

Environmental and Social Management Plan (ESMP)

for the
'Rehabilitation and Upgrade of the Water Supply System in
Municipality of Gjilan'

Prepared under
Fostering and Leveraging Opportunities for Water Security - FLOWS

May 2024

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ABBREVIATIONS

AC	Asbestos Cement
BoQ	Bills of Quantities
CoC	Code of Conduct
CoI	Corridor of Impact
E&S	Environmental and Social
EHS	Environmental, Health, and Safety
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FLOWS	Fostering and Leveraging Opportunities for Water Security
GBV	Gender Based Violence
GM	Grievance Mechanism
GRM	Grievance Redress Mechanism
O&M	Operation and Maintenance
HDPE	High density polyethylene
OHS	Occupational Health and Safety
PPEs	Personal Protective Equipment's
PMT	Project Management Team
PS	Pumping Station
SCADA	Supervisory Control and Data Acquisition
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
WB	World Bank
WTP	Water Treatment Plant

SUMMARY

This subproject for the 'Rehabilitation and Upgrade of the Water Supply System in Municipality of Gjilan' is implemented under the Fostering and Leveraging Opportunities for Water Security (FLOWS¹) Program, funded through a credit from the World Bank.

It falls under Sub-Component 2.2 – Investments in water infrastructure and services addressing the water crisis, which is part of Component 2 – Addressing water crisis with catalytic investments.

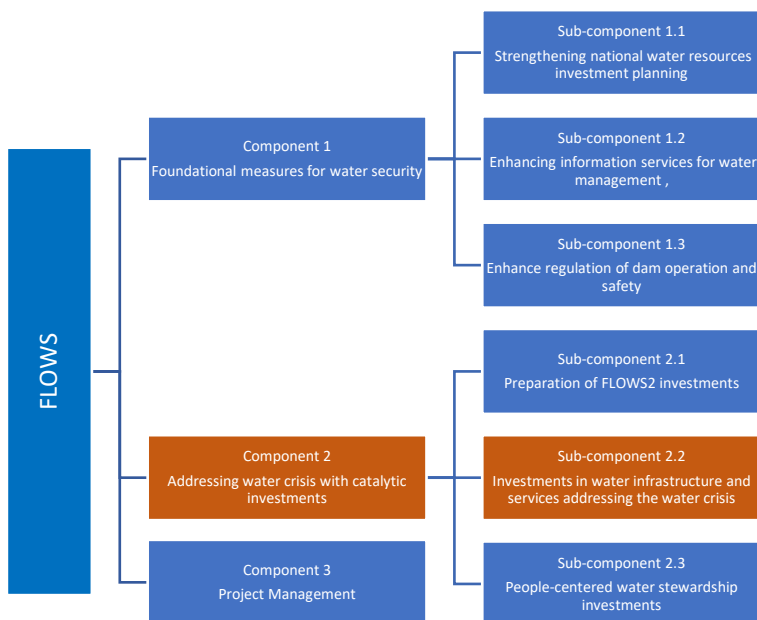


Figure 1. FLOWS components and subcomponents

The beneficiary of this subproject is the Regional Water Company Hidromorava a joint-stock company, established on 2007, responsible for managing and operating water and wastewater systems in the Anamorava region.

Hidromorava oversees operations through its three units located in Gjilan, Viti, and Kamenica. Specifically, the Gjilan unit serves the municipalities of Gjilan, Ranilug, Novo Berd, and Partesh, while Viti unit caters the municipality of Viti, and the Kamenica unit serves the municipality of Kamenica.

This subproject, known as the 'Contract,' is designated for the unit in Gjilan and encompasses the following:

1. Rehabilitation and Upgrade of the **Pipeline Network**
2. Constructing the **New Water Storage Tank**
3. Rehabilitating the **Pumping Stations**
4. Installing the **Scada** system

All activities are to be implemented within the Municipality of Gjilan.

¹ https://www.mit-ks.net/repository/docs/2020_03_24_170402_KOSOVO_ESMF_19032020_final_2.pdf

Table 1: Summary sheet

Name of the subproject:	'Rehabilitation and Upgrade of the Water Supply System in Municipality of Gjilan'
Subproject specification:	<ol style="list-style-type: none"> 1. Rehabilitation and upgrade of the pipeline network in Gjilan town and Perlepnica village 2. Construction of the new Water Storage Tank in Perlepnica village 3. Rehabilitation of pumping stations in Gjilan Perlepnica and Pasjan villages 4. Installation of the SCADA system in Gjilan and Perlepnica village
Subproject location:	Gjilan municipality Gjilan, Perlepnica, Pasjan
Number of beneficiaries	103.660 Gjilan
Sector and type of subproject:	Water sector Water supply system
Implementing of the subproject:	RWC 'Hidromorava' FLOWS/PMT
Implementation modality:	Directly implemented by RWC 'Hidromorava' through Contractors
Size of the subproject:	8977m pipeline construction works V=3500m ³ new water tank 4 Pumping Stations rehabilitate SCADA installed in 3 Pumping Stations
Estimated Cost of subproject:	EUR 7.5 mil
Field Visit (Yes/No; Include Date):	Yes July, October, 2023 February, March, April 2024
Was Consultation Carried out? (Yes/No):	Yes
Proposed Class of subproject (Low to High):	Moderate

1. INTRODUCTION

The Environmental and Social Management Plan (ESMP) for the 'Rehabilitation and Upgrade of the Water Supply System in Municipality of Gjilan', is prepared in accordance with the Environmental and Social Management Framework (ESMF) of the Fostering and Leveraging Opportunities for Water Security (FLOWS) Program.

This ESMP was prepared by PMT and support of Regional Water Company 'Hidromorava', for the specific works for the purpose of increasing the water supply reliability, improving the efficiency of water distribution network and pumping stations management and reducing the non-revenue water in areas managed by this company, by expansion of water storage capacities, increasing pumping efficiency and establishment of the Supervisory Control and Data Acquisition System.

Prepared by the MESPI/PMT, the ESMP aligns with the requirements of the World Bank's Environmental and Social Framework (ESF) and the Kosovo environmental laws and regulations.

The subproject involves civil works, which means that the scope of work requires applying ESS1 (Assessment and Management of Environmental and Social Risks and Impacts).

The work will involve contractors and workers, which requires applying ESS2 (Labor and Working Conditions).

The work activities generate waste, which leads to the application ESS3 (Resource Efficiency and Pollution Prevention and Management).

Moreover, the activities and equipment may increase community exposure to risks and impacts, thus, ESS4 (Community Health and Safety) should be applied to address the health and safety risks and impacts on the community.

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.

ESS5 will not be applicable to the activities under this Contract.

In addition, the ESS6 is not relevant because the subproject does not include and will not affect biodiversity or living natural resources.

The ESS7 and ESS9 are not relevant because there are no indigenous peoples and the subproject does not involve any financial intermediaries that may be affected and have relationships in the subproject.

While there are no cultural heritage areas near the project sites, ESS8 remains relevant to this project due to its involvement in excavations and earth movements. A management approach is necessary for any chance findings related to the project, ensuring their proper handling and documentation.

As a result, 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.

Furthermore, it is important to note that the Environmental and Social Management Plan (ESMP) will be disseminated to stakeholders and made available on the FLOWS and World Bank websites.

2. SUBPROJECT BACKGROUND

This subproject aims to enhance the water supply system managed by Hidromorava company. With this Contract it is planned the rehabilitation and upgrade of the pipeline network in Gjilan and construction of a new reservoir in Perlepnica, village of Gjilan, to increase water storage capacity. Additionally, it encompasses the rehabilitation and upgrade of water pumps in Gjilan area to improve pumping efficiency. Moreover, with the installation of SCADA system will enable better monitoring and management of water consumption.

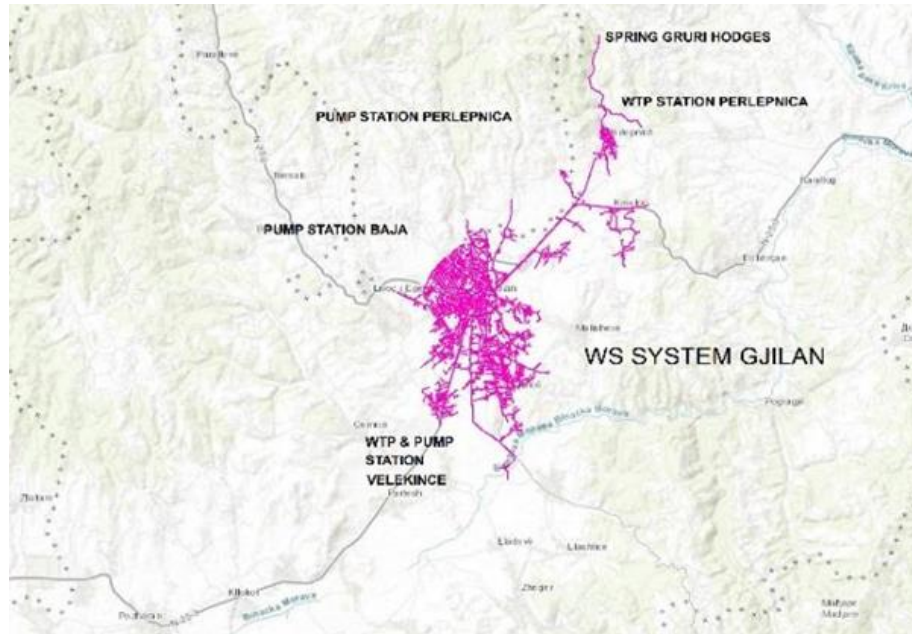


Figure 2. Overview map of the project area

2.1. Existing Situation of the targeted area

Water supply system of Gjilan

Water Sources: Gjilan's water supply relies on four main sources: Perlepnica Dam, Gori Hoxhes Spring, Baja Groundwater Source, and Velekinca Groundwater Wells. Water from Perlepnica Dam is treated at Perlepnica Water Treatment Plant (WTP), while water from Gori Hoxhes Spring is mixed with treated water from the dam before reaching the city. Perlepnice WTP is the primary water source, with a capacity of 230 l/s, and Gori Hoxhes Spring adds 70 l/s to the supply. Baja Groundwater Source, located within the city, is pumped to the network by the Baja Pumping Station, which has a total capacity of 50 l/s. Velekinca Wells, situated in the southern part of the city. Water from these wells is pumped to Velekinca WTP, with a capacity of 110 l/s. The treated water is stored in a 1000m³ reservoir at the plant before being pumped to the city by Velekinca Pumping Station.

Pipeline Infrastructure: The water supply network of Gjilan consists of main, primary, secondary and tertiary pipelines. The total length of the network is 275.7km. The main distribution pipelines is composed of different materials. Materials present in the network are polyethylene (PE) (77%), asbestos cement (AC)

(11.8%), polyvinyl chloride (PVC) (6.5%) and others with a smaller share (4.7%). Diameters in the network varies from 32 to 450mm.

2.2. Planed activities

The subproject activities under this Contract involve:

1. Rehabilitation and Upgrade of the water distribution **pipeline network** in Gjilan city and in Perlepnica;
2. Construction of the **new reservoir** in Perlepnica;
3. Rehabilitation of the **water pumps** in Gjilan, Perlepnica and Pasjan;
4. Installation of **SCADA** system in Gjilan and Perlepnica

2.2.1. REHABILITATION AND UPGRADE OF THE WATER DISTRIBUTION PIPELINE NETWORK

This initiative for rehabilitation and upgrade of the water supply system network in municipality of Gjilan is crucial due to the aging infrastructure marked by deterioration and leakages.

The current water main pipeline, constructed of AC (Asbestos Cement) pipes, is slated for replacement with modern/ more environmentally friendly material, with PE pipes of larger diameter. The new pipeline route will run parallel to the existing AC pipeline, which will remain intact, eliminating the creation of asbestos waste.

The water distribution networks to be rehabilitated and upgraded with this subproject encompassing 8977m of pipeline in Gjilan city center and suburb, including Perlepnica village.

Main Lines under the project in Gjilan		
Pipe Diameter (∅)	Type	Total (m)
630	HDPE	3787
315	HDPE	2232
400	HDPE	1008
280	HDPE	1950
TOTAL		8977

The subproject will follow existing footprints of the current water pipelines and will include activities such as workplace mobilization and management, demolition works, excavation works, laying of pipes, purchase and installation of equipment, among others. Measures such as traffic organization, road maintenance, alternative electricity supply, safety measures, and damage repair ensure smooth operations throughout the construction period.

Following this, the demolition works entail preparing the route for the installation of the new water pipeline. This involves tasks such as removing asphalt and concrete, ensuring the safe storage of materials. These efforts are essential to clear the path for the new pipeline installation while minimizing disruptions and ensuring public safety.

The excavation works involve opening channels for laying the new water pipes, considering factors such as soil category, terrain conditions, and traffic density. Both mechanical and manual excavation methods are employed, with meticulous attention to securing, maintaining, and leveling the channels. Additionally, excavation for constructing wells further enhances the project's infrastructure.

Supplying and distributing sand for pipe bedding and covering, as well as limestone sand for road restoration, are critical steps to ensure the durability and stability of the installed pipelines and road segments. Proper compaction and layering techniques are employed to achieve the desired specifications and structural integrity. Finally, the installation of a steel pipe over the river beds for the water supply pipeline involves meticulous planning and execution to ensure the structural integrity and functionality of the crossing. This includes reinforcing the steel pipe with concrete, adhering to project specifications and regulations.

In summary, the outlined activities encompass a comprehensive approach to construction, spanning mobilization, demolition, excavation, material supply, and structural installation, all aimed at ensuring the successful implementation of the water supply project while adhering to safety, quality, and regulatory standards.

