpska“, No. 124/11, 100/17), Law on expropriation („Official Gazette of the Republic of Srpska“, No. 112/06, 37/07, 66/08, 110/08) .

**Substrates**

**Geodetic substrates**

For the preparation of the investment-technical documentation for the first phase, the following geodetic bases must be provided:

* 1:25000 scale maps,
* Plans scale 1:2500.

Necessary geodetic works include the following:

* Development and connection of polygon lines in the state coordinate system,
* Stabilization of a sufficient number of polygonal points,
* Adjustment of the developed polygonal network,
* Surveying the current geodetic situation of the separate sewer sections at a scale of 1:1,000,
* Developing the polygonal network using precise geodetic instruments - total station,
* If there are areas for surveying the geodetic situation of separate sewer sections located in forests, this should be done using precise total stations.

**Geological substrates**

For the specified area, provide and execute:

* Basic geological map of the considered area,
* Detailed reconnaissance of the terrain with a focus on ground stability,
* Collection, processing, and critical evaluation of the usability of previously conducted research results,
* If necessary, conduct additional geological investigations (excavations and boreholes),
* Prepare reports on engineering geological and geotechnical characteristics of the area under consideration.

The preliminary design primarily needs to consider the followings:

* The existing state (number of residents, individual residential and commercial buildings),
* The planned number of residents and residential buildings for the municipality's development over a 20-year period,
* Sewer networks with the possibility of connecting all existing, newly designed residential, commercial, and other facilities,
* Solutions for stormwater drainage from existing slopes, roads, and buildings,

The Preliminary design will carry all necessary calculations (for the existing and future planned number of residents, facilities and other economic entities) of the separate sewerage network, the elevation of large waters in the area of possible sewage lines and the planned purifier(s).

The Preliminary design should include design drafts, technical specifications and a cost estimate for the first phase of the public sewer expansion, which will be ready for implementation. This should be prepared in accordance with the Rulebook on the content and control of technical documentation („Official Gazette of the Republic of Srpska“, No. 101/13).

The following is the preliminary content outline for the **Preliminary design of the first phase**:

1. **GENERAL DOCUMENTATION** (basic information about the project, company registration, relevant authorization, decision on the appointment of designers, certificates and project terms of reference)
2. **TEXTUAL PART** 
   1. **Technical report**
   2. Introduction
   3. Description of the current state
   4. Available basis for designing
   5. Description of the technical solution
   6. Hydraulic calculation and dimensioning of pipelines, pumping stations and other buildings
   7. Selection of pipe material with instructions for installation
   8. Description of the trench, method of laying and burying the pipeline
   9. Testing and commissioning
   10. **Technical conditions for the performance of works**
   11. **Estimates and estimate of works** (accurate and complete with proof of measurements of all positions, done in the Microsoft Office Excel program similar software that is accessible/used by the key stakeholder delegates from Municipality)
   12. **Table attachments**
   13. Stakeout scheme
   14. Specification of earthworks
   15. Pipe material specification
   16. Specification of manholes (manholes) and drains
   17. Connection specification
   18. **Graphic part**

5.1 Up-to-date geodetic situation

5.2 Overview situation MJ 1:5000

5.3 The projected situation of fecal and precipitation collectors with the drawn routes of MJ. 1:1000

5.4 Longitudinal profiles of fecal and precipitation collectors MJ. 1:100/1000

5.5 Details

* Detail of trench MJ. 1:25
* Detail of the trench in the planned road MJ.1:25
* Detail of the typical solution of connections M 1:20
* Detail of MJ audit channels. 1:25
* Detail of the opening of the trench, the pedestrian crossing over the trench and the protective fence along the MJ trench. 1:25
* Detail of outlet to the river
* Detail of pipeline intersection with other installations

1. **GEODETIC ELABORATE** (Technical report on geodetic works on the sewer route, list of coordinates of detailed and polygonal points, staking scheme, geodetic data of inspection manholes, devices, etc.) The exact data will be clarified during the conceptual design phase. However, to ensure equal conditions for all offerors, the geodetic surveys should account for a length of 20-25 km, with 3-5 boreholes and 3-8 excavations.
2. **EXPECTED RESULTS AND TIMELINES**

The expected outcomes of developing the conceptual design, feasibility study, and the first phase of technical-investment documentation are multidimensional. They include obligations as follows:

**Obligations of the designer:**

* **Consultation and Coordination**: When executing projects, it is mandatory to consult and agree with the technical service of the municipality.
* **General project (Preliminary design with feasibility study)** which includes long-term sustainable sewage infrastructure and wastewater treatment until 2050, and confirms the technical, economic and environmental feasibility of the proposed solutions,
* **Phased implementation plan** which clearly defines the priorities and time frames for the implementation of the project,
* **Investment and technical documentation** - Preliminary design for the first phase of public sewrage network expansion, ready for the start of investment activities and execution of works.

**Obligations of the municipality Ugljevik** :

* Preparation of minutes on the acceptability of the Preliminary design and the Feasibility study,
* Preparation of minutes on the acceptability of the General project,
* Obtaining urban planning approval according to the agreed Preliminary design.

1. **DEADLINES AND DELIVERABLES**

The selected Contractor will be required to provide services according to the deadlines outlined below:

|  |  |
| --- | --- |
| **Tasks** | **Due Date** |
| **Task 1:**  The first draft of the Conceptual design and the Feasibility Study, submit to SEI and the representatives of the Municipality of Breza for review and comments | 3 months from the date of signing the Agreement |
| **Task 2:**  Submit the final draft of the Conceptual Design and Feasibility Study to SEI and the representatives of the Municipality of Breza for review and comments. | 2 months from the day of approval of the Conceptual Design |
| **Task 3:**  Prepared investment and technical documentation (Preliminary design) | 2 months from the date of Study approval |
| **Task 4**:  Report to SEI on the work performed | 1 month from the date of approval of the Feasibility Study and definition of the first phase |

The beneficiaries are the Municipality of Ugljevik and AD „Kompred“

The selected Contractor will be provided with the contact details of the persons in front of the Municipality of Ugljevik. The bearer of realization will provide support to the selected Contractor in field data collection, clarification of documentation, and related activities.

The selected Contractor is required to consider comments from representatives of the Municipality of Ugljevik, SEI and other relevant parties, and to align their work with the provided suggestions.

The expected contract duration is eight (8) months.