

**TERMS OF REFERENCE (TOR) FOR CONSULTANCY SERVICES FOR
DEVELOPMENT OF TECHNICAL DOCUMENTATION FOR THE PROTECTION
OF SJENICA AGAINST HIGH WATERS OF THE GRABOVICA RIVER AND ITS
TRIBUTARIES**

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List of Abbreviations

| | |
|-------|--|
| EHS | Environmental, Health and Safety |
| EHWS | Early Hydro meteorological Warning System |
| EIA | Environmental Impact Assessment |
| ESA | Environmental and Social Assessment (as per Serbian regulations) |
| ESCP | Environmental and Social Commitment Plan |
| ESF | Environmental and Social Framework |
| ESIA | Environmental and Social Impact Assessment |
| ESMF | Environmental and Social Management Framework |
| ESMP | Environmental and Social Management Plan |
| ESS | Environmental and Social Standards |
| GIIP | Good International Industry Practices |
| GIS | Geographical Information System |
| GNSS | Geodetic Methods and the method of integrated system |
| GPS | Global Positioning System |
| GRM | Grievance Redress Mechanism |
| GOS | Government of Serbia |
| MAFWM | Ministry of Agriculture, Forestry and Water Management |
| OHS | Occupational Health and Safety |
| OT | Operational Traverse |
| PE | Pipeline |
| PIU | Project Implementation Unit |
| RAP | Resettlement Action Plan |
| RNU | Early Warning System |
| SEP | Stakeholder Engagement Plan |
| SR | Scoping Report |
| ToR | Terms of Reference |
| WB | World Bank |

1. BACKGROUND OF THE PROJECT

1.1 Background of SDIP project

The Republic of Serbia has received financing from the World Bank towards the cost of the Sava and Drina Rivers Corridors Integrated Development Program, Phase I project, and intends to apply part of proceeds for financing Design Consultancy Services to support flood protection and environmental management of the Sava and the Drina River Corridors.

The Ministry of Agriculture, Forestry and Water Management – the Directorate for Water will be responsible for works on flood protection under two components of the Program:

Component 1: Integrated Management and Development of the Sava River Corridor – this component will finance investments in renovations and upgrading of flood protection infrastructure to address the increasing risk of flooding due to climate change. These activities will reduce the risks and impacts of floods, thereby increasing the resilience to climate change – related threats.

Component 2: Integrated Management and Development of the Drina River Corridor – this component will support multipurpose investments along the Drina River to reduce the risk of a potential impact of floods. This component will facilitate the implementation actions, management measures, and investments identified by the Drina Strategic Action Plan prepared under Western Balkans GEF-SCCF Drina River basin Management Project and investments identified through the Integrated Water and Hydropower Development Project. The above measures will contribute to increased resilience to floods and droughts.

1.2 Background of Grabovica river project

The Grabovica River is a left tributary of the Vapa River. It is characterized by an uneven flow drop that varies from 3% in the lower part of the flow to 3% in the upper part. The basin is characterized by a branched hydrographic network and its area is about 62 km². Part of its course, the Grabovica River flows through the city zone of Sjenica in a length of 2 km.

The Grabovica River is characterized by torrential nature and floods that occur almost every year. The action of torrential waters is understandable, given that it is an unorganized basin, with a small percentage of forest cover (0.6% of the total area of the basin), meadows (49.6% of the total area of the basin), barrens (49.8% of the total area of the basin), with a multitude of small rivers, ravines, variable slopes (from mountainous terrain to lowlands) of river courses and a very harsh climate.

On the natural river course of the Grabovica River through Sjenica, frequent floods endanger residential buildings and road infrastructure. The riverbank of the regulated section is also threatened by high waters, due to the transportation of a vast amount of eroded material, which is deposited in the lower section of the river basin, the river's natural course becomes clogged, leading to water overflow and flooding in the populated valleys), the flow profile of the regulated section is reduced, as a result of which large water flows out of the riverbed and floods the littoral zone.

By the decision on determining the List of "I" class waters (Official Gazette of RS no. 83/2010 of November 9, 2010) the Grabovica River is classified as class "I" watercourses.

According to the Flood Defense Operational Plan, this section belongs to the water unit "Lim - Prijepolje", sector S.7., and section S.7.6.

The Grabovica River is a left tributary of the Vapa River, which flows into it near the village of Donja Vapa at 993 m above sea level. Grabovica is a mountain river. The basin is characterized by a branched hydrographic network and its area is about 62 km².

The regulated section of the Grabovica River extends for approximately 900 m through Sjenica and its urban part. Upstream of the city, river regulation designs have been developed for an additional section of about 500 m and works have been finalized. The remaining stretches of the Grabovica River, both upstream and downstream of Sjenica, remain unregulated and require comprehensive regulation.

In the section in question, the Tuhovac Stream (the right tributary, which is dammed at a length of about 80 m) and the Medjurecki Stream (the left tributary, dammed at a length of about 70 m) flow into the river.

In 2006, technical documentation was prepared, and then works were carried out on the construction of a structural barrier, about 5 km upstream from Sjenica. Its primary function is to retain coarse sediment and reduce the transport of debris and erosion material toward the settlement, thereby mitigating the risk of clogging and reducing the intensity of flood waves downstream. The barrier is located entirely within the Grabovica catchment and does not have a direct hydraulic connection with the Vapa River. Instead, it functions as a protective structure along the Grabovica itself, prior to its confluence with the Vapa. While it has proven effective in decreasing sediment load and providing partial flood protection, the retention capacity of this single structure is insufficient to manage the increasingly frequent extreme flood events observed in recent years. For this reason, this ToR foresees complementary protective measures — including additional torrent-control barriers, retention structures, and regulation) in order to establish a comprehensive and continuous system of flood and erosion protection for the urban zone of Sjenica of the Grabovica river and its tributaries (Tuhovac and Medjurecki streams). The barrier is made of concrete with a height of about 4 m and a width of about 57 m. It is designed to hold 25,000 m³ of sediment.

The choice of location, type and capacity of the facility is the responsibility of the Consultant (after visiting the site) and it will be dimensioned after the hydrological and hydraulic calculations have been performed.

It is necessary to dimension the facilities in such a way as to enable the smooth flow of large water waves through the existing regulated bed of the Grabovica River and its tributaries (Tuhovac Stream and Medjurecki Stream).

The mentioned partition has proved being worthwhile in order to protect the inhabited place from torrential floods. After its construction and its role in the transformation of the flood wave, once regular, often several times a year, floods are now limited to extreme cases only.



Figure 1. Grabovica river basin

In the continued flood battling efforts of the Republic of Serbia to protect lives, health and assets, the Government has requested, and received financial support through an Investment Project Financing with the World Bank (Hereinafter referred to as: WB) to implement the Sava Drina Integrated Development Program (SDIP).