This Contract covers interventions in the Line 0, partially Line 1, partially Line 2 and Line 3, as depicted in the Figure 3 below.

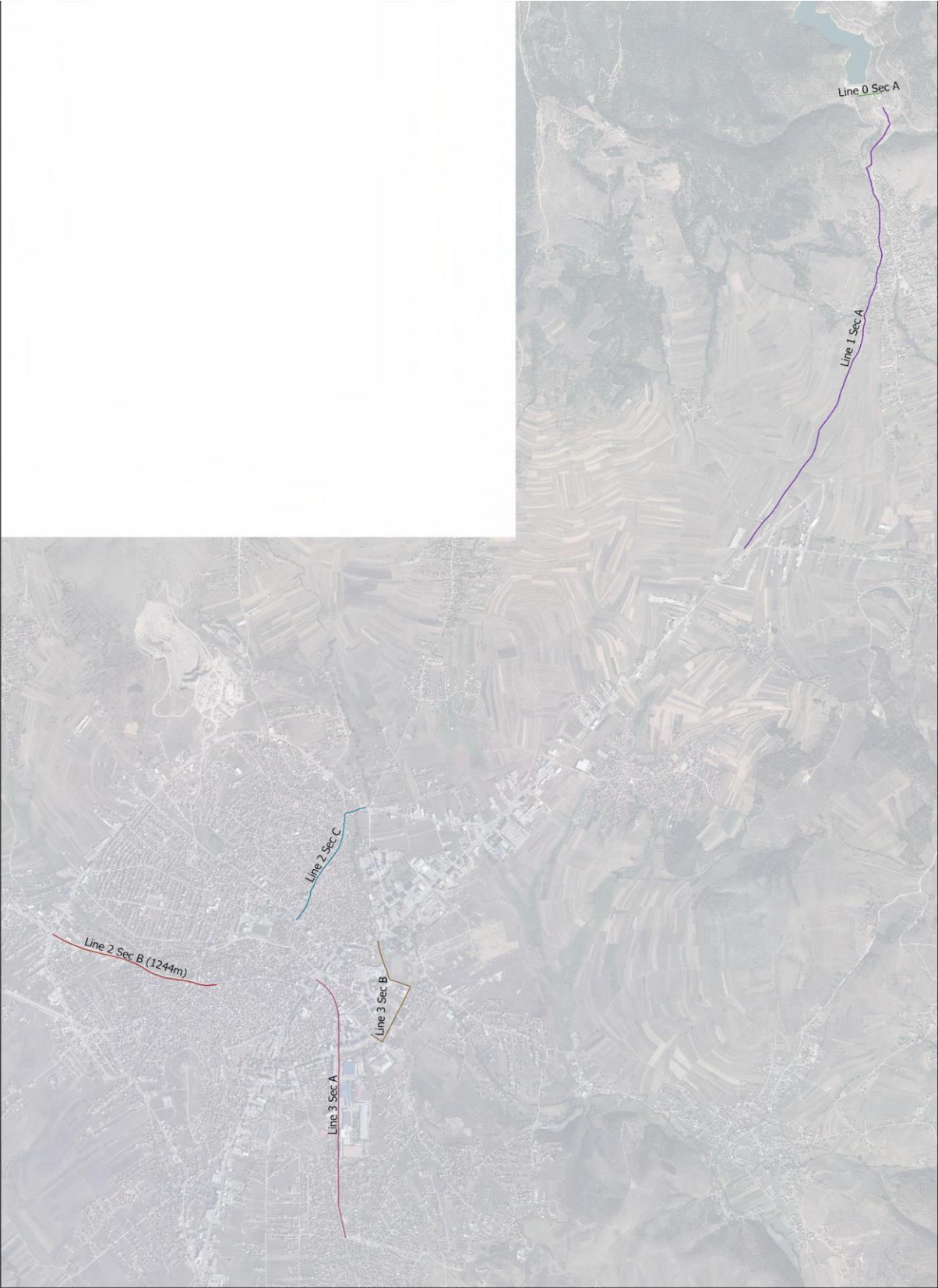


Figure 3. The schematic view for the pipeline network activities that are planned under this Contract

a) Pipeline 0

Line 0 Section A, the raw water transmission line goes from Perlepnica Pump Station (PS) to Perlepnica Water Treatment Plant (WTP). The initial point of the transmission lines is the raw water pumping line that takes water from Perlepnica PS to Perlepnica WTP. This pipeline is the replacement of the existing pumping line from PS Perlepnica to Perlepnica WTP in a length of 187m with a pipe diameter $\varnothing 630\text{mm}$. The general layout of the pipeline is given in Figure 4, Annex 2.

b) Pipeline 1

The pipeline running from Perlepnica WTP to Gjilan city is the main transmission line that conveys the major amount of city's water need. The Line 1A starts from the clean water reservoir (Perlepnica Water Tank) and goes along the Perlepnica village road until it reaches the crossroads (where the entrance to the village of Perlepnica intersects with the main road M25). During this Contract, for rehabilitation are planned in the first 3600meters, as shown in **Error! Reference source not found.**5, Annex 2. Close to the start of the line, near 0+675 meters, at the entrance of the village of Perlepnica the pipeline passes beneath the riverbed. The method with DN 800mm steel pipe surrounding (Sleeve pipe) will be implemented to covet the 630mm HDPE pipe.

a) Pipeline 2

Line 2 serves as the primary distribution pipeline within the town, branching off from the endpoint of the transmission Line 1. This pipeline is crucial for supplying water to the city center. It is composed of three sections for convenience, A, B and C. However, during this Contract, for rehabilitation are planned only 2933m covering Line 2 Section C in a length of 1008m (with a pipe diameter $\varnothing 400\text{mm}$), and the Line 2 Section B in a length of 1244m (with pipe diameter is $\varnothing 315\text{mm}$). The Figure 6 and Figure 7 in the Annex 2 illustrates the starting point, ending point, and route of Line 2B and Line 2C.

b) Pipeline 3

Line 3 functions as a segment of the main distribution pipeline, in the city center indirectly linked to Line 1 and Line 2 within the network. It consists of two parts, 3A and 3B. Line 3A originates from the city center and extends southward. The Line 3 Section A has a length of 1945m with a pipe diameter $\varnothing 280\text{mm}$. Line 3B has a length of 987,96m, with $\varnothing 315\text{mm}$. The Line 3B is a new pipeline network. Along Line 3B, near the starting point at approximately 0+750 km, the pipeline crosses the Mirusha river. An excavation method will be employed to pass this river. The 500mm cast iron sleeve pipe will traverse the riverbed and be enveloped in concrete for stability. To ensure stability, the pipe will be encased in concrete along the river crossing. The river crossings will also serve as convenient drainage points for pipeline maintenance or replacement needs. It will serve as suitable drainage point for pipeline maintenance or replacement activities in the future. There is also a road crossing in the Line 3B. Across section 3B, there are plans for laying steel pipes through road drilling for water pipe installation. In section 3B, a road crossing is anticipated. The Figure 8 and Figure 9 in the Annex 2 illustrates the route of Line 3A and Line 3B.

2.2.2. CONSTRUCTION OF THE NEW WATER RESERVOIR IN PERLEPNICA/GJILAN

The expansion of Gjilan's water supply system is crucial to accommodate the increasing demands resulting from both the expanding service areas and the growing number of consumers.

This necessitates an augmentation of storage capacities beyond the initial design specifications of existing facilities. Presently, Gjilan relies primarily on a water storage tank with a volume of 3000m^3 , located near the Perlepnica WTP, along with other storage capacities.



Photo 1a & 1b. Current state of the location planned for construction of the new reservoir in Perlepnica

As part of the expansion plan, adjacent to the existing reservoir in Perlepnica, the RWC Hidromorava intends to increase storage capacities through the construction of a new water storage tank with a volume of 3500m³. The strategic placement near the existing WTP is aimed at optimizing operational efficiency and ensuring a dependable water supply to the city of Gjilan and its surrounding residential areas.

The new water storage tank will ensure reliability with uninterrupted water supply and optimal pressure within the water distribution system. It will also facilitate sufficient retention time during water treatment processes, optimize pump operations, and provide increased emergency storage capacity and pressure during power outages. Additionally, the additional volume will address peak demands, such as fire flows, during periods of heightened consumption.

Newly built tank with a capacity of 3500m³ which should be in accordance with the new SCADA system.

The project unfolds in four distinct phases: design activities, preparatory activities, construction, and exploitation. In the design phase, comprehensive project supporting documentation has been prepared, addressing erosion protection, fire safety measures, proximity to electricity supply and water pipelines, as well as consideration of any archaeological sites or cultural heritage to ensure avoidance or proper handling if encountered.

During the preparatory phase, clearing of the project site, covering an area of up to 2800m², will be undertaken. Access to the designated reservoir location is facilitated by an existing local road that extends to the dry chamber of the tank, facilitating the delivery of necessary construction materials. The reservoir itself takes on a rectangular shape, divided into four wet chambers, each measuring 22.0 x 8.0m at the base, with a water height of 5.25m and a constructive height above the water of 0.75 meters. Hydraulic calculations determine the tank's capacity to be 3500m³, with each chamber holding 875m³. This configuration allows for continuous water circulation, enabling maintenance and repair work on one chamber while the others remain operational. The dry chamber features various pipes, including a Ø600mm drainage pipe, Ø100mm drain-overflow tube, and Ø100mm sand filter washing drain, all constructed from cast iron materials. Water is discharged from the tank through the overflow pipe into an audit shaft and eventually into the existing sewer system. A drainage system comprising perforated tubes and revision shafts surrounds the tank, while a dedicated shaft facilitates the connection of supply points from the tank to the water supply network. Figure 12. below provides an overview of the current state of the construction site.

The land designated for the reservoir site is owned by the municipality, therefore no land acquisition is required for this subproject.

The local population residing in the settlement of Perlepnica, along with workers engaged in project activities, will be considered sensitive receptors during the subproject implementation. The access road to the project site passes through the village of Perlepnica, which is also utilized by local residents to reach their agricultural lands and carry out daily routines. An alternative, road exists to connect to the project location, providing a route that bypasses the village.

The implementation of the subproject will necessitate the use of various materials, including concrete, rebar, mesh, crushed stone, hydro insulation materials, geotextile, and others.

2.2.3. REHABILITATION OF THE WATER PUMPS

The subproject envisages to rehabilitate the existing 4 Pumping Stations: PS Perlepnica, PS Veleknica, PS Baja and PS Prison.

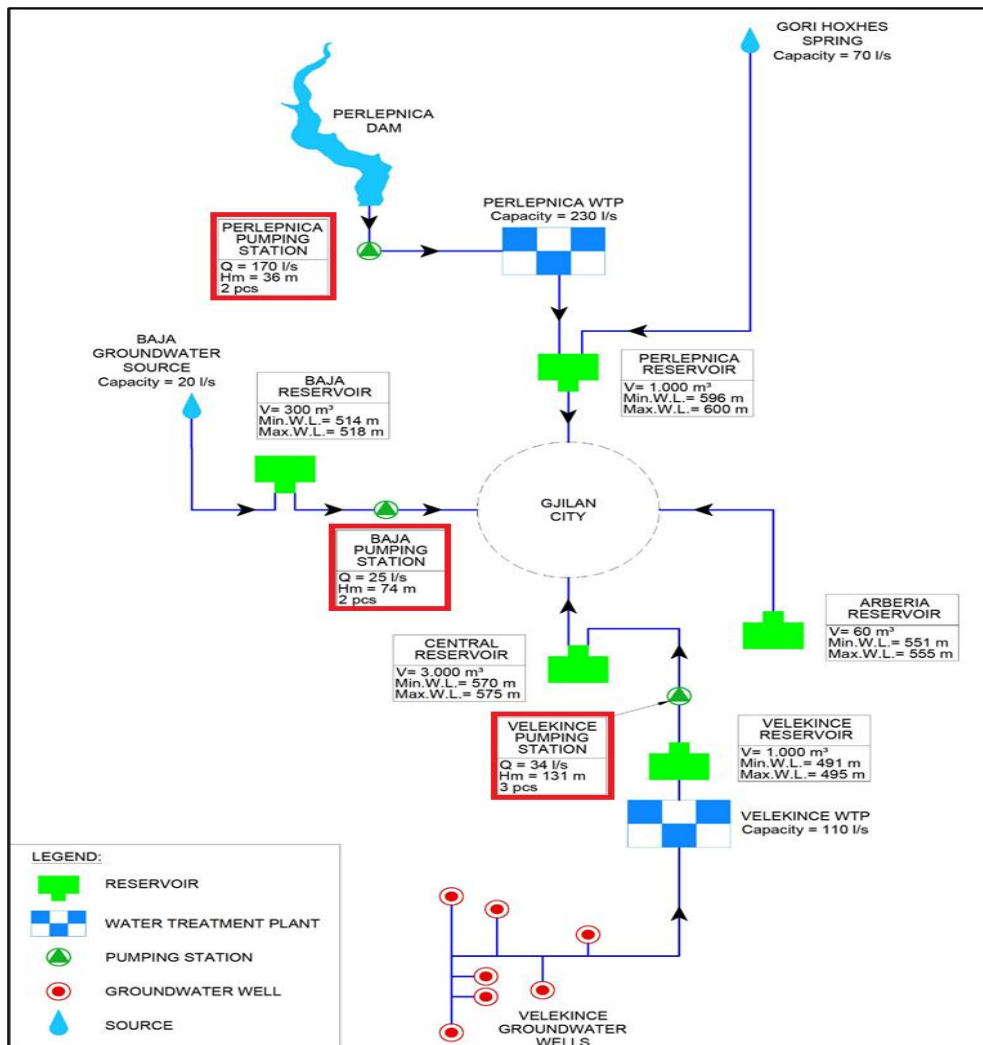


Figure 12. Schematic view of the water supply system of Gjilan and the pumping stations

Improving pumping efficiency not only cuts down on energy usage and operational expenses but also

ensures consistent water pressure across the distribution network. Such optimization efforts can further prolong the lifespan of pumping equipment. This initiative anticipates boosting reliability, efficiency, and revenue generation for the Hidromorava company.

