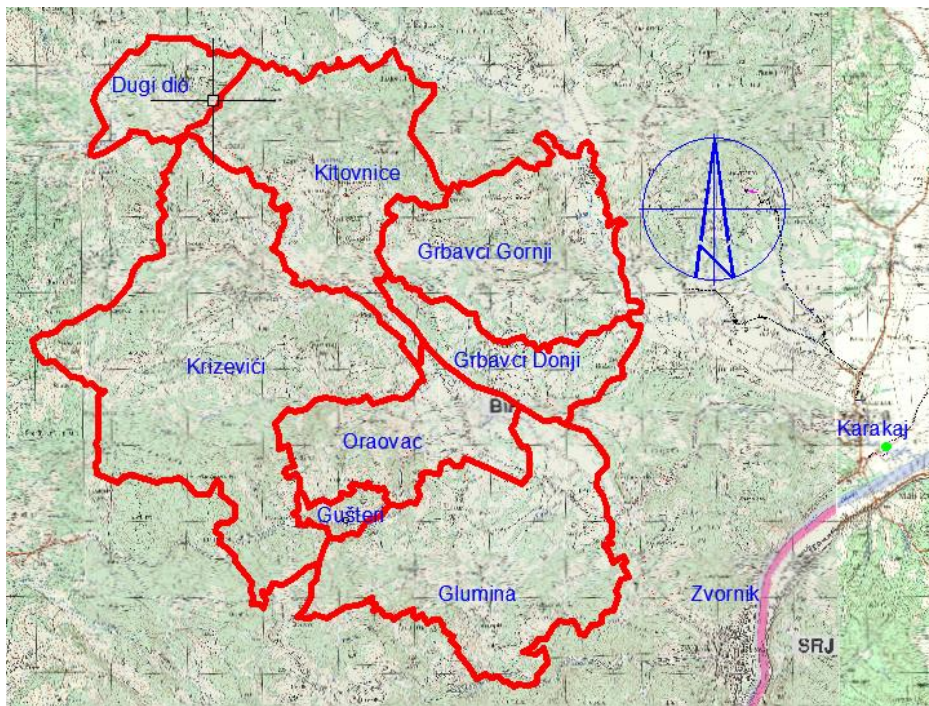


**Ministry of Agriculture, Forestry and Water Management of the Republic of  
Srpska**

**Agriculture Projects Coordination Unit (APCU)**

**Environmental and Social Management Plan (ESMP)**

(final)



for subproject:

" Construction of the water supply system "Zvornik-West" (the settlements of  
Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in  
the area of the city of Zvornik "

prepared as part of:

**WATER AND SANITATION SERVICES MODERNIZATION PROJECT (WSSM)**

April 2025

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## LIST OF ABBREVIATIONS

|            |  |
|------------|--|
| APCU/ JKPP | Agriculture Project Coordination Unit  |
| BiH        | Bosnia and Herzegovina   |
| CSLP       | Construction site layout plan  |
| E&S        | Environmental & Social   |
| EHS        | Environment, health and safety   |
| EHSG       | Environmental, Health and Safety Guidelines Group                                  |
| EIA        | Environmental Impact Assessment  |
| ESMF       | Environmental and Social Management Framework                                      |
| ESMP       | Environmental and Social Management plan   |
| ESS        | Environmental and Social Standards of the World Bank                               |
| EU         | European Union   |
| FBiH       | Federation of Bosnia and Herzegovina   |
| GBV        | Gender-based violence  |
| GIIP       | Good International Industry Practices  |
| GM         | Grievance Mechanism  |
| GRM        | Grievance Resolution Mechanism   |
| HDPE       | High density polyethylene  |
| IPCHNH     | Republic Institute for the Protection of Cultural, Historical and Natural Heritage |
| LMP        | Labor Management Procedure   |
| MAFWM      | RS Ministry of Agriculture, Forestry and Water Management                          |
| O&M        | Operation and maintenance  |
| OHS        | Occupational Health and Safety   |
| PAP        | People affected by the project   |
| PIT        | Project Implementation Team  |
| PS         | Pump station   |
| SCADA      | Supervisory Control and Data Collection  |
| SEA        | Sexual exploitation and abuse  |
| SEP        | Stakeholder Engagement Plan  |
| SH         | Sexual harassment  |
| WS&S       | Water supply and sewerage  |
| WB         | The World Bank   |
| WSSM/PMVU  | Water and Sanitation Services Modernization Project                                |

## SUMMARY

Table 1. General information about the project

|  |  |
|--|--|
| Name of the sub-project:                     | Construction of the water supply system "Zvornik-West" (the settlements of Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in the city area Zvornik   |
| Sub-project specification:                   | <p><b>Incorporation of the Zvornik-West water supply system into the existing water supply system of the Zvornik urban settlement, including works on the water supply network, with associated facilities (pumping stations, tanks, pressure relief chambers, vent valves, sludge drains and required inspection shafts with associated fittings).</b></p> <ul style="list-style-type: none"> <li>• Settlements: Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi dio, Karakaj and Jordan</li> </ul> |
| Sub-project location:                        | City of Zvornik  |
| Number of users:                             | 5382 users   |
| Sector and type of subproject:               | Water sector<br>Water supply system  |
| Realization of the subproject:               | Agriculture Projects Coordination Unit within the Ministry of Agriculture, Forestry and Water Management of the Republic of Srpska with the Project Implementation Team (PIT) from representatives of the municipality/city and the water supply   |
| Method of implementation:                    | Through the Contractor   |
| Project size information:                    | The total length of the water supply is about 49,115.31 m  |
| Sub-project cost estimation:                 |  |
| Field visit (yes/no; date):                  | Yes, 14.10.2024.   |
| Has the consultation been done?<br>(Yes/No): | No   |
| Estimated project risk (from low to high):   | Moderate risk,   |

# 1. INTRODUCTION

## 1.1. Subproject background

Based on the decision of the Republic of Srpska National Assembly, adopted at the 21st session held on 27 April 2022 on the acceptance of World Bank loan - International Development Association, the Ministry of Agriculture, Forestry and Water Management – **Agriculture Project Coordination Unit (APCU)**, in cooperation with the Ministry of Finance, implements the **Water and Sanitation Services Modernization Project (WSSM)**.

The aim of the WSSM Project is to:

- (i) strengthen the institutional capacity in Republic of Srpska,
- (ii) improve access to safely managed Water Supply and Sanitation (WSS) services at the local level (Cities/Municipalities), and
- (iii) improve the efficiency of WSS service providers in local governments participating in the Project.

The overarching approach of the Project is to build the sector's institutional capacity for better services at Republic of Srpska (Component 1) and local (Component 2) levels, while creating an incentive framework encouraging the gradual improvement of the WSS service providers in Republic of Srpska toward operational and financial sustainability, good practices, and eventually, creditworthiness (Component 3).

This Project will implement a number of sub-projects of great importance to the program objectives. One of them is the sub-project " **Construction of the water supply system "Zvornik-West" (the settlements of Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in the area of the city of Zvornik"**.

## 1.2. World Bank requirements

WB's Environmental and Social Framework (2016) became effective in October 2018. The Framework sets out the Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social Standards that are designed to support Borrowers' projects, with the aim of ending extreme poverty and promoting shared prosperity. The Bank's Framework consists of three parts:

- A Vision for Sustainable Development, which sets out the Bank's aspirations regarding environmental and social sustainability
- The Environmental and Social Standards, which set out the mandatory requirements that apply to the Borrower and projects
- The World Bank Environmental and Social Policy for Investment Project Financing, which sets out the mandatory requirements that apply to the Bank

The bank classifies all projects according to the following classification:

- high risk,
- Substantial risk,
- moderate risk,
- low risk.

When determining the appropriate risk classification, the Bank considers important issues, such as:

- type, location, sensitivity and scope of the project,
- the nature and intensity of potential risks and impacts on the environment and society,
- the ability and commitment of the Borrower (including all other entities responsible for the implementation of the project) to manage risks and impacts on the environment and society in accordance with ESSs.

Borrowers and projects must also apply the relevant World Bank requirements, the Environmental, Health and Safety Guidelines Group (EHSB). These are technical reference documents, with general and industry examples of Good International Industrial Practice (GIIP).

The Bank is committed to supporting the Borrowers in the development and implementation of projects that are sustainable in terms of the environment and society, as well as strengthening the capacities of the ecological and social frameworks applied by the Borrowers in the assessment and management of risks and impacts on the environment and society. For these purposes, the Bank established special ESSs designed to avoid, minimize, or mitigate negative risks and impacts on the environment and society that projects have. Desired outcomes are described in the goals of each ESS, along with specific requirements that help Borrowers achieve those goals. Projects supported by the Bank must be aligned with the following ESSs:

|                                      |  |
|--------------------------------------|--|
| Environmental and Social standard 1  | •Assessment and Management of Environmental and Social Risks and Impacts                       |
| Environmental and Social standard 2  | •Labor and Working Conditions  |
| Environmental and Social standard 3  | •Resource Efficiency and Pollution Prevention and Management                                   |
| Environmental and Social standard 4  | •Community Health and Safety   |
| Environmental and Social standard 5  | •Land Acquisition, Restrictions on Land Use and Involuntary Resettlement                       |
| Environmental and Social standard 6  | •Biodiversity Conservation and Sustainable Management of Living Natural Resources              |
| Environmental and Social standard 7  | •Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities |
| Environmental and Social standard 8  | •Cultural Heritage   |
| Environmental and Social standard 9  | •Financial Intermediaries  |
| Environmental and Social standard 10 | •Stakeholder Engagement and Information Disclosure   |

Those ESSs are accompanied by non-binding guidelines, best practice notes, templates and checklists. The standards applicable to WSSM/PMVU are: ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS8, ESS10.

Below is an overview of the World Bank's E&S standards that are considered applicable to the Water and Sanitation Services Modernization Project at the time of evaluation, as well as a brief explanation of their significance.

*Table 2. ESSs considered significant for the Water and Sanitation Services Modernization Project at the time of assessment*

| ESS  |   | Relevance to the WSSM   |
|------|---|---|
| ESS1 | Assessment and Management of E&S Risks and Impacts          | These standard guides the preparation of E&S instruments including those that have been prepared for WSSM Project: (i) ESMF, (ii) SEP, (iii) RPF (iv) LMP and appropriate risk assessment for individual activities implemented under the project.  |
| ESS2 | Labor and Working Conditions                                | These standard guides the creation of sound worker-management relationships. The primary labor risk is the risk of informal work. The risks of unpaid and underpaid work, work overload, poor terms and conditions of engagement, lack of occupational health and safety measures, and denied access to social security, pension or health insurance are associated with informal work. Labor Screening and Compliance Checklist, and Monitoring and Evaluation procedures have been developed to be included as mandatory in the tender documentation providing compliance of third parties i.e. different contractors to the ESS2 requirements. |
| ESS3 | Resource Efficiency and Pollution Prevention and Management | This standard sets out the requirements to address resource efficiency and pollution prevention and management throughout the project life cycle. Considering that most of the activities involve construction works, the major risk is that Contractors will not be aware of best practices to avoid or minimize pollution from project activities or avoid or minimize adverse impacts on human health and the environment. The site-specific ESMP will guide contractors to implement adequate pollution prevention and management measures.   |
| ESS4 | Community Health and Safety                                 | This ESS sets out the requirements to avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials and to have in place effective measure to address emergency events. The works anticipated in this project will be carried out mostly in remote or publicly restricted areas and will not employ use or generation of hazardous substances and waste. The main risk associated with the project is related to workers health and safety that is addressed by ESS2.   |
| ESS5 | Land Acquisition, Restrictions on Land Use                  | This ESS provides guidelines for procedures to avoid forced and economic displacement or to carry out forced and economic   |

| ESS   |  | Relevance to the WSSM  |
|-------|--|--|
|       | and Involuntary Resettlement   | displacement with the least possible impacts. Water and Sanitation Services Modernization Project includes the possibility of land acquisition and economic displacement. In order to minimize this risk, an appropriate RPF has been prepared at the project level, and, if necessary, a RAP for a specific location will also be prepared. The main risk relates to the proper implementation of the RPF.  |
| ESS6  | Biodiversity Conservation and Sustainable Management of Living Natural Resources | The project area is an entire entity, which includes several nationally and internationally recognized natural and critical habitats, protected zones, wetlands and Ramsar sites, as well as hundreds of locally designated nature areas. Activities will be assessed against relevant risks and a mitigation hierarchy will be applied. As part of the verification and approval process, the creation of ESMPs for specific locations will be considered. Environmental screening will ensure that activities with potential negative impacts are not eligible for funding in natural or critical habitats. In the case of activities that will be financed by the project and that will be implemented in altered habitats, requirements for avoiding or minimizing any impact on biodiversity will be presented at the project level and mitigation measures will be implemented as necessary. |
| ESS8  | Cultural Heritage  | Information available at the project assessment stage indicates a very low probability that the construction works will have any impact on known cultural heritage areas. If there are accidental findings, the Borrower resolves the issue taking into account the requirements of domestic laws that are fully in accordance with UNESCO and good international practice.  |
| ESS10 | Stakeholder Engagement and Information Disclosure                                | This ESS serves as a guideline for the involvement of relevant stakeholders in the project life cycle. In accordance with the requirements of this ESS, a Stakeholder Engagement Plan was drawn up for this project, including a Grievance Redress Mechanism. The main risk is related to the proper implementation of the SEP.  |

### 1.3. Role and objective of ESMP

This ESMP was prepared for the sub-project **Construction of the water supply system "Zvornik-West" (the settlements of Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in the area of the city of Zvornik.** The Environmental and Social Management Plan (ESMP) for the sub-project was prepared in accordance with the Environmental and Social Management Framework for the Republic of Srpska (ESMF) as part of the Water and Sanitation Services Modernization (WSSM/PMVU) in BiH.

The goal of the ESMP for The Construction of the "Zvornik-West" water supply system (the settlements of Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in the area of the city of Zvornik is to: (i) analyze the policies, legal and administrative framework relevant to the construction of water supply infrastructure, (ii) analyze the available basic data on environmental issues and trends, (iii) identify possible negative and positive impacts of the project on the environment, society and propose mitigation measures, (iv) specify the key criteria for monitoring the quality of the environment and social issues in the area of project implementation; (v) develop guidelines for environmentally friendly construction practices; (vi) assist in the inter-institutional coordination and process of public/NGO discussions and (vii) to integrate the significant features of the developed SEP, LMP and ESMF documents for the WSSM.

As mentioned in the introduction, according to the ESMF project impacts are classified as "high", "moderate", "low" and "minor/no impact" based on the size of the project and the scope of works (new construction, repair and maintenance). The sub-project activities for connecting the water supply system with distribution pipelines were classified as moderate risk from environmental and social aspects according to the screening and risk assessment prepared by APCU's E&S expert based on stakeholder input and WSSM ESMF guideline. Subproject activities are simple and relatively easy to implement.

Prepared by the APCU, the ESMP is aligned with the requirements of the Environmental and Social Management Framework for the Republic of Srpska (ESMF), relevant environmental and social standards (ESS) and environmental regulations of the Republic of Srpska.

The sub-project includes construction works, which means that the scope of work requires the applying of ESS1 (Assessment and Management of Environmental and Social Risks and Impacts).

Contractors and workers will be involved in the work, which requires the application of ESS2 (Workforce and working conditions).

Work activities use resources and generate waste, which leads to the application of ESS3 (Resource Efficiency and Pollution Management and Prevention).

Moreover, activities and equipment can increase the community's exposure to the risks and impacts of project implementation, therefore ESS4 (Community Health Protection and Safety) should be applied to address health and safety risks and impacts on society.

ESS5 (Land acquisition, restrictions on land use and forced displacement) will not be applicable to the activities under this Agreement, because the actual acquisition of land for the purposes of project implementation is not foreseen.

In addition, ESS6 (Conservation of Biodiversity and Sustainable Management of Living Natural Resources) is not relevant, as the sub-project does not involve and will not affect biodiversity or natural resources and is not implemented in protected nature areas.

ESS7 (Indigenous peoples) and ESS9 (Financial intermediaries) are not relevant, because there are no indigenous peoples and the sub-project does not include financial intermediaries that could be affected by the implementation.

Although there are no cultural heritage areas near the project sites, ESS8 (Cultural Heritage) remains relevant to this project due to land excavation.

Furthermore, open and transparent engagement with the subproject's stakeholder is an essential element of good international practices, therefore, ESS10 (Stakeholder Engagement and Information Disclosure) will be applied to ensure the environmental and social sustainability of the subprojects,

enhance subprojects acceptance and make a significant contribution to successful design and implementation throughout the subproject life cycle.

The subproject is obliged to comply with the Labor Management Plan (LMP) regarding labor working conditions and Occupational Health and Safety (OHS) standards to address any related issues. Additionally, the Stakeholder Engagement Plan (SEP) will be followed for consultation and information disclosure.

The ESMP checklist for this project is expected to outline measures that mitigate or minimize potential impacts and risks during implementation. These impacts are anticipated to be manageable, temporary, and localized, as they pertain primarily to general construction activities.

Furthermore, it is important to note that the ESMP will be forwarded to interested parties and available on the websites of the Ministry of Agriculture, Forestry and Water Management of the RS (APCU) and the City of Zvornik, as well as the World Bank.

## 2. SUBPROJECT DESCRIPTION

### 2.1. Existing water supply system

The issue of water supply in the municipality of Zvornik has been addressed through the city's water supply system, the water supply systems of local communities, and numerous local rural and individual water supply systems. The city's water supply system serves the municipal center of Zvornik, Karakaj with its industrial zone, as well as settlements surrounding the municipal center and incidental settlements along the Drinjača and Divić supply pipelines.

The settlements of Kozluk and Šepak are supplied by autonomous local water supply systems with water intakes in the alluvium of the Drina River, while other residents are supplied with water through numerous village water supply systems (153 units), individual systems, and wells.

This project focuses on providing water supply to settlements west of the town of Zvornik, including Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, and Dugi Dio, as well as integrating parts of the Jordan and Karakaj settlements. These settlements currently lack an established water supply network and rely on individual wells for their water needs.

### 2.2. Technical description and location of the subproject

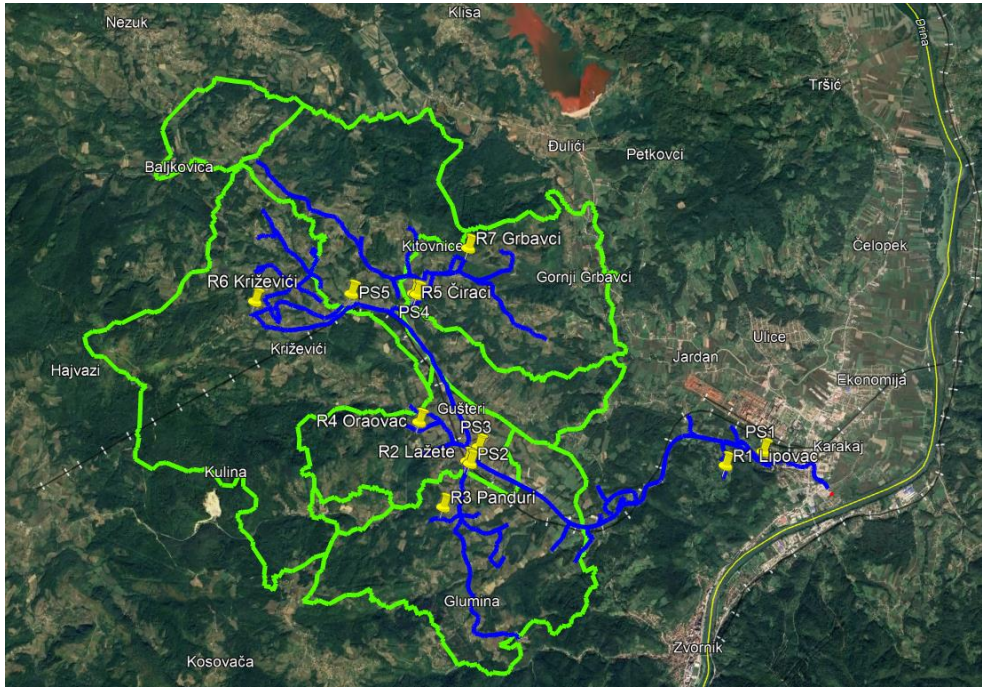
#### Description of the subject location

This project covers the area west of the narrow city center of Zvornik. The covered area includes the settlements of Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, and Dugi Dio. Additionally, this sub-project involves integrating parts of the Jordan and Karakaj settlements into the planned water supply network.