Operations and activities for which the World Bank's Investment Project Financing (IPF) is sought after October 1, 2018, fall under the application of the Environmental and Social Framework (ESF). The ESF comprises, inter alia, the 10 Environmental and Social Standards, which set out mandatory requirements for the Borrower and the Project. Subsequently all activities to be rendered under this ToR will be prepared in a manner materially consistent with ESF and its objectives. The relevance of each standard was determined during the Screening phase and articulated through the Screening report which for this Sub-Project was completed, reviewed by the WB and risk rating concurred on April 5, 2024. The screening has determined relevance of ESS1 Assessment and Management of Environmental and Social Risks and Impacts, ESS2 Labor and Working Conditions, ESS4: Community Health and Safety, ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement * on precautionary basis) , ESS8: Cultural Heritage and ESS10: Stakeholder Engagement and Information Disclosure.

In December 2023 in line with the SDIP Serbian Environmental and Social Management Framework (ESMF) 2019, prepared for the SDIP Project, an initial environmental and social screening has been undertaken internally by the PIUs Environmental and Social Specialists. The screening assessed the sub-projects eligibility, potential environmental and social risks and impacts, and the need for further assessment, in accordance with the World Bank Environmental and Social Framework (ESF, and national legislation. The initial screening covered the following:

- Intended river training works along approximately 2,900 m of the Grabovica River, upstream from the existing regulated section;
- River training works along the Tuhovac Stream (right tributary), over a length of about 300 m upstream from its confluence with the Grabovica River;
- River training works along the Medjurecki Stream (left tributary), over a length of about 300 m upstream from its confluence with the Grabovica River; and

Construction of **flood-protection structures**, including barriers, retention areas, and relief channels within the Grabovica River basin and its tributaries (Tuhovac and Medjurecki Streams).

The Subprojects activities were classified as Moderate Risk from both the Environmental and Social risks. To adequately manage these risks and impacts in parallel to the development of the design -technical documentation the MAFWM through its PIU and the Environmental and Social Specialists will develop the following Environmental and Social risk management instruments: an Environmental and Social Management Plan (ESMP) in parallel with development of the technical design and at the level of the Design for Construction Permit, Action Plan for Implementation of the SEP, and a Resettlement Action Plan (if needed depending on the results of the Multi Criteria Analysis - MCA). The need for development of a RAP is highly likely and has been confirmed by the initial screening based on the walk-over survey during the screening phase (referred to as Phase I of the Screening). The RAP will be prepared by the PIU with the initial census of persons and assets undertaken during the Preliminary Design (when the footprint will be proposed) to be followed by consultations and final verification at the level of the Design for the Construction Permit. The design and activities in development of Environmental and Social Risk Instruments shall be intertwined and correlate in risk management efforts including the selection of the final footprint of the subproject. This will be achieved by a multi criteria analysis of alternatives (part of the design development process and the ESMP) and shall follow the mitigation hierarchy for all ES risks, including risks related to ESS5 on Land Acquisition, Restrictions on Land Use and Involuntary Resettlement.

Environmental and Social Framework (ESF) requirements shall be implemented in parallel with the engineering design process and shall be used to inform design decisions throughout the assignment. This includes early identification (screening) of environmental and social risks and constraints, application of the mitigation hierarchy in the assessment of alternatives, and alignment of design choices with the preparation of ESMP, RAP, SEP and other instruments, as deemed necessary.

2. OBJECTIVE OF THE ASSIGNMENT

The main goal of the technical documentation for the Grabovica River is the establishing of a complete system of protection against floods, erosion and torrents. As part of the technical solutions in question, it is necessary to form a continuous and uniform level of littoral zone protection, especially considering the level of protection that has already been established on the downstream, regulated section, which is located in the central part of the municipality of Sjenica.

The degree of protection shall be determined in accordance with the Water Management Master Plan of the Republic of Serbia and the "Strategy of Water Management in the Territory of the Republic of Serbia until 2034." (Official Gazette of the RS, no. 3/2017).

The design solution shall foresee the regulation of the Grabovica river ensuring the water and sediment flow and the stability of the river bed and banks. This implies the formation of regulatory lines, securing endangered banks and stabilizing the bottom of the river bed. Within the boundaries of the flood zones design, defined by the consultant and approved by the Employer, shall provide arrangement of floodplains and flood banks (i.e. "water land" as land owned by Serbian Water Authority), through leveling of the terrain and cleaning of sediment and excess vegetation. The design solution would need to consider also floodplains and their proprietary aspects, mainly focusing interventions on public land.

After receiving the Location conditions the Consultant shall prepare the Request for a Decision on the Need for an Environmental Impact Assessment Study and submit it to the relevant authority on behalf of the Investor.

The assignment shall be guided by a clear and explicitly defined flood and sediment management risk problem and corresponding design objectives. The Consultant shall ensure that the proposed technical solutions are demonstrably aligned with these objectives and effectively reduce flood risk and manage sediment dynamics in the urban area of Sjenica.

The design process shall be based on clearly defined assumptions regarding hydrology, hydraulics, system boundaries, and key uncertainties. These assumptions shall be validated by the Employer prior to further design development.

A structured stakeholder consultation process shall be conducted to inform the definition of design objectives, ensuring that social and environmental considerations are adequately reflected. Environmental and Social Framework (ESF) requirements shall be integrated into this process from the beginning and shall inform key design decisions.

3. LEGAL AND REGULATORY FRAMEWORK

3.1 Relevant National Legislation

The designs shall comply with the following National Legislation:

- Law on Planning and Construction ("Zakon o planiranju i izgradnji"; 'Official gazette Republic of Serbia', no. 72/2009, 81/2009 - ispr., 64/2010 - decision US, 24/2011, 121/2012, 42/2013 - decision US, 50/2013 - decision US, 98/2013 - decision US, 132/2014, 145/2014, 83/2018, 31/2019, 37/2019 – other law, 9/2020, 52/2021 i 62/2023
- Rules on the content, method and procedure of design and method of performing the control of technical documentation according to the class and purpose of the facilities (Official gazette Republic of Serbia, br. 96/2023)
- Law on Environmental Protection ("Official Gazette of the RS" No. 135/04, 36/09, 43/11, 14/16, 76/18, 95/18 and 94/24)

- Law on Environmental Impact Assessment (“Official Gazette of the RS” No. 94/24)
- Regulation on Determining the List of Projects for which the Impact Assessments is obligatory (List I) and List of Projects for which the Environmental Impact Assessment can be required (List II) (“Official Gazette of the RS” No. 114/08)
- Rulebook on contents of the request on the need for Environmental Impact Assessment and contents of the request for defining the scope and content of Environmental Impact Assessment Study (“Official Gazette of the RS” No. 69/05);
- Water Law (“Official Gazette of the RS” No. 30/10, 93/12, 101/16, 95/18 i 92/23)
- Law on Waste Management (“Official Gazette of the RS” No. 36/09, 88/10, 14/16, 95/2018 and 35/23)
- Rulebook on the waste categories, examination and classification (“Official Gazette of the RS” No. 56/10, 93/2019, 39/2021 and 65/2024)
- Regulation on disposal of waste on landfills (“Official Gazette of the RS” No. 92/10)
- Law on Occupational Safety and Health (“Official Gazette of the RS” No. 101/05, 91/15 i 113/17)

3.2 Applicable World Bank Environmental and Social Standards

The assignment shall be conducted in accordance with the following ESSs under the World Bank ESF:

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts
- ESS2: Labor and Working Conditions
- ESS3: Resource Efficiency and Pollution Prevention and Management
- ESS4: Community Health and Safety
- ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement (if relevant)
- ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- ESS8: Cultural Heritage
- ESS10: Stakeholder Engagement and Information Disclosure

3.3 Applicable Technical Norms and Standards

In order to ensure safety of structures, minimize risks during construction, ensure compliance with relevant regulations and building codes, the following standards shall be applied:

- Eurocodes (EN 1990-EN1999)
- ISO standards
- SRPS standards (Serbian standards)

3.4 Reference to Urban Planning Documents

- Adopted urban plans for the river Grabovica will guide the design process.