PS Perlepnica

After the WTP Perlepnica, is located the 'Perlepnica' water storage tank, with a volume of 1000m³/ Pumping station at the WTP Perlepnica is utilized for pumping of the raw water from the Perlepnica dam in to the WTP.

The Pumping Station at the Water Treatment Plant in Perlepnica transfers raw water from the dam to the WTP. It currently operates with three main pumps and one reserve, each capable of 250 m³/h capacity and 36m head. However, the existing mechanical equipment is severely deteriorated, being over 20 years old and unreliable. Given their age and condition, intensive maintenance is required, and it's anticipated that the pumps have reached the end of their lifespan.

Considering the production year and condition of the existing pumps, they are due for replacement. The project necessitates the installation of new, modern equipment to improve efficiency and reduce maintenance costs. All four pumps will be replaced with new ones, expected to consume 10-20% less electricity per pumped cubic meters of water. The rehabilitation plan includes installing three new pumps with an additional standby pump (3+1 configuration) for enhanced reliability and operational efficiency.



Foto . PS at the WPT Perlepnica

PS Velekinca

The Velekince water plant supplies a part of Gjilan, Velekince and the village of Pasjan.

In the well area of Velekince, the water storage tank 'Velekince' was built with a storage volume of 1000m³ at elevation of 493 m.a.s.l. This water storage tank is used as wet well of the pumping station 'Velekince for Gjilan' and the pumping station 'Velekince for Pasjan';

The equipment to be installed in the pumping station will include:

Pumps: These will be utilized for transporting raw water from the dam to WTP Perlepnica, ensuring a steady supply to the treatment plant.

Valves, Pipes, and Fittings: Integral components for regulating flow and pressure within the system, facilitating efficient water distribution throughout the network.

Measuring Equipment: Instruments will be employed to monitor flow rates and pressure levels, providing essential data for effective system management and optimization.

Protection Equipment: Measures will be implemented to safeguard against water hammer, a phenomenon that can cause damage due to sudden pressure changes, as well as absorbing wells to mitigate potential impacts.

Pressure Probe: Installation of a pressure probe in the aeration tank will enable accurate monitoring of pressure variations, ensuring optimal conditions for the treatment process.

PS Baja

Nearby water intake structure Baja is built water storage tank 'Baja 1' with volume 350m³, at elevation of 493 m.a.s.l. The reservoir is used as well for pump station 'Baja-Prison' and the 'PS Baja 1' pumping station. The subproject entails renovation of an aging pumping station, aimed at modernizing its infrastructure and improving functionality. This involves replacing the roof, upgrading facade walls, and improving interior spaces with new carpentry, windows, and flooring to ensure energy efficiency and moisture resistance. Additionally, two HDPE pipelines, meticulously designed to withstand varying pressures, will be installed to improve water supply from Reservoir Baja and connect to the prison's water system.

PS Baja will house three large booster pumps distributing water via a DN 400 main pipeline.

Safety measures include an axial fan and electric heater for temperature control, thermal insulation to prevent condensation, and immediate activation of the axial fan in case of chlorine leakage. Ventilation systems, including wall-mounted axial fans, ensure airflow, while an inverter air conditioner in the administration area regulates temperature for personnel comfort.

Rehabilitation activities include installing an axial window fan for air circulation, an electric heater with thermostat control, and thermal insulation for the piping system.

The chlorination station will have an axial fan activated by sensors in case of chlorine leakage, and wall-mounted axial fans will ensure airflow in other areas.

An inverter air conditioner will be placed in the administration area for heating and cooling purposes, enhancing comfort.



Photo 2. Present situation of PS Baja

PS Prison

The PS Prison facility requires substantial upgrades, as it currently falls short of modern standards for a pumping station. Situated adjacent to the Baja Pumping Station, it was originally constructed to supply water to the Gjilan Prison. However, due to its deteriorated condition, the existing structure necessitates complete demolition and replacement with a new, modern building to better serve the occupants of the prison.

The location of the annex pumping station, along with the PS Baja, is within the central city area of Gjilan. The terrain, with minor deviations, covers an area of approximately 2000m². Plans include landscaping around the buildings to create a cohesive urban unit that seamlessly integrates with the surrounding environment.

Field Transformations: Initial steps involve the removal of existing greenery and the mechanical extraction of the topsoil layer, transported to designated landfill sites. New truck lanes will be constructed to facilitate efficient transportation of equipment, along with the installation of roadways and platforms for assembly and parking.

Space Arrangement: The remaining area will undergo horticultural organization, with emphasis on high-quality greenery to enhance the aesthetic appeal. Careful consideration will be given to the placement of tall plants to prevent interference with underground water supply networks.

New Pump Station Annex: The ground-level facility will house three vertical pumps, designed to operate based on water capacity requirements. Construction will utilize reinforced concrete foundations and clay block walls, with thermal facade treatments for energy efficiency.

2.2.4. SCADA SYSTEM

As part of RWC Hidromorava, there exists a partial SCADA system, supplemented by manual operations, currently installed at the PS Perlepnica and PS Veleknicia facilities. However, due to its aging infrastructure, this system necessitate replacement.

The proposed modernized SCADA system is intended to automate and digitize operations, enhancing monitoring and management of critical process parameters such as pressure, flow, and level at the pumping stations PS Perlepnica and PS Velekinca. Additionally, in this [Contract](#) includes integration of the PS Baja into the new SCADA system.

The implementation of a remote monitoring and control system (SCADA system), requires establishment of a comprehensive infrastructure (servers, storage, workstations, large displays, local computer network, communication equipment). This infrastructure operates across hierarchical levels, including instrumentation, remote stations, communication systems, and a main control station (SCADA center).

To implement a new SCADA system, key components for the central control center will be procured and installed, including cabinets for communication equipment, uninterrupted power supply devices, servers, data backup systems, workstations, video displays, and communication equipment such as network switches and routers.

The installation and integration of the SCADA system in the pumping stations entail equipment supply, installation, and testing activities, without involving any construction works. This approach ensures efficient modernization of system operations while minimizing potential environmental impacts.

Overall, the implementation of a remote monitoring and control system (SCADA system) is expected to significantly enhance the quality and efficiency of managing and maintaining the system, leading to a reduction in water losses and improved overall performance.

2.3. Nature of works

The subproject activities for the pipeline networks will include but are not limited to the following:

1. 'Workplace' mobilization and 'workplace' management.
 - Equipment for alternative electricity supply (generators, cables, etc.),
Organization and regulation of traffic in cooperation and consultation with the representatives of the municipality and with the Traffic Police during the entire time of execution of works
Proper maintenance of roads in the workshop,
Organization of safety measures in the workshop, and repairing damage to roads and greenery and returning them to their original state.
2. Demolition works for the preparation of the route for the installation of the new water pipeline². - Cutting and removing asphalt along the road where the installation of the new pipeline is planned and transport to a legal landfill in the city, in coordination with the municipal authority.
3. Excavation works for opening the channel and covering the channel.
 - The excavation works entail opening channels for the installation of new water pipes and covering them. This includes excavating channels in category III and IV soil for various pipe profiles, such as DN-630mm, DN 400mm, DN 315mm and DN 280mm, across different lines. The lengths, widths, and depths of the channels vary depending on the terrain. Some of these works will be conducted in areas with heavy traffic, necessitating the securing, maintenance, and final leveling of the channels. **Excavation is estimated to be primarily conducted with excavators (90%) and manually (10%). The estimated Corridor of Impact (Col), determined by factors such as pipe width, gap from the existing pipe, excavator operation, and backfilling, spans approximately 140cm for pipe diameters up to 400mm. For pipe DN 630mm, the Col expands to approximately 193cm. The duration of work in a specific section, causing disturbance to people and traffic, will not exceed 6 hours.**
 - Due to the presence of **narrow spaces** in certain areas, special attention is required for **employing techniques that enable safe and efficient excavation** within confined spaces.
 - Supply, distribution and leveling of sand under the pipe and for covering the pipe. The supplied sand can be from crushed stones (stone crushers) or fraction from the rivers. Sand fractions: 0-4mm. The layer under the sand pipe should be 10cm thick, the middle layer should be placed around the pipe (as thick as the diameter of the pipe) and the top layer of sand with a thickness of 10cm should be spread over the pipe. The material needs to be supplied by licensed stone crushers.
 - Covering the channel with soil/crushed material. -Covering the channel should be done layer by layer (the thickness of the layers should be max. 30cm) and include the compaction of the soil / material with adequate machinery. This position also includes the removal of excess soil from the workshop, the separation of stones and other material that can damage the installed pipes.
 - Supply, distribution and compaction of 0-60mm buffer limestone sand for Asphalt for road segments where the asphalt has been removed. compressing it in layers of max 20 -30cm, while the thickness of the layer is 30cm. with $M_v > 90 \text{ Mn/m}^2$.

² **The contractor is obliged to collect all data related to the installations in the workshop (above ground and underground, including but not limited to: electric and telephone cables, water and sewage pipes, etc.) and take care to protect them from possible damages during the implementation of the contract. The Contractor must cooperate with the enterprises for the provision of public services, with the municipal authorities to provide all the necessary information about the existing infrastructure**

- Removal of excess soil (removal material): Reuse the excess soil as recommended by municipality, and the remain of excess soil/material loading and transporting from the site (removal material from pipe channels, removal material from wells, removal material from check valves) to the permitted municipal dump site.

5. Passing the pipe under the river beds. -The subproject involves passing pipes under river beds, requiring transportation of machinery to workplaces, site preparation, and placement of steel pipes under the profiles of the Perlepnica river DN Ø800mm steel pipe surrounding (Sleeve pipe) will be implemented to covet the 630mm HDPE pipe and the Mirusha river with the pipe diameter Ø500 mm.

6. Pipeline & Fitting –Montage works.

- The pipeline and fitting montage works involve the purchase, installation, and transportation of HDPE 100 - RC pipes with specifications SDR 17 and PN 10 bar. The subproject includes HDPE pipes in various diameters DN 280, DN 315, DN 400 and DN 630. Additionally, the subproject encompasses the purchase, installation, and transportation of PE material equipment, including various types of tees, reducers, electro fusion fittings, butt fusion end caps, and 90° elbows.
- Purchase, transport, and installation of metal wire signal tape labeled 'Waterworks' to be positioned 20 cm above the water pipe.
- Purchase, transport and installation of cast iron fittings for main manholes, complying with DIN EN ISO 9000-2000 standards and certified according to DIN-DVGW quality tests. **All fittings must be protected from corrosion with a minimum 250 µm thickness epoxy coating**, adhering to DIN 3476(P) and DIN 30677 standards. **All valves and fittings must be suitable for use for drinking water** with flanges meeting DIN EN 1092-2 standards. The devices (bolts, nuts, rubber washers, etc.) for connecting the phase parts are included for all positions and they **must be corrosion resistant**;

7. Purchase, installation, transport and installation of the telescopic mechanism for operating the valves. installed on the ground with all the necessary elements for operation and protected by plastic wraps; Purchase, installation, transport, and installation of the telescopic mechanism for operating the valves installed on the ground with all the necessary elements for operation and protected by plastic wraps; Gate valve (long body) DN 50, DN 80, DN 150.

8. Supply, transport and installation of cylindrical caps for control valves. - The cap must be manufactured according to the DIN 40 56 standard. The cap must be manufactured from GG 20. The body is bituminized and protected from corrosion - the dimensions of the cover must be as follows: - the diameter of the lid: the upper part - 120 mm, while the bottom part - 170 (the shape should be circular);

9. Air valves. Purchase, transport and installation of air valves VV DN 150, gate valves Gate valve (short body) DN 150; different fittings FF DN 600/600, DN 400/400, FFR 300/150, TEE 600/300 and 400/300, HDPE AF DN-630 and DN-400, HDPE; AF Ø100 PE drainpipe with screened opening for draining the manhole with pipe length of 15.0m'

10. Washout valves. -It includes purchasing, transporting, and installing gate valves (DN 150), along with various fittings (such as FF DN 600/600, DN 400/400, FFR 300/150, TEE 600/300, 400/300), and HDPE AF DN-630, DN-400. Additionally, Ø100 PE drain pipes with screened openings are to be installed for draining manholes, with a pipe length of 15.0m.

11. Hydrants. - Purchase, transport and installation of Hydrants: TEE PE DN 400/90mm, DN 315/90mm, DN 160/90mm; ELEKTRO-MUFF DN 400mm, DN 160mm, DN 90mm; HDPE AF DN-90; TELESCOPIC VALVE

DN80mm; CUP FOR TELESCOPIC VALVE DN80mm; DUCKFOOT BAND, 90°, DN 80mm; FF, DN 80mm, L=800mm; HYDRANT, DN 80mm.