The water supply will be sourced from the "Tilić Ada" spring. The connection to the main pressure pipeline is planned at the location near the bridge over the regulated Hoča Riverbed.

The targeted settlements are rural, consisting of family homes, auxiliary buildings, yards, fields, gardens, and meadows.

The local communities are connected to the town of Zvornik by asphalt roads, while internal roads within the communities include asphalt, concrete, and gravel surfaces.



*Figure 1 – Location of the subproject*

### Planned activities

As the town of Zvornik does not currently have an adequate water supply system for its population and industry, the construction of a new water supply network is planned to provide drinking water to the settlements of Glumina, Oraovac, Križevici, Kitovnice, Donji Grbavci, Gornji Grbavci, and Dugi Dio.

After evaluating various solutions for addressing the water supply issues in these settlements, it was concluded that the most efficient approach is to expand the "Tilić Ada" spring, which is already used to supply the existing municipal water system. Hydrogeological studies have determined that the "Tilić Ada" area contains substantial reserves of potable water of suitable quality.

The connection of the new water supply system is planned at a location near the bridge, above the regulated bed of the Hoča River.



*Figure 2 and 3. Place of connection of the planned pipeline*

The water supply system will include both primary and secondary networks, supported by auxiliary facilities. The project entails constructing seven reservoirs and five pumping stations, along with installing approximately 49,000 meters of pipeline for the main transport and distribution network (Primary Network) and around 50,000 meters for user connections, supplying approximately 2,000 households (Secondary Network). These pipeline lengths estimated by the project designers.

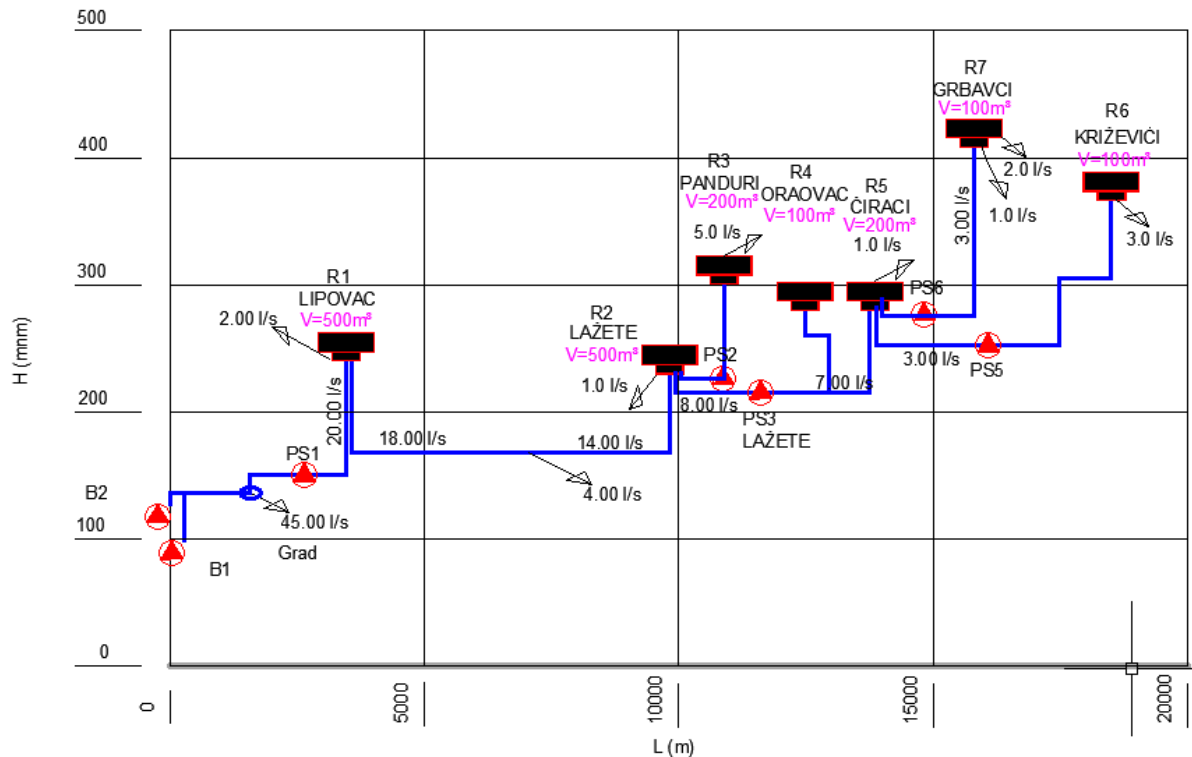


Figure 4. Vertical scheme of water transport in the R=1000:4000 system

The water supply is sourced from the "Tilić Ada" spring through a well, with a DN450 pressure pipeline connecting to the first pumping station located on the road to Caparde settlement, below the Lipovac hill. From this pumping station, water is pushed to the R2 "Lažete" reservoir. A branch from the transport pipeline is directed to the Jordan settlement, which already has a newer distribution network that will be connected to the water supply system planned in this project.

Below the "Lažete" reservoir, a pumping station (PS2) is planned, where water will be pumped to the R3 "Panduri" reservoir. This reservoir will supply the settlements in the Glumina local community through gravity-fed pipelines.

From the R2 reservoir, water will also be transported via gravity pipeline to the PS3 pumping station, which pumps water into the R4 "Oraovac" reservoir, from which the residents of the Oraovac local community will be supplied. A branch from this pressure pipeline will supply the R5 "Čiraci" reservoir, and from there, water will be gravity-fed to the PS5 pumping station in Donji Križeviči, which will pump water into the R6 "Križeviči" reservoir, providing water to the residents of the Križeviči, Kitovnice, and Dugi Dio local communities.

From the R5 "Čiraci" reservoir, water will be pumped to the east through the PS4 pumping station to supply the R7 "Grbavci" reservoir. This reservoir will supply the settlements of Gornji Grbavci, part of Kitovnice, and Dugi Dio.



Figure 5. Location of the 1st pumping station "PS1"



Figure 6. Location of reservoir R1 "Lipovac"

It is planned to use high-density polyethylene (HDPE) pipes, as this material has proven to be excellent for the intended purpose. The main transport and distribution pipelines are designed to use polyethylene pipes with diameters ranging from DN63 to DN280 and nominal pressures between 10 and 16 bar.

The pipeline will traverse terrain classified as categories III and IV, where it will be buried at an average depth of at least 1.0 meter above the pipe crown. This depth ensures sufficient protection, providing both structural stability and thermal insulation.

To ensure continuous work and accommodate the project's scope, the execution has been divided into two phases.

The following table shows the layout of the pipeline routes – primary and secondary – along with the lengths by phase. The division into two phases is aimed at minimizing the area under construction at any given time, ensuring smoother operation for the local population in the affected areas.

Table 3: Pipeline sections of the system by stages

| Network / channel                     | Label network / channel      | Length per station m |
|---------------------------------------|------------------------------|----------------------|
| <b>Zvornik West - Pipeline routes</b> |                              |                      |
| <b>M1</b>                             | <b>The main one Phase 1</b>  | <b>14760.18</b>      |
| M 1.K 1                               | Connection - PS1             | 1382.18              |
| M 1.K2                                | PS1 - R. Lipovac             | 1361.66              |
| M 1.K 3                               | R. Lipovac - R. Lažete       | 5750.78              |
| M 1.K 4                               | R. Lažete - PS3 - R. Oraovac | 1839.57              |
| M 1.K 5                               | R.Lazete -PS2-R.Panduri      | 1176.03              |
| M 1.K 6                               | R.Panduri - Glumina          | 3249.96              |
| <b>M2</b>                             | <b>Secondary Phase 1</b>     | <b>10119.52</b>      |
| M 2.K 1                               | Pašino hill 1                | 682.73               |
| M 2.K2                                | Pašino hill 2                | 394.02               |

|           |                          |         |
|-----------|--------------------------|---------|
| M 2.K 3   | Jardan                   | 379.53  |
| M 2. K 4  | Colovnik 1               | 971.69  |
| M 2.K 5   | Colovnik 2               | 493.65  |
| M 2.K 6   | Colovnik 3               | 308.09  |
| M 2.K 7   | Colovnik 4               | 188.31  |
| M 2. K 8  | Tulici 1                 | 690.01  |
| M 2.K 9   | Tulici 2                 | 513.65  |
| M 2.K 10  | Panduri 1                | 973.82  |
| M 2.K 11  | Panduri 2                | 347.39  |
| M 2. K 12 | Panduri 3                | 875.15  |
| M 2.K 13  | Panduri 4                | 859.03  |
| M 2.K 14  | R. Oraovac - Balan field | 1044.95 |
| M 2.K 15  | Oraovac 1                | 563.24  |
| M 2. K 16 | Oraovac 2                | 506.50  |
| M 2.K 17  | Oraovac 3                | 327.76  |

|           |                                |                 |
|-----------|--------------------------------|-----------------|
| <b>M3</b> | <b>The main one Phase 2</b>    | <b>10075.49</b> |
| M 3.K 1   | PS3 - R. Ciraci                | 2902.77         |
| M 3.K2    | R. Ciraci - R. Grbavci         | 1226.81         |
| M 3. K 3  | R. Grbavci - Cirilovo hill     | 1473.14         |
| M 3. K 4  | R.Ciraci - PS Križevici        | 1216.35         |
| M 3.K 5   | PS Križevici - R. Križevici    | 1650.42         |
| M 3.K 6   | R. Križevici - Donji Križevici | 1606.00         |

|           |                           |                 |
|-----------|---------------------------|-----------------|
| <b>M4</b> | <b>Secondary Phase 2</b>  | <b>14160.12</b> |
| M 4.K 1   | Oraovac - School          | 824.38          |
| M 4.K2    | Branch Markovici          | 1579.90         |
| M 4.K 3   | Branch Jokica Hajdarevici | 2031.86         |
| M 4.K 4   | Branch Boškovi            | 1178.59         |
| M 4.K 5   | Branch Ciraci 1           | 294.51          |
| M 4.K 6   | Branch Ciraci 2           | 569.36          |
| M 4.K 7   | Križevici 1               | 268.28          |
| M 4. K 8  | Križevici 2               | 220.72          |
| M 4.K 9   | Križevici 3               | 718.77          |
| M 4.K 10  | Seferovici 1              | 640.07          |
| M 4.K 11  | Seferovici 2              | 194.79          |
| M 4.K 12  | Križevici 4               | 546.39          |
| M 4.K 13  | Križevici - Šib           | 917.23          |
| M 4.K 14  | Križevici 5               | 304.53          |
| M 4.K 15  | Molotovo 1                | 1229.85         |
| M 4.K 16  | Molotovo 2                | 445.02          |
| M 4.K 17  | Boškovici - Parlog        | 2195.87         |

|                |                 |
|----------------|-----------------|
| <b>Phase 1</b> | <b>24879.70</b> |
| <b>Phase 2</b> | <b>24235.61</b> |

TOTAL m:

**49115.31**

Beside pipelines and associated facilities such as reservoirs and pumping stations, other auxiliary structures will be installed along the main and secondary pipeline route. A complete overview of the facilities is provided in Tables 4 and 5.

*Table 4: Facilities on the route of the Main Pipelines*

| No. | Type   | Quantity (pc) | Bright height (m) | Material | Description             |
|-----|--------|---------------|-------------------|----------|-------------------------|
| 1   | TYPE 2 | 1             | 1.8               | AB       | Junction manhole PRŠ    |
| 2   | ST     | 5             | 1.8               | AB       | Sectional valve         |
| 3   | VV     | 19            | 1.8               | AB       | Air valve               |
| 4   | WE     | 21            | 1.8               | AB       | Sludge discharge        |
| 5   | NV     | 10            | 1.8               | AB       | Check valve             |
| 6   | R1500  | 12            | 1.8               | AB       | Branch of GVŠ1          |
| 7   | C 1000 | 8             | 1.8               | AB       | A knot                  |
| 8   | RV     | 1             | 1.8               | AB       | Pressure reducing valve |
| 9   | R5000  | 5             | 1.8               | AB       | Pumping station         |
| 10  | 100m3  | 3             | 1.8               | AB       | Tank 100 m3             |
| 11  | R200m3 | 3             | 1.8               | AB       | Tank 200 m3             |
| 12  | 500m3  | 2             | 1.8               | AB       | Tank 500 m3             |

*Table 5: Facilities on the route of the secondary pipeline*

| No | Type   | Quantity (pcs) | Bright height (m) | Material | Description             |
|----|--------|----------------|-------------------|----------|-------------------------|
| 1  | VV     | 40             | 1.8               | AB       | Air valve               |
| 2  | WE     | 59             | 1.8               | AB       | Sludge discharge        |
| 3  | R1500  | 19             | 1.8               | AB       | Branch SVŠ1             |
| 4  | C 1000 | 24             | 1.8               | AB       | A knot                  |
| 5  | RV     | 9              | 1.8               | AB       | Pressure reducing valve |

## 3. ENVIRONMENTAL CONDITIONS AND SOCIAL CONDITIONS

### 3.1. Physical-geographical and other natural characteristics of the project area

#### 3.1.1. Geographical position and geomorphology

The town of Zvornik is located in the north-eastern part of Republic of Srpska, Bosnia and Herzegovina.



*Figure 7. Geographical location of the City of Zvornik*

In terms of relief, the territory of the municipality of Zvornik is characterized as hilly-mountainous. Only a narrow strip along the Drina River is flat land. On the southern, western, and northwestern sides, the city is surrounded by Majeвица and the foothills of Javor, while Drina River is in the east. Zvornik extends into the flatlands of Semberija through a narrow strip along the Drina. To the west, it is bordered by the hills of Mlađevac, Zmajevac, Kaplan, Kahvenjača, Vratolomac, and Debelo Brdo. The elevation ranges from around 130 meters to 916 meters (the elevation of Mount Jelica). The city itself is located at an elevation of 146 meters, with about 60% of the city situated between 300 and 500 meters above sea level.

The city of Zvornik covers an area of approximately 371.95 km<sup>2</sup> and holds a highly advantageous geostrategic position, serving as a crossroads for major routes leading into the interior of Republic of Srpska, the Federation of Bosnia and Herzegovina, and Serbia. The municipality of Zvornik is connected to the Republic of Serbia through four border crossings, all of which facilitate various types of road traffic. Additionally, the Zvornik-Tuzla railway represents a key transportation corridor, establishing a connection to the industrially developed city of Tuzla.

#### 3.1.2. Climate and climate change

The climate of the city of Zvornik is moderately continental, characterized by hot summers and harsh winters. The climatic conditions are influenced by the geographical location and elevation, leading to differences between the lowland and mountainous areas. The highland areas experience a mountain climate, while the lowlands, particularly around the Drina River, have a continental climate.

Temperature analysis reveals significant variations throughout the year. July is the warmest month, with an average temperature between 20°C and 22°C, while January is the coldest month, with an average temperature between -1°C and 0°C.

In terms of precipitation, the Zvornik municipality falls into a region with relatively low rainfall, with an average annual precipitation of 850 mm, distributed fairly evenly throughout the year, with the highest intensity in autumn and spring. The total number of rainy days is 121. In addition to rain, this area experiences snowfall, which can accumulate up to 1.20 meters with frequent snowdrifts.

The air humidity is very high, with an average annual relative humidity of 78%. The lowest humidity occurs during the summer months, 60%, while the highest humidity is in winter, reaching 85%.

Zvornik receives between 1,800 and 2,000 hours of sunshine annually, with the sunniest months being June and July.

Regarding the wind rose, the prevailing winds come from the southwest, followed by winds from the north and northwest. These are also the directions with the highest wind speeds. Strong winds occur on average 2.1 days per year, most frequently in April, March, and October.

Zvornik  
44.39°N, 19.10°E (163 m nm).  
Model: ERA5T.

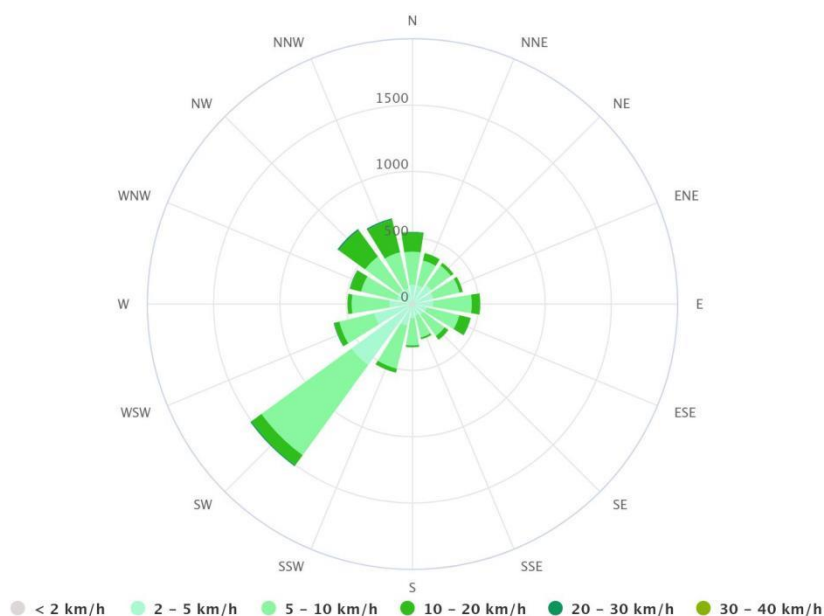


Figure 8. Annual wind rose for Zvornik (Source: Simulated historical climate and weather data for Zvornik)

### 3.1.3. Air quality

In terms of pollutants, they are mostly located in the urban zone of the city and in Karakaj settlement. The main identified problem is the large number of solid and liquid fuel heating systems during the winter months. In addition to the heating problem, significant pollutants include the high volume of vehicles operating in a small area, emitting exhaust gases, as well as trucks transporting ore, which generate large amounts of dust.

An additional issue is the lack of protective greenery, which could reduce the spread of dust and partially neutralize the negative impact of exhaust gases.

Given that the primary problem is the high number of heating systems using solid and liquid fuels during the winter months, air quality measurements are conducted only during the heating season using a monitoring station located in the city zone in Svetog Save Street 71A. The measurements are continuous, 24 hours a day, and monitor the basic air quality parameters: SO<sub>2</sub>, CO, NO, NO<sub>2</sub>, NO<sub>X</sub>, O<sub>3</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>, as well as meteorological parameters: humidity, pressure, and temperature.

Data from the monitoring station indicate that there are no exceedances of the following air quality parameters: SO<sub>2</sub>, CO, NO, NO<sub>2</sub>, NO<sub>X</sub>, O<sub>3</sub>, PM<sub>2.5</sub>. However, during December and January, there are exceedances of the limit value for PM<sub>10</sub>, which occur as a result of the burning fossil fuels. These exceedances are minimal and limited by location and time.

#### **3.1.4. Noise**

Parts of the inner-city center, especially Divič and Karakaj, settlements located along traffic roads, are most at risk from noise. Due to the proximity of the border crossing and the passage of the main road through parts of the settlement, it can be assumed that the noise on certain days and periods of the day exceeds the permitted limits.

Noise, as a form of pollution, endangers settlements along major roads, especially Divič and Karakaj. The settlement of Karakaj is in a particularly unenviable position precisely because of the industrial facilities located there. The high concentration and high frequency of traffic with industrial facilities make Karakaj a settlement with the highest noise pollution.

Noise measurement is conducted only as part of the mandatory monitoring specified in the environmental permit for businesses that are required to obtain an environmental permit, or in the case of receiving grievances from citizens regarding high noise levels.

#### **3.1.5. Hydrology and water quality**

In the municipality of Zvornik, twelve river basins have been identified, along with three areas where streams flow directly into the Drina River.

##### Surface water

Regarding the water quality of the Drina River and the Zvornik reservoir, the situation is as follows:

- The water quality meets the conditions of Class II for watercourses, as prescribed by the Regulation on Water Classification and Categorization of Watercourses (Official Gazette of the Republic of Srpska, No. 42/01)
- The quality of all surface watercourses that flow into the Drina River and Zvornik Lake must also meet the conditions of Class II watercourse quality.

All waste water from the residents and industry in the urban part of Zvornik is currently discharged into the Zvornik lake and to a greater extent, into the Drina River, without prior treatment. Measurements of BOD<sub>5</sub> (biochemical oxygen demand) at the discharge point in Zvornik have shown increased BOD<sub>5</sub> values, indicating a negative impact on the water quality of the Drina River.

In addition to the issue of direct wastewater discharge into surface watercourses, there is also the problem of uncontrolled disposal of municipal and other waste near riverbeds, as well as pollution caused by the uncontrolled runoff of water from roadways.

##### Underground water

The highest risk of groundwater contamination occurs at the locations of springs and their immediate vicinity. The Zvornik municipality is home to numerous springs with capacities ranging from 0.1 l/s to 15 l/s. Many of these springs are tapped for the organized water supply to residents in both urban and rural areas, within local communities.

The municipality of Zvornik has enacted a decision to protect water sources throughout the entire area, covering all water intakes, whether springs or wells, used for the public water supply. This decision defines protective zones and outlines measures to safeguard all springs and wells:

- Supplying drinking water to more than 500 residents,
- Supplying drinking water to fewer than 500 residents,
- Non-captured sources. The source of Tilić Ada

The water supply from the Tilić Ada source, which serves both the existing water system and the planned water supply system, undergoes regular quality testing by the “Public Health Institute.” Analysis of the physical-chemical, microbiological, and radiological parameters indicates that the tested water samples are safe for human consumption.

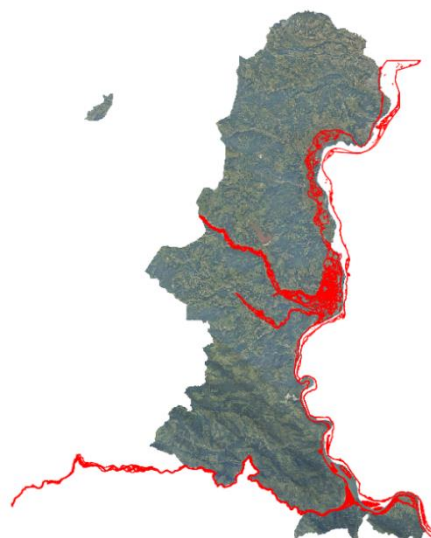
### 3.1.6. Hydrography and floods

The hydrographic network of the municipality of Zvornik is very well developed throughout the territory. A large number of smaller and larger surface streams and springs are evenly distributed over the entire territory of the municipality.

All major surface currents flow from west to east. And the biggest constant streams are:

- |                   |                   |                   |
|-------------------|-------------------|-------------------|
| • Drina           | • Kozlučka river  | • Kamenička River |
| • Tavna stream    | • Sapna           | • Drinjaca        |
| • Pilića river    | • Hoča            | • Jadar           |
| • Lokanjska River | • Zlatica         | • Polomski stream |
| • Jasenicka river | • Jošanička river |                   |

A common characteristic is that all streams are permanent, with a torrential nature in their upper reaches and typically taking on the characteristics of lowland rivers in their middle and lower courses. During hydrological peaks, they overflow their banks and flood the surrounding areas.



*Figure 9. Flood hazard zones*

The area planned for the installation of pipelines and the construction of accompanying facilities is not in the danger zone.

### **3.1.7. Geology**

During geological evolution, the territory of Zvornik and its surrounding areas saw the formation and deposition of lithologically heterogeneous structures, including Paleozoic, Triassic, Jurassic, Cretaceous, Tertiary, and Quaternary formations.

- **Paleozoic Rocks**  
These are the oldest rocks in the area, characterized by a massive texture and significant alterations in surface layers. They form a narrow zone extending from Sopotnik southeastward toward Karaula and Tomino Hill, as well as the Oštri Brijeg area in the Drinjača Valley and along the Kamenica Stream on its left bank near its confluence with the Drina River.
- **Triassic Rocks**  
These occupy a substantial portion of the terrain, predominantly in the southern part of the municipality and south of Zvornik.
- **Jurassic Rocks**  
These are divided into serpentinites and diabase-chert formations, characterized by numerous fractures. The diabase-chert formation features claystones, cherts, sandstones, and occasionally marl limestones. Serpentinites appear in a narrow zone along the Hoča River, extending through Zeleni Kamen peak to the Drina River. They are also found along the Jošanička River, northwestward through the Kamara area and the Bjelobara stream, reaching Orahovac. The diabase-chert formations spread across a wide area around the Lipovac settlement and Mount Vrnjača, with smaller occurrences west and southwest of Zvornik.
- **Upper Cretaceous Rocks**  
These cover larger areas in the northern part of the municipality, as well as central and southern portions. They include several distinct lithological complexes.
- **Tertiary Rocks**  
These form the largest part of Zvornik's territory and are represented by Paleogene and Neogene lithostratigraphic complexes.
- **Quaternary Sediments**  
These are primarily river terrace deposits and alluvial deposits from the Drina River and major watercourses such as the Lokanj River, Jasenička River, and the Sapna and Hoča Rivers.

### **3.1.8. Seismology**

The seismicity of the terrain was determined on the basis of the Seismological Map of the SFRY from 1987, according to which the largest part of the municipality of Zvornik is the area with the maximum intensity of expected earthquakes  $I=7^{\circ}$  MSK-64 and a lower probability of occurrence for a return period of 100 years. The narrower part of the Drina and the city of Zvorik itself is in the zone with intensity  $I=8^{\circ}$  MSK-64, and only a small part in the far north is in the zone  $I=5$  MSK-64, also for a return period of 100 years and the probability of occurrence is 63% .

For a return period of 500 years and a probability of occurrence of 63%, the narrower zone along the Drina is the area with the expected earthquake intensity  $I=9^{\circ}$  MSK-64, and for the entire other area it is  $I=7^{\circ}$  MSK-64.

### **3.1.9. Soil, soil quality**

The most common negative impacts on soil in the municipality of Zvornik include:

- Improper waste disposal,
- Deposition of hazardous particles resulting from combustion in industrial facilities,
- Emissions from vehicles, households, and similar sources,
- Uncontrolled construction,
- Excessive use of plant protection chemicals,
- Surface exploitation of solid mineral resources,
- Pollution that may occur following flood surges, and more.

Soil quality measurements in the municipality of Zvornik are conducted only during accidental situations. According to the environmental inspector, no such incidents have been reported in the municipality.

### **3.1.10. Waste management**

The "Crni Vrh" Regional Landfill is used for the disposal of municipal waste. It serves the city of Zvornik and eight other municipalities, covering a population of approximately 195,000. The landfill is designed to accommodate 94.4 tons of waste daily over a period of 19 years. According to its classification, it is a non-hazardous waste landfill.

Regarding the waste composition and challenges with separate collection and treatment, Zvornik faces similar issues to other municipalities in the Republic of Srpska. Additionally, the problem of illegal dumpsites arises.

According to the "Survey of Municipal and Illegal Dumpsites in the Bijeljina-Zvornik Region," 32 illegal dumpsites have been documented within the Zvornik municipality. However, along the route of the planned pipeline and at the locations designated for necessary facilities, no illegal dumpsites have been observed. If workers find unsanitary landfills at the locations of the planned water supply system during construction, they must remove them.

### **3.1.11. Flora and fauna and landscape**

The vegetation in the Zvornik municipality is shaped by its climatic and geographical characteristics.

Since a significant portion of the municipality lies at an altitude between 300 and 500 meters above sea level, favorable conditions exist for forest cultivation. Forests cover 13,741 hectares, accounting for 37% of the total area.

Under the prevailing climatic conditions, mixed deciduous forests thrive, including trees such as beech, oak, hornbeam, chestnut, ash, and others.

In the area covered by the sub-project, alongside arable land used for fruit and vegetable crops, there are also meadows, pastures, and wild-growing vegetation.

### **3.1.12. Protected areas of nature**

According to national legislation, there are currently no protected nature areas in the Zvornik municipality. Therefore, the location of the project area does not belong to the area under protection.

### **3.1.13. Cultural and historical heritage**

In the Zvornik municipality, there are just two national monuments, that are listed as the Cultural and historical heritage of the Republic of Srpska:

- The Old Town of Zvornik, an
- Hadžibeg's House – a residential architectural complex.

The Institute for the Protection of Cultural, Historical, and Natural Heritage of the Republic of Srpska has documented numerous cultural assets within the Zvornik municipality. However, none of these cultural or historical sites are located along the route of the planned water supply system and therefore will not be impacted by the project.

If an archaeological site, artifacts, or objects presumed to have the characteristics of a natural monument are discovered during construction work, the work will be immediately halted, and the Republic Institute for the Protection of Cultural, Historical, and Natural Heritage of Republic of Srpska will be notified. All necessary measures will be taken to prevent damage to the cultural and/or natural property until the arrival of an authorized representative.

## **3.2. Socio-economic characteristics of the project area**

### **3.2.1. Demographic characteristics**

According to the 2013 census, the municipality of Zvornik had a population of 58,856. Spanning a total area of 371.95 km<sup>2</sup>, the municipality comprises one urban and 67 rural settlements. The city of Zvornik, as the only urban settlement, covers an area of approximately 3.96 km<sup>2</sup> with a population density of about 2,905.4 inhabitants per km<sup>2</sup>, amounting to 11,497 residents.

While the settlements that are the subject of this project had a total of 6,116 inhabitants, namely:

- Glumina – 1.191 residents
- Oraovac - 711 residents
- Križevići – 2.016 residents
- Kitovnice - 441 residents
- Donji Grbavci - 420 residents
- Gornji Grbavci – 1.009 residents
- Long part - 328 residents

In the period from 2013 to 2024, there was migration of the population, which affected the change in demographics. Table 6 shows the current and forecasted population for the planning period until 2050.

Table 6. Current and projected population for the planning period until 2050

| No. | Settlements        | Number households | Number residents |             |             |             |
|-----|--------------------|-------------------|------------------|-------------|-------------|-------------|
|     |                    | in 2020           | in 2020          | 2030        | 2040        | 2050        |
|     |                    | Growth Rate %     | 0                | 0.5         | 0.5         | 0.5         |
| 1   | Glumina            | 325               | 975              | 1025        | 1077        | 1132        |
| 2   | Oraovac            | 198               | 594              | 624         | 656         | 690         |
| 3   | Križeviči          | 527               | 1581             | 1662        | 1747        | 1836        |
| 4   | Kitovnice          | 122               | 366              | 385         | 404         | 425         |
| 5   | Donji Grbavci      | 122               | 366              | 385         | 404         | 425         |
| 6   | Gornji Grbavci     | 301               | 903              | 949         | 998         | 1049        |
| 7   | Dugi Dio           | 79                | 237              | 249         | 262         | 275         |
| 8   | Karakaj and Jordan | 120               | 360              | 378         | 398         | 418         |
|     | <b>TOTAL:</b>      | 1794              | <b>5382</b>      | <b>5657</b> | <b>5947</b> | <b>6251</b> |

### 3.2.2. Economy

In the Zvornik municipality, a total of 314 businesses, 794 entrepreneurs, and 20 public institutions are registered.

Table 7. Number of registered companies - classification by type of activity

| Ordinal number | NAME   | TOTAL |
|----------------|--|-------|
| 1              | Agriculture  | 6     |
| 2              | Extraction ore and stone   | 8     |
| 3              | Processing plant industry  | 62    |
| 4              | Production and supply electric energy , gas , steam and air conditioning                                 | 7     |
| 5              | Supply water; sewerage, management waste and activities rehabilitation (remediation) of life environment | 1     |
| 6              | Construction   | 47    |
| 7              | Trade on big and small ; Repair motor vehicles and motorcycles   | 92    |
| 8              | Transport and storage  | 26    |
| 9              | Activities of provision accommodation , preparation and serving food ;                                   | 5     |
| 10             | Information and communications   | 7     |
| 11             | Financial activities and insurance activities  | 1     |
| 12             | Business real estate   | 6     |
| 13             | Professional , scientific and technical activities   | 15    |
| 14             | Administrative and auxiliary serviceable activities  | 3     |
| 15             | Education  | 2     |
| 16             | Activity health protection and social of work  | 17    |

This sub-project would be of significant importance for all the aforementioned activities, especially for the smaller agricultural households that predominate in the areas covered by the project.

The construction work on the water supply network will have a minimal negative impact on these businesses, primarily due to construction activities along the pipeline routes and reduced accessibility to certain parts of the settlements. However, this impact is localized and short-term, while the benefits of the planned project are long-term.

### **3.2.3. Agriculture**

In the database of agricultural farms for the year 2024, 667 farms were registered in the area of the municipality of Zvornik.

Of the total area of 789.14 ha, which is owned by registered farms, there are 756.67 ha of arable area, while 745 ha have been cultivated.

The largest area is covered by orchards, followed by meadows and pastures. Farms with larger areas of pastures and meadows raise livestock, mostly cattle and sheep.

### **3.2.4. Infrastructure**

Due to its favorable geographical position, the city of Zvornik is well connected, both within the local communities and with the rest of the Republic of Srpska

The water pipeline planned by this sub-project will be built along major roads, as well as along the routes of smaller local roads, due to easy maintenance and access to the route itself.

Traffic, technical and communal infrastructure has been developed in the project area, on which the project in question will have a significant impact.

During construction works, the machines will work along the main roads for the installation of water and sanitation pipes. In this way, there will be minimal impact of the works on the road routes along which the pipeline is planned. If there is a need to excavate roads for the purpose of installing pipelines, this section of the road will be reconstructed after the completion of the works on the section. The execution of the works itself will be organized in such a way as to enable the smooth functioning of citizens, access for pedestrians and vehicles to the facilities, access to emergency and fire services and communal services.

About all changes in the traffic regime and other service information (interruption in the supply of drinking water, electricity, telecommunications, municipal waste collection, vehicle access restrictions) citizens will be informed in time through all available communication channels (e.g. TV, radio, social media, written notes placed on frequently visited places in the community).

In the event of an interruption of the water supply at the location during the execution of the works, the utility company will provide tanks with drinking water. The community will be notified at least two days in advance of supply interruptions and locations of water tankers with drinking water which will be provided by the utility company. The communication channels of such notifications will be: local radio stations, social media accounts of the municipality, daily newspaper and written notes placed on frequently visited places in the community.

Pedestrian traffic will be ensured by roadway steel plates placed over holes, trenches, dug channels, and vehicle access will be limited to a minimum time.

## 4. ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS AND MITIGATION MEASURES

### 4.1. Presentation and classification of environmental and social risks and impacts of the project

The risk assigned to the sub-project is moderate, therefore it requires the preparation of an ESMP as detailed in the ESMF. The activities are expected to have moderate environmental, social and OHS risks, which will require attention and appropriate mitigation measures, therefore the City of Zvornik, with the support of PMT, will include environmental and social requirements for the Contractor including all OHS requirements in the contract and tender documentation.

Environmental and social impacts for the sub-project "The construction of the water supply system "Zvornik-West" (the settlements of Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in the area of the city of Zvornik" are present during the preparatory phase (planning/design), but considering the nature of the project, primarily during the construction phase, and are attributed to activities such as the machinery operation, procurement, transportation and use of materials and raw materials for construction works, possible damage to private and public property, air pollutant emissions, noise and vibration emissions, solid waste generation and potential risks arising from incidents and hazards at work.

Environmental impacts and risks during the use phase are minimized or absent. During the exploitation phase, the water supply network will have positive effects on society.

In the next part, the main risks and impacts of the project in different phases of the sub-project are classified and summarized.

#### **General impacts in the preparatory phase (planning / designing)**

- There is a potential risk of lack of coordination with the relevant construction authorities and public utilities managing infrastructure at the construction sites. This issue may arise due to insufficient communication with the public and relevant institutions, as well as the failure to obtain necessary approvals.
- If a Waste Management Plan is not developed during the design phase, improper storage of generated waste could occur, posing a threat to the environment.
- Unresolved property and legal issues along the planned route for the construction of the water supply network.

#### **Potential risks and environmental impacts during the construction phase:**

- **Negative Impact on Air Quality:** During construction (e.g., clearing, cutting concrete/asphalt, excavation, backfilling, soil compaction, material delivery, and waste removal), emissions of dust and exhaust gases from internal combustion engines are expected. Inefficient engines and high operating temperatures produce significant pollutants, such as nitrogen oxides (NO<sub>x</sub>), hydrocarbons, carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), soot, particulate matter, lead, aldehydes, and secondary pollutants. This issue is exacerbated when vehicles lack ecological catalysts. The pollutants include primary ones from fuel combustion and secondary ones formed in the atmosphere from primary pollutants. These impacts are temporary and localized.
- **Negative Impact on Water:** Impacts on water are negligible, as there are no watercourses in the project area, and changes in groundwater quality are not anticipated.

- **Negative Impact on Soil:** Soil impacts are significant in this sub-project. During construction, surface soil layers are disturbed; however, trenches will be backfilled, restoring the soil's original appearance. Potential soil contamination may occur from oil or fuel leaks from machinery and vehicles, but these are localized and accidental. Improper disposal of various waste classes, especially hazardous waste (as defined in the Waste Categories Regulation), could also pollute the soil. This can be avoided by adhering to the Waste Management Plan.
- **Noise and Vibration:** Construction activities may increase noise and vibration levels above permissible limits due to machinery operation, the presence of workers, and increased vehicle traffic at work sites. Older or malfunctioning machines may emit higher-than-expected noise levels. These impacts are moderate and can be mitigated through preventive measures, modern equipment with noise suppressors, and other mitigation strategies.
- **Impact on Flora and Fauna:** The impact is minimal and localized to construction sites. Soil degradation will occur where pipelines and associated facilities are installed. Locations designated for reservoirs and pump stations will experience permanent land use changes. However, these areas are not used for agriculture or orchards and remain agriculturally unutilized.
- **Cultural and Historical Heritage:** No cultural or historical monuments are present along the route. However, if archaeological findings or historically significant objects are discovered during construction, these must be reported and considered appropriately.

**Social risks and impacts during the construction phase:**

- **Damage to Existing Infrastructure:** During construction, there is a potential risk of damage to existing infrastructure, such as roads and underground utilities (electricity, telephone lines, etc.). However, if existing infrastructure maps are followed, this impact is negligible.
- **Traffic Disruption:** Construction activities may require partial or complete closure of certain road sections, causing changes in traffic flow. Alternative routes must be provided to ensure uninterrupted traffic movement.
- **Increased Traffic from Construction Vehicles:** Higher traffic from construction machinery and contractor vehicles may temporarily impact road accessibility. This moderate impact can be further minimized through effective work organization and adherence to good construction practices.
- **Lack of Worker Awareness and Training:** The risk of insufficient awareness and knowledge among workers regarding construction procedures is low, given the scope of the project.
- **Risk of SEA/SH in local communities is low** due to the local context, no labour influx, short duration of works per section. The Project will work proactively and implement measures as per the Project's LMP, ESMF and SEP. These mitigation measures include a GRM sensitized to managing SEA/SH related grievances and a requirement for a workers's Code of Conduct with specific provisions on SEA/SH, as well as workers and community awareness raising activities.
- **Impact on Human Health:** Impacts related to air, water, and soil pollution are localized and, considering the nature of the project, short-term.

**Potential OHS risks and impacts during the construction phase:**

- **Worker Injuries:** There is a risk of worker injuries from falls, machinery operation, or improper use of construction equipment. This can be prevented by mandatory use of personal protective equipment (PPE).
- **Exposure to Hazardous Materials:** Handling hazardous substances, such as chemicals and oils, may cause skin, eye, and respiratory tract irritation. Proper handling procedures will prevent potential harm.

- **Dust Generation:** Construction activities, especially trench excavation, asphalt cutting, and concrete work, may generate dust, causing respiratory irritation. Protective masks should be used to minimize this impact.
- **Trench Collapse:** There is a risk of trench collapses, particularly in areas with unstable terrain. Adequate reinforcement and safety protocols must be implemented.
- **Physical Exhaustion:** To avoid the risk of physical fatigue, legal work hours must be strictly followed.
- **Natural Disasters:** Risks from extreme weather conditions (e.g., high or low temperatures, precipitation) can be mitigated by adjusting work schedules to suit weather conditions.
- **Electrical Shock:** Accidental electrical shocks may occur if existing underground electrical installations are not properly considered. Adherence to infrastructure maps is crucial.
- **Injuries from High-Pressure Water:** During pipeline work, workers may be injured when dealing with water under high pressure. Appropriate safety measures must be in place.
- **Noise Pollution:** The operation of machinery and equipment increases noise levels, which can negatively affect human health. Noise-dampening equipment and measures should be employed.
- **Accidents:** There are risks of accidents involving machinery operation, material transport, and waste removal from the construction site. Adhering to safety protocols and good construction practices is essential to mitigate these risks.

**Risks and impacts during exploitation and maintenance:**

- Impacts on the emission of pollutants into the environment during this phase do not exist or are negligible.
- In the event of a failure on part of the pipeline (pumping station, burst pipe, tank, etc.), interruptions in water supply are possible. Failures can be caused by external factors, wear and tear of equipment or human activity, as well as inadequate system maintenance.
- Poor hygiene of distributed water. This impact is considered low due to the regular practice of sampling and proper physico-chemical and microbiological analysis conducted by the user.
- The construction of a water supply pipeline in the subject area has a positive impact on the health of the population, considering that this facility provides a stable and high-quality supply of conditionally healthy drinking water to the population. This creates better conditions for the future socio-economic development of the subject area.

**Risks and impacts after the realization (use) of the project:**

- Impacts are difficult to predict and quantify due to the lack of knowledge of the project's lifetime, but in the context of increasingly responsible waste management and the possibilities of proper waste disposal, these impacts are considered to be low.

## 4.2. Presentation and classification of prevention and mitigation measures

Mitigation and prevention measures can be classified according to the different phases of the project:

- **Prevention and mitigation measures in the preparation, design/planning phase**  
These measures refer to obtaining all necessary permits before starting work. Choosing a qualified construction company to perform the necessary works, as well as informing the public and relevant institutions about the planned works.

It is necessary to purchase plots of land on which the construction of reservoirs and pumping stations is planned, or to collect the consents and statements of the rights holders, so that the works can begin.

Table 8 lists all plots on which reservoirs and pumping stations will be located, as well as whether the consent of the rights holders has been obtained.

The city of Zvornik has issued a Construction permit for works on the Zvornik-West water supply network.

*Table 8. Overview of plots on which the construction of water supply network facilities is planned*

| Ordinal number | Name of the object | Cadastral parcel number | Cadastral municipality | real area m <sup>2</sup> | needed area m <sup>2</sup> | Status of approval/consent of the owner of the plot in terms of its use for works on the building of the water supply system Zvornik west |
|----------------|--------------------|-------------------------|------------------------|--------------------------|----------------------------|---|
| R1             | LIPOVAC            | 6877                    | Zvornik                | 3065                     | 1000                       | Signed consent by the owner   |
| R2             | LAŽETE             | 1442/2                  | Glumina                | 2668                     | 1000                       | Signed consent by the owner   |
| R3             | PANDURI            | 1967                    | Glumina                | 1996                     | 1000                       | Signed consent by the owner   |
| R4             | ORAOVAC            | 1246                    | Glumina                | 1174                     | 1174                       | City of Zvornik   |
| R5             | ČIRACI             | 3475/1                  | Grbavci                | 3403                     | 1380                       | Signed consent by the owner   |
| R6             | KRIŽEVIĆI          | 2124                    | Križevići              | 4959                     | 1000                       | Signed consent by the owner   |
| R7             | GRBAVCI            | 2624                    | Grbavci                | 2268                     | 1000                       | Signed consent by the owner   |
| R8             | Rasteretna         | 2093/1                  | Grbavci                | 295580                   | 200                        | Public forestry enterprise "Šume Republike Srpske"  |
| PS1            | LIPOVAC            | 8678                    | Zvornik                | 23004                    | 150                        | Public Enterprise "Roads of the Republike Srpske"   |
| PS2            | LAŽETE 1           | 1383/2                  | Glumina                | 994                      | 150                        | City of Zvornik (roads)   |
| PS4            | ČIRA               | 3475/1                  | Grbavci                | 1380                     | 1380                       | Signed consent by the owner   |
| PS5            | KRIŽEVIĆI          | 1112                    | Glumina                | 1732                     | 264                        | City of Zvornik   |

- Prevention and mitigation measures during the construction phase  
In this phase, the implementation of good construction practices is crucial. In this way, a negative impact on the air, soil stability, water and soil quality will be prevented, and noise

and vibration levels will be reduced during the execution of works. A list of good construction practices should be incorporated into the Contract with the Contractor.

The works should be adapted to the activities of the local community, respecting the working hours at the construction site. It is necessary to provide alternative routes so that traffic can proceed smoothly.

The Contractor is responsible for the implementation of the aforementioned measures, as well as the Environmental Monitoring Plan, they must be included in the Contract with the contractor, and the implementation costs must be included in the construction costs. It should be noted that if the mentioned measures and good construction practices are not followed, significant damage may occur, accompanied by financial problems.

The investor and the designated supervisor are responsible for monitoring the implementation of the mitigation measures as well as the Monitoring Plan.

In case it is necessary to interrupt the water supply during the works, residents must be notified at least 2 days in advance. A water tanker with drinking water should be provided to residents if the interruption lasts longer than 2 hours.

In case of an unplanned water supply interruption, it is necessary to redirect all available workforce to resolve the issue as quickly as possible. If it turns out that the damage is more significant and the repairs will take longer, it is essential to provide water tankers with drinking water for the residents of the affected areas.

- Prevention and mitigation measures in the use phase  
Regular and adequate maintenance of installed equipment, including pipelines, pumping stations and tanks as well as supporting facilities will reduce potential network failures.
- Prevention and mitigation measures in the phase of removing objects.  
They relate to proper disposal of outdated equipment, in accordance with the Law and Regulations on waste classification and management.

**Air pollution (dust generation and gas emissions) during construction works and maintenance will be mitigated:**

- By using the correct equipment and proper maintenance of machines, CO emissions, suspended particles and smoke will reduce air pollution to a minimum.
- By wetting the construction site surfaces with water to reduce dust.
- Covering trucks transporting excavated material, fill material, construction and waste material to prevent its spillage and uncontrolled spread.
- Storage and covering of materials at the excavation site, if necessary, to prevent possible spread by wind.

**Increased noise levels can be mitigated by:**

- Use of well-maintained equipment with silencers and regular equipment maintenance.
- Use noise suppressors during operation if it proves necessary.
- Limit noisy activities to normal daily hours during the prescribed working hours.
- Limit vehicle speed at critical locations.

**Soil and groundwater pollution can be mitigated by:**

- Ensure that waste or excavated materials are stored in the prescribed place in cooperation with the responsible utility company, in an appropriate manner in order to prevent contamination of groundwater and/or springs.
- Purchase an adsorbent (e.g. ecopor, commercial, patented means) for the treatment of potentially spilled harmful liquids (fuel, lubricants...), and if the same is used, treat it as

hazardous waste and dispose it in cooperation with a company authorized for hazardous waste management.

- Provide a waterproof base and restrict access to non-employees for all locations with containers of chemicals.
- Ensure the presence of appropriate equipment to prevent the spillage of dangerous substances.
- Proper storage of hazardous materials away from the ground, wells and water tanks.
- Store chemicals, hazardous waste and materials such as cement according to their safety and technical data sheets (MSDS/BTL).

**Production and disposal of solid waste can be mitigated by:**

- Regular cleaning, construction site maintenance and waste collection.
- By ensuring that solid waste is regularly collected and stored in designated locations in plastic or metal closed containers.
- Properly collect, transport and dispose of solid waste at designated locations or landfills in cooperation with the competent utility company.
- All waste generated during the execution of works shall be classified according to types of waste, in accordance with the Rulebook on categories, testing and classification of waste ("Official Gazette of the Republic of Srpska", number 19/15 and 79/18).
- Proper covering of trucks transporting solid waste to avoid spillage during transportation.
- Keep records of waste movements and keep receipts from the company responsible for the Regional Landfill.

**Impacts on flora, fauna and natural surroundings can be mitigated by:**

- During the construction of reservoirs and pump stations, there will be a change in land use on which the works will be carried out. These are locations that have not been used for agricultural purposes and occupy a small area. In this way, the impact will be localized. There are no protected species of plants in the area intended for the construction of the pipeline system, mostly wild plants, which will be restored after the installation of the pipes and backfilling.

**Accidents and injuries at work can be mitigated by:**

- Provide occupational safety training for all employees involved in the work and ensure compliance with occupational safety measures.
- Provide the necessary personal protective equipment at the construction site: protective masks, helmet, coveralls, safety shoes and safety glasses, antiphons. In areas of high noise, the use of earplugs or earmuffs is mandatory, especially for workers who operate equipment that emits excessive noise. When working on excavations, cutting concrete, asphalt, etc., where excessive dust is emitted, it is necessary to use protective masks for the upper respiratory tract.
- Inform all workers about the position of the first aid package, which must be correct and complete.
- Place information about the nearest emergency room and hospital in a visible place.
- Trained drivers must follow safe driving instructions and follow the speed limit. Regular maintenance of trucks and other machines on the construction site is required.
- Appropriate warning signs must be placed on the construction site.

- Workers should be insured according to the requirements of the tender documentation, and in accordance with the Labor Law.
- The contractor should protect workers and the public by covering excavations and erecting protective fences around construction sites.
- The contractor will prepare and submit a health risk statement and assessment for high-risk work activities.
- Ensure workers are familiar with proper lifting techniques to avoid back injuries.
- Ensure regular rest breaks, meals and proper drinking water.
- Adhere to the permitted working hours and, except in necessary situations, avoid keeping workers overtime.

**The risk to workers from hazardous materials can be mitigated by:**

- Train workers on the proper use and handling of hazardous chemicals and materials.
- Handle, store and dispose of hazardous materials and waste in accordance with their BTLs (MSDS).

**Risk of worker exhaustion:**

- Provide employees with access to toilets, drinking water and hygiene products (soap, clean water).
- Provide and implement safety measures at the construction site during the implementation of the subproject.
- Respecting working hours and ensuring regular breaks.

**The risk of collapse of excavated trenches on unstable ground can be mitigated by:**

- By shoring up the excavation to avoid collapse of the excavation or material falling into the pits and to ensure safe access and egress from the excavation for workers, machinery and equipment.
- By placing warning signs for safe excavation along the trenches.
- By removing temporary supports gradually as backfilling proceeds.
- By removing unnecessary material from the sides of the excavation to prevent backfilling of the excavation.
- Provision of occupational safety training for all employees involved in the execution of works.

**The risk of lifting water pipes can be mitigated by:**

- By closing the space with a fence to prevent access to the space during the works.
- By placing warning signs for pipe lifting activities at the workplace and other danger zones.
- By carrying out pipe lifting by a trained and qualified worker.
- Provide all necessary personal protective equipment for workers.
- The use of suitable lifting equipment, which is technically correct and regularly maintained, and is designed for the appropriate weight of the load.
- Secure the load when lifting with the use of strong and reliable fastening materials, in order to prevent tearing off and falling from great heights. The capacity of the lifting device must be at least 1.65 times greater than the maximum calculated static load at that point, while the ultimate load must be  $\geq 4$  times greater than the maximum static load;
- Secure the lifting area, so that workers stay at a safe distance from the lifting zone.

**Risks from adverse weather effects:**

- It is mandatory to check the weather conditions before performing any work;
- Work should be avoided in rainy weather, periods with strong winds and during intense heat.
- In case of high temperatures, ensure sufficient quantities of drinking water and regular breaks.

**Risks of electric shock from electric poles:**

- Consider overhead or underground power lines.
- Make sure that areas of power lines near the construction site are not surrounded by wet soil.
- Raise workers' awareness of protection from electric shock.
- Avoid working during heavy and prolonged rains.

**Risks of damage to underground utility infrastructure (electricity, internet, telephone, etc.) that can be mitigated:**

- By coordinating with local authorities, competent utility companies and locating and marking the infrastructure before the start of work.
- Provide up-to-date floor plans and drawings of all key underground installations.
- Before starting the excavation, carry out manual excavation, where necessary, in order to avoid damage to the underground infrastructure.
- By obtaining consent from competent companies and institutions, for excavation in zones with underground infrastructure, before the start of work.
- Anticipate time for repairs of potentially damaged private or public property (infrastructure, etc.).

**Risks of temporary interruption of access to household/business activities due to construction that can be mitigated:**

- By ensuring that traffic closures will not cause disruptions in the daily activities of the population by providing alternative access to residential and business facilities along the road;
- Coordinating the execution of works on the timing of construction works and informing the public before the start of works in order to avoid disrupting daily activities or disrupting traffic.
- Pedestrian traffic should be ensured by placing steel plates over the excavated canals, which should be secured with fences, and vehicle access should be limited to a minimum period of time.
- The construction will be carried out in phases to ensure that alternative routes remain accessible. Each resident will be notified 2 days prior to the commencement of work through announcements in local media, portals, local television, and by posting notices on bulletin boards within the community, so that everyone is informed about the start and duration of the work. During the construction, emergency and fire vehicles will be on standby to ensure a quick response if needed. After working hours, excavations will be secured and protected to prevent accidents, such as falls into trenches or similar incidents.

In addition to all of the above, the contractor is responsible for the timely restoration and return to its original condition of any public and private property damaged during the execution of the subproject. This includes the repair of any infrastructure, such as roads, sidewalks or utility infrastructure, that may be affected by construction activities. The contractor must ensure that all restoration work is

carried out in accordance with the needs of the competent authorities and infrastructure owners, and that all disturbances caused by construction are minimized. Furthermore, the contractor should provide compensation for any resulting damage, in accordance with the terms of the contract and applicable laws and regulations in the Republic of Srpska.

## 5 . ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

### 5.1. Plan of prevention and mitigation measures

Table 9. Potential impact on the environment and society and mitigation measures

| Phase                     | Problem/Impact   | Mitigation measure  | Cost                              | Responsibility        |
|---------------------------|--|---|-----------------------------------|-----------------------|
| <b>General conditions</b> |  |   |                                   |                       |
| Planning and design phase | <p>Lack of coordination with competent institutions for construction, and with public companies that manage infrastructure.</p> <p>Failure to notify the public.</p> <p>Failure to obtain the necessary permits and consents in the field of spatial planning and construction and environmental protection.</p> <p>Failure to plan waste management at the location of the works.</p> <p>Damage to existing infrastructure due to untimely identification and locating.</p> | <p>Inform all relevant institutions and organizations about the works (e.g. police, competent inspections, utility companies, etc.). Inform the public with timely and relevant information about the type of works and their temporal and spatial scope.</p> <p>All permits and approvals (building permits, water approvals, etc.) must be obtained before the start of the works.</p> <p>The city of Zvornik has issued a construction permit for the construction project of the Zvornik-west water network.</p> <p>Identify and contact registered landfills for disposal of construction and other waste from construction sites (hazardous and non-hazardous waste).</p> <p>Work on sections that cross the communal infrastructure must be agreed with the providers of public communal services (electricity, water supply and sewerage, telecommunications, etc.).</p> <p>Before starting work on a particular section, precisely determine the positions of the infrastructure/installation routes and provide up-to-date printed and electronic documents with mapped routes.</p> <p>Before starting works for sections in the construction zone, determine the locations of existing private and public property. (No land</p> | Included in the performance costs | Investor / Contractor |

| Phase                                 | Problem/Impact   | Mitigation measure   | Cost                              | Responsibility           |
|---------------------------------------|--|--|-----------------------------------|--------------------------|
|                                       |  | acquisition, temporary or permanent, will be executed as part or in preparation of the Project.).  |                                   |                          |
| <b>Air quality and climate change</b> |  |  |                                   |                          |
| Construction phase                    | <p>Emission of dust and exhaust gases as a result of: preparation of the construction site (land clearing, demolition, etc.), construction, operation of machines.</p> <p>Uncontrolled scattering of solid waste particles and odors.</p> <p>Use of outdated machinery and equipment with inefficient internal combustion engines.</p> <p>Improper storage, handling of materials and waste.</p> | <p>Implementation of good construction practices.</p> <p>Wetting the substrate (manually or with sprinklers) on construction sites, temporary storage areas, roads.</p> <p>Installation of protective fences or temporary protective walls on construction sites, as needed.</p> <p>Stabilization and/or covering of piles of inert materials.</p> <p>Removal of excavated soil and other waste material in vehicles with a covered cargo area.</p> <p>Implementation of waste management measures, especially municipal and organic waste.</p> <p>Use of new equipment and machinery, which is regularly maintained and technically correct.</p> <p>Use of fuel with less polluting substances.</p> <p>Washing tires before going out on paved roads.</p> <p>Daily cleaning of access roads.</p> <p>Implementation of procedures for handling building materials.</p> | Included in the performance costs | Contractor / Supervision |
| <b>Noise and vibration</b>            |  |  |                                   |                          |
| Construction phase                    | Emitting noise and vibrations above the permitted values by using worn-out and   | The contractor shall implement good construction practices.  | Included in the performance costs | Contractor/ Supervision  |

| Phase        | Problem/Impact  | Mitigation measure   | Cost                              | Responsibility           |
|--------------|---|--|-----------------------------------|--------------------------|
|              | defective machines and construction equipment.  | <p>Noise levels should be maintained at the level provided for in the Rulebook on preventive measures for safety and healthy work when exposed to noise.</p> <p>All construction equipment and machinery should comply with the requirements on noise emission in the environment.</p> <p>Use compressors or hydraulic equipment, cutting tools, etc. equipment that emits a lower level of noise.</p> <p>All mechanical equipment should be technically correct, have usage permits and be regularly maintained.</p> <p>Construction works should not be carried out in the evening and at night.</p>   |                                   |                          |
| <b>Water</b> |   |  |                                   |                          |
| Construction | <p>Water pollution with oily waste, fuel, etc. chemicals.</p> <p>Maintenance, service and washing of equipment, vehicles and machinery in places not provided for it.</p> | <p>Construction activities should be planned during dry weather.</p> <p>Control soil erosion to avoid surface runoff and prevent soil or silt from entering drains and canals.</p> <p>Prepare a document on measures in case of accidental situations, in case of uncontrolled spillage of oil, fuel or waste water from the construction site into waterways.</p> <p>Provide means and equipment for preventing leaks and urgent cleaning and remediation of polluting substances.</p> <p>Regular implementation of measures for the management of waste (non-hazardous and hazardous) and hazardous substances.</p> <p>Prohibit washing of equipment, machinery or vehicles in or near watercourses.</p> | Included in the performance costs | Contractor / Supervision |

| Phase              | Problem/Impact   | Mitigation measure   | Cost                              | Responsibility           |
|--------------------|--|--|-----------------------------------|--------------------------|
| <b>Solid waste</b> |  |  |                                   |                          |
| Construction phase | Solid waste pollution including municipal waste and hazardous waste (asphalt, cement, packaging waste, oily waste, inert waste) due to excavation, replacement of pipelines, construction of shafts, etc.    | <p>Prepare a site waste management plan and adhere to it.</p> <p>Sign a contract with the Public Utility Company on the removal of waste to the designated locations. In the case of hazardous waste, it is necessary to sign a contract with an authorized company for disposal and management of municipal waste.</p> <p>All waste generated during the execution of works shall be classified according to types of waste, in accordance with the Rulebook on categories, testing and classification of waste ("Official Gazette of the Republic of Srpska", number 19/15 and 79/18).</p> <p>The generated waste should be stored for a short time in adequate locations (metal or plastic containers, containers or barrels) protected from spillage and weather effects.</p> <p>Earth and other inert material should be properly stored and used for filling the terrain after construction</p> <p>It is forbidden to burn waste outdoors and on site.</p> | Included in the performance costs | Contractor / Supervision |
| <b>Land</b>        |  |  |                                   |                          |
| Construction phase | <p>Degradation, erosion, compaction, destruction of the surface layer of soil as a result of construction activities.</p> <p>Storage of building materials, excavations and waste at construction sites.</p> | <p>When removing the surface layer of soil, it is necessary to put it away and protect it from the effects of the weather, human activity, and everything so that after laying the pipes, a trench can be buried with it and the appearance of the soil can be restored. The temporary disposal site must be away from drains and sewers and protected from erosion, flooding and strong winds.</p> <p>In the case of discovered contaminated soil on construction sites, the Contractor should determine and prepare procedures for the</p>   | Included in the performance costs | Contractor / Supervision |

| Phase             | Problem/Impact  | Mitigation measure  | Cost                              | Responsibility           |
|-------------------|---|---|-----------------------------------|--------------------------|
|                   | <p>Soil pollution as a result of accidental release of fuel, oil, waste.</p> <p>Land degradation by illegal dumping.</p>  | <p>appropriate storage and handling of contaminated soil, in accordance with the relevant regulations on waste management, as well as through communication with institutions responsible for environmental protection (environmental inspections).</p> <p>If, during construction, a wild dump is encountered on the route of the projected water supply network, it must be removed and the land cleaned.</p> <p>In case of soil pollution by accidental spillage of oil, fuel or dangerous substances, the contaminated layer of soil should be removed and treated as hazardous waste in cooperation with an authorized hazardous waste management company.</p> <p>Ensure the implementation of procedures for responsible handling of construction materials, waste, etc.</p> <p>Ensure the implementation of measures for the responsible management of sanitary-fecal water from mobile toilets and stormwater runoff.</p> |                                   |                          |
| <b>Plant fund</b> |   |   |                                   |                          |
| Execution phase   | <p>Removal of plant stock.</p> <p>Occupying meadows and pastures for machinery, equipment and workers' residence.</p> <p>Pollution of the area around the construction site with dust, exhaust gases.</p> | <p>The plant fund on the pipeline route is mainly wild plants and meadows, which will be restored after the suspension of works.</p> <p>Do not occupy an area larger than necessary for the purpose of building facilities for the operation of the water supply network.</p> <p>Adhere to Good Construction Practices and the specified dust protection measures so that the impact is localized and minimized.</p> <p>Avoid cutting down trees unless necessary.</p>  | Included in the performance costs | Contractor / Supervision |

| Phase                                   | Problem/Impact  | Mitigation measure   | Cost                              | Responsibility           |
|---|---|--|-----------------------------------|--------------------------|
| <b>Cultural and historical heritage</b> |   |  |                                   |                          |
| Construction                            | Discovery of archaeological or other tangible or intangible cultural and historical heritage. | <p>In case of encountering archaeological sites or archaeological objects, the contractor is obliged to immediately stop the work and notify the Institute for the Protection of Cultural, Historical and Natural Heritage of the RS, to take measures to ensure that the site is not destroyed or damaged, and that it is preserved in place and the position in which it was discovered.</p> <p>The works will remain stopped until the Institute for the Protection of Cultural, Historical and Natural Heritage of the RS gives the permission to continue the works.</p>  |                                   | Contractor               |
| <b>Social issues</b>                    |   |  |                                   |                          |
| Construction                            | Damage to private property as part of planned construction works.                             | <p>Coordination with supervision and the competent utility company in order to determine the exact location, scope and area of the property that will be affected by the works.</p> <p>Obtain the necessary Declarations on the consent of the use of land for the purpose of the construction of the Water Supply System before entering into the works.</p> <p>Inform the owners of buildings located along construction lines at least 7 days before entering the construction site, in cooperation with the local government.</p> <p>Ensure the restoration of potentially damaged public or private property to its original condition, before leaving the construction site.</p> | Included in the performance costs | Contractor / Supervision |
| Construction                            | Damage to underground utility infrastructure  | Coordination with local authorities and public companies (Municipal, Water supply, Electric, M:tel) and the identification of linear infrastructure before the execution of the works begins.  | Included in the performance costs | Contractor / Supervision |

| Phase        | Problem/Impact  | Mitigation measure   | Cost                              | Responsibility                     |
|--------------|---|--|-----------------------------------|------------------------------------|
|              | (electricity, water, internet, telephone, etc.).  | <p>Ensure the provision of detailed and up-to-date foundations and drawings of the complete infrastructure potentially threatened by the execution of works.</p> <p>In the areas where the underground infrastructure is located, obtain the consent of the competent companies and institutions. If necessary, perform manual excavation in order to prevent damage to the existing infrastructure network.</p> <p>In case of damage to the infrastructure, it must be repaired by the contractor.</p> <p>Inform the public 48 hours before any planned disruption of water (or other utilities) supply. Provide information on location of water tanks, timeframe and cause of disruption.</p>   |                                   |                                    |
| Construction | <p>Limiting public movement while construction work is ongoing.</p> <p>Interruption of traffic roads, temporary suspension of water supply.</p> | <p>Inform the local community and the population in the settlements affected by the works about the planned schedule of works.</p> <p>Ensure that traffic closures will not cause disruptions in the daily activities of the population by providing alternative access to residential and commercial properties along the road.</p> <p>Pedestrian traffic must be ensured by placing steel plates over the excavated canals, which should be secured with fences, and vehicle access should be limited to a minimum period of time.</p> <p>Divide the work into parts and perform them in the shortest possible time.</p> <p>If necessary, speed up the execution of works by hiring additional workers and equipment.</p> <p>Plan an alternative route for heavy machinery and freight vehicles to avoid zones with schools, markets, main city roads, etc. if possible.</p> | Included in the performance costs | Mandatory (Contractual Obligation) |

| Phase        | Problem/Impact  | Mitigation measure   | Cost                              | Responsibility                     |
|--------------|---|--|-----------------------------------|------------------------------------|
|              |   | <p>Prohibit the transport of construction materials and waste through populated areas during the part of the day with the most intensive traffic.</p> <p>Placing signs for detours before commencement of works in coordination with the police and local authorities.</p> <p>Assign people to direct traffic in areas where work is being carried out, where the need is identified.</p> <p>Park machines and equipment away from the streets in the designated area.</p> |                                   |                                    |
| Construction | Public access to the construction site.   | <p>Place warning boards about potential dangers to people and vehicles, as well as fences, barriers and signs prohibiting access to the construction site.</p> <p>In coordination with the police, restrict the movement of heavy freight vehicles on the roads used by the population during the time of the most intensive traffic.</p> <p>Ensure trenches are secured to prevent accidental falls of people and property into the excavations.</p>                      | Included in the performance costs | Mandatory (Contractual Obligation) |
| Construction | Low awareness of workers about respecting the culture of the local community and social protection issues (risks of abuse and sexual harassment). | <p>Prepare and implement a Code of Conduct that reflects the contractor's core values and overall work culture and includes provisions related to SEA-SH.</p> <p>Conduct awareness-raising on issues related to GBV/SEA-SH.</p> <p>Adhere to the measures defined in the Labor Management Procedure.</p>   | Included in the performance costs | Mandatory (Contractual Obligation) |
| Construction | Exploitation of children  | All workers should be over 18 years of age. Checking the age of workers by checking personal documents and official documents.   |                                   |                                    |

| Phase        | Problem/Impact  | Mitigation measure  | Cost                              | Responsibility                     |
|--------------|---|---|-----------------------------------|------------------------------------|
|              |   | <p>Ensure that the records of workers are available for inspection by the competent authority and that all workers are registered.</p> <p>Ensure that working conditions are in accordance with ESS2 and that forced labor is not used.</p>   |                                   |                                    |
| Construction | Negative impacts on people's health by the emission of gases and particles from machines, vehicles and machinery. | <p>In order to reduce the emissions of -PM, CO, NO<sub>x</sub> and other gases, it is necessary to use newer and technically correct equipment and machinery, which is regularly maintained.</p> <p>Provide adequate protective equipment for workers.</p> <p>Raising the awareness of workers about turning off machines, equipment, and vehicles when they are not in use for the sake of economy and preventing unnecessary pollution.</p> | Included in the performance costs | Mandatory (Contractual Obligation) |
| Construction | Noise and vibration caused by machinery and vehicles.   | <p>Reduce noise to the lowest possible level with noise suppressors on machines if necessary.</p> <p>Wherever possible, minimize transport through densely populated parts of the settlement.</p> <p>Regular maintenance and service of machines, vehicles and equipment.</p> <p>Limit noisy activities to normal daily working hours.</p> <p>If possible, work within densely populated areas should be carried out manually.</p>            | Included in the performance costs | Mandatory (Contractual Obligation) |
| Construction | Inadequate disposal of waste from construction works or waste from workers accommodation.                         | Ensure regular collection of communal waste and disposal in designated places (bins, containers, plastic bags for waste) by all workers and raise awareness among workers about these measures.   | Included in the performance costs | Mandatory (Contractual Obligation) |

| Phase                                       | Problem/Impact  | Mitigation measure   | Cost                              | Responsibility |
|---|---|--|-----------------------------------|----------------|
|   |   | <p>Regular disposal of collected waste in cooperation with an authorized utility company.</p> <p>Waste management procedures including hazardous waste will be added to the tender documents to ensure proper waste management at construction sites.</p>  |                                   |                |
| <b>Occupational Health and Safety (OHS)</b> |   |  |                                   |                |
| Construction                                | <p>The risk of workers' exposure to toxic gases, noise, dust and vibrations.</p> <p>Risk of accidents and injuries at work, such as: risk of tripping and falling, risk of exhaustion, equipment falling on workers, lifting pipes and heavy constructions, hazards associated with material handling, welding and other work that emits hot and glowing particles, work with electrical installations and equipment.</p> | <p>Implement all the above-mentioned measures related to mitigating the impact of gases, noise, dust and vibrations.</p> <p>Provide sanitary and hygienic facilities for workers.</p> <p>Prepare and implement <i>the Site Organization Plan and Worker Health and Safety Management Plan</i>.</p> <p>Require all workers to comply with the Worker Health and Safety Management Plan.</p> <p>Provide workers with personal protective equipment (PPE) that meets the needs of performing work activities.</p> <p>Ensure that workers follow procedures on the mandatory use of PPE and that they have received training on occupational safety.</p> <p>Adhere to the measures defined by the Workforce Management Procedure (LMP).</p> <p>Ensure that machines are operated only by qualified machine operators who have the necessary skills and experience.</p> <p>*Other measures to protect the health and safety of workers are given in the good construction practice section.</p> | Included in the performance costs | Contractor     |

| Phase                   | Problem/Impact   | Mitigation measure  | Cost | Responsibility                        |
|-------------------------|--|---|------|---------------------------------------|
| <b>Removal</b>          |  |   |      |                                       |
| Post-construction phase | Inadequate closure of the construction site, with waste left in unauthorized places. | Disposal of waste in accordance with the Waste Management Plan at authorized landfills: Recycle waste that is subject to recycling (iron, pipes, etc.). | -    | Contractor/Supervisor/Utility Company |

## 5.2. Environmental monitoring plan

Table 10. Environmental and social issues monitoring plan

| Phase                               | Which parameter is subject to monitoring?  | Where is the parameter monitoring performed? | How is parameter monitoring performed / type of equipment for monitoring? | When is parameter monitoring performed - measurement frequency or continuous? | Cost of monitoring/what are the costs of the equipment or fees of the monitoring contractor? | Responsibility             |
|-------------------------------------|--|--|---|---|--|----------------------------|
| Preparatory phase (planning/design) | Negative public reactions due to lack of information and coordination of activities. | In the local community.                      | By inspecting the grievance registers .                                   | In the case of citizen grievances.  | -  | PIT City of Zvornik / APCU |
| Construction                        | Damage to existing infrastructure and facilities, especially underground             | At the location of the works.                | Visual inspection of the construction site.                               | Continuously during the execution of the works and the removal                | -  | Contractor/Supervision     |

| Phase        | Which parameter is subject to monitoring?  | Where is the parameter monitoring performed?             | How is parameter monitoring performed / type of equipment for monitoring? | When is parameter monitoring performed - measurement frequency or continuous?                         | Cost of monitoring/what are the costs of the equipment or fees of the monitoring contractor? | Responsibility                    |
|--------------|--|--|---|---|--|-----------------------------------|
|              | installations (plumbing, telecommunications, power cables, etc.)   |  |   | of the construction site.   |  |                                   |
| Construction | Complaints from citizens due to the reduction of traffic, increased traffic of mechanized vehicles and trucks, and unorganized construction sites. | At the location of the works and in the local community. | Visually and by comparison with the Site Organization Plan                | Continuously on a daily basis during the execution of the works and removal of the construction site. | Included in the performance costs.   | Contractor / Supervision          |
| Construction | Limiting access, business activities and land use.   | Around the construction zone .                           | By inspecting the records.  | After receiving complaints from citizens.   | -  | PIT of the City of Zvornik / APCU |
| Construction | The number of accidents recorded by the local population due to construction works.  | In the local community.                                  | By inspecting the records.  | Continuously during the execution of the works and the removal of the construction site.              | Included in the performance costs.   | Contractor                        |
| Construction | Number of recorded incidents related to GBV/SEA-SH.  | In the local community.                                  | By inspecting the records.  | Continuous out of work execution and removal of the construction site.                                | Included in the performance costs.   | Contractor                        |

| Phase        | Which parameter is subject to monitoring?  | Where is the parameter monitoring performed? | How is parameter monitoring performed / type of equipment for monitoring?   | When is parameter monitoring performed - measurement frequency or continuous?                                    | Cost of monitoring/what are the costs of the equipment or fees of the monitoring contractor? | Responsibility           |
|--------------|--|--|---|--|--|--------------------------|
| Construction | Emission of large amounts of visible floating dust.                                      | At the location of the works.                | Visual inspection of the construction site and machinery and equipment.   | Daily / Weekly in case of grievances.  | -  | Contractor / Supervision |
| Construction | pollution by gases and particles (basic aero pollutants and specific ones, as needed).   | At the location of the works.                | By an authorized and accredited laboratory for air quality monitoring, in accordance with the Regulation on air quality values ("Official Gazette of RS", no. 124/12).      | In the case of citizen grievances.   | 2,000 KM for basic and specific pollutants, per measuring point.                             | Contractor / Supervision |
| Construction | Increasing the noise level.  | At the location of the works.                | By a company authorized to measure noise using standard equipment, in accordance with the Rulebook on limit values of noise intensity ("Official Gazette of RS" no. 02/23). | In the case of citizen grievances.   | 200 KM 15-minute level, per measuring point.   | Contractor / Supervision |
| Construction | Pollution of surface or underground water (basic pollutants and specific, if necessary). | At the location of the works.                | By an authorized and accredited laboratory for testing the quality of surface and waste water, in accordance with the Rulebook on conditions for discharge of waste water   | In case of citizen grievances or accidental leakage of polluting liquids into water or soil (fuels, oils, etc.). | 200 – 400 KM current sample, per sample.   | Contractor / Supervision |

| Phase        | Which parameter is subject to monitoring?                                      | Where is the parameter monitoring performed? | How is parameter monitoring performed / type of equipment for monitoring?   | When is parameter monitoring performed - measurement frequency or continuous?            | Cost of monitoring/what are the costs of the equipment or fees of the monitoring contractor? | Responsibility           |
|--------------|--|--|---|--|--|--------------------------|
|              |  |  | into surface water ("Official Head of RS", No. 44/01).  |  |  |                          |
| Construction | Solid waste management .<br>Separation of hazardous and non - hazardous waste. | At the site of construction works.           | Visual monitoring and comparison with the waste management report.  | Continuously during the execution of the works and the removal of the construction site. | Included in the performance costs.   | Contractor / Supervision |
| Construction | The presence of finds of cultural and historical settlers.                     | At the location of the works.                | Supervision of trench excavation.   | During the excavation.   | -  | Contractor               |
| Construction | Removal of the existing tree line.   | At the location of the works.                | Number and characteristics (decorativeness, age, representativeness, state of health, etc.) of removed trees.       | Continuously during the execution of works.  | -  | Contractor / Supervision |
| Construction | Qualifications and age of employed workers.                                    | At the location of the works.                | Verification of the construction site, documentation of workers registration and verification of age over 18 years. | Continuously during the execution of works and removal of the construction site.         | -  | Supervision              |
| Construction | Control of work outside scheduled working hours.                               | At the location of the works.                | Visual and comparison with the construction site organization plan.   | Upon receipt of citizens' grievances.  | -  | Supervision              |

| Phase        | Which parameter is subject to monitoring?   | Where is the parameter monitoring performed? | How is parameter monitoring performed / type of equipment for monitoring?  | When is parameter monitoring performed - measurement frequency or continuous?            | Cost of monitoring/what are the costs of the equipment or fees of the monitoring contractor? | Responsibility                  |
|--------------|---|--|--|--|--|---------------------------------|
| Construction | Existence of hygienic conditions for workers (mobile toilet, clean water, etc.).  | At the location of the works.                | Visual inspection of the construction site and inspection of the construction site records.  | Continuously during the execution of works and removal of the construction site.         | -  | Contractor / Supervision        |
| Construction | Accidents and injuries at work (number of workers who do not use protective equipment at work, number of injuries during lifting loads and digging trenches, proper handling of tools and equipment, etc.). | At the location of the works.                | Visual inspection of the construction site and equipment, personal protective equipment, construction works in order to determine that all works are performed in accordance with occupational safety regulations. | Continuously during the execution of works and removal of the construction site.         | -  | Contractor / Supervision        |
| Construction | Quality of performed works.<br>The quality of the built-in material.  | At the location of the works.                | Visually and by inspecting the documentation and records at the construction site.   | Continuously during the execution of the works and the removal of the construction site. | Included in the performance costs.   | Supervision                     |
| Exploitation | Damage to the water system due to improper management or lack of maintenance.   | At the project location.                     | Visually and through records of supply interruptions, breakdowns and citizen grievances.   | Continuously.  | Included in maintenance costs.   | AD Vodovod i komunalije Zvornik |

| Phase        | Which parameter is subject to monitoring? | Where is the parameter monitoring performed? | How is parameter monitoring performed / type of equipment for monitoring?  | When is parameter monitoring performed - measurement frequency or continuous?  | Cost of monitoring/what are the costs of the equipment or fees of the monitoring contractor? | Responsibility                  |
|--------------|---|--|--|--|--|---------------------------------|
| Exploitation | Hygienic safety of distributed water.     | At the project location.                     | By an authorized and accredited laboratory for testing the quality of drinking water, in accordance with the Rulebook on the health suitability of water intended for human consumption ("Official Gazette of RS", no. 88/17 and 97/18). | 4 times a year, or in accordance with domestic regulations in the field of hygienic safety of water for human consumption. | Included in maintenance costs.   | AD Vodovod i komunalije Zvornik |

## 6. WORKERS GRIEVANCE MECHANISM

A specific Grievance Mechanism for directly employed workers (including external consultants) will be established to deal with workplace grievances, suggestions and problems. The Mechanism will outline the procedures to whom the worker should lodge a grievance, the time frame for receiving a response or feedback and the steps for referral to a higher level. It will also ensure transparency, confidentiality and practice without fear of reprisals/repercussions.

Any third party that engages and employs contract workers is required to establish a mechanism for workplaces and an instrument for the peaceful resolution of disputes according to the requirements of WSSM LMP, ESS2 and domestic labor law.

- The Workers Grievance Mechanism (GM) will be defined through a series of key steps, which include: The contractor will establish a dedicated Workers GRM for construction workers, managed by the Contractor GRM Officer, who will oversee its implementation and monitoring. Regular updates will be provided to the Local Grievance Officer of the City of Trebinje and APCU.
- The Contractor GRM Officer will inform workers about the GRM's purpose, contact persons, and grievance procedures through accessible information on the contractor's website and/or notification boards, and at the construction site, along with distributing a leaflet on the grievance process.
- Grievances can be submitted orally, in writing (via mail or email), or using a grievance form, free of charge, and can be made anonymously. The Contractor GRM Officer will acknowledge grievances within 3 calendar days, assign them for review and resolution, and promptly send a resolution/closure letter with an acknowledgment of receipt.
- The Contractor GRM Officer will also provide regular updates to the Local Grievance Officer of the City of Trebinje and APCU on received complaints and any urgent developments.

For the grievance process and labor management reporting activities, the contractor will refer to Annexes A, B, and C of the ESMP and WSSM LMP.

## 7. METHODS OF STAKEHOLDER ENGAGEMENT

A Stakeholder Engagement Plan (SEP) was prepared within the WSSM, with the aim of establishing an effective platform for productive interaction with affected parties and other stakeholders during project implementation.

The purpose of the Stakeholder Engagement Plan is to present the target groups and methods of stakeholder engagement and responsibilities in the implementation of activities. In accordance with the requirements of the World Bank, the engagement of interested parties is an inclusive process that is carried out during the entire life cycle of the project, and is most effective if it is initiated at an early stage of project development.

Engagement should begin as early as possible in the preparation of the project, because timely identification and consultation with interested parties allows the views and opinions of those groups to be taken into account during the development and implementation of the project.

The intention of SEP is to timely activate all interested parties during the preparation of the project and during its implementation.

In particular, the SEP serves the following purposes:

- a) identification and analysis of interested parties;
- b) planning engagement modalities and effective communication tools for consultation and publication;
- c) defining the role and responsibility of various actors in the implementation of the Plan;
- d) defining the Grievances Mechanism (GM) i
- e) providing feedback to stakeholders.

In order to adequately meet the needs of different groups, communication and information channels were created for all identified interested parties in accordance with their needs. A participatory process will be used to obtain comments and suggestions for the design of the Project, which can help improve the design of the Project and bring greater benefits at the local level.

In order to comply with best practice approaches, the project will apply the following principles of stakeholder engagement:

- *Informed participation and feedback:* information will be provided and widely distributed among all stakeholders in an appropriate format; opportunities are provided for the submission of feedback from interested parties, for analysis and resolution of comments and doubts;
- *Openness and lifetime approach:* public consultations on the project will be organized throughout the lifetime, conducted in an open manner, without external manipulation, interference, coercion or intimidation;
- *Inclusiveness and sensitivity:* Stakeholders are identified to support better communication and build effective relationships. The process of participation in projects is inclusive. All stakeholders are encouraged to be involved in the consultation process at all times. All interested parties are provided with equal access

to information. Sensitivity to the needs of stakeholders is a key principle underlying the choice of engagement methods. Special attention is paid to vulnerable groups.

Significant stakeholder engagement throughout the project cycle is an important aspect of good project management and provides opportunities to:

- Clarifying project goals, scope and managing expectations,
- Ensuring meaningful engagement of citizens,
- Seeking feedback to inform project design, implementation, monitoring and evaluation,
- Assessment and mitigation of project risks,
- Better project outcomes and benefits,
- Dissemination of information and materials about the project,
- Resolving grievances about the project.

### 7.1. Conclusions and comments of public consultations

The draft ESMP will be published on the websites of APCU and the City of Zvornik, in Serbian and English, together with *Invitations to the public consultations*. The invitation will indicate how to access the document on which the public is consulted, details of the project, the date, time and place of the consultation and contact information for feedback and/or questions.

The public call will be published in reputable print media with national coverage to enable a wide range of the public to be involved in the consultation process. In this way, the public will be given the opportunity to express their views on the project's risks, impacts and mitigation measures and enable the project proponent (City of Zvornik) to consider and respond to them.

After 14 days from the date of publication by the project proponent, the draft ESMP will be subject to public consultation in accordance with World Bank Guidelines. Public consultation and presentation of the Environmental and Social Management Plan (ESMP) for the sub-project: "Construction of the water supply system "Zvornik-West" (the settlements of Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in the area of the city of Zvornik" prepared as part of: WATER AND SANITATION SERVICES MODERNIZATION PROJECT (WSSM).

When the consultations are completed, the Minutes of the meeting will be prepared and attached as annexes to the ESMP. The minutes will include feedback received, questions raised and how they were incorporated into the final version of the ESMP. Attendance of interested parties is verified through a signed attendance record, preferably with participant contact details and photographs with permission to publish.

The final version of the ESMP for the subject sub-project will be published on the websites of the APCU, the City of Zvornik and will be visible throughout the duration of the project.

### 7.2. Grievance mechanism

In accordance with the ESS10 and the Stakeholder Engagement Plan (SEP), a Grievance Mechanism (GM) will be implemented for the WSSM to ensure that all grievances, by Project Affected People (PAP) and other stakeholders, are dealt with appropriately, including taking corrective action and, after completion, that the complainant is informed of the outcome of the procedure. A hard copy of the **Project Complaints Form (p. 54)** will be available in the premises of the community(ies) affected by the project activities.

The Grievance Mechanism (GM) within the project is defined through a series of basic steps that include:

#### Filing Grievance

All complaints can be submitted in person or by phone or in writing by filling out the Project Grievance Form, by phone, email, post, fax or in person at the addresses/numbers for the Agriculture Projects Coordination Unit (APCU) / Ministry of Agriculture, Forestry and water management of the Republic of Srpska namely:

- By mail to the address “Trg Republike Srpske 1”, 51000 Banja Luka with reference to the SDIP project and the Unit for the Coordination of Agricultural Projects at the office of the Ministry of Agriculture, Forestry and Water Management of the Republic of Srpska
- Phone: +387 (0)51 338 736 and fax + 387 (0)51 338 857
- By e-mail: [n.stojakovic@mps.vladars.rs](mailto:n.stojakovic@mps.vladars.rs).

*Complaints can also be submitted anonymously, and in that case the answer will be published on the website of the Ministry of Agriculture, Forestry and Water Management, section Unit for Coordination of Agricultural Projects.*

The Agriculture Projects Coordination Unit (APCU) will perform the function of the Central Complaints Office (CGD), while the Local Grievance Office for certain sub-projects (LGD) will consist of representatives of the local community, namely: representatives of the municipality/city and Person under the influence/affected by the project (PAP).

#### Grievance management

Within 3 days of submission, it will be confirmed that the case has been registered and the complainant will be provided with basic information about the next steps. The GM will investigate the facts and circumstances and articulate a response, and the complainant should be notified of the final decision no later than 15 days after the Grievance was submitted.

#### Reporting of user complaints and feedback

The Agriculture Projects Coordination Unit (APCU) will be responsible for managing and storing the comments/Grievances received and maintaining the Central Grievance Log.

#### Grievance log

Each Grievance should be assigned a unique reference number and should be followed up appropriately, and recorded activities should be completed. The diary should contain the following information:

- Name and surname of the complainant, location and details of the Grievance,
- Date of submission,
- The date the Grievance log was uploaded to the project database,
- Details of proposed corrective measures,
- The date when the proposed corrective measure was sent to the complainant (as applicable),
- Closing date,
- The date the response was sent to the complainant.

### Channels for receiving Grievances

All Grievances can be submitted by completing the Project's complaint form in printed form or online, or in any other form chosen by the complainant through the designated channels listed above under **Filing Grievances**.

### Monitoring and reporting of Grievances

The Central Grievances Office (CGD) or the Agriculture Projects Coordination Unit (APCU) will be in charge of:

- Collecting data from LGDs that will serve as local reception points on the number, content and status of Grievances and uploading them to a single regional database;
- Keeping a Grievancelog on complaints received at the regional and local level
- Monitoring of unresolved issues and proposing measures for their resolution;
- Publication of quarterly reports on Grievance Mechanisms (GM).
- Summarizing and analyzing received qualitative data from local reception points on the number, content and status of Grievances and uploading them to the project's unique database;
- Monitoring of unresolved issues and proposing measures for their resolution.

## WATER AND SANITATION SERVICES MODERNIZATION PROJECT (WSSM)

### Project Grievance Form

|   |   |
|---|---|
| Designation (entries Project implementation unit)   |   |
| First and last name (optional)<br><input type="checkbox"/> I want to submit a complaint anonymously.<br><input type="checkbox"/> Please do not reveal my identity without my consent. |   |
| Contact details<br><br>Mark the way you want to be contacted (by post, by phone, by e-mail).  | <input type="checkbox"/> By mail: <i>Specify the address for mail delivery:</i><br>_____<br>_____<br>_____<br><input type="checkbox"/> By phone: _____<br><input type="checkbox"/> By e-mail: _____                           |
| Description of the event to which the complaint relates   | What happened? Where did it happen? Which person did it happen to? What resulted from the problem?  |
|   |   |
| Date of event / complaint   |   |
|   | <input type="checkbox"/> Event/complaint that occurred once (date _____)<br><input type="checkbox"/> They happened more than once (how many times? _____)<br><input type="checkbox"/> Ongoing (problem that currently exists) |
| What would you like to see done?  |   |
|   |   |

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Please send this form to the following address:

|           |  |
|-----------|--|
| <b>RS</b> | <b>Attn: APCU Manager, Water and Sanitation Services Modernization Project (WSSM)</b><br><b>Ministry of Agriculture, Forestry and Water Management of the RS</b><br>Address: Trg Republike Srpske 1,78000 Banja Luka<br>Tel.: + 387 51 338-932 , Fax: + 387 51 338-932, E-mail: <a href="mailto:n.stojakovic@mps.vladars.rs">n.stojakovic@mps.vladars.rs</a> |
|-----------|--|

### 7.3. Stakeholder Engagement Plan

Table 11. Stakeholder involvement plan

| Consultation / Meeting  | Purpose  | The way  | Who  | When      |
|---|--|--|--|-----------|
| Commencement of works/ Hiring of contractors                            | Informing interested parties about the start of works  | Direct communication, Meetings   | AD Vodovod i Komunalije Zvornik<br>PIT<br>Contractor                       | [Date]    |
| Fortnightly briefing meetings on the progress of project implementation | Provide updates on project progress and receive feedback from stakeholders                             | Meetings, progress reports   | AD Vodovod i Komunalije Zvornik<br>PIT<br>Contractor<br>Interested parties | Monthly   |
| Publication of information about utility service interruptions          | Notification to the local community about utility service interruptions due to construction activities | Public announcements through the media   | AD Vodovod i Komunalije Zvornik<br>PIT<br>Local media                      | As needed |
| Traffic diversion/ Road blocking  | Notify interested parties of traffic diversions or road closures during construction                   | Public announcements through the media   | AD Vodovod i Komunalije Zvornik<br>PIT<br>Local media                      | As needed |
| Informing the public about the progress of the project                  | Use local media to disseminate information about project progress to the local community               | Public announcements through the media<br>On site meetings with the municipality, contractor, supervisor, PIUU and all other relevant actors | Investor<br>AD Vodovod i Komunalije Zvornik<br>PIT<br>Local media          | As needed |

## 8. ANALYSIS OF THE NEED FOR CAPACITY BUILDING AND TRAINING

APCU/PIT will organize capacity building in different phases of the sub-project life cycle based on the ESMF.

Comprehensive training for the staff of AD Vodovod i komunalije Zvornik will include training in line with the latest ESF of the World Bank.

The second part of the training will cover the responsibilities of each staff member, implementation procedures, required forms, risk assessment methods and general occupational health and safety (OHS) procedures.

Before handing over the construction site to the Contractor, representatives of AD "Vodovod i Komunalije" Zvornik and APCU will hold training sessions to raise the awareness of workers and the local community, emphasizing the environmental, social and occupational safety aspects that are necessary during implementation. During the implementation phase, the contractor's associate at OHS will hold regular awareness training for workers and residents of the settlement on everyday risks and addressing issues such as sexual exploitation and abuse (GBV&SEA-SH), grievance mechanism (GM) and code of conduct. . Contractor should do awareness raising for workers, on the other side, PIU should do awareness raising for community.

## 9. ESMP IMPLEMENTATION AND REPORTING

The following roles and responsibilities of the various participants involved in the implementation and reporting of the Environmental and Social Management Plan (ESMP) for the project are listed below:

**Contractor:** The contractor is responsible for the implementation of the Environmental and Social Management Plan (ESMP). He is required to report monthly on the implementation of the ESMP. In addition, the Contractor must monitor, record and report to PIT on various environmental and social issues, including safety, incidents, worker grievance and stakeholder engagement.

**Supervision:** Supervision is in charge of weekly monitoring and reporting, as well as extraordinary reporting, on the implementation of prevention/mitigation measures for PIT.

**Beneficiary:** Beneficiary AD "VODOVOD I KOMUNALIJE" Zvornik has a supervisory role in the implementation process. They receive reports from both contractors and supervisors regarding environmental and social issues. He is responsible for overseeing the execution of the ESMP and ensuring compliance with environmental and social standards.

**APCU/PIT:** for WSSM, the existing APCU within MAFSM is primarily responsible for project management, financial management, environmental and social compliance, and monitoring and evaluation reporting within WSSM. APCU/PIT ensures fulfillment of sub-project development goals and facilitates communication with relevant ministries and local government bodies to ensure timely implementation of activities. APCU/PIT is responsible for reporting to the World Bank on ESMP implementation.

**Cities/Municipalities:** The Municipal/City Inspectorate supervises the implementation of the ESMP within its jurisdiction, ensuring compliance with environmental and social standards.

## 10 . ANNEXES

### Annex A

#### FORMAT FOR REPORT ON COMPLIANCE WITH CONDITIONS OF WORK WITH ESS2 FOR THIRD PARTIES ENGAGING CONTRACTED WORKERS

|   |
|---|
| Assignment name:  |
| Contract ref. No:   |
| Contract period: Start date (M/D/Y)      End date (M/D/Y) |
| Contractor/Service Supplier:                              |
| Reported period:  |
| Date of report:   |
| Signature of authorized person:                           |

#### LABOR AND WORKING CONDITIONS COMPLIANCE REPORT

Company employees\* statistics:

Total number of employee's gender disaggregated: M \_\_\_\_\_ F \_\_\_\_\_

Number of employees with an employment contract out of total number of employees

Number of employees without an employment contract out of total number of employees

Number of employees with access to social security, pension and health insurance out of total number of employees

Number of employees who receives wages/salaries at least once a month out of total number of employees

Number of employees who left the company in the reported period out of total number of employees

Number of employees hired in the reported period

Number of hours worked per employee (monthly average)

Total overtime (monthly average per employee)

- Number of injuries at work (in reporting period and cumulative since contract start) out of total nr. of employees
- Number of fatalities at work (in reporting period and cumulative) out of total nr. of employees
- Number of reported violence out of total nr. of employees
- Number of reported harassment/ abuses out of total nr. of employees

Availability of an accessible and functioning employee grievance mechanism (Y/N)

Number of grievances raised with the GM (in reporting period and cumulative since contract start)

Number of grievances resolved by GM (in reporting period and cumulative since contract start)

Number of suits filed with regard to labor, employment and OHS issues

Number of disputes brought to peaceful settlement/ voluntary arbitration procedure

Number of visits by labor/ OHS inspection

\*The employee is any natural person employed or engaged to work or perform service for the employer

1 The number of employees refers to the actual number/headcount on the date of the report.

2 The numbers imply the total number of incidents in the reported period.

Project workers statistics:

- Total number of project workers\*\*:
- Number of project workers with an employment contract:
- Number of project workers without an employment contract:
- Number of project workers with access to social security, pension and health insurance verified by confirmation from registry:

|    | Terms and conditions   | Yes / No  | Notes  |
|----|--|---|--|
| 1  | All project workers have an employment contract or engagement agreement in writing.                                      | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "No" please specify and explain                                   |
| 2  | All project workers are paid at least once a month   | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "No" please specify and explain                                   |
| 3  | All project workers worked 8 hours a day, 40 hours a week  | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "No" please explain and specify the hours worked                  |
| 4  | All project workers had a regular daily and weekly rest  | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "No" please specify and explain                                   |
| 5  | Number of project workers were terminated from employment with termination in line with entity labor law and <b>ESS2</b> | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "Yes" please specify number and explain conditions of termination |
| 6  | Number of project workers attended OHS related training programme  | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "Yes" please specify number and explain                           |
| 7  | Project workers were granted leaves they are entitled to   | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "Yes" Please specify the type and number of leaves                |
| 8  | Project workers were involved in accidents at work resulting in injuries or fatalities                                   | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "Yes" please specify and explain                                  |
| 9  | Project workers reported on cases of discrimination, harassment, sexual harassment or non-compliance with law            | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "Yes" please specify and explain                                  |
| 10 | All project workers are above the age of 18.   | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "No" please specify and explain                                   |

|    | Terms and conditions  | Yes / No  | Notes                               |
|----|---|---|-------------------------------------|
| 11 | Project workers raised grievances or started voluntary arbitration/ legal proceedings to settle a dispute | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "Yes" please specify and explain |
| 12 | In the reported period there were some incidents on noncompliance with the LMP                            | Yes <input type="checkbox"/><br>No <input type="checkbox"/> | If "Yes" please specify and explain |

## Annex B

### THIRD PARTIES STATEMENT (POTENTIAL CONTRACTORS AND SERVICE PROVIDERS) ON COMPLIANCE WITH PROVISIONS OF LABOR LEGISLATION and THE PROJECT'S LMP

Date and place of issuance: \_\_\_\_\_

Name and address of the issuer (Bidder): \_\_\_\_\_

#### STATEMENT OF LEGAL AND REGULATORY COMPLIANCE

Hereby we declare that

- We are aware of, and comply with, the standards laid down in the Labor Management Procedures.
- We conform to all national laws\* and applicable regulations concerning employment, labor and employee relations, and labor and working conditions.
- We are committed to providing a safe and healthy environment for our employees and to implementing all occupational health and safety requirements as stipulated by national legislation.
- We do not tolerate any form of child, forced or slavery work.
- We prohibit any form of harassment, sexual harassment, abuse, violence, including GVB at work and forbid direct or indirect discrimination against any employee or groups of employees on any ground and for whatever reason.
- We confirm that a worker GM is available.
- We confirm that no worker GM is available but will be established by the time the contract is signed.

We hereby state that should we be awarded with the contract; we shall adopt the Labor Management Procedures applicable to the project and incorporate them in our practice.

We understand that the failure to respect any of the above stated commitments could lead to termination of the contract and exclusion from the project.

Signature:

Name:

Position:

\*National Laws refers to the Laws of RS and the domicile Law of the country in case the Bidder is foreign.

## Annex C

### GRIEVANCE REDRESS MECHANISM TEMPLATE

|   |   |
|---|---|
| Designation<br>(entered by the contractor)  |   |
| First name and Surname (not obligatory)<br><br><i>Please indicate with an X</i><br><br>[...] I would like to lodge a complaint anonymously<br><br>[...] Please do not disclose my identity without my consent |   |
| Contact data<br><br>Signify the desired manner of contact (by mail, phone, email)   | <p>[...] By mail: <i>Provide an address for mail delivery.</i></p> <p>_____</p> <p>–</p> <p>_____</p> <p>[...] By phone: _____</p> <p>[...] By email: _____</p>                     |
| Description of event to which the complaint relates   | What occurred? Where did it happen? To which person did it happen? What came out as a consequence of the problem?   |
|   |   |
| Date of the event/complaint   |   |
|   | <p>[...] Event that occurred once/complaint (date _____)</p> <p>[...] It occurred more than once (how many times? _____)</p> <p>[...] Ongoing (a problem that currently exists)</p> |
|   |   |

|                                       |
|---------------------------------------|
| What would you want to be undertaken? |
|                                       |
| Signature: _____                      |
| Date: _____                           |

## ANNEX 1. GOOD CONSTRUCTION PRACTICES

The requirements regarding good construction practices that will be included in the Contract for the performance of works are as follows:

General requirements:

- Contractors will be required to follow good environmental construction practices in all construction activities and minimize damage to vegetation, soil, groundwater, surface water, landscape, and disturbance of settlements and local communications.
- The implementation of environmental protection and mitigation measures, as well as monitoring, will be implemented in parallel with construction activities. They will commence at the moment when the workers, equipment and / or material are placed on the construction site, and will end with the termination of construction work, when all workers, equipment and / or material leave the construction site and when the environment is restored to its original state.
- The Contractor has an obligation to appoint an Occupational Safety and Health Coordinator who will be responsible for ensuring compliance with the laws and objectives of environmental, occupational safety and fire protection.
- The contractor should ensure the order, discipline and professional responsibility of all employees at construction sites. Work and residence must be limited solely to the area of construction work and damage to private property, land and crops should be avoided. Regular contacts with representatives of local residents (local communities) should be ensured for the purpose of exchanging information or finding solutions to possible disputes (resulting from property rights violations, damage during construction works, etc.).

Supply and transportation of materials:

- When purchasing materials for the construction of irrigation systems, the Contractor will select a manufacturer / supplier that operates in accordance with a valid environmental permit, if required in accordance with the Environmental Protection Act ("Official Gazette of the Republic of Srpska", No. 71/12 and 79/15), or other environmental standards recognized in BiH and / or the EU.
- In order to prevent dust emissions, the Contractor is obliged to transport asphalt, gravel, stone, soil and other material in tarpaulin trucks. The transportation of stone and gravel is done in the wet state. Vehicle speed must not exceed 30 km/h. The contractor will avoid unnecessary driving.

Construction site organization

- Construction should start (if possible) at the time of year when the benefits of dry soil can be redeemed, ie. when compaction and degradation through use is at a minimum.
- Appropriate machinery and / or protection plates will be used that could prevent compaction during land removal, e.g. using rails or low pressure tires in locations that indicate compaction. Appropriate procedures will be used for the separate removal, handling, storage and replacement of humus and underground.
- The contractor will establish a temporary landfill for construction material, a flush area for concrete pumps and a mixer, and a tire wash area with a suitable cleaner. Temporary dumps for excavation material will be reduced to a maximum of 2m in height to prevent compaction caused by the weight of the land and storage time will be reduced to a minimum.
- The contractor will ensure that all construction equipment is licensed and approved in accordance with local regulations and, if possible, certified in accordance with EU standards.
- The contractor is obliged to use modern machines and vehicles that meet environmental standards in terms of emissions (full combustion). It will also use filters to reduce particulate matter emissions, and fuel with a favorable chemical structure (low sulfur content) and efficient / safe transfer.
- The contractor is obliged to use modern machines and vehicles representing noise sources (engine, exhaust system). This generally involves the purchase of new machines or the implementation of measures to install additional sound insulation as well as its constant maintenance. In addition, it is recommended that the machines only need to work in the period 07-17 hours on all sections of the route whose distance from the nearest dwelling house is less than 60m.
- The contractor is required to use biodegradable lubricants and gearbox oils. Maintenance, filling and cleaning of machinery must be carried out outside the construction site and outside the surface water area.
- The contractor will determine and follow control measures for dust generated during the handling of equipment and / or during renovation work. The contractor must submit a plan outlining the routes for the transportation of materials, and should also provide statements on the proposed method for dust control in places where transportation through settlements cannot be avoided.
- Develop a project for the organization of a construction site with appropriate solutions for the drainage and treatment of sanitary wastewater, as well as stormwater from the construction site. Dispose of used water from construction sites with appropriate sewage systems, collect, if necessary, in watertight containers and dispose of in the prescribed manner (either on site or at a remote location) before discharging into a recipient or urban sewer system.
- The contractor shall ensure that the parking spaces of machinery and vehicles and workers' accommodation containers are not located within forest areas, that they do not affect water courses and do not affect the endangered flora and fauna.
- The contractor will ensure the protection of erosion-sensitive areas with stabilization agents (temporary dams, fences, pits) and grafting after completion of construction work).

Execution of construction works

- In order not to jeopardize the stability of the soil, on unstable or conditionally stable terrains, construction works will be performed in shorter intervals.
- During the land works, the humus layer will be deposited in piles that will not be more than 2m long and will be protected from pollution to maintain its fertility.
- In order to minimize negative impacts on the river and river banks, construction activities carried out on or near surface water bodies should be carried out during the low water season, which is most often between July and September. It is recommended that this be taken into account when preparing the activity schedule.
- All handling of oil and its derivatives in the process of construction and procurement of machinery are carried out with the utmost protection measures to avoid spills. All packaging for petroleum and other petroleum products must be collected and taken to a controlled landfill of the Contractor, from where they will be taken away by an authorized utility company. In the event of an accident, spillage of fuel or lubricant into the environment, emergency intervention is required in accordance with procedures for the discharge of fuel and lubricants.
- Machines and vehicles will not be monitored in the work area.
- The waste water from the workers' restrooms will not be discharged into the ground or into water courses.
- The waste will be managed in accordance with the Waste Management Plan (details are given below). Disposal of excavated material and any other solid waste into watercourses will be prohibited. Driving machines in rivers, streams, or on their banks should not be allowed, except in situations where this cannot be avoided due to the construction of a special structure.
- The riverbeds will be protected and not completely blocked during digging in order to protect existing water corridors for undisturbed communication between living species at the bottom and those that are free to swim. Restoration of existing shores should be ensured through the planting of adequate vegetation in damaged terrain.
- The contractor shall implement appropriate traffic control measures, in accordance with the law, for the duration of the contract, and such measures must first be approved by the Supervising Engineer. Traffic safety management measures will include temporary lighting and appropriate signage during digging and rehabilitation work.
- The contractor should appoint permanent staff to be engaged in traffic safety issues and be responsible for implementing traffic safety measures and implementing traffic measures prescribed by national laws, which will include: (i) inspection of the condition and location of control equipment traffic in use, (ii) draft review - the part relating to traffic control equipment needed to ensure safe and efficient flow of traffic, (iii) rectification of any traffic defects where applicable, (iv) control of work zones, handling equipment and storage, material handling and storage related to traffic safety.
- The contractor must not leave the trenches unsupervised, and must enclose and mark all open trenches to prevent possible accidents.

Organization of the construction site after the completion of the works:

- The contractor must also remove all special facilities and sites used to support construction including temporary buildings and their foundations, temporary installations (electrical,

water and sanitation installations) and equipment (sedimentation basin), restoration of temporary roads (especially in forest area and private property), and work areas, removal of fences, signs and notices.

- The contractor will remove all construction waste.
- All construction sites and other areas that were affected during construction will return to their original condition, depending on future land use.
- The restoration activities will start immediately after the pipe is buried. The construction site must be planted with species preserved in peat and supplemented with appropriate material, if necessary.
- Agricultural land must be returned to a condition suitable for the landowner to be able to replant their own plantations.

## ANNEX 2. ENVIRONMENTAL AND SOCIAL SCREENING

On the official website of World Bank Group International Finance Corporation (IFC), projects and activities that are listed in the IFC Exclusion List (2007) are not eligible to be supported under the WSSM project and its sub-projects.

|                      |   |
|----------------------|---|
| Subproject name      | <b>Construction of the water supply system "Zvornik-West" (the settlements of Glumina, Oraovac, Križeviči, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in the area of the city of Zvornik</b> |
| Subproject location  | <b>City of Zvornik, Republic of Srpska</b>  |
| Subproject Proponent | <b>Ministry of Agriculture, Forestry and Water Management - Agriculture Projects Coordination Unit (APCU)</b>   |

| Activity   | Answer |    |
|--|--------|----|
|  | Yes    | No |
| Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCB's, wildlife or products regulated under CITES. |        | ✓  |
| Production or trade in weapons and munitions. <sup>1</sup>   |        | ✓  |
| Production or trade in alcoholic beverages (excluding beer and wine). <sup>1</sup>   |        | ✓  |
| Production or trade in tobacco. <sup>1</sup>   |        | ✓  |
| Gambling, casinos and equivalent enterprises. <sup>1</sup>   |        | ✓  |
| Production or trade in radioactive materials. This does not apply to the purchase of medical equipment, quality control (measurement) equipment and any equipment where IFC considers the radioactive source to be trivial and/or adequately shielded.   |        | ✓  |
| Production or trade in unbounded asbestos fibers. This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.  |        | ✓  |
| Drift net fishing in the marine environment using nets in excess of 2.5 km. in length.   |        | ✓  |
| Production or activities involving harmful or exploitative forms of forced labor <sup>2</sup> /harmful child labor. <sup>3</sup>   |        | ✓  |
| Commercial logging operations for use in primary tropical moist forest.  |        | ✓  |
| Production or trade in wood or other forestry products other than from sustainably managed forests   |        | ✓  |
| Production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals. Hazardous chemicals include gasoline, kerosene, and other petroleum products.  |        | ✓  |
| Production or activities that impinge on the lands owned, or claimed under adjudication, by Indigenous Peoples, without full documented consent of such peoples.   |        | ✓  |
| Affecting lands or rights of minorities  |        | ✓  |

| Activity  | Answer |    |
|---|--------|----|
|   | Yes    | No |
| Significant adverse social impacts and may give rise to significant social conflict |        | ✓  |

footnotes:

1. This does not apply to project sponsors who are not intrinsically involved in these activities. "Not substantially involved" means that the activity in question is ancillary to the project sponsor's primary operations.
2. Forced labor means all work or service, which is not performed voluntarily, and which is extracted from an individual under the threat of force or punishment.
3. Harmful child labor is the employment of children that is economically exploitative, or is likely to be dangerous or interfere with the child's education, or will be harmful to the child's health, physical, mental, spiritual, moral, or social development.

### SCREENING OF ENVIRONMENTAL AND SOCIAL RISKS AND IMPACTS OF THE SUB-PROJECT

The screening results are shown in the following table:

| no. | Environmental and social risk issues  | YES   | No |
|-----|---|---|----|
| 1   | Does this sub-project belong to WB Exclusion list?  | NO  |    |
| 2   | Does the proposed activity belong in list of projects for which full EIA is mandatory under the RS Law on Environment Protection?                           | NO.   |    |
| 3   | Will the sub-project be located in or near some sensitive or protected area?  | NO.<br>The sub-project is not located in any area that is protected for its biodiversity or sensitivity.  |    |
| 4   | Is there a possibility that the proposed sub-project will adversely affect the local landscape?   | NO  |    |
| 5   | Does the proposed activity require other type of EA under the local/ national legislation?  | NO  |    |
| 6   | Will the sub-project use natural resources such as land, water, materials or energy, particularly any resources which are non-renewable or in short supply? | The sub-project activity envisages the introduction of a water supply network in the local communities west of Zvornik, thereby improving the efficiency and quality of life of their citizens. |    |
| 7   | Is the sub-project likely to cause microclimate changes, e.g. includes activities such as significant deforestation, forest degradation & land use change?  | NO  |    |
| 8   | Will the sub-project generate significant quantities of non-hazardous and/or inert waste?   | NO  |    |

| no. | Environmental and social risk issues  | YES  | No   |
|-----|---|------|--|
| 9   | Are there any risks of contamination of surface waters?   | NO.  | There are no rivers in the construction area.  |
| 10  | Are there any risks of contamination of ground waters?  | NO.  | There is no indication of the existence of underground water under the work zone.  |
| 11  | Are there any risks of soil pollution?  | NO   |  |
| 12  | Are there any risks of physical changes of the terrain, sediment loads, erosion, etc.?                              | NO   |  |
| 13  | Will the sub-project be source of noise and vibration?  |      | During the construction phase, temporary and localized impacts will be associated with the operation of construction machinery for excavation and replacement of network pipes.  |
| 14  | Will the proposed activity require vegetation removal?  | NO   | Wild vegetation will be removed, which will be restored once the work is completed and the land returned.  |
| 15  | Will the implementation of the project cause physical displacement of formal users OR informal users and occupants? | NO.  | The project will not cause any physical displacement.  |
| 16  | Will the implementation of the project impact any vulnerable individuals or groups?                                 |      | In order to reduce the impact of construction and reconstruction on the daily activities of street residents - children, employees, the elderly and people with special needs, the works will be carried out in phases and alternative roads will be provided by changing the road regime. |
| 17  | Will the implementation of the project cause economic displacement?   | NO.  | The project will not cause any economic change.  |
| 18  | Will the project need temporary or permanent land acquisition?  | YES. | It will be necessary to purchase land for the purpose of building a reservoir and setting up pumping stations.   |
| 19  | Will the project result in the temporary or permanent loss of crops, fruit trees or household infrastructure?       | NO.  |  |
| 20  | Is there a right of way issue?  | YES. | Using the usual instruments for  |

| no. | Environmental and social risk issues   | YES  | No   |
|-----|--|------|--|
|     |  |      | determining easement rights, incomplete expropriation, etc.  |
| 21  | Is there probability of impacts to community health and safety:  | YES. | <p>Citizens will be informed in a timely manner through all available communication channels about all changes in the traffic regime and other service information (breaks in the supply of drinking water, electricity, telecommunications, municipal waste collection, vehicle access restrictions).</p> <p><u>In case of interruption of water supply at the location during the execution of works</u> , the utility company will provide tanks with drinking water.</p> <p>Pedestrian traffic will be ensured by road <b>steel plates placed over holes, trenches, dug channels</b> , and vehicle access will be limited to a minimum time.</p> |
| 22  | Are probability of impacts to occupational health and safety:  | YES. | <p>The contractor is obliged to apply good construction practice, including PPE in order to minimize potential harmful effects on workers, e.g. workers should wear a protective mask when removing asbestos-cement pipes to prevent possible inhalation of particles.</p>   |
| 23  | Are probability of impacts to occupational health and safety:  | NO   |  |
| 24  | Will the proposed activity require specific public consultations under the RS legislation?   | NO   |  |
| 25  | Whether project activities will have an impact on increase of water utility fees and/or creation of new fees/financial obligations to project beneficiaries? |      | <p>Water utility company AD "Vodovod i Komunalije" Zvornik is in charge of water delivery services to households and business including collecting water fees.</p> <p>The City of Zvornik subsidies water fees for vulnerable categories of population.</p>  |
| 26  | Whether the Project will have impacts on access to private or public property including public institutions like schools, hospitals, ambulates etc?          |      | <p>If required, when laying the pipe in the trench, the necessary metal crossings for vehicles and pedestrians over the trench will be installed with fencing and markings in order for activities for the local business and population to take place smoothly.</p>   |

## RISK CLASIFICATION

### a. Proposed Environmental and Social Risk Rating (High, Substantial, Moderate or Low). Provide Justifications:

APCU has considered the following elements in E &S screening and risk assessment process:

- the risk category pursuant to WB and parameters from the *rapid risk assessment matrix* and *sensitivity of receiving environment* (WSSM ESMF, chapter 7.4);
- the results of a field visit in October 2024 and a meeting with representatives of Zvornik PIT members to understand the project at local-level and ground realities;
- analysis of data and information from Project proposal of the City of Zvornik, technical and other relevant documentation, local consents received so far and requirements according to RS legislation
- previous experiences of the APCU team as a contract for activities similar in nature and size to the proposed works.

After completed the screening and assessment process by APCU staff that potential adverse risks and impacts: **'Construction of water supply system Zvornik-West', City of Zvornik** are likely to be MODERATE RISK subproject activity. This risk category requires the development of site-specific ESMP for "Construction of water supply system Zvornik-West" (settlements Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) and Abbreviated RAP.

After construction of the "Zvornik-west" water supply system, it would be possible to ensure a regular and high-quality supply of more than 1,200 households in 7 settlements that gravitate towards the Zvornik urban settlement.

Technical solution envisages 60 km of the water supply network (main and secondary pipelines), 5 pumping stations (PS) and 7 reservoirs. During preparation of technical documentation, the designer worked closely with the experts of the local utility company who have relevant experience in the functioning of the water supply system.

The City of Zvornik financed the preparation and revision of technical documentation. In design phase it is obliged to obtain necessary consents of local companies regarding to locations where works are planned (Road Company, etc.).

Adequate access to water can positive stimulate further development of local communities, as better provision of services to individuals and households (about 1200) and companies after construction of the "Zvornik-West" water supply system is expected.

The project activity refers to the provision of water services to new users of the public water infrastructure for which the local utility company AD "Vodovod i komunalije" Zvornik is responsible.

#### Justification:

- Land acquisition is required. As result of completed and revised technical documentation for "Construction of water supply system Zvornik-West" plots/sites are marked for construct water structures: 7 Reservoirs (R1-R7) and 5 pumping stations (PS1-PS5). Out of these 12 plots, **6 are privately-owned by 8 natural persons** (Project Affected Persons): 4 private owners (1 female) and 4 co-owners (1 female) with **total land required for project of 9252 m<sup>2</sup> (Table 1)**.
- Local EIA is NOT required. The procedure according to RS legislation in the field of environmental protection is not required, nor is obtaining an Environmental Permit.

- The implementation of the sub-project activity will contribute to WSSM's Component 2: Support for water services sector reforms at local level, because it will improve the delivery of water 7 settlements of Zvornik West, enabling regular and high-quality water supply to 5,598 individuals (2,822 women) and other users.

| municipality | Sub-project activity  | Conducted E&S risk assessment | Recommended E&S Instrument for Construction Contract | Comments  |
|--------------|---|-------------------------------|--|---|
| Zvornik      | Construction of the "Zvornik-West" water supply system (the settlements of Glumina, Oraovac, Križevići, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in the area of the town of Zvornik" | <b>MODERATE</b>               | <b>Site-specific ESMP</b>                            | Land acquisition is required for <b>6 plots</b><br><br><u>RS EIA procedure not required</u> |

**b. Proposed E&S instruments:**

Taking into account the overall context of the project and the technical solution, the assessment is that the activities during the execution of works on the installation of the pipeline and construction of reservoirs and pumping station will have an **environmental and social moderate risk**. Scope of works, nature, size and place of impacts are limited to a precise route (line infrastructure), can be managed relatively easily, given that the project activity involves excavations for the installation of pipelines. Also, the works will be carried out in the road belt (land in public ownership), **thus avoiding impacts on private property** (land and buildings). However, in case of construction of water structures/reservoirs out of 12 plots, 6 are private and land acquisition is needed so **social impacts and risks should be considered**. The sub-project activity would have a positive impact, as it would ensure **continuous and reliable water supply to the end users in settlements of Zvornik West**, which would contribute to consumer satisfaction.

Sub-project for **Construction of water supply system Zvornik-West** is screened as **Moderate Risk** from Environmental and Social part. The Subprojects activity is **simple** and relatively easy to implement and **APCU recommends site-specific ESMP** for the purposes of this project with the measures defined in it to mitigate/minimize potential impacts and risks during implementation on minor/small-scale works are expected to be of manageable, temporary and with localized impacts as they are related to the general construction activities. For social part of sub-project activity, and APCU recommends Resettlement Plan.

## ANNEX 3. MINUTES OF THE PUBLIC CONSULTATIONS

### Minutes of

#### The public discussions

#### **Environmental and Social Management Plan (ESMP) for subproject: "Zvornik-West" (the settlements of Glumina, Oraovac, Križeviči, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in the area of the city of Zvornik"**

#### prepared as part of:

#### **WATER AND SANITATION SERVICES MODERNIZATION PROJECT (WSSM)**

The public discussions and presentation of ESMP for the subproject "Zvornik-West" (the settlements of Glumina, Oraovac, Križeviči, Kitovnice, Donji Grbavci, Gornji Grbavci, Dugi Dio) in the area of the city of Zvornik" was prepared as a part of the Water and sanitation services modernization project (WSSM). It was held in the premises of the City Administration of Zvornik, organized by the Agriculture Projects Coordination Unit (APCU) within the Ministry of Agriculture, Forestry, and Water Management of the Republic of Srpska. The public discussion started at 10:00 PM on April 28th, 2025.

The public discussions was led by a representative of the Agriculture Projects Coordination Unit (APCU), with the assistance of the consultant (TA), in the role of the document's developer and presenter of the ESMP.

#### **Cours of the Public Consultation**

After the welcome remarks and introductory notes, the APCU representative invited the consultant to present the ESMP document to those present.

The E&S consultant, presented the key elements of the prepared document and the steps that stakeholders and users will follow during implementation.

During the presentation, attendees were informed about the WSSM project itself, the specific sub-project in Zvornik and its scope, the main environmental and social characteristics of the project site, the project's environmental and social impacts and risks, as well as the planned mitigation measures.

After the presentation, the moderator opened the floor for discussion.

Representatives of the "Oraovac" Local Community were interested in when they could expect the start of construction and how long the works would last.

In addition, one resident of Oraovac pointed out certain issues related to water quality, as well as a major problem of illegal dumping sites near the Tilić Ada spring, and the proximity of the Regional Landfill "Crni vrh," which, in his opinion, negatively affects the quality of life.

A representative of the water utility company provided a detailed explanation regarding the safety of the "Tilić Ade" water source for the needs of the city water supply. He attempted to ease the concerns of the residents by explaining that the water passes through a natural filtration system consisting of the Drina alluvium (composition and thickness: gravel and sand), which effectively removes turbidity and contaminants. He also emphasized the hydrological characteristics of the area, as well as the mandatory regular drinking water quality checks conducted by the Public Health Institute of Republika Srpska.

It was suggested that construction work near schools should be carried out during the months when children are on break, in order to ensure their free movement and prevent any risk posed by open trenches (with appropriate fencing around the construction zones).

Another concern raised was about the restoration of excavated roads to their original condition (on-site supervision).

During the presentation, participants were given complaint forms, and the purpose of the forms and relevant contact information was explained to them.

PIT members responded to the questions and emphasized that they will continue to be available for any further questions and suggestions from local community members during project implementation.

Photo documentation from the public consultation:






The event was attended by 18 individuals (13 men and 5 women). To protect personal data, the attendance record was submitted without including names or contact information.

|    | Organization  | Representative |
|----|---|----------------|
| 1  | Jokić Invest d.o.o. Zvornik                                   | Male           |
| 2  | City of Zvornik   | Male           |
| 3  | City of Zvornik   | Male           |
| 4  | Local Community „Oraovac“                                     | Male           |
| 5  | City of Zvornik   | Female         |
| 6  | City of Zvornik   | Female         |
| 7  | City of Zvornik   | Male           |
| 8  | City of Zvornik   | Male           |
| 9  | City of Zvornik   | Male           |
| 10 | City of Zvornik   | Male           |
| 11 | City of Zvornik   | Male           |
| 12 | City of Zvornik   | Male           |
| 13 | City of Zvornik   | Male           |
| 14 | Local Community “Gornji Grbavci”                              | Male           |
| 15 | Public Water Supply Company                                   | Male           |
| 16 | Agriculture Projects Coordination Unit (APCU), E&S Specialist | Female         |
| 17 | Agriculture Projects Coordination Unit (APCU), E&S Specialist | Female         |
| 18 | Technical Assistance (TA) team member                         | Female         |

After the public consultation, a news announcement about the event was published on the official website of the City of Zvornik and shared in the city's Viber group.

Od: ГРАД ЗВОРНИК



Одржана јавна расправа о нацрту Плана управљања животном средином и друштвеним питањима (ЕСМП)

У великој сали Градске управе Зворник одржана је јавна расправа о нацрту Плана управљања животном средином и друштвеним питањима (ЕСМП) за пројекат изградње система водоснабдијевања „Зворник – Запад“, а који је дио Пројекта модернизације водних и санитарних услуга (WSSM), који се финансира из кредита Свјетске банке.

Истакнуто је да је ријеч о важном пројекту којим ће бити обухваћено седам насеља, западно од градског насеља Зворник: Глумина, Ораовац, Крижевићи, Китовнице, Доњи Грбавци, Горњи Грбавци, али и прихваћени дијелови насеља Јардан и Каракај на предметну водоводну мрежу.

Предвиђено је да се водоводни систем састоји од главне и секундарне мреже, као и пратећих објеката. Планирана је изградња 7 резервоара и 5 пумпних станица, као и уградња око 49 километара цјевовода за главне транспортне и дистрибутивне цјевоводе и око 50 километара за прикључке корисника.

#### Publication of Information on Public Consultations

The organization of public consultations and the publication of information about public consultations were carried out in accordance with the guidelines of the World Bank and in line with the Bank's Environmental and Social Standard (ESS 10). With the assistance of PIT Zvornik, information about the public consultations invitation was posted on the official websites of two institutions (as listed below):

1. City of Zvornik
2. Agriculture Projects Coordination Unit of the Ministry of Agriculture, Forestry, and Water Management of the Republic of Srpska.



Почетно » Илде » Вибести » У току јавни увид у нацрт Плана управљања животном средином за пројекат изградње водовода „Запад“

## У току јавни увид у нацрт Плана управљања животном средином за пројекат изградње водовода „Запад“

08.04.2025.



Датум: 28. априла 2025. године на градској интернет страници и у Градској управи града Зворника доступан је на увид нацрт Плана управљања животном средином и државног позивања (ЗПДП) на Пројекат „Изградња система водоснабдевања Зворник – Запад“.

Пројекат обухвата насеља Глушци, Правова, Крушковићи, Катовићи, Доњи Грбацик, Диги Диги, и др. (у Пројекту модернизације водних и санитацијних услуга (МОВУ) који се финансира из кредита Светског банке).

Јавни увид на нацрт ЗПДП за Пројекат „Изградња система водоснабдевања Зворник – Запад“ одржаће се у понедељак, 28. априла 2025.године са почетком у 10:00 часова у Велнесу зграде Градске управе Града Зворника.

План и обавештајног материјала се на интернет страници града Зворника: [https://gradzvonik.org/obavestaji/](https://gradzvonik.org/obavestaji)

ИМО

Илде

Вибести

Тип на српски (srpski)

The public consultation notice was also sent to all local communities included in the project. It was published in the city's Viber group and on the official Facebook page of the City of Zvornik. Additionally, the notice was published in Glas Srpske and posted on the notice board of the City of Zvornik.

Photo documentation is provided below.

Od: ГРАД ЗВОРНИК



У току јавни увид у нацрт Плана управљања животном средином за пројекат изградње водовода „Запад“

До петка, 25. априла 2025. године на градској интернет страници и у Градској управи града Зворника доступан је на увид нацрт Плана управљања животном средином и друштвеним питањима (ESMP) за Пројекат „Изградња система водоснабдевања Зворник – Запад.“

Пројекат обухвата насеља Глумина, Ораовац, Крижевићи, Китовнице, Доњи Грбавци, Дуги Дио, а дио је Пројекта модернизације водних и санитарних услуга (WSSM), који се финансира из кредита Свјетске банке.

Јавна расправа за нацрт ESMP за Пројекат „Изградња система водоснабдевања Зворник – Запад одржаће се у понедељак, 28. априла

30 сриједа, 9. април 2025. ГЛАС СРПСКЕ

Влада Републике Српске  
МИНИСТАРСТВО ПОЉОПРИВРЕДЕ,  
ШУМАРСТВА И ВОДОПРИВРЕДЕ/  
Јединица за координацију пољопривредних пројеката

**О Б А В Ј Е Ш Т Е Њ Е**  
**О ЈАВНОМ УВИДУ и ОДРЖАВАЊУ ЈАВНЕ РАСПРАВЕ**  
за нацрт  
**ПЛАН УПРАВЉАЊА ЖИВОТНОМ СРЕДИНОМ и ДРУШТВЕНИМ ПИТАЊИМА**  
(ESMP)  
за  
**ПРОЈЕКАТ ИЗГРАДЊА СИСТЕМА ВОДОСНАБДИЈЕВАЊА "ЗВОРНИК-ЗАПАД"**  
ГРАД ЗВОРНИК  
(насеља Глумина, Ораовац, Крижевићи, Китовнице, доњи Грбавци, Горњи Грбавци, Дуги Дио)

Обавјештавамо јавност и заинтересоване стране да је на интернет страници Министарства пољопривреде, шумарства и водопривреде РС и Града Зворника:

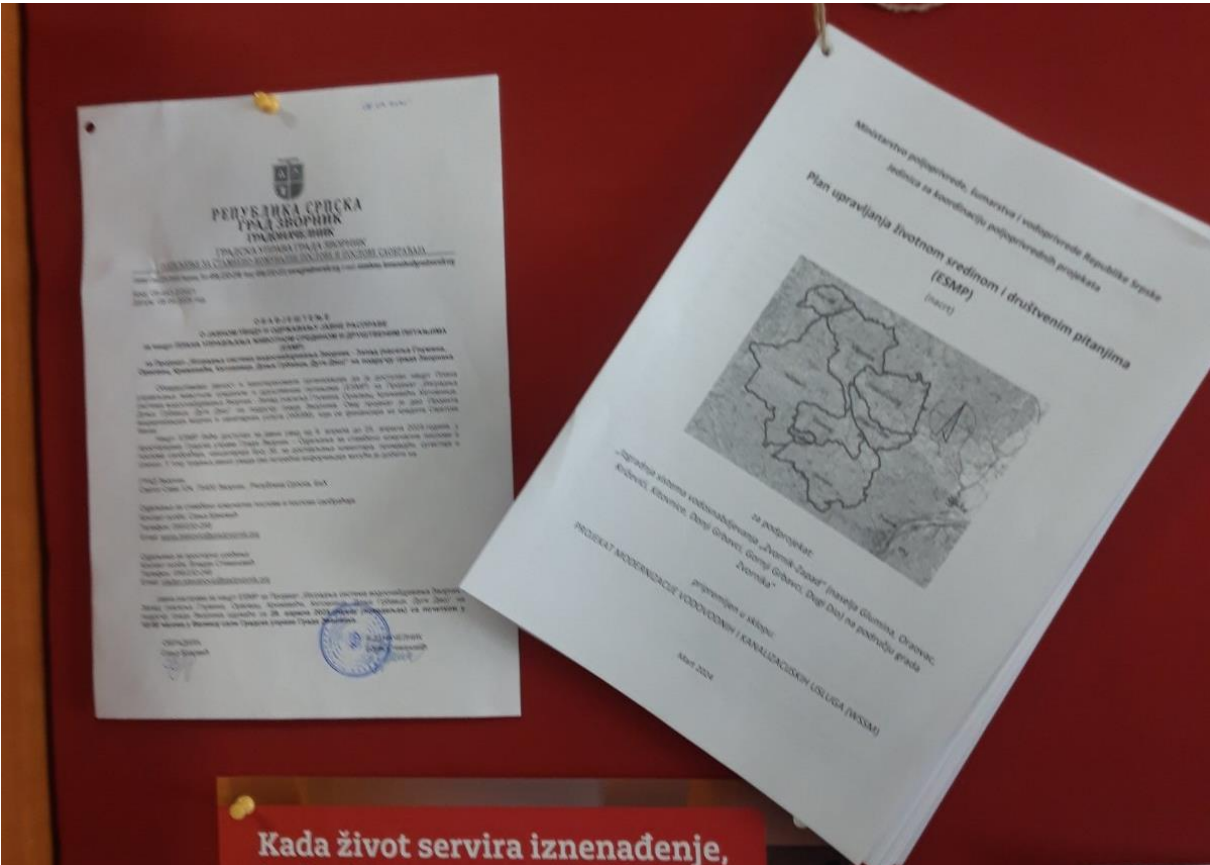
[https://vladars.rs/rs-SP-cyrl/Vlada/Ministarstva/mps/Documents/ESMP-izgradnja%20%20vodovodnih%20sistema%20%20%20Zvornik-Zapad%20%20%20WSSM%20projekat\\_258948927.pdf](https://vladars.rs/rs-SP-cyrl/Vlada/Ministarstva/mps/Documents/ESMP-izgradnja%20%20vodovodnih%20sistema%20%20%20Zvornik-Zapad%20%20%20WSSM%20projekat_258948927.pdf)  
<https://gradzvornik.org/n-tolm-javni-vid-u-nacrt-plana-upravljanja-zivotnom-sredinom-za-projekt-izgradnje-vodovoda-zapad/>

доступан нацрт Плана управљања животном средином и друштвеним питањима (ESMP) за за Пројекат „Изградња система водоснабдевања Зворник – Запад“ у оквиру Пројекта модернизације водних и санитарних услуга (WSSM) који се финансира из кредита Свјетске банке. Нацрт ESMP биће доступан за јавни увид од 9. априла до 25. априла 2025. године, у просторијима Градске управе Града Зворника – Одјелу за стамбено комуналне послове и послове саобраћаја, канцеларија број 36, за достављање коментара, примједби, сугестија и слично.

Јавна расправа за нацрт ESMP за Пројекат „Изградња система водоснабдевања Зворник – Запад“ који обухвата насеља Глумина, Ораовац, Крижевићи, Китовнице, Доњи Грбавци, Дуги Дио одржаће се у понедељак, 28. априла 2025. године са почетком у 10:00 часова у Великој сали Градске управе Града Зворника. У току трајања јавног увида све потребне информације могуће је добити на:

ГРАД ЗВОРНИК  
Светог Саве 124, 75400 Зворник, Република Српска, БиХ  
Одјелу за стамбено комуналне послове и послове саобраћаја  
Контакт особа: Сана Бјековић  
Телефон: 056/232-258  
Email: [sanja.bjekovic@gradzvornik.org](mailto:sanja.bjekovic@gradzvornik.org)  
Одјелу за просторно уређење  
Контакт особа: Владан Стевановић  
Телефон: 056/232-245  
Email: [vladan.stevanovic@gradzvornik.org](mailto:vladan.stevanovic@gradzvornik.org)

Министарство пољопривреде, шумарства и водопривреде РС  
Јединица за координацију пољопривредних пројеката  
Трг Републике Српске 1, Дамела А, 78000 Бања Лука  
Контакт особа: Невена Стојановић  
Телефон: 051/338-932  
Email: [n.stojkovic@mps.vladars.rs](mailto:n.stojkovic@mps.vladars.rs)  
Директор Мр Стефан Митровић



Kada život servira iznenađenje,

After the public disclosure, representatives of the City Administration of Zvornik, specifically the Department for Housing-Utility Affairs and Traffic, submitted an Opinion regarding the presented Environmental and Social Management Plan (ESMP).

They noted that, as of the date of submitting their Opinion, no comments, objections, or complaints had been received regarding the Draft Plan.

In their view, the “Zvornik-West” Water Supply System construction project in the area of the City of Zvornik is not expected to have a negative impact on the environment, except in the case of accidental situations. According to them, such incidents occurring during the operation of the water supply system would be promptly addressed due to the involvement of professionally trained personnel from the Water Supply Company.

Given that this water supply system will serve seven settlements in the western part of the city, they believe that the overall benefits of the project outweigh its potential negative aspects. Consequently, they issued a positive opinion on the Draft Plan.