4. SCOPE OF SERVICES

The general Scope of works of the assignment are as following:

- Review of existing documentation;
- Data Collection and Surveys - Collection of existing geodetic, topographic, cadastral, and hydrological data (if available) and conduction of additional field geodetic and geological surveys;
- Technical studies including hydraulic, hydrological, and economic and financial, including modeling to support the studies and designs;
- Permitting Support - support in obtaining Location Conditions, Water Conditions, Construction Permit, or other relevant approvals (preparation of documentation required by permitting authorities)
- Stakeholder Coordination (coordination with the Employer, relevant institutions, utility companies, and other stakeholders - participation in meetings, workshops, and consultations as needed).
- Deliverables - Submission of all technical documentation in required format (print and digital); Preparation of progress reports, final reports, and other required documentation.
- To ensure sustainable management of the River Grabovica through effective river regulation measures that shall reduce flood risks, protect infrastructure and Sjenica town; and
- To provide environmental protection and improve ecological conditions.

The specific objectives are as following:

- To calculate the water level lines on the considered sector of the Grabovica River and its tributaries the Tuhovac Stream and the Medjurecki Stream in the entire range of calculation flows in the conditions before and after the construction of the required retention facilities (small, medium and large waters with a return period of 5, 10, 20, 50, 100 and 1000 years);
- Compare the calculation results with the calculation on regulated sections (calculations are to be made for a natural and regulated river bed, with the adoption of experimental parameters of the model (flow resistance) depending on the shape of the route, planned regulatory works and the method of stabilizing the river bed);
- At the Situation drawing the flood zones for the high-water levels are to be shown, and the low, medium and high-water level lines shall be indicated on the longitudinal and cross-section profiles (to obtain optimal width of the riverbed for high river levels);
- To harmonize the technical solution with the urban requirements (the route of the regulated riverbed, the riverbed stabilization solution and the facilities should be environmentally friendly, economical and suitable for maintenance);
- Envisage the supporting facilities for flood protection: ramps, service roads, etc. (if needed) , and any auxiliary infrastructure in line with the urban planning
- Ensure riverbank flood protection during dimensioning of the objects in relation to the relevant high-water level, with an additional protection of 0.5 m.
- Provide an integral protection proposal with a technical solution, considering all existing infrastructure. One type of the solutions to be assessed shall be the optimization and upgrade of existing water retention structures, including embankment retention dam located in the designated gorge-like part of the upper part of the basin, among others.. The Consultant shall also further develop the design of the Grabovica River upstream of the regulated river bed in a length of 2900 m and provide a solution for the development of the Tuhovac and Medjurecki streams through the populated part (or new alternative solution shall be proposed);

- To minimize the risk of flooding in surrounding residential, agricultural and industrial areas by implementing riverbed stabilization (Flood Risk Reduction);
- Riverbank Protection – to prevent further erosion of riverbanks and loss of land by constructing appropriate protective structures (e.g., gabions, retaining walls, revetments);
- Hydraulic Capacity Improvement - to increase the hydraulic capacity of the river to ensure safe passage of high-water flows;
- Infrastructure and Public Safety Enhancement - to protect critical infrastructure (e.g., roads, bridges, utilities) and ensure public safety in the areas adjacent to the river;
- Monitoring and Maintenance Plan Development - to establish a long-term monitoring and maintenance plan to ensure the sustainability and functionality of the river regulation measures;
- Community Awareness and Involvement - to engage local communities in the planning and implementation process, raising awareness about flood risks and environmental protection;
- Environmental and Social considerations – to ensure compliance with national legislation, relevant WB Environmental and Social Standards (ESS) and international best practices for environmental protection and risk management.

Before Conceptual design, the Consultant shall prepare the following design steps:

- **First, a baseline assessment and problem definition shall be carried out.** This step shall identify and describe the key drivers of flooding and sediment-related risks in the project area, including hydrological behavior, tributary contributions, sediment and debris dynamics, and hydraulic constraints/interactions within the urban system. The outcome shall be a clear and shared understanding of how and why flood and sediment impacts occur in Sjenica. A quantification of the flood impacts on people, jobs and area will need to be included.
- **Second, based on this assessment, the Consultant shall define the design objectives of the project.** These objectives shall be specific and measurable and shall include, where relevant, the intended level of flood protection, the spatial extent of protection, and considerations regarding residual risk¹. The objectives shall be informed by stakeholder engagement and aligned with Environmental and Social Framework requirements.
- **Third, the Consultant shall prepare the Basis of Design (BoD).** The BoD shall translate the agreed problem definition and objectives into a coherent set of design assumptions, principles, and choices. It shall demonstrate how the proposed design approach responds to the identified drivers of risk and meets the defined objectives, while clearly stating system boundaries, key assumptions, and relevant uncertainties. Meanwhile it shows how design assumptions align with key ESF requirements.

The outcomes of these steps shall be documented and agreed with the Employer prior to proceeding to the Conceptual Design phase

¹ In compliance with the provisions from the "Strategy of Water Management in the Territory of the Republic of Serbia until 2034." (Official Gazette of the RS, no. 3/2017)

5. TASKS

The project is divided into 6 Tasks:

Task 1: Investigation works

Geodetic survey

For the purposes of developing this project, the Consultant is obliged to carry out geodetic works/services, namely:

- Obtain data on facilities and installations along the route of the riverbed, data on the existing geodetic network and basic situational and cadastral plans;
- Record of transverse profiles at a distance of 25 m, if necessary at a shorter distance;
- Survey existing facilities located along the river bed (bearing in mind that the design is prepared in a manner materially consistent with the objectives of the World Bank's Environmental and Social Framework and the Environmental and Social Standards within, the surveying activities shall include surveying of all existing facilities – residential, business, auxiliary, fences, retaining walls, improvised facilities for flood protection and must be accompanied by a detailed register of facilities, cadastral plots and holders of rights to land and facilities with an indication of whether the facilities were built in accordance with or contrary to construction regulations, and whether they were recorded in the real estate cadaster, including area and purpose of each facility as well as the type of material from which the facilities were built);
- Detail surveying and mapping at the locations of intersections with local roads, bridges, sharp horizontal turns of the route, facilities built along the watercourse (for locations where the collision of the existing local infrastructure with the future facility of hydro technical regulation is determined, it is necessary to perform an analysis of possible alternative directions of movement of the population with consultations as with the local self-government as well as with the current users of the road and other infrastructure, which is predicted to be in a changed mode of use after the completion of the works. If it is proposed to reduce the number and removal of bridges, their removal by project, but it is necessary to foresee the construction of new bridge constructions and assess the sufficiency and adequacy of the locations of bridges/crossings provided by valid planning acts. These activities must be carried out in consultation with the local population and local self-government. When assessing the structural and hydraulic dimensioning of bridges, it is necessary to record and determine whether such bridges were built through private investments by individuals or legal entities. Such bridges, in accordance with the standards of the World Bank, in addition to the fact that after removal, they must receive their replacements, they are also subject to the compensation procedure.
- Map the profiles on a cadastral topographic substrate R= 1:1000.
- Elaboration of reports on completed geodetic works in printed and electronic form.

Geodetic works shall be carried out on the following sections:

- The existing regulated bed of the Grabovica River in the length of about 900 m;
- Unregulated riverbed, upstream of the existing regulation in a length of 2900 m;
- Tuhovac Stream from the confluence upstream in a length of about 300 m;
- Medjurecki Stream from the confluence upstream in a length of about 300 m;
- At the locations of the designed retention facilities on the surface required for making the necessary calculations;

A separate cadastral topographic plan must be prepared for each location.

Geotechnical survey

The Geotechnical survey shall comprise:

- Preparatory works:
 - Collection and analysis of existing documentation;
 - Development of a program of research works;

- Reconnaissance of the terrain and locating the planned research works.
- Projected research works – Along the route of the unregulated part of the Grabovica River, one investigation borehole with a depth of 5.0 m (7 exploratory wells) should be drilled every 450-500 m. Along the sections of the Tuhovac and Medjurecki streams that are intended for regulation, one investigation borehole shall be drilled, each with a depth of 5.0 m. Total length of the investigation boreholes shall be 45 m. Immediately after the completion of the drilling process, detailed engineering-geological and hydrogeological mapping of the core shall be carried out. 40 samples shall be taken from the core of the exploratory wells for laboratory geomechanical tests and the occurrence and level of underground water shall be registered.
- In the investigation boreholes, execution of at least one standard penetration test in the borehole, per program (total of 15 SPT tests), shall be provided;
- For the purposes of designing flood barriers (at this moment it is estimated that there may be two of them), it is necessary to perform 1 (one) static penetration test with a piezocone (CPTU standard ASTM D 3441) at each location of the planned facility in order to determine the resistant-deformable properties continuously by depth. At the location of the larger partition, conduct a seismic dilatometer test (SDMT) with the measurement of shear wave speed (Vs) and compression wave speed (Vp) to define the seismic characteristics of the soil;
- All investigations works must be geodetically positioned (recording of coordinates and elevation);
- Laboratory tests shall include identification and classification tests on 40 samples, deformability and strength tests on 9 samples. On the samples from the riverbed slopes (3), the quality of the material for the needs of installation in embankments shall be determined (basic properties and Proctor's test). Shear strength parameters and water permeability coefficient on Proctor-compacted samples shall be determined.

The method of displaying research results

- Present the results of the conducted investigations in the form of a Geological-geotechnical Elaborate with geostatic and filtration calculations and recommendations for design and implementation.
- Specification of investigation works with performance dynamics:
 - Preparatory works;
 - Reconnaissance of the terrain in a length of about 3.5 km;
 - Development of a program of investigation works;
 - Construction of investigation boreholes, 9 exploration wells with a total depth of 45 m;
 - Conducting standard penetration tests in boreholes (SPT), a total of 15 tests;
 - Carrying out a static penetration test (CPTu), a total of 2 tests;
 - Conducting tests with a seismic dilatometer (SDMT), a total of 1 test;
 - Sampling of soft muddy sediments (if necessary);
 - Geodetic recording of coordinates and elevation of investigation works;
 - Laboratory geomechanical tests, 40 classification and identification tests, 9+3 strength and deformability tests, 3 Proctor tests and 3 water permeability tests;
 - Preparation of geological-geotechnical study with geostatic and filtration calculations;
 - Investigation work and preparation of the Geological-geotechnical Elaborate should be carried out within 60 days.

List of annexes necessary in the geological-geotechnical Elaborate

- An overview map with the location of the examined section;
- Geodetic base maps;
- A detailed engineering-geological map with the location of research works;
- Geological profiles for filtration calculations and static stability calculations;
- Geotechnical terrain models with static and filtration calculations.

Hydro-geology survey

In the area of the part of the Grabovica river basin that is the subject of this project, a detailed hydrogeological mapping of the terrain with the recording of hydrogeological processes, phenomena and facilities shall be performed. For the purposes of observing the hydrogeological characteristics of the terrain in space and profile, use the data of previous surveys as well as the data of exploratory drilling and laboratory tests according to this project task. Based on the collected data, a hydrogeological map have to be created.

Hydrology survey

For the purposes of preparing a hydrological study, it is necessary to obtain all the available data necessary for making hydrological and hydraulic calculations. Costs of obtaining data from RHSS required for hydrological calculation and preparation of hydrological study are the responsibility of the Consultant.

Hydrological calculations will be performed for all significant profiles (flood barriers, Grabovica River, Tuhovac Stream and Medjurecki Stream).

Hydrology analysis

After obtaining all the necessary input data, it is necessary to create a hydrological study. To determine the level of flood protection and dimensioning of regulatory facilities, it is necessary to define the relevant waters of the Grabovica River and the tributaries of the Tuhovac Stream and the Medjurecki Stream in the range of small, medium and large waters with a return period of 5, 10, 20, 50, 100 and 1000 years. The hydrological calculation should also include the profiles of the proposed retention facilities.

Compare the obtained results with earlier calculations, on the basis of which part of the riverbed was arranged.

The Consultant's obligation is to check the possibility of conducting large water on the existing regulated section and determine the maximum capacity.

Cadastral base maps

The Contractor's obligation is to obtain an up-to-date cadastral base that will be used for the purposes of creating a cadastral-topographic plan.

The results of the investigation works shall be used not only for technical design purposes, but also to support the baseline assessment and problem definition, including the identification of key drivers of flood and sediment risks.

Task 2: Conceptual design (Idejno resenje - IDR)

For obtaining the Location conditions, the Conceptual design, prepared in accordance with the valid Law on Planning and Construction and the Rulebook on the content, method and procedure of preparation and the method of control of technical documentation according to the class and purpose of facilities, shall be prepared.

As part of the Conceptual Design, the Consultant will present the concept of the facilities, specifying all the data necessary to determine the location conditions, with special reference to the definition of land occupation in accordance with the cadastral base maps.

Before making the Conceptual Design, the Consultant will prepare a Hydrological study of the watercourse. According to Hydrology study, the Consultant shall prepare the alternative technical solutions, and in case of more than one variant, Consultant shall, as a conclusion, propose the best variant solution to be adopted. The variant solutions, along with the best one, shall be presented to the Employer for his approval, clearly stating performance in flood protection, advantages and disadvantages, estimated capital costs (on infrastructure investment, and land acquisition) and O&M costs. The best solution shall be further developed into Conceptual design.

The Conceptual Design shall respond to the agreed problem definition, design objectives, and Basis of Design. The Consultant shall demonstrate how the proposed technical solutions respond to the identified drivers of flood and sediment risk and meet the defined objectives.

As part of the Conceptual Design, the Consultant shall carry out a Risk, Uncertainty and Robustness Assessment. This assessment shall evaluate the sensitivity of the proposed solutions to key uncertainties, including contributions from tributaries, sediment and debris processes, hydraulic bottlenecks within the urban area, and potential impacts of climate change and land-use changes and policies. Given World Bank ESF requirements and the long service life of flood protection infrastructure, the consultant shall assess how projected climate trends might affect design flood magnitudes.

Where relevant, the Consultant shall propose design optimizations or complementary measures to ensure that the solution performs adequately under these conditions. The results of this assessment shall be documented and shall support the selection of the preferred design solution.

Reports to be delivered are given in the Clause 7.

The content of the Reports has to be in line with the "Rulebook on the content, method and procedure of creating and executing the control of technical documentation according to the class and purpose of the facilities ("official gazette of RS", no. 96/2023).

The Design should be made in the form of an electronic document, according to the Rulebook on the procedure for implementing the unified procedure by electronic means ("Official Gazette of the RS", no. 68/2019).

Task 3: Feasibility Study with Preliminary design (IP)

After receiving the Location conditions, the Preliminary Design with a Feasibility Study shall be prepared, including a preliminary economic and financial analysis.

Preliminary design with the Feasibility Study should contain all the elements prescribed by the Rulebook on the content, method and procedure of preparation and the method of performing technical control of technical documentation according to the class and purpose of the facility (Official Gazette of the RS, no. 96/2019). It should also contain investment value (land, construction, electrical works), estimate of expropriation costs. The Feasibility Study should contain all the elements prescribed by the Rulebook on the content and scope of previous works (Official Gazette of the RS, no. 68/2019).

The scope of the Elaborate on the geotechnical conditions of execution must be such that it provides accurate and clear elements for the design and execution of all facilities, in accordance with the valid regulations that apply in that area. In the Elaborate, all relevant results obtained, necessary for the preparation of further documentation, should be presented. The Elaborate should contain textual and numerical documentation and graphic annexes and should be signed and certified by an authorized person.

Reports to be delivered are given in the Clause 6.

Task 4: Expropriation design

If after the application of the mitigation hierarchy the footprint of the river training works and designed facilities still require acquisition of private land and assets, the Consultant shall develop an Expropriation design (Elaborate) under this assignment in line with the national legislation for area required for the future regulation of the Grabovica River, the Medjurecki Stream, the Tuhovac Stream and the dimensions of flood water retention facilities. Information from the Expropriation Design shall serve as a key input for the preparation of the Resettlement Action Plan (RAP) and will constitute the starting point for conducting the census of Project-Affected Persons (PAPs), in line with the requirements of ESS5. This census shall be combined with detailed site surveys to identify and record all affected persons, both registered and

unregistered, and to compile a full inventory of affected land, immovable assets, and sources of livelihood. The objective is to ensure that the RAP reflects accurate and complete data on all impacts and forms the basis for fair compensation and appropriate resettlement and livelihood restoration measures, in compliance with ESS5 and national legislation.”

The Expropriation Design shall clearly delineate the expropriation boundaries on appropriate maps and plans. It shall include a comprehensive inventory of all persons affected by land acquisition impacts, including both formally registered and unregistered individuals, consistent with the requirements of ESS5. This inventory shall be accompanied by a detailed record of all immovable assets—such as land and any attached structures or improvements—that are subject to expropriation or for which specific mitigation measures must be designed to protect the facilities during pre-construction, construction, and operation activities.

In addition, the Expropriation Design shall identify and document any public land currently occupied, specifying the nature of the occupation, the use of the land, and whether any immovable structures have been erected.

The RAP, if required, shall be developed, consulted upon, disclosed, and implemented prior to the signing of the contract for the river training works.

The expropriation boundary established around the regulated riverbed shall be delineated so as to include both the area occupied by the facility and the additional area necessary for all works related to its construction, in line with the chosen methodology for execution of the works.

As part of the Expropriation Design, the Consultant shall assess and quantify all costs related to land acquisition and compensation arising from the construction of the facility. This assessment shall include, but not be limited to, the costs of acquiring land and any assets attached to the land including public (if applicable), as well as administrative and procedural costs, such as fees for the expropriation commission.

To inform this cost assessment, the Consultant shall carry out a comprehensive survey of all physical structures and assets within the expropriation boundary. This survey shall include, but not be limited to: residential, commercial, and auxiliary buildings; fences; retaining walls; improvised flood protection structures; and any other relevant assets. The survey shall be accompanied by a detailed register containing the following information:

- Identification and description of all surveyed structures and assets;
- Cadastral plot references and identification of all holders of rights to land and assets;
- An indication of whether each asset or structure was constructed in compliance with or in breach of permitting requirements;
- Information on whether each structure is officially recorded in the real estate cadaster;
- The area and current use of each facility, asset, or structure;
- The type of construction material used for each structure.

The task consists of:

- The Grabovica river (including Tuhovac and Medjurecki stream) **Expropriation design** on a stretch 2900 m upstream from the existing regulation, the components of which are:
 - **Geodetic marking design** of cadastral plots for the preparation of the expropriation design;
 - **Urban project design** – Subdivision project for the expropriation of areas of public use;

- **Elaborate on the implementation of expropriation** (in digital form), in order to implement changes in the competent service for the real estate cadaster.

The **Expropriation design** contains the following documentation:

- General documentation
- Design task
- Technical part
 - Introduction
 - Basic data on the subject of expropriation
 - Defining the expropriation line
 - Geodetic and technical works in the expropriation procedure
 - The subject of the expropriation design
 - Data on available documentation
 - Determining the plots of land occupied by expropriation (taking into account that the project is implemented by applying the standards of the World Bank in the field of environmental protection and the social environment, the surveying should include the surveying of all facilities – residential, commercial, auxiliary, fences, retaining walls, improvised structures for flood protection and followed by a detailed register of facilities, cadastral plots and holders of rights to land and facilities with an indication of whether the facilities were built in accordance with or in violation of building regulations, and whether they were recorded in the real estate cadaster, including the area and purpose of each facility as well as the type the material from which it was built.
 - Determining the elements of marking the expropriation area
 - Legal regulations and technical regulations
 - Evaluation of purchase costs considering the methodology as per the disclosed SDIP Resettlement Policy Framework and ESS5.
- Numerical annexes
 - List of occupied plots
 - List of owners and users
 - List of coordinates of points of the line of permanent expropriation
- Graphic annexes
 - Line of expropriation on the cadastral substrate (R 1:1000) with drawn facilities recorded on the ground
 - Line of expropriation on the cadastral substrate with project (R 1:1000)
- Other annexes
 - Real estate sheets
 - Report on the land value
 - costing

The **Geodetic marking design** will "split" cadastral parcels whose parts of the parcels fall within the expropriation zone.

The Geodetic marking design defines geodetic works on marking the existing operational polygon or the creation of the necessary operational polygon, if it has not already been formed or the existing one cannot be used for the realization of the designed works.

Geodetic marking works include the marking and stabilization of designed pre-subdivision points for newly formed plots from the design. It is necessary to achieve such marking accuracy, that during the control of the marking of the subdivision points, any deviations are within the limit of permitted deviations.

In order to carry out geodetic works, it is necessary to report the works to the competent Real Estate Cadaster Service and download data from the cadastral office about the area, culture and class of the plots that are involved in the change. It is also necessary to download the coordinates of polygonal, linear and detailed points, sketches of the original survey and subsequent sketches of the maintenance of the survey, on the basis of which the geodetic marking of the cadastral plots will be carried out.

The Geodetic marking design includes:

- General part
- Text part
 - Design task
 - Basics for creating a design solution
 - Necessary geodetic works
 - Design Solution
- Downloaded data from the Real Estate Cadaster Service
- Graphic annexes

Urban project design – The subdivision project for the expropriation of public areas contains:

- Company registration
- The license of the responsible urban planner
- Text part
 - Legal and planning basis for the development of the subdivision design
 - Scope of the design
 - Explanations of solutions and conditions of construction
 - Existing condition
 - Subdivision
 - Construction conditions
 - Method of connection to the infrastructure network
 - Conditions and measures for the implementation of the subdivision design
- Graphic annexes
 - The current situation with the scope boundary of the subdivision design
 - Subdivision plan with analytical-geodetic elements
 - Regulation, leveling and infrastructure
- Documentation
 - Plan copy
 - Real estate sheets
 - Cadastral topographic plan
- Geodetic marking design

After verification of the Urban Planning design and the Geodetic Survey Design by the municipality of Sjenica, the Consultant shall prepare the Parcel Subdivision Plan in accordance with the applicable geodetic regulations and standards in force and submit it to the competent Real Estate Cadaster Service.

Task 5: Construction Permit design (PGD)

After receiving a positive report from the audit committee, the Construction Permit design shall be prepared, as well as the Request for a Decision on the Need for an Environmental Impact Assessment Study.

If there are sections (units) on the regulation route that need to be separated from the aspect of property-legal relations or other characteristics, it is necessary to clearly separate these sections and provide for phased construction in the project for the construction permit.

Reports to be delivered are given in the Clause 6.

The content of the Reports has to be in line with the "Rulebook on the content, method and procedure of creating and executing the control of technical documentation according to the class and purpose of the facilities ("Official gazette of RS", no. 96/2023).

The Design should be made in the form of an electronic document, according to the Rulebook on the procedure for implementing the unified procedure by electronic means ("Official Gazette of the RS", no. 68/2019).

Task 6: Detail design (PZI)

After obtaining the construction permit, the Detail design shall be prepared, which will include all necessary technical assessments (hydraulics, hydrological, and structural), and blueprints, in addition to an economic and financial assessment.

Reports to be delivered are given in the Clause 7.

The content of the Reports has to be in line with the "Rulebook on the content, method and procedure of creating and executing the control of technical documentation according to the class and purpose of the facilities ("official gazette of RS", no. 96/2023).

The Design should be made in the form of an electronic document, according to the Rulebook on the procedure for implementing the unified procedure by electronic means ("Official Gazette of the RS", no. 68/2019).

6. EMPLOYER'S OBLIGATIONS

The Employer shall provide the following documents within 10 days of contract commencement:

- Urban and planning documents;
- Applicable cadastral basic data and copies of the plans of parcels;
- Locations of potential borrow-pits and dumping sites;
- Access to the locations where investigation works are envisaged;

The Employer shall provide the following documents timely, during the contract implementation:

- Location conditions;
- Report of the State revision committee on the conducted expert revision of the Preliminary design;
- Technical control of the Design for construction permit;
- Other available documentation and data significant for the development of the design documentation.

The following tasks are the sole responsibility of the MAFWM PIU, while the Consultant is required to provide support and timely inputs:

- Verify and, if determined necessary, update the environmental and social screening for the proposed sub-projects to confirm or revise the assessment of environmental and social risks and confirm the appropriate environmental and social risk management instrument,
- Develop environmental and social risk and impacts management instruments,
- Issuing the Decision on the need for an impact assessment for the project in question. The Request on the need for Environmental Impact Assessment will be submitted to the City of Sjenica, as the competent authority in the procedure, by the project holder, based on the previously obtained documentation delivered by the Consultant, in everything according to the Rulebook on the content of the request on the need for an impact assessment (Official Gazette of RS", No. 69/2005).
- Resettlement Action Plan (RAP).
- Stakeholder Engagement Implementation Plan (SEP Implementation Plan) in line with the requirements of ESS10;
- Based on inputs from the Consultant and additional surveys, identify Project-Affected Persons (PAPs), vulnerable groups, and other interested stakeholders;
- Conduct meaningful consultations with project-affected people, including vulnerable individuals and groups, ensuring that the outcomes of these consultations inform the final design and siting of the works;
- Organize and conduct public consultations on the ESMP, SEP, and RAP (if applicable), in cooperation with the Consultant, to present the project and its environmental and social aspects to interested stakeholders and affected groups and individuals.

7. REPORTING REQUIREMENTS, DELIVERABLES AND TIME SCHEDULE

The Consultant shall deliver the following documents:

Reports

The Consultant shall prepare and submit the following key Report for review and approval:

Inception Report. The Draft and Final Inception Report should outline the work plan, key issues requiring guidance and decisions, and proposed design options to be considered for the development of the Design. The Inception Report shall outline the Consultant's understanding of the assignment, the proposed methodology, work plan, staffing, and timeline for delivery of the services. It shall identify key issues requiring clarification and propose an approach for carrying out the baseline assessment and undertake data collection and surveys.

The Inception Report shall not present final conclusions on the problem definition or design assumptions, but shall define the methodology and approach through which these will be developed, including the proposed approach for stakeholder engagement and integration of Environmental and Social Framework (ESF) requirements.

The Site visit shall serve as a guidance for collecting the necessary data from the Site and ongoing works.

Monthly Progress and Project Trends Reports. A progress and trends report shall be submitted one week after the end of each month. The report shall cover all activities undertaken during the month and indicate any activities that are delayed or likely to be delayed. The Report shall highlight issues that require urgent resolution and shall include updated staffing and study schedules. "Project Trends" will look at the forecast of project completion with a proactive approach; it should define the measures the Consultant has taken or intends to take in order to keep the Tasks on schedule. Based on the "Project Trends", the Consultant shall timely re-schedule its effort so as to ensure the completion of the services on schedule, with the contract ceiling unchanged.

Final report. Summarizing all activities undertaken on the project.

Task Deliverables

Draft and Final Task Reports shall be submitted on the individual tasks as detailed in the Table herein below:

| Report Number | Deadline for deliverable (calendar months after signing the Contract) |
|---|---|
| 1. Inception report | After 1 month |
| 2. Task 1: Investigation works | After 3 months |
| 2.1 Topography survey | After 2 months |
| 2.2 Geology survey | After 3 months |
| 3. Task 2: Conceptual design (Idejno resenje - IDR) | After 4 months |
| 4. Task 3: Feasibility Study with Preliminary design (IP) | After 7 months |
| 5. Task 4: Expropriation design | After 8 months |
| 6. Task 5: Construction permit design (PGD) | After 10 months |

| Report Number | Deadline for deliverable (calendar months after signing the Contract) |
|--------------------------------|---|
| 7. Task 6: Detail design (PZI) | After 12 months |

The following deliverables are requested (per Tasks):

Task 1: Investigation works

| | Name of Deliverables | Number of reports |
|-----|-------------------------|-------------------|
| 1.1 | Geodetic elaborate | 1 |
| 1.2 | Geotechnical elaborate | 1 |
| 1.3 | Hydro-geology elaborate | 1 |
| 1.4 | Hydrology elaborate | 1 |

Task 2: Conceptual Design (Idejno resenje-IDR)

| | Name of Deliverables | Number of reports |
|-----|---|-------------------|
| 2.1 | Main volume | 1 |
| 2.2 | Hydraulic installations | 1 |
| 2.3 | Request for a Decision on the Need for an Environmental Impact Assessment Study | 1 |

Task 3: Expropriation design

| | Name of Deliverables | Number of reports |
|-----|----------------------|-------------------|
| 3.1 | Expropriation design | 1 |
| 3.2 | Urban project design | 1 |

Task 4: Feasibility Study with Preliminary design (IP)

| | Name of Deliverables | Number of reports |
|-----|--|-------------------|
| 4.1 | Main volume | 1 |
| 4.2 | Engineering facility design | 1 |
| 4.3 | Elaborate on geotechnical performance conditions | 1 |

Task 5: Construction Permit design (PGD)

| | Name of Deliverables | Number of reports |
|-----|-----------------------------|-------------------|
| 5.1 | Main volume | 1 |
| 5.2 | Engineering facility design | 1 |

| | | |
|-----|--|---|
| 5.3 | Elaborate on geotechnical performance conditions | 1 |
|-----|--|---|

Task 6: Detail design (PZI)

| | Name of Deliverables | Number of reports |
|-----|--|-------------------|
| 5.1 | Main volume | 1 |
| 5.2 | Engineering facility design | 1 |
| 5.3 | Elaborate on geotechnical performance conditions | 1 |

All supporting calculations and models that inform the evaluation of alternatives and the designs (hydraulic modeling files, EFA calculation spreadsheets, etc.) will need to be transferred to the client as part of the tasks package.

8. LANGUAGE OF REPORTS

The Consultant will prepare all Deliverables in Serbian language.

Inception Report, Monthly Progress, Project Trends Reports and Final report which shall be submitted in both English and Serbian. The reports will be reviewed by the relevant consultants within the MAFWM PIU.

9. TIME, DURATION AND WORKPLACE

The assignment is expected to be implemented within 12 months from contract signature.

The estimated experts time input is:

1. Key staff: 16.25 person/months.
2. Non-key staff 20 person/months
3. Other staff 5 person/months

Public Participation Meetings will be conducted in Sjenica (at least 2 meetings, but continuous engagement is also expected in line with the development of site-specific Environmental and Social Management Plan (ESMP) and Stakeholder Engagement Plan (SEP) that would cover for all phases-planning/preparation, construction and operation) and the relevant impacted settlement. The ESMP will include stakeholder engagement and public participation meetings that will cover the planning/preparation, construction and operation phases of the center. The Consultant shall take an active role in the public consultation process and during Public Participation Meetings, providing explanations of key project characteristics to the interested public. The PIU Environmental and Social Experts will present the potential environmental and social impacts and risks of the project, along with the mitigation measures integrated into the project design.

10. SERVICES AND FACILITIES TO BE PROVIDED BY THE ADMINISTRATION

PIU will provide the Consultant with all the information and designs and other documents needed by the Consultant for the proper execution and completion of the work.

11. SUPERVISION OF THE WORK BY THE ADMINISTRATION

The preparation of the reports will be monitored by the PIU staff. Corrective action can be requested whenever necessary.

12. PROFILE OF THE CONSULTANT

The Consultant will be a company or a Joint Venture of companies with relevant previous project experience in providing similar services related to the tasks specified in these ToR and similar investment Projects using procedures and policies of the International Financial Institutions, notably the World Bank, EBRD, EIB.

The Consultant must provide independent, impartial technical, cost, strategic, management, financial, and legal advice. As such, the Consultant will not be permitted to have a commercial interest in any other contracts or agreements related to the Project.

Qualification requirements of the Consultant:

1. Possession of license P080G3 - for hydro technical projects for regulation works to protect urban areas and rural areas larger than 300 ha from floods is mandatory. The license can be provided from one of JV members, but not from the Sub-Contractor.
2. Possession of license for geodetic works. The license can be provided from one of JV members, but not from the Sub-Contractor
3. Possession of the following standards:
 - ISO 9001;2015 – Quality management system,
 - ISO 14001;2015 – Environmental management systems,
 - ISO 45001;2018 – Occupational health and safety management systems
 - ISO/IEC 17025:2017; General requirements for the competence of testing and calibration laboratories; if consultant is not in possession of this license, ensure that testing is done in a laboratory that possesses this license.
4. Have extensive experience in the field of services mentioned above. The required experience should be demonstrated by references in last 5 years for each item as follows:
 - At least 1 (one) Feasibility Study with Preliminary design of settlement protection from high water (minimum value of the contract 250,000.00 Euros) in last 5 years;
 - At least 2 (two) Design for construction permit of protection against high water by embankments with obtained construction permit in last 5 years;
 - At least 1 (one) Design for construction permit for river regulation with obtained construction permit in last 5 years;
 - At least 2 (two) hydrological study on the watercourse of the first order in last 5 years.

Only Consultants that meet the qualification requirements will be considered for the shortlist. The evaluation criteria to establish the shortlist are:

- Core business and years in business (20 points)
- Past experience in similar assignments (80 points)

Consultant team

The Consultant's team available under the assignment has to include minimum the following experts and their qualifications:

Key Staff Qualifications

Team Leader

- At least 20 years of professional experience in water infrastructure systems, including those related to flood protection retention and detention, and river regulation (dams, dikes, embankment, etc)
- At least master's degree (or equivalent) in a relevant discipline (civil engineering, hydraulic engineering, water resources management),
- Chartered Engineer – Design License of Serbian Chamber of Engineering type numbers 310, 313, 314 or 376,
- Project and contract management capability, including managing teams of experts,
- Excellent communication skills, presentation skills and ability to manage preparation of high-quality reports, project documentation, and communications materials,
- Experience in working with projects funded by international donors (World Bank, etc.)

Senior Hydraulic Engineer

- At least 10 years of relevant experience,
- At least master's degree (or equivalent) in a hydraulic engineering or similar,
- Chartered Engineer – Design License of Serbian Chamber of Engineering type number 313 or 314,
- Previous experience in preparing Feasibility studies, Preliminary design, or Final design for flood protection and control systems, and river regulation, including hydraulic modelling and the design of hydraulic structures in urban settings.
- Experience in the design of water infrastructure including dams and alike is required

Senior Hydrology Engineer

- At least 10 years of relevant experience,
- At least master's degree (or equivalent) in a relevant discipline,
- Chartered Engineer – Design License of Serbian Chamber of Engineering type number 313 or 314,
- Previous experience in preparing similar Hydrological studies.

Senior Civil Structural Engineer

- At least 10 years of relevant experience, including preparation of Feasibility studies, Preliminary design, or Final design flood protection or river regulation projects.
- At least master's degree (or equivalent) in civil engineering or equivalent,
- Chartered Engineer – Design License of Serbian Chamber of Engineering type number 310,
- Previous experience in preparing Feasibility studies, Preliminary design, or Final design flood protection or dam projects.

Senior Hydro-geology Engineer

- At least 10 years of professional experience,
- To have designed the flood protection or dam projects, minimum Preliminary design, or Feasibility study flood protection or river regulation projects.
- At least Master degree (or adequate) in geology engineering.

- Design License of Serbian Chamber of Engineering type number 392

Senior Geotechnical Engineer

- At least 10 years of professional experience,
- To have designed the flood protection or river regulation projects of comparable scale, minimum Preliminary design, or Feasibility study flood protection or dam projects.
- At least Master degree (or adequate) in Geotechnical engineering.
- Design License of Serbian Chamber of Engineering type number 391

Senior Geodetic Engineer

- At least 10 years of relevant experience,
- At least master's degree (or equivalent) in a Geodesic studies or similar,
- Chartered Engineer – Design License of Serbian Chamber of Engineering type 372,
- Previous experience in preparing Feasibility studies, Preliminary design, or Final design for flood protection or river regulation projects.

Senior Finance expert

- At least 10 years of relevant experience,
- At least master's degree (or equivalent) in economics, finance or similar,
- Previous experience in preparing Feasibility studies, Preliminary design, or Final design studies for flood protection projects, including estimation of land acquisition and investments costs, and EFA

Environmental & Social Expert

General Responsibilities

Responsible for all Environmental and Social aspects of the Project.

Qualifications and Responsibilities

- Minimum bachelor's degree, preferably in environmental science, sociology, biology, civil engineering or similar.
- Minimum 5 years' relevant work experience in managing occupational health, safety performance including implementation of environmental management plan of infrastructure project of at least one contract technically similar in complexity.
- Familiarity with World Bank ESF and local environmental laws
- Experience in public consultation and stakeholder engagement

Technical offers from Bidders whose Key staff do not have required Design licenses will be rejected and will not be evaluated.

In addition to Key-experts, the list of non-key experts shall be prepared by the Bidder. The non-key experts are expected to support/complement all the activities of the key experts.

13. SELECTION

The consulting firm will be selected under the provisions of the World Bank Procurement Regulations for Borrowers under Investment Project Financing" dated July 1, 2016, revised on November 2017 and August 2018, in accordance with Quality and Cost Based Selection, Lump - Sum based Contract.

14. ANNEXES

ANNEX 1: COMPLIANCES WITH REGULATIONS IN REPUBLIC OF SERBIA

Technical documentation must be created professionally and with high quality, in compliance with the applicable laws and bylaws, standards and rules of the profession.

Having in mind the significance and size of the design, as well as the type and scope of activities, which are the subject matter of the Terms of Reference, permanent communication between the Consultant and the Client is necessary for providing the support for reaching timely and relevant decisions during implementation of works on the design.

Technical documentation is to be developed all in accordance with the Law on planning and construction (Official Gazette of the Republic of Serbia, nos. 72/09, 81/09 - correction, 64/10 decision of the Constitutional Court, 24/11 and 121/12, 42/13 - decision of the Constitutional Court, 50/2013 - decision of the Constitutional Court, 98/2013 - decision of the Constitutional Court, 132/14, 145/14, 83/18, 31/19, 37/19 – other law, 9/20, 52/21 and 62/23), Water Law (Official Gazette of the Republic of Serbia, nos. 30/2010, 93/2012, 101/2016, 95/2018), Law on environmental protection (Official Gazette of the Republic of Serbia, nos. 135/2004, 36/2009, 36/2009 - other law, 72/2009 - other law, 43/2011 - decision of the Constitutional Court, 14/2016, 76/2018, 95/2018 - other law and 95/2018 - other law and 94/2024), Law on environmental impact assessment (Official Gazette of the Republic of Serbia, nos. 94/2024), Law on waste management (Official Gazette of the Republic of Serbia, nos. 36/2009, 88/2010, 14/2016 and 95/2018 - other law and 35/2023), Law on energy (Official Gazette of the Republic of Serbia, nos. 145/2014, 95/2018 - other law, 40/2021 and 35/2023 - other law), and bylaws (Rulebook on the procedure for implementing the integrated procedure electronically (Official Gazette of the Republic of Serbia, no. 68/2019); Regulation on Determining the List of Projects for which the Impact Assessments is obligatory (List I) And List of Projects for which the Environmental Impact Assessment can be required (List II) (“Official Gazette of the RS” No. 114/08); Rulebook on contents of the request on the need for Environmental Impact Assessment (“Official Gazette of the RS” No. 69/05); Rulebook on the content, method and procedure of preparation and the method of control of technical documentation according to the class and purpose of the facilities (Official Gazette of the Republic of Serbia, nos. 72/2018, 77/2015, 58/2016, 96/2016, 72/2018 and 73/2019); Rulebook for civil engineering structures (Official Gazette of the Republic of Serbia, nos. 89/2019, 52/2020 and 122/2020); Design of engineering-geological investigation, and Survey on geotechnical conditions of construction are to be developed in accordance with the Law on mining and geological research (Official Gazette of the Republic of Serbia, nos. 101/2015, 95/2018 - other law and 40/2021), Rulebook on the conditions, criteria and content of the designs for all types of geological investigations (Official Gazette of the Republic of Serbia, nos. 45/2019 and 72/2021), Rulebook on the content of the designs for geological investigations and surveys on the results of geological investigations (Official Gazette of the Republic of Serbia, nos. 51/96 and 45/2019), Rulebook on the required level of knowledge of the engineering geological properties of the terrain for the purposes of planning, design and construction (Official Gazette of the Republic of Serbia, no. 51/96), Rulebook on technical norms for the construction of overhead power lines with a nominal voltage from 1 kV to 400 kV (Official Journal of the Socialist Federal Republic of Yugoslavia, no. 65/88, and Official Journal of the Federal Republic of Yugoslavia, no. 18/92), Rulebook on technical norms for the construction of low-voltage overhead lines (Official Journal of the Socialist Federal Republic of Yugoslavia, no. 6/92), Regulation on the conditions of delivery and supply of electricity (Official Gazette of the Republic of Serbia, nos. 63/13 and 91/2018), Rules on the operation of the distribution system (Official Gazette of the Republic of Serbia, no. 71/17)).

In case that during the development of these designs, a new bylaw is reached regarding the necessary scope and content of technical documentation for obtaining permits, consents and necessary solutions, in accordance with the new Law on Planning and Construction, the Service Provider is obliged to act according to it.

Designs for construction permit, Surveys on geotechnical conditions for construction, Geodetic surveys are to be printed in six copies each, and the abstracts from the technical documentation should be printed in the sufficient number for the integrated procedure of issuing construction permit.

Construction designs, Designs of geodetic ranging, elements for creation of the Plan of preventive measures, Survey on warning and evacuation of people and mechanization, and Plan for protection against floods during the performance of works on the reconstruction of the embankment have to be printed in six copies each, and the abstracts from the technical documentation should be printed in the sufficient number as well.