12. Testing and disinfection of installed water pipes. -It involves pressure testing and cleaning procedures adhering to technical standards and regulations. Pressure tests follow the guidelines outlined in the German Guide DVGW W 400-2, while cleaning and disinfection procedures adhere to DVGW Rule W 291. Detailed procedures can be found in the "Quality control and quality assurance program" document, ensuring compliance with relevant regulations and standards

13. Damage to the infrastructure and return to the previous state.

- Repair and restoration of infrastructure installations if damaged or destroyed during the subproject, including above-ground and underground utilities like any electric and telephone cables, water, and sewage pipes.
- Supply, transportation, and installation of two-layer asphalt with emulsion paint on road segments where asphalt has been cut and removed..
- Supply, transport, and installation of concrete layer on road segments where concrete has been cut and removed.
- .
- Removal and restoration of electric poles along the planned pipeline route, coordinated with KEDS.

14. Connecting the network - existing pipes to the new installed network. -Connecting the existing network of water supply pipes with the new installed pipes, until the water supply is fully operational.

15. Structural works_Concrete works.

Concreting of wells- The subproject involves the concreting of wells, specifically the supply and construction of reinforced concrete manholes with class C 25/30, impermeable to water, for various components such as air valves, washout valves, control valves, and hydrants. Tasks include reinforcing the manholes, drilling, concrete placement, assembly of metal covers capable of bearing heavy weights up to 40 tons with a diameter of DN 800mm, and installation of stairs according to technical norms. The dimensions for FMJ-4a, FMJ-4b, FMJ-6, FMJ-5B, discharge manholes, and air manholes are specified in the subproject details. All works are performed in accordance with technical standards.

Anchor blocks/ thrust blocks -The subproject involves the supply and construction of reinforced concrete blocks for anchoring and protecting water pipes, bends, river crossings, road penetrations, and supporting phasonic parts for various infrastructure elements. The concrete blocks are specified for pipe diameters DN-400mm and DN-315mm with concrete class C 25/30. The scope of work includes reinforcement using Q 335 mesh reinforcement (Ø10mm, 15 x 15), paving works, concrete placement according to technical norms, and all other necessary tasks. This encompasses support for main manholes, discharge manholes, hydrants, and joints, with all activities carried out in accordance with technical standards.

16. The Water Reservoir construction activities will include but not limited to:

- Earth works: Mechanical wide excavation up to 7m deep in soil III and IV category, backfilling by compacting the soil above the top plate a reservoir, excavated material around the foundation walls and shaft
- Concrete works: concrete for slopes with d=4cm to d=10cm, C20 in the wet chambers, processing from cement mortar the roof surface of the dry and wet chambers, waterproof concrete C30, with necessary formwork from waterproof chipboard, per vibration and care of concrete for structural elements (walls, bottom, roof etc.).

- Reinforce works (Purchas, transport, stretching, cutting, cleaning, bending, placing and tying of reinforcement MRA 400/500-2)
- Waterproofing works: Installation of waterproof HDPE foil and geotextile, insulation materials such as hydromal, and Styrofoam. Waterproofing works: Installation of waterproof HDPE foil and geotextile, insulation materials such as hydromal, and Styrofoam;

and **operational phase** – activities related to regular operation and regular and preventive maintenance of reservoir.

The Contractor is responsible for effectively managing various waste streams, including soil, concrete remains, and communal waste, generated at the project site through proper selection, transportation, and disposal in compliance with national legislation. To mitigate the risk of improper waste disposal, particularly near or within the vicinity of the Perlepnica River, Perlepnica Lake, and along the road, the Contractor is expected to develop and implement a Waste Management Plan. Approximately 9,800m³ of excavated soil is anticipated, with around 2,300m³ designated for reuse in backfilling, while any inert waste will be transported to an landfill site approved by the municipality.

3. ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

The FLOWS Program activities of the Component 2 will take place in the Morava e Binces River Basin. This river basin covers municipalities such as Gjilan, Novoberd, Viti, Klllokot, Partesh, Kamenica and Ranilug. In this basin, characterized by low rainfall and high-water stress levels, drought has severely affected water quality, leading to water rationing in major towns and villages. The decline in water quality has made it unsuitable for economic activities, including irrigation, leading to strict rationing measures and depletion of drinking water supply in certain areas.

3.1. Geographic characteristics

The territory of Gjilan municipality is situated in the south-eastern part of Kosovo, the region of Anamorava covering area of 512 km². It is situated in 650 m elevation. Around the town of Gjilan lies the Hill of Martyrs, Gllama, Dheu i Bardhë, the area of Malisheva (Gjilan), Zabeli of Sahit Agës and Bregu i Thatë. The Gjilan area is defined by the Morava e Binces River, which collects three small rivers, Mirusha, Banja and Stanishori. In the southeast, it is surrounded by the mountains of Karadak.

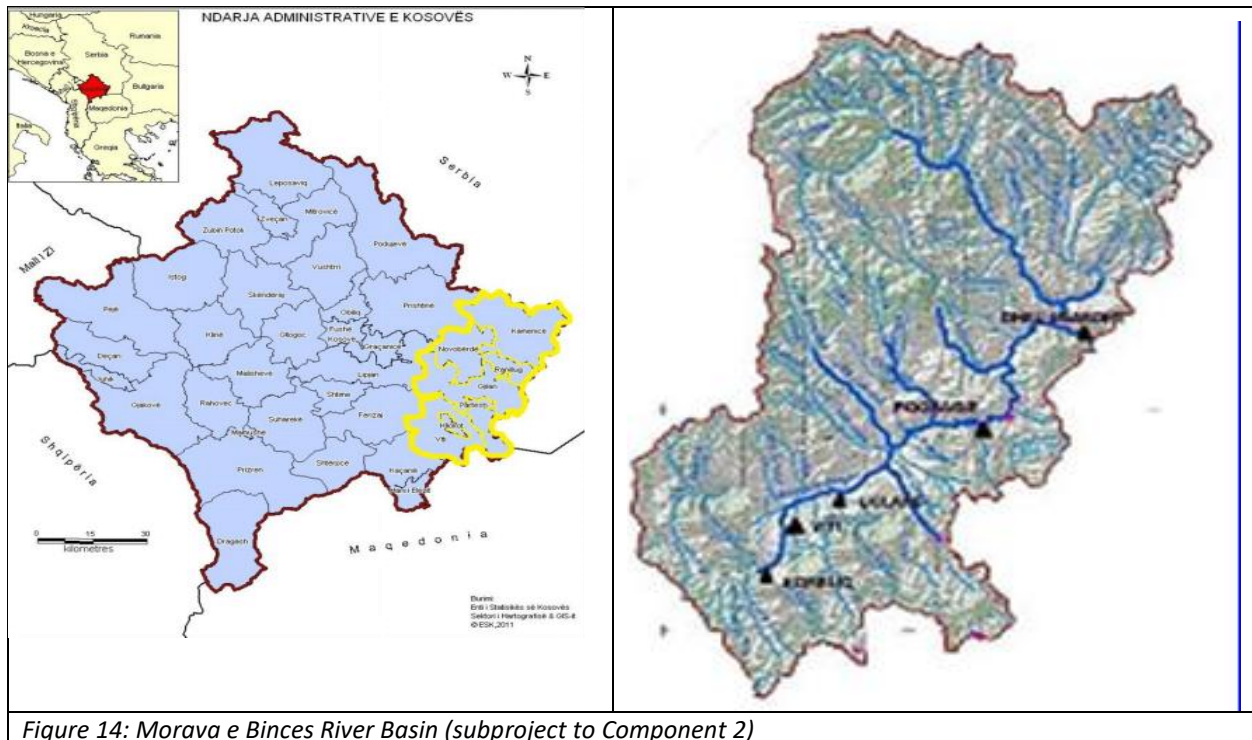


Figure 14: Morava e Binces River Basin (subproject to Component 2)

3.2. Air Quality and Noise

The Institute for Hydrometeorology in Kosovo (IHMK) monitors air quality across Kosovo through 12 monitoring stations.

Within the Morava e Binces river basin, IHMK operates a single monitoring station located in Gjilan, within an urban area and housed within the municipal building. It measures key parameters such as PM10, PM2.5, SO₂, NO_x, O₃ and CO.

During the field visit, numerous sources of air pollution were observed, including emissions from old vehicles and household heating as well as dust generated by vehicle movement and traffic contributing to noise pollution in the subproject areas.

3.3. Climate

Gjilan experience a continental climate, with an average annual temperature of 10.9°C. The warmest month is August, reaching 35°C during heatwaves in Gjilan. Conversely, the coldest month is January, with average temperatures of -1°C in Gjilan. Annual rainfall in Gjilan is 583mm.

3.4. Water quantity and quality

The sewage system in Gjilan, like many areas in Kosovo, is of the mixed type, discharging untreated wastewater directly into the city's rivers, including the Mirushe, Banje, and Stanishor rivers.

The basin encompasses the Morava e Binça river, starting from Korbuliq village, passing through Kllokot and Ranilugë, and reaching the Serbian border in Domoroc, where it meets the Krivareka River. This river receives urban and industrial discharges from Vitia, Gjilan, and Kamenica.

The Morava e Binça basin has six monitoring stations spread across two rivers. Two stations are reference points, checked twice yearly, while the other four are situated along the river and monitored eleven times annually.

3.5. Hydrology

Gjilan is surrounded by three small rivers—Stanishori, Mirusha, and Banja—with an average monthly flow rate of 6.7m³/s.

3.6. Geology

In Gjilan, diverse lithologies along pipeline routes include alluvium (gravel, sand, silt), river terraces (gravel, sand, silt, clay), marble, marlstone, claystone, sandstone, tuffstone, lignite, tectonic melange with olistoliths (limestone, schists, volcanic rocks), and gabbro.

The subproject main pipeline will run parallel to the existing one, with no changes in runoff patterns that could impact the water distribution networks in Gjilan.

3.7. Floods

The central area (Zone 1) in Gjilan is flanked by two rivers: the Mirusha River, which runs through the city centre, and the Stanishor River, which traverses the suburban parts. These rivers, typically dry during the dry season, experience significant water flow during the rainy season. The Mirusha River frequently overflows its banks, causing flooding in the vicinity, exacerbated by waste dumping and obstruction of the riverbed. Rivers bear the brunt of pollution, primarily from untreated sewage discharge from settlements and industrial facilities, highlighting the need for proper wastewater management.

3.8. Soil Erosion

In Gjilan, erosion is particularly noticeable on bare surfaces, with an estimated 2,324ha classified as such.

3.9. Waste Management

Waste management practices in Gjilan are overseen by the public-private company 'Ekohigijena', with waste disposal at the Gjilan landfill. However, the landfill's condition is unsatisfactory, necessitating improvements to prevent surface water and landfill wastewater mixing.

3.10. Flora & Fauna

Changes in flora and fauna due to human activity are observed in Gjilan, Endemic, near-endemic and threatened species of plants and animals are not existing in the subproject areas which is mostly urban area and there is no impact on biodiversity in the sub-project area during the implementation.

3.11. Cultural Heritage

Investment locations are away from archaeological sites in municipality, but provisions are included to address potential chance findings or archaeological discoveries during project implementation.

SOCIO-ECONOMIC CHARACTERISTICS

3.12. Demography

As to the ethnic structure, in the municipality of Gjilan, the Albanian ethnic group is dominant. Other smaller minority groups are Turkish and Serbian. The population in the municipality is mostly rural. Regarding the type of population (urban or rural), Gjilan is predominantly urban, with an urban population of 60.15%. Gjilan have young population, with the population between 5 and 29 years old having the highest share within the age cohort groups.

3.13. Economy

Gjilan's economy also revolves around small businesses, with around 4,100 registered active private enterprises. The majority of employees in Gjilan are engaged in Wholesale and Retail Trade, along with motor vehicle repair.

3.14. Agriculture

Despite its heterogeneous relief and continental climate, Gjilan offers favorable conditions for agriculture, including vegetable, fruit, vineyard, and livestock production. Poultry breeding is the most developed livestock sector in both municipalities, with sheep breeding more dominant in Gjilan.

Gjilan, with an estimated population of 140,000, has less than 0.15ha of agricultural land per capita.

3.15. Culture and Religion

In terms of religious affiliation, Gjilan is dominated by Islamic religion with 98.65%. A total of 64 cultural heritage sites (27 archaeological and 37 architectural) are included in the MCYS list of sites under permanent/temporary protection.

3.16. Targeted Beneficiaries

The interventions are selected based on the communities' highest priorities. The activities of the subproject will serve the local community that is considered as the subproject direct beneficiaries.

The subproject will ensure continuity to provide water for 103,660 individuals in the target areas of Gjilan municipality.

4. ENVIRONMENTAL AND SOCIAL SCREENING

The assigned risk for the subproject is moderate. Environmental and social screening was conducted using the FLOWS ESMF screening form, as detailed in Table 6 in Annex 3.

The subproject activities in Gjilan are confined to public property, primarily streets, and do not involve activities with high potential environmental and social impacts. Occupational Health and Safety (OHS), environmental, and social measures for local population protection will be integrated into the contract and tender documents to minimize disruptions to the community.

The completion of subproject activities is anticipated to have positive environmental and social impacts, as it will provide beneficiaries access to safe and sufficient water.

5. RISK LEVEL AND MITIGATION INSTRUMENTS

The subproject assigned risk is moderate, thus, it requires the preparation of an ESMP as detailed in the ESMF for FLOWS. It is expected that activities will have moderate environmental, social and OHS risks, that will require attention and appropriate mitigation measures, therefore, Hidromorava, with the PMT support will include environmental and social requirements for Contractor including all OHS requirements in the contract and tender documents:

Social Risk and Impacts:

- Temporary damage to public roads such as asphalt. Therefore, Contractor is obliged to restore the damaged assets to the previous condition. No Land acquisition is anticipated.
- Temporary disruption of access to the home/ economic activities due implementation. Therefore, the Contractor is obliged to inform the PAPs of the duration of disruption and make efforts to minimize.
- Lack of worker's awareness and knowledge on social risks and impacts on gender, SEA and GBV. Child Labor. Risk of employing children (underage of 18 years) for work activities
- Accidental destruction of other public infrastructure such as electricity grids
- Community Health and Safety/Public safety during the implementation.
- Safety risks associated with open trenches
- Increase in road traffic and temporary inaccessibility
- Safety risks to children where construction carried out in the road
- Minor Increased levels of noise and vibration due to heavy vehicles and equipment, which are a nuisance to the community around the site.
- Damage to the utilities and services located underground (electricity, telephone, etc.)

Potential Environmental risks and Impacts:

- Dust generation during maintenance work's excavation, backfilling and compaction of soil;
- Air pollution due to gaseous emissions from vehicles and equipment.
- Waste production including solid wastes, domestic waste and hazardous waste (asphalt, cement) due to excavation and replacement of old pipes lines. Therefore, contractor is obliged to provide well maintained equipment and follow the mitigation measures that in this ESMP clauses for contractor and BoQ's in the tender documents.
- Minor Increased levels of noise and vibration due to heavy vehicles and equipment, which are a nuisance to the community around the site.
- Accidental oil spills from machineries and vehicles causing soil and groundwater contamination

Potential OHS risks and Impacts:

- Work related accidents and injuries from lifting pipes and excavation activities.
- Work related accidents and injuries from vehicles running into workers.
- Coming into contact with hazardous chemicals which may cause skin and eye irritation such as cement, asphalt.
- Poor onsite sanitation or water supply, leading to illness and disease.
- Falling into excavated zones or tripping.
- Risks from physical exhaustion.
- Environmental risks (heat exposure, storms, rainfall, etc.).
- Risks from accidental electrical shocks from electrical poles.
- The risk of employing children (underage of 18 years) for work activities.
- Collapse of excavated trenches, soil on unstable ground.

- Vehicles accidentally running into workers.
- Road accidents while transporting materials and equipment and waste to and from the site.
- Manual handling risks of injuries.
- Air/dust emissions and noise emissions while conducting excavation work and using machineries.

Risks and impacts during operation and maintenance

- OHS risks such as vehicles accidentally running into workers during operation or maintenance
- Lack of maintenance and impacting the community (i.e. water cuts).
- Road blocking/traffic during maintenance work.
- Water abstraction risks.

Resources and Services' access restrictions:

The activities will be conducted section by section, and the excavations will be executed with the installation of the pipes in the same day for every section to avoid any access restriction issues, and alternative roads will be available for road users during implementation.

The contractor shall:

- Ensure all workers are older than 18 Years old.
- Maintain occupational health and safety system in the site to protect workers from hazards and risks and provide adequate health and safety training, required PPE, first aid box,
- OHS training should include trainings on dealing with chemicals and handling machines and tools and first aid training
- Provide the workers with potable drinking water, and shade during hottest hours
- Avoid all forms of forced, involuntary, unpaid or compulsory labor
- The daily working hours must not exceed 8 hours.
- The contractor has to construct mobile latrines, which must contain wash hands and soap, that will be connected to cesspits.
- The contractor must ensure workers have access to toilets, clean water, and designated areas equipped with soap for handwashing.

Gender:

The sub-projects are a priority to all community's groups, men and women, and will serve all families living in the targeted areas without exclusion. It will contribute to ensure the access of water to the beneficiaries and improving the health and environment in the area. As well as prevent beneficiaries from using alternative systems that are susceptible to pollution and help consumers, especially women and children, save time and effort.

Gender Based Violence GBV, Sexual Exploitation and Abuse SEA and Sexual Harassment SH:

The contractors and workers should sign the Code of Conduct and ensure workers respect and adhere to the Code of Conduct. CoC to respect the local community cultures, and adhere to the social safeguard issues on Gender, SEA/SH and GBV. Raise awareness on the GM system and how it can be used to report any GBV cases.

Contractor, supported by Hidromorava and FLOWS/PMT should provide the workers with required training and daily discussions (toolbox talk) in the OHS, GBV and SEA.

Contractor should provide the work sites with GM system for all workers including providing complaints box and means of raising awareness about the complaint mechanisms.

Additionally, contractor should ensure that workers are aware of the complaint mechanisms available to them, such as providing information and raising awareness about how to report issues or grievances.

Land Acquisition

All activities of this Contract will be carried out in public property and there is no land acquisition to be carried out.

It's important to note that there are no other infrastructure plans along with the pipelines on the project site, during the time of the project implementation.

Additionally, as needed, the contractor will rent storage or workshop to store his equipment and work materials.

Affected public parcels

In this subproject, there are various lines and sections to be worked on, each with different characteristics. Line 1, Section A (3600m): This section primarily consists of Traffic Road (Asphalt), covering an area of 2244.34 m². Additionally, there are portions designated as Roads without Asphalt, totaling 465.95 m². Moreover, there are three more segments without asphalt: 2283.79 m², 1352.82 m², and another 581.57 m² of Traffic Road (Asphalt).

Line 2, Section C: This section is entirely composed of Traffic Road (Asphalt), occupying an area of 1970.89 m².

Line 2, Section B (1244m): Similar to Section C, this segment is also dedicated to Traffic Road (Asphalt), covering 2366.32 m².

Line 3, Section A: Here, Traffic Road (Asphalt) dominates, with an area of 2736.73 m².

Line 3, Section B: This section is split into two parts. One part is allocated for Traffic Road (Asphalt), with an area of 765.69 m², while the other part is designated is along the river area, covering 635.59 m².

In summary:

Traffic Road (Asphalt): The total area for this type of road across all sections is 10665.54 m².

Roads without Asphalt: These areas cover a total of 4102.56 m².

River: There's a river section with 635.59 m².

Community health and safety

As mentioned before, activities will be carried in the public property (streets) and community may impact on:

- community will be exposed to fall into tranches, or temporary restriction of access, traffic., etc.
- Access of public to worksites.

These impacts on the community health and safety can be mitigated through:

- Working in day hours.
- Install barriers, danger warning signs and restriction signs to only authorized persons and signs showing the potential danger to the public.
- Establish barriers around the working sites.

Grievance Mechanism for Workers

The Workers must use the general GM system highlighted in section #10 to submit any grievances pertaining to them. These complaints may include, but are not limited to, the following:

- Termination/Summary Dismissal. If a worker believes they have been unfairly terminated or summarily dismissed from their employment.
- Breach of Employment Contract Terms. If there has been a violation or breach of the terms outlined in the employment contract.
- Work Injury. In the event of a work-related injury or accident, workers can submit grievances related to the incident or their treatment.
- Discrimination. If a worker experiences discrimination based on factors such as race, gender, age, or disability.
- Sexual Harassment. Grievances related to instances of sexual harassment or inappropriate behavior in the workplace.
- Remuneration. Concerns regarding wages, salaries, overtime pay, or other forms of compensation.
- Wrongful Termination. Complaints alleging wrongful termination of employment.
- Suspension: Grievances related to temporary suspension from work.
- Waiver of Claims. If a worker believes they were coerced or pressured into waiving their rights or claims.

GM shall adhere to the following principles:

- *Provision of information.* All workers should be informed about the grievance mechanism at the time they are hired, and details about how it operates should be easily available, for example, included in worker documentation or on notice boards.
- *Transparency of the process.* Workers must know to whom they can turn in the event of a grievance and the support and sources of advice that are available to them. All line and senior managers must be familiar with their organization's grievance procedure.
- *Keeping it up to date.* The process should be regularly reviewed and kept up to date, for example, by referencing any new statutory guidelines, changes in contracts or representation.
- *Confidentiality.* The process should ensure that a complaint is dealt with confidentiality. While procedures may specify that complaints should first be made to the workers' line manager, there should also be the option of raising a grievance first with an alternative manager, for example, a human resource (personnel) manager.
- *Non-retribution.* Procedures should guarantee that any worker raising a complaint will not be subject to any reprisal.
- *Reasonable timescales.* Procedures should allow for time to investigate grievances fully but should aim for swift resolutions. The longer a grievance is allowed to continue, the harder it can be for both sides to get back to normal afterwards. Time limits should be set for each stage of the process, for example, a maximum time between a grievance being raised and the setting up of a meeting to investigate it.
- *Right of appeal.* A worker should have the right to appeal to the World Bank or national courts if he or she is not happy with the initial finding.
- *Right to be accompanied.* In any meetings or hearings, the worker should have the right to be accompanied by a colleague, friend or union representative.
- *Keeping records.* Written records should be kept at all stages. The initial complaint should be in writing, if possible, along with the response, notes of any meetings and the findings and the reasons for the findings. Any records on SEA shall be registered separately and under the strictest confidentiality.
- *Relationship with collective agreements.* Grievance procedures should be consistent with any collective agreements.
- *Relationship with regulation.* Grievance processes should be compliant with the national employment code.

Environmental and Social Risk Classification

E&S impacts from the activities for the 'Rehabilitation and Upgrade of the Water Supply System in Municipality of Gjilan' are primarily concentrated during the construction phase, attributable to activities such as the operation of heavy machinery, use of raw materials for civil works, damage to private and public assets, noise and vibration emissions, waste generation, and potential risks stemming from incidents and hazards. Additional related risks are those related to the communities and those related to labor and working conditions.

During the operational phase, the water supply network will demonstrate moderate positive effects, particularly in newly serviced areas with improved water supply services. These improvements are expected to lead to enhanced water efficiency, as well as improvements in both water quality and quantity.

Mitigation measures have been determined to reduce the impact of potential environmental and social risks during the works implementation, which are provided in Table 2.

Air pollution (dust generation and gaseous emissions) during construction and maintained activities will be mitigated by:

- Use of well-maintained equipment and properly maintain machinery to minimize exhaust emissions of CO, suspended particulates and fumes.
- Spray water for dust control.
- Use dust sweeping methods to reduce dust.
- Covering trucks which transport construction and waste materials.
- Storing and covering excavated piles at less windy areas.

Increased levels of noise can be mitigated by:

- Use of quiet/well-maintained equipment and regularly maintain equipment.
- Use operational noise mufflers.
- Limit noisy activities to normal day hours.
- Limit vehicle speed at critical locations.

Soil and ground water contamination (oil) that can be mitigated by:

- Ensure no wastes or excavated materials are stored inappropriately to prevent contamination of ground water and water sources.
- Provide secondary containment for all chemical contained vessel or rumps.
- Presence of suitable spill prevention kits
- Proper storage of hazardous substances and away from soil and water wells and storage tank.
- Store chemicals, hazardous waste such cement according to their Material Safety Data Sheets (MSDSs).

Production and disposal of wastes can be mitigated by:

- Ensure good housekeeping measures are kept
- Ensure solid waste is regularly collected and stored at designated sites in plastic containers
- Properly collect, transport and dispose of solid waste at designated permitted sites or landfill allocated by the local authorities and cleaning funds;
- Properly covering trucks which transport collected waste to avoid spillage during transportation.
- Attach and submit the waste receipt from the assigned landfill authorities.

Work related accidents and injuries can be mitigated by:

- Provide occupational health and safety training to all employees involved in works.

- Provide PPE (protective masks, helmet, overall and safety shoes, and safety goggles, as appropriate); in high noise areas with earplugs or ear muffers; masks for work involving excavation, dust and emissions; goggles and gloves to prevent skin blisters and eye irritation from cement and asphalt.
- Ensure availability of first aid box.
- Details of the nearest hospital should be present on site.
- Following driving safety instructions i.e. trained drivers, following speed limits, using well maintained trucks.
- Ensure warning signs are added at a safe distance from workers and work place to ensure no worker is accidentally ran over by a vehicle.
- Maintain insurance for workers in subproject site according to the requirements and conditions of insurance in the bidding documents which should comply with the national labor law.
- The contractor should submit daily reports on the movement of workers, approved and trained workers to perform the water network rehabilitation activity.
- The contractor should protect workers and public by covering openings and establishing protected fencing, barricaded and guardrails around worksite locations.
- Contractor shall prepare and submit method of statement and OHS risk assessment for high-risk work activities.
- Ensure transport drivers are following good driving practices such as maintaining speed limit and wearing seat belts.
- Ensure workers are aware of proper lifting techniques to avoid back injuries
- Ensure regular breaks and potable water are provided.
- Conduct work during daylight.

Risk to workers from hazardous material can be mitigated by:

- Train workers regarding the handling of hazardous materials.
- Handle, store and dispose hazardous materials and wastes as per their material safety data sheet (MSDS).

Providing employees with access to toilets and potable drinking water and soap.

- Provide and implement safety precautions onsite during the implementation of the subproject.

Risk of collapse of excavated trenches, soil on unstable ground can be mitigated by:

- Shoring, shielding and support to all excavations
- Provide supports to adjacent structures where necessary, sufficient to prevent damage arising from the rehabilitation work.
- Install safety excavation warning signs along trenches.
- Remove temporary supports progressively as backfilling proceeds.
- The contractor should support excavation sides by sheet piles with Jake/ shielding to avoid collapse of excavation or fall of materials into the excavations and ensure safe access and egress to excavation for equipment and workers.
- Remove unnecessary materials from the side of excavation to prevent materials full in excavation trenches.
- Provide occupational health and safety training to all employees involved in works.

Risk from lifting of water pipes which can be mitigated by:

- Close the lifting area with fence to prevent access to the area during lifting work;
- Install warning signs for lifting activities at work location.

- Carry out lifting work by well trained, qualified lifting team;
- Provide workers with all suitable necessary Personal Protective Equipment PPEs and safety materials;
- Use well-maintained equipment for lifting the activates that are appropriate for the weight;
- Secure loads when lifting and use strong and reliable fixation materials to make sure that the load is well tighten and no solid parts falls from the load during lifting;
- Protect the units against staining, discoloration and other damage until they are installed in their final location.
- Lifting device capacity shall be at least 1.65 times the maximum calculated static load at that point
- An ultimate load shall be ≥ 4 times the maximum static load.
- Ensure workers are standing at a safe distance from lifting zone

Risks from physical exhaustion:

- Ensure regular breaks and potable drinking water is provided to all workers

Risks from Environmental risks (heat exposure, storms, rainfall, etc.):

- Ensure checking weather conditions before conducting any work
- Work should avoid rainy periods, dusty weather and heat waves
- Ensure potable drinking water is provided and regular breaks

Risks from electrical shocks from electricity poles:

- Ensure proper distance is kept from electrical poles
- Ensure that electrical pole areas nearby are not surrounded with wet soil
- Provide awareness to workers
- Work in dry season

Damage to the utilities and services located underground (electricity, internet, telephone, etc.) which can be mitigated by:

- Coordination with local authorities and locating service lines before starting work.
- Get detailed drawings of underground services.
- Before starting excavation, manual excavate is applied to avoid damaging the underground infrastructure.
- The area that will be scanned for underground services is needed to be obtained from the relevant government institutions before starting work.
- Ensure contractor repairs time for any services that were destroyed during implementation.

Inadequate slope of the road after the excavation for the water network which can be mitigated by:

- Leveling and surveying should be conducted by the instrument of total station to guarantee the drainage of the stormwater and no flooding of water during the rainy season in the targeted areas.

Temporary disruption of access to the home/ economic activities due implementation process which can be mitigated by:

- Ensure closure of street sections will not cause income loss to roadside businesses by providing alternative access to residences and roadside businesses.
- Activities are to be conducted section by section in a manner to avoid any disruption to people's daily routines.
- Coordinate with the public on the activities implementation time and inform them previously to avoid any delay or disruption.

- Never disturb citizens from access to homes, markets, and daily subsistence zones.
- Provide alternative temporary access roads to homes, markets, and daily subsistence zones.

Additionally, the contractor is responsible for promptly restoring any public and private assets damaged during the subproject implementation process. This includes repairing any infrastructure, such as roads, sidewalks, or utilities, that may be affected by the construction activities. The contractor must ensure that all restoration work is carried out to the satisfaction of the relevant authorities and property owners, and that any disruptions caused by the construction process are minimized as much as possible. Furthermore, the contractor should provide compensation or restitution for any damages incurred, in accordance with the terms of the project contract and applicable laws and regulations.

6. ENVIRONMENTAL AND SOCIAL IMPACTS AND MITIGATION MEASURES

Table 2: Potential Environmental and Social Risks Impact and Mitigation Measures

Source of impact	Mitigation measures	Responsibility	Estimated Cost
Environmental impacts			
General conditions			
<ul style="list-style-type: none"> - Notification of public and relevant institutions - Permits - Waste management - Damage of infrastructure 	<ul style="list-style-type: none"> - All relevant institutions (e.g. traffic police, construction, environmental and H&S inspectorate, etc.) has been notified on the upcoming works. The public has received timely and relevant information through appropriate means and its geographical and temporal scope. - All legally required permits (construction, environmental and other) have been obtained before works commence. - Identifying licensed landfills for major waste streams – hazardous and non-hazardous waste - The works on sections transecting utility infrastructure will be coordinated with utility services providers (electricity, sewerage, water supply, telecommunications, etc.). - Precise positions of present infrastructure/installations will be determined before works on a particular section commence. - Precise positions of the present private/public institutions/ community assets in the construction zone will be determined before works on a particular section commence. Works to commence only after consent is obtained from the PAP. 	Contractor	Construction cost
Air quality and climate changes			
Generation of dust emissions, exhaust gases as a result of: <ul style="list-style-type: none"> - Preparation of construction sites (cleaning up of sites, demolition activities, etc.); - Construction activities; - Use of equipment, mechanisation and transport activities; - Generation of waste; - Storage, handling of materials and waste. 	<ul style="list-style-type: none"> - Implementation of good construction practices; - Spraying with water (manually or with sprinklers) on construction sites, storage area, roads; - Placing of a protection fence or temporarily protective walls on the construction sites; - Stabilizing or covering the heaps of inert materials; - Daily removal of the excavated earth and other waste material in covered transportation vehicles; - Implementation of measures for waste management, especially organic waste; - Optimization of transport activities; - Proper maintenance of equipment and mechanisation; - Use of fuels with less polluting emissions; - Mandatory washing of tires; - Daily cleaning of access roads; - Implementing procedures for handling of construction materials 	Contractor/ Supervisor	Construction cost Protection fence for dust protection 1m ² ~1 € Water for dust suppression 1m ³ : ~0.5 € Transport of waste 1 km: ~0.5 €

Noise and vibration			
<ul style="list-style-type: none"> - Equipment and mechanisation for construction and transport activities; - Construction activities. 	<ul style="list-style-type: none"> - Implement good construction practices; - Limit the noise emissions in accordance with the national requirements (Law on Noise Protection No. 02/L-102); - All construction equipment and mechanisation will comply with the requirements of EU Directive 2000/14/EC on noise emission in the environment; - Select silenced compressors or use quieter hydraulic equipment; - All mechanical equipment should be silenced appropriately and regularly maintained; - Construction works in/or in close vicinity of the settlements will not be permitted during the night, etc. 	Contractor/ Supervisor	Construction cost
Water			
<p>Performance of construction activities near water bodies (during the implementation of the river crossing)</p> <ul style="list-style-type: none"> - Soil erosion as a result of construction activities, - Risk of Contamination form storage and usage of chemicals and auxiliary materials, fuels; - Generation of waste and its temporary storage, - Maintenance and servicing of the equipment, washing of the equipment; - Incidental spillage on sites etc. - Damage of the vegetation - Disruption of river bed 	<ul style="list-style-type: none"> - Construction area next to the watercourses to be only large as it is strictly necessary to perform the construction works - Construction activities should be scheduled during the dry season to minimize disruption to water flow and flooding risks. - Implement soil erosion control measures in order to avoid surface run off and prevent siltation, - If there is a risk of discharge of high quantity of sediment into watercourses, to install clarifiers (sediment traps); - Implement spill prevention and response measures to address any accidental releases of pollutants. - Provide leak prevention equipment near the construction site for urgent cleaning; - Implementation of measures for waste and hazardous material management. - Ensure proper cleaning and sanitation of all construction materials and equipment to prevent contamination of waterways, and prohibit washing of equipment or vehicles in rivers or their vicinity. - Minimize disturbance to the riverbed by using trenchless methods for pipe installation where possible, and develop a restoration and rehabilitation plan to restore the riverbed and habitat post-construction. 	Contractor/ Supervisor in coordination with Hidromorava and PMT	<p>Construction cost</p> <p>Cost of sedimentation trap will vary depending on the type of flow control structures and the size of the trap.</p>
Waste			
<p>Generation of different types of hazardous and non-hazardous waste, as inert waste, municipal waste, biodegradable waste, packaging waste, as a result of:</p> <ul style="list-style-type: none"> - Clearing up and removal of vegetation on the sites, 	<ul style="list-style-type: none"> - Implementation of good construction practices; - Preparation of Waste Management Plan for all activities in accordance with Law on waste Law No. 04/L-060 (amended and supplemented) - The plan should be addressing issues such as location and methods of storage, transport and disposal, as well procedure for waste management, measures for monitoring and periodic audits. 	Contractor/ Supervisor in cooperation with Hidromorava and Municipalities	<p>Construction cost</p> <p>Preparation of Waste Management Plan: 2500 €</p>

<ul style="list-style-type: none"> - Dismantling or demolition of some existing buildings, structures, equipment, - Use of construction materials; - Performance of construction and rehabilitation activity; - Use of equipment and mechanisation, - Presence of workers and etc. 			
Soil			
<ul style="list-style-type: none"> - Degradation, erosion, compaction, destruction of the topsoil as a result of construction activities; - Storage of raw materials and waste on sites; - Soil contamination as a result of accidental spillage of fuel chemicals, hazardous waste, - Revealed contaminated soil on the subproject sites; - Generation of waste and waste water (possible pollution of ground waters in case of high level of aquifer). 	<ul style="list-style-type: none"> - The topsoil (humus) should be properly removed before the excavation begins, stored and used after the completion of the activities, for the purpose of re-cultivation and stabilization of the slopes; - The removed soil heaps should be stabilised or covered (with textile) and temporary stored in places located away from the river banks or erosion-prone sites; - In a case of revealed contaminated soil on the construction sites, the Contractor should have determined and prepared procedures for appropriate storage and handling of contaminated soil, in accordance with the relevant standards as well through communication with the Ministry of Infrastructure and Environment; - In case of soil contamination by accidental spillage, the contaminated soil layer should be removed and treated as hazardous waste in accordance with low obligation; - Implementation of procedures for handling of construction materials and waste, etc. - Implementation of measures for waste water management. Construction activities to be performed in a period of low rainfalls in order to minimise the possibilities of flooding and spreading of sediment; 	Contractor/ Supervisor	Construction cost
Biodiversity and landscape			
<ul style="list-style-type: none"> - Earth work, risk of vegetation removal and other construction activities, - Performance of construction activities in or near water bodies and possible water pollution, 	<ul style="list-style-type: none"> - Apply good construction practices that would avoid pollution; - Prevention of interventions in the riverbed; - Cutting of the plants and destruction of the habitats for the purpose of tracing new access roads, storage the raw materials or waste should be avoided; - Careful cleaning up of the construction site immediately after the completion of the construction activities, etc. - Setting up equipment and objects that will not disturb the landscape values of the sites, - Implementation of measures for water and soil protection as well as waste management. 	Contractor/ Supervisor	Construction cost

<ul style="list-style-type: none"> - Possible movement of vehicles through rivers, - Soil erosion, - Storage of materials and waste; - Generation of waste and waste water; 			
Social issues			
<ul style="list-style-type: none"> - Damage to private/public institutions/community assets in the corridor of impact 	<ul style="list-style-type: none"> - Coordinate with Supervisor and Hidromorava to confirm/variation to exact locations and dimensions of assets to be removed/cleared for construction works with pictures - Agree with Supervisor and Hidromorava the quantity and condition of restoration of affected assets before starting excavation. - Ensure that the consent to enter the site is available with Hidromorava/PMT before entering/clearing private property. - Inform affected party at least one week in advance before clearing/dismantling the existing asset. - Ensure the damaged assets are restored before leaving the specific site 	Contractor	Construction Cost
<ul style="list-style-type: none"> - Damage to the utilities and services located underground (electricity, water, internet, telephone, etc.) and causing the residents to stop their services. 	<ul style="list-style-type: none"> - Coordination with local authorities and locating service lines before starting work - Get detailed drawings of underground services. - Before starting excavation, manual excavate is applied to avoid damaging the underground infrastructure. - The area that will be scanned for underground services is needed to be obtained from the relevant government institutions before starting work. - Ensure contractor repairs any services that were destroyed during implementation. 	Contractor	Construction cost
<ul style="list-style-type: none"> - Gas emissions generated from machines, and vehicles on the site. 	<ul style="list-style-type: none"> - Maintain machinery in good working conditions to minimize emissions -CO, NOx and other fumes. - Provide adequate protective wear for workers, and equipment must be maintained regularly to avoid any emissions. - Offer good practice awareness to workers to turn off vehicles and machinery when not in use 	Contractor	Mandatory
<ul style="list-style-type: none"> - Loud noise and severe vibration caused by machines, and vehicles. 	<ul style="list-style-type: none"> - Measures to reduce noise to acceptable levels must be implemented and could include silencers, mufflers. - Avoiding or minimizing transportation through or processing material in community areas (like concrete mixing). - Machinery must be maintained regularly to avoid exceeding noise emission from poorly maintained machines. - Limit noisy activities to normal daylight hours. - Limit vehicle speed at critical locations. - In the narrow streets in neighbourhood, use small machines and equipment to avoid vibration on buildings. 	Contractor	Mandatory (Contractual Obligation)
<ul style="list-style-type: none"> - Solid waste produced by workers (trash and plastic bags) accumulates and pollutes the environment 	<ul style="list-style-type: none"> - Ensure that workers regularly collect all solid trash in well insulated bags and transport them to the designated landfill or dispose of it in a proper way that does not impact the environment through a certified contractor or at authorized area - Waste management procedures will be added in the tender documents to ensure proper management of waste 	Contractor	Mandatory (Contractual Obligation)

	in the worksites.		
- The low aesthetic value of landscape such as damages to existing trees and plants, accumulation of waste and debris, damages of fence, walls, advertisements, damaged curbs and tiles, etc.	<ul style="list-style-type: none"> - Plant new trees and replant those damaged. - Compensation of damaged plants. - Remove the accumulated waste and debris in the maintenance site. - Reconstruct the damaged fence, walls, advertisements, damaged curbs and tiles, etc. - Intervention sites must be cleaned when investments are completed. 	Contractor	Mandatory (Contractual Obligation)
- Impacts by vibration due to compaction and maintenance machinery equipment	<ul style="list-style-type: none"> - The Contractor should utilize manual activities inside the neighborhood. - Use small equipment. 	Contractor	Mandatory
- The road traffic may temporarily be interrupted during implementation, impeding people from accessing their needs.	<ul style="list-style-type: none"> - Inform community, shops owners, public and roadside residence on the work schedule. - Coordinate with local community and the public on the work schedule. - Shorten works period. - Avoid complete closure to the streets by doing work in sections. - Accelerate the work activity and open up the site as soon as possible by doubling workers and equipment. 	Contractor	BOQ Items. Mandatory (Contractual Obligation)
- Temporary disruption of economic activities, including disruption of traffic and congestion	<ul style="list-style-type: none"> - Ensure closure of streets sections will not cause income loss of roadside businesses, kiosks, or vendors by providing alternative access to residences and roadside businesses. - Conduct activities section by section in a manner to avoid any disruption to people's daily routines. - Coordinate with the public on the activities implementation time and inform them previously to avoid any delay or disruption. - Never disturb citizens from access to homes, markets, and daily subsistence zones by providing alternative temporary access roads to homes, markets, and daily subsistence zones this could involve creating temporary roads, footpaths, or entrances to ensure continued access during the implementation phase. - In residential areas where dust and odor are emitted, inform locals to close their windows. 	Contractor	Mandatory
- Traffic jams due to the movement of vehicles from/to worksite and transporting of materials	<ul style="list-style-type: none"> - Before the works, the contractor should carry out consultations with Hidromorava and the community. - Vehicle trips must be included in a construction plan before approval. Routings, especially heavy vehicles, need to take into account sensitive sites such as schools, hospitals, and markets. - It is strictly forbidden to transport materials for construction during rush hour. - Coordinate with the traffic authority in the city on the maintenance schedule. - Find alternatives (detours) to either side of the existing road before excavating and reconstructing existing surfaces. - Control and manage traffic, by arranging detours and alternate bypass for traffic and roadside residences & businesses for each maintenance site by using traffic cones, barriers, fences, or lights as appropriate with 	Contractor	Mandatory

	<ul style="list-style-type: none"> - coordination with traffic officers and according to the work plan conducted by the Contractor and approved by Hidromorava and PMT - Do not start any maintenance activities before the installation of traffic safety and control safeguards. - Install signs to detour were necessary to guide the driver to follow. - Where required, allocate persons to direct traffic in areas where work is taking place. - Park the machines and equipment away from the streets in an area allocated for. 		
- Access of public into the worksite.	<ul style="list-style-type: none"> - Install fences, barriers, dangerous warning/prohibition sites around the working area which showing potential danger to public people. - Place appropriate warning and directional signs at areas where work is taking place. - Keep road surfaces clear from materials such as soil and gravel. - Limit in coordination with traffic authorities the movement of heavy vehicles on roads/lanes used by the public during traffic peak hours. - Conduct management and safety plans for maintenance activities. - Erect removable barriers. - Protect proper shielding scaffolds. 	Contractor	BOQ Items. Mandatory (Contractual Obligation)
- Lack of workers' awareness and knowledge on respecting local community cultures, and social safeguard issues on Gender, SEA/H, and GBV.	<ul style="list-style-type: none"> - Contractor and its workers to sign the Code of Conduct. - Ensure workers respect and adherence to the Code of Conduct CoC for the local community's protection and do no harm. - GM system in place to handling any issues on Gender, SEA/H, and GBV. 	Contractor	Mandatory
- Child Labor	<ul style="list-style-type: none"> - All workers should be more than 18 years old. - Verifying age of workers by checking IDs and official documents. - Ensure a worker log is available, and all workers are registered. - Verify that labor conditions are compliant with ESS2 and no forced labor is used. 	Contractor	Mandatory
Occupational Health & Safety (OHS) Impacts			
- General OHS issues	<p>The following mitigation measures are applicable to all OHS impacts</p> <ul style="list-style-type: none"> - Ensure skilled workers are hired for each job. - Conduct regular awareness sessions and daily Toolbox Talks on OHS requirements before commencing any work. - Periodic inspection to ensure that mitigation measures are implemented and stop any unsafe act or unsafe situation. - Emergency response plan to be in place with details and contact of the nearest hospital or medical center, responsibilities are understood for all works, first aid boxes are available and a list of trained first aiders is posted and known by all workers with available transportation. 	Contractor	Mandatory

	<ul style="list-style-type: none"> - Immediately report all accidental occurrences with serious accident potential such as major equipment failures, and exposure to hazardous materials, slides c to UNOPS and to the WBG within 48 hours. - Contractors shall monitor, keep records and report on the following environmental and social issues: <ul style="list-style-type: none"> - <i>Safety</i>: hours worked, lost time injury (LTI), lost workdays, recordable incidents and corresponding Root Cause Analysis (lost time incidents, medical treatment cases), first aid cases, high potential near misses, and remedial and preventive activities required (for example, revised job safety analysis, new or different equipment, skills training, and so forth). - Major works: those undertaken and completed, progress against subproject schedule, and key work fronts (work areas). - <i>ESHS requirements</i>: noncompliance incidents with permits and national law (legal noncompliance), subproject commitments, or other ESHS requirements. - <i>ESHS inspections and audits</i>: by Project Company, Independent Engineer, PMT and Hidromorava, or others—to include date, inspector or auditor name, sites visited, and records reviewed, major findings, and actions taken. - <i>Maintaining a record of injuries and accidents specifying cause and location</i> - Provide a list of trained workers, who will be checked for their training skills. Measures will be implemented onsite and followed by regular monitoring visits. 		
<ul style="list-style-type: none"> - Excavation risks: - Falling in excavated areas. - Dust from excavation 	<p>Protection from falls, Falling Loads, and Equipment</p> <ul style="list-style-type: none"> - Temporary access will be installed in front of all households. - Install barricades around excavated zones or open zones. - Use hand / mechanical signals. - Grade soil away from the excavation. - Provide workers with safety breathing masks against dust near excavation works. - Fence or barricade trenches left overnight. - Keep materials or equipment that might fall or roll into an excavation at least two (02) feet from the edge of excavations, or have retaining devices, or both. - Provide warning systems such as mobile equipment, barricades, hand or mechanical signals, or stop logs, to alert operators of the edge of an excavation. If possible, keep the grade away from the excavation. - Provide and install protective barricades and other equivalent protection to protect employees against falling rock, soil, or materials. - Prohibit employees from working on faces of sloped or benched excavations at levels above other employees unless employees at lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment. - Prohibit employees under loads that are handled by lifting or digging equipment. To avoid being struck by any spillage or falling materials, require employees to stand away from vehicles being loaded or unloaded competent person must make daily inspections of excavations, areas around them and protective systems: <ul style="list-style-type: none"> - Before work starts and as needed, 	Contractor	Mandatory

	<ul style="list-style-type: none"> - After rainstorms, high winds or other occurrences which may increase hazards. - When reasonably anticipated that an employee will be exposed to any hazard. 		
<ul style="list-style-type: none"> - Lifting Operations (overhead crane to lift water pipes) 	<ul style="list-style-type: none"> - Close the lifting area with fence to prevent access to the lifting area during lifting work. - Install warning signs for lifting activities - Prevent accessibility to non-workers at lifting zones or any construction zone - Carry out lifting work by well trained, qualified, and certified lifting team and with proper communication means and flag Man. - Provide workers with all necessary Personal Protective Equipment PPEs and safety materials. - Use well-maintained equipment for lifting that is appropriate for the weight; well checked and tested by a third party. - Ensure workers are standing within a safe distance from the lifting zone - Secure loads when lifting and use strong and reliable fixation materials to make sure that the load is well tightened, and no solid parts fall from the load during lifting. - Protect the units against staining, discoloration and other damage until they are installed in their final location. - Lifting device capacity shall be 1.65 times the maximum calculated static load at that point. - An ultimate load shall be ≥ 4 times the maximum static load. - Ensure workers and any person is standing at a safe distance from the lifting area. 	Contractor	Mandatory
<ul style="list-style-type: none"> - Emergency response and accidents 	<ul style="list-style-type: none"> - Contractor has to prepare emergency response plan and establish and maintain an emergency preparedness and response system, to cover: (i) the contingencies that could affect personnel of the subproject to be financed; (ii) the need to protect the health and safety of subproject workers; (iii) the need to protect the health and safety of the affected people and Affected communities. - The emergency preparedness and response system shall include (i) identification of the emergency scenarios, specific emergency response procedures, and training of emergency response teams, (ii) emergency contacts and communication systems/protocols (including communication with affected communities), (iii) procedures for interaction with government authorities (emergency, health, environmental authorities), (iv) permanently stationed emergency equipment and facilities (e.g., first aid stations, firefighting equipment, spill response equipment, personal protection equipment for the emergency response teams), (v) protocols for the use of the emergency equipment and facilities with clear identification of evacuation routes and muster points emergency drills and their periodicity based on assigned emergency levels or tiers, (vi) decontamination procedures and means to proceed with urgent remedial measures to contain, (vii) limit and reduce pollution within the physical boundaries of the subproject sites, property and assets to the extent possible. -The emergency preparedness will include both the construction and the operation phases, and a dedicated, trained, and competent contractor team will be trained to handle the emergency response responsibilities. -First Aid and Accidents - Ensure that qualified first-aid by qualified personnel is always available. Appropriately equipped first-aid stations should be easily accessible throughout the place of work. 	Contractor	Mandatory

	<ul style="list-style-type: none"> - Provide workers with rescue and first-aid duties with dedicated training so as not to inadvertently aggravate exposures and health hazards to themselves or their co- workers. Training would include the risks of becoming infected with blood–borne pathogens through contact with body fluids and tissue. - Provide eye-wash stations and/or emergency showers close to all workstations where immediate flushing with water is the recommended first-aid response. - Provide dedicated and appropriately equipped first-aid room(s) where the scale of work or the type of activity being carried out so requires. - Equip first aid stations and rooms with gloves, gowns, and masks for protection against direct contact with blood and other body fluids. - Make widely available written emergency procedures for dealing with cases of trauma or serious illness, including procedures for transferring patient care to an appropriate medical facility. - Immediately report all accidental occurrences with serious accident potential such as major equipment failures, contact with high-voltage lines, and exposure to hazardous materials, slides, or cave-ins to Hidromorava and PMT. - Immediately investigate any serious or fatal injury or disease caused by the progress of work by the Contractor and submit a comprehensive report to Hidromorava and PMT. - Details of the nearest hospital should be present on site. 		
Manual Handling	<ul style="list-style-type: none"> - Provide required information and training on manual handling to the site workers. - Ensure applying safe handling techniques. - Remove space constraints, ensure good housekeeping and providing improved layouts - Keep manual handling to one level, improve floor conditions and improve the environmental conditions. The floor must be clean from any obstacles. - Ensure use of appropriate PPE and safety materials. - Addressing potential use of handling aids with matching safety measures. - Ensure workers are aware of correct lifting techniques or physical work to avoid injuries including back injuries - Ensure regular breaks are maintained and the presence of potable drinking water 	Contractor	Mandatory
Dust and noise emissions during excavation and while using machineries and equipment (OHS)	<ul style="list-style-type: none"> - Provide dust masks to workers - Provide ear muffers to workers working with or near noisy equipment and machines - Ensure proper maintenance of equipment and machineries - Use dust sweeping methods and limited water for dust suppression 	Contractor	Mandatory
Road accidents while transporting equipment and materials	<ul style="list-style-type: none"> - Ensure drivers received awareness sessions on good driving practices such as maintaining speed limits and wearing seat belts - Conduct drug checkups on drivers. - Coordinate with local authorities to provide and manage alternative road for smooth traffic if required 	Contractor	Mandatory

<ul style="list-style-type: none"> - 'Environmental pressures on workers (heat strokes, dust storms) / Inadequate working conditions 	<ul style="list-style-type: none"> - Allow resting breaks in shaded areas and provide workers with enough water - Raise awareness on the importance of drinking enough water - Provide proper PPEs against heat and dust - Do not allow working during bad weather, rain, dust storms 	Contractor	Mandatory
<ul style="list-style-type: none"> - Chemicals Hazardous Substances and Wastes 	<ul style="list-style-type: none"> - Ensure batteries are well placed in a safe and proper ventilated room with appropriate fire extinguisher and conduct regular monitoring. - Ensure proper recycling and disposal paths exist for batteries. - Ensure all chemicals (cement) are handled and stored and disposed according to their material safety data sheet - Ensure workers are wearing proper PPEs while handling chemicals such as gloves, masks and goggles. 	Contractor	Mandatory
<ul style="list-style-type: none"> - Poor onsite sanitation or water supply, leading to illness and disease. 	<ul style="list-style-type: none"> - Provide adequate supplies of potable drinking water from a fountain with an upward jet or with a sanitary means of collecting the water for the purposes of drinking - Ensure that water supplied to areas of food preparation or for the purpose of personal hygiene (washing or bathing) meets drinking water quality standards - The contractor should provide mobile latrines, which must contain wash hands and soap, that will be connected to cesspits that the contractor has to construct. The cesspits will be dismantled immediately by filling them with gravelly soil after the activities are completed, and the cesspit sewage will be discharged to the nearest manhole in the public network,. 	Contractor	
<ul style="list-style-type: none"> - Improper use of equipment while cutting Asphalt which causes injuries 	<ul style="list-style-type: none"> - Maintain the cutting equipment to ensure they are in good condition. - Provide storage place in the worksite to ensure good storage for the machinery and equipment in the end of the day. - Check the used cutting equipment if they are in compliance with the relevant standard. - Issuance of a special permit to work before using cutting equipment to ensure health and safety procedures in place. - Ensure the moving parts in the equipment are provided by a fixed guard to avoid contact with dangerous moving parts - Train the workers at a safe distance from moving parts to avoid injuries. - Monitor the operation of equipment during all working times on the equipment to ensure safe procedures are in place and stop any dangerous acts with equipment directly. - Prohibit the use of untrained workers and use restricted to trained operators only - Ensure that workers wear the necessary personal protection equipment at all times. 	Contractor	Mandatory
<ul style="list-style-type: none"> - Vehicles running into workers 	<ul style="list-style-type: none"> - Emphasis safety aspects among drivers - inform drivers on local speed limit, and monitor implementation - Control and manage traffic, by using traffic cones, barriers, fences, or lights as appropriate 	Contractor	

	<ul style="list-style-type: none"> - Daily inspection and maintenance for the vehicles by the contractor to ensure they are in good condition prior to start the work. - Provide traffic signs in the worksite, especially for speed limits, routes directions, parking places, entrance and exits, pedestrians' walkways, and worksite warnings signs. - Warning signs for vehicles should be added at a safe distance from work site to warn drivers to slow down prior to reaching the work area - Stop the movement of vehicles in worksite in bad weather conditions to avoid collision. - Provide the worksite with barriers in the road edges to protect workers and vehicles from falling. - Arrangement and control of the worksite entrance and exits, and not allow for unauthorized person or vehicles enter the worksite. - Provide the vehicles in the worksite with audible reversing alarms and flashing beacons. - Prohibit workers to climb on the vehicles during moving to avoid falling. 		
<ul style="list-style-type: none"> - Electrical shocks from electricity poles: Work in dry season 	<ul style="list-style-type: none"> - Ensure proper distance is kept from electrical poles - Ensure that electrical pole areas nearby are not surrounded with wet soil. - Provide awareness to workers. 	Contractor	Mandatory

7. ENVIRONMENTAL AND SOCIAL MONITORING PLAN

The implementation of the mitigation measures will be monitored accordingly through daily checks by the Supervisor, weekly and event-based by Hidromorava and PMT staff during field monitoring visits.

The aspects that will be monitored, which is provided in Table 3, will be updated to accommodate any emergency or updated aspects that may be recommended by the monitoring reports.

Table 3. Environmental and Social Monitoring Plan

Impact	Measurements		Frequency	Implementation responsibility
	Methods	Indicators		
Community Health and Safety				
Public safety during the work.	Visual observation and photographic documentation of safety measures. Visual observation for installing of warning signs, barricading of working areas with safety tapes and fencing/ barricades to prevent unauthorized access of public and pedestrians to the working areas.	Number of recorded injuries and accidents	Daily basis during rehabilitation work and weekly during site inspection visits, On any complaint	Contractor/Supervisor Hidromorava and PMT
The risk of employing children for work activities.	Site inspection, checking and documentation of contractor employee records	Number of recorded employees below the age of 18	Weekly during site inspection and regularly	Contractor, Hidromorava and PMT
External stakeholder engagement	Minutes of the meetings/consultation Records with date, venue, participants, Key issues discussed/ resolution / Information provided.	Highlights, including formal and informal meetings, and information disclosure and dissemination—to include a breakdown of women and men consulted and themes coming from various stakeholder groups, including vulnerable groups (e.g., disabled elderly, children, etc.).	Monthly	Contractor, Hidromorava and PMT
Complaints and Feedback Handling	Complaints' forms will be kept on site, and this will feed into the GM register. Details of complaints received will be incorporated into the monitoring process	Number of Reported Grievances, No. of grievances resolved within 2 days, Number of grievances outstanding. No. of grievances escalated.	Weekly	Contractor, Hidromorava and PMT
GBV and SEA issues	GBV and SEA Complaints' will be registered into the GM register. Details of complaints received will be incorporated into the monitoring process	Number of reported and registered cases of the SEA/SH through subproject GM. Number of reported cases of contractors' noncompliance to PSEA/SH obligation on work sites.	Weekly	Contractor, Hidromorava and PMT

Contractor and their workers signed the Code of Conduct CoC	Contractor, and their workers signed on the Code of Conduct CoC and they are aware to respect the local community's protection and do no harm.	Number of CoC signed.	Before commencement of work	Contractor, Hidromorava and PMT
Damage to assets for clearing site	Site verification based on proposed design and construction method to confirm list of properties to be cleared and restored by the contractor.	Number of properties to be cleared and restored. Number of properties restored.	Before starting to clear the site Weekly for progress on clearing and restoration	Contractor, Hidromorava and PMT
General Environmental Impacts				
Dust generation during work.	Visual observation and photographic documentation of equipment induced dust clouds during construction/ rehabilitation activities	Visible dust emissions. Number of GM related to air pollution	Daily Weekly for received complaints	Contractor/Supervisor Hidromorava and PMT
Increased level of noise and vibration.	Site supervision/ inspection and documentation to ensure compliance with the noise mitigation measures	Percentage of workers comply with suitable PPE procedures Number of GM and complaints related to noise.	Weekly during site inspection.	Contractor /Supervisor Hidromorava and PMT
Air pollution due to emissions from equipment, machinery and transportation trucks.	Visual observation and photographic documentation of equipment induced emissions from vehicles and transport trucks and excavation work during implementation of activities.	Quantity of consumed fuel. Visible dust clouds. Number of complaints regarding dust and air emissions	Weekly during construction/ rehabilitation works and site inspection	Contractor /Supervisor Hidromorava and PMT
Production, proper disposal and disposal of work's debris and waste materials.	Inspection and photographic documentation	Records of presence of wastes stored in open areas or near drainage areas and at undesignated areas and increase in waste pollution Visible records of pests (insect vectors and rodents) Presence of waste collection receipt.	Daily during construction/ rehabilitation works and site inspection	Contractor, Supervisor Hidromorava
Soil and groundwater contamination	Inspection and photographic documentation	Visible change in soil color Presence of visible leaks of chemicals	Daily	Contractor, Supervisor Hidromorava

Occupational Health and Safety				
Lifting Operations	Visual inspection to ensure that all lifting activities in the work site are executed safely and as per the standard lifting safety rules. Visual inspection that safety distance from lifting sites is adhered to OHS reports	Records and number of lifting accidents Number of workers not wearing proper PPEs Records of non-compliances such as standing under lifting zone	Daily	Contractor, Supervisor Hidromorava
Manual Handling	Visual inspection to ensure that all manual handling activities are performed according to the OSH manual handling safety rules and instructions. Record any noncompliance Ensure that the implementation of the safety techniques to control the manual handling risk is monitored continuously.	Number of injured workers from manual handling Number of workers not wearing proper PPEs	Daily	Contractor, Supervisor Hidromorava and PMT
Excavation	Visual inspection to ensure that all excavation activities are executed safely, and all safety rules are implemented. Recorded noncompliance with photographic proof.	Presence of visible dust cloud Presence of workers not wearing masks and adhering to PPEs Number of injuries from excavated zones Number of workers not wearing proper PPEs	Daily	Contractor, Supervisor Hidromorava and PMT
Chemicals and Hazardous Substances and Wastes	Visual inspection Recorded noncompliance with photographic proof.	Records of hazardous wastes in undesignated zones Chemicals, wastes and hazardous substances are not labelled Number of workers not wearing suitable PPEs while handling chemicals and wastes	Daily	Contractor, Supervisor Hidromorava and PMT
Work related accidents and injuries.	Inspection and photographic documentation	The record of injuries and accidents indicating the number of injured workers in the subproject report specifying cause and location. Corrective actions recorded	Daily	Contractor, Supervisor Hidromorava and PMT
Poor onsite housekeeping, toilet and water supply	Visual inspection Site inspection	Presence of clean water and soap Presence of pests	Weekly during site inspection and regularly	Contractor, Supervisor Hidromorava and PMT

		Presence of waste at undesignated areas Reports on illness and diseases.		
Safety	Visual inspection Site inspection	Hours worked, recordable incidents, root causes, incident types (e.g., lost time, medical treatment, first aid, near misses), and required remedial actions. This includes revising safety procedures, introducing new equipment, and providing additional training.	Daily	Contractor, Hidromorava and PMT
Environmental incidents and near misses	Environmental incidents and high potential near misses and how they have been addressed, what is outstanding, and lessons learned.	Number and types of recorded environmental near misses	Daily	Contractor, Hidromorava and PMT
Major works		Work undertaken and completed, progress against subproject schedule, and key work fronts (work areas).	Daily	Contractor, Hidromorava and PMT
E&S and OHS requirements		Register non-compliance incidents with permits and national law (legal non compliance), subproject commitments, or other E&S requirements.	Daily	Contractor, Hidromorava and PMT
E&S/OHS inspections and audits:		By contractor, engineer, or others, including authorities to include date, inspector or auditor name, sites visited, and records reviewed, major findings, and actions taken.	Weekly	Contractor, Hidromorava and PMT
Workers issues		Number of workers, indication of origin (local, nonlocal nationals), gender, age with evidence that no child labor is involved, and skill level (unskilled, skilled, supervisory, professional, management). Number of grievances raised by workers and number of solved grievances	Daily	Contractor, Hidromorava and PMT
Training on E&S issues	Including dates, number of trainees, and topics.	Training records and number of training sessions on OHS risks and	Weekly	Contractor, Hidromorava and PMT

		Environmental & Social issues and attendances		
Footprint management:		Details of any work outside boundaries (Such transportation of equipment and materials) or major off-site impacts caused by ongoing work—to include date, location, impact, and actions taken.	Monthly	Contractor, Hidromorava and PMT
Operation and Maintenance				
Workers dissatisfaction/issues	GM reports	Number and type of GM and solved GM related to work issues	Continuous/daily	Contractor, Hidromorava, PMT
Operation and Maintenance (Staff Health and Safety and community health and safety, social and environment)	Ensure same monitoring measures are implemented during operation and maintenance	Number of complaints due to misfunctions of water network Number of water cuts Number of maintenance times	Continuous daily	Contractor/ Supervisor, Hidromorava
Operation and Maintenance (Training to staff)	Training on how to maintain the water network, clean them, proper PPEs, and safety measures, etc.	Number of trainings received by facility workers.	Prior to handing the subproject to the facility administration.	Contractor/ Supervisor, Hidromorava
Operation and Maintenance (water quality and quantity)	Monitor and manage water quality and quantity Conduct awareness campaigns and educational programs	Number of monitoring conducted on water quality and quantity. Presence of water monitoring devices Increased awareness and knowledge among the local community about sustainable water management Number of awareness sessions conducted	Monthly	MESPI in coordination with the PMT Hidromorava, Municipality

8. STAKEHOLDERS ENGAGEMENT PLAN AND PUBLIC CONSULTATION

The stakeholder engagement process involved engaging all relevant parties, including local authorities and communities targeted by the interventions. Activities included sharing community needs, setting priorities, and developing subproject designs and plans. FLOWS/PMT social consultants to inform the local community about planned activities and gather feedback conducted public consultations.

Table 4. Public Consultation Dates

Subproject Intervention	Consultation Date/Place	Consulted Beneficiaries		
		Male	Female	Total
Works to upgrade the water distribution networks in Gjilan and Kamenica	10/10/2023 Kamenica	23	3	26
Works to upgrade the water distribution networks in Gjilan and Kamenica	17/10/2023 Gjilan	14	8	22
Total		37	11	48

8.1. Public Consultation Findings and Feedback

PMT engages all affected parties of sub-project within the subproject cycle. The consultation process involved face-to-face and group interviews with members of local communities, including both men and women. Feedback was collected through discussions, where the nature, objectives, potential impacts, and proposed mitigation measures of the subproject were explained. Beneficiaries prioritized their need for regular access to drinking water and expressed support for the targeted investment, foreseeing positive social impacts. No concerns were raised regarding land, noise, or Gender-Based Violence and Sexual Harassment (GBV&SH). However, during the work phase, concerns were raised about potential disruptions to businesses, protection of underground services and water pipes during construction and excavation, and proper disposal of construction waste. It is essential to ensure that all construction waste is transferred to designated areas. PMT also coordinates with Local Authorities and conducts public feedback sessions during its site visits to ensure community acceptance.



Photo 4a & 4b: Public discussion and information

8.2 Stakeholders Engagement Plan

PMT will maintain ongoing engagement with stakeholders throughout subproject implementation. This will involve Fortnightly meetings with beneficiaries, community committees, and local authorities to address issues and discuss various aspects of implementation. The Hidromorava, in collaboration with PMT will coordinate meetings with community committees to ensure effective coordination and address environmental and social concerns. Additionally, they will organize awareness and training sessions on environmental and social requirements and monitoring roles. PMT will remain in continuous cooperation with community committees to address any emerging issues. Meetings with local authorities will also be conducted to facilitate cooperation in implementation efforts.

Consultation Event	Purpose	How	Who	When
Beginning of works/ Mobilization of contractors	Inform stakeholders about the start of construction activities	Direct communication, meetings	Hidromorava PMT Contractor	[Date]
Fortnightly progress meetings	Provide updates on project progress and receive feedback from stakeholders	Meetings, progress reports	Hidromorava PMT Contractor, Stakeholders	Every two weeks
Information disclosure on utility disruptions	Notify the community about utility disruptions due to construction activities	Public notices, announcements	Hidromorava PMT Local Media	As needed
Traffic rerouting/ Blocking of roads	Inform stakeholders about traffic rerouting or road closures during construction	Public notices, announcements	Hidromorava PMT Local Media	As needed
Access through local media	Utilize local media channels to disseminate project information to the community	Public notices, announcements	Hidromorava PMT Local Media	As needed

9. CAPACITY BUILDING

PMT will organize capacity building sessions at various stages of the subproject life cycle based on the ESMF. A comprehensive training for Hidromorava staff will include updates aligned with the World Bank's new ESF. Another training session will cover each staff member's responsibilities, implementation procedures, required forms, risk assessment methods, and general Occupational Health and Safety (OHS) procedures. Before handing over sites to the Contractor, Hidromorava and PMT representatives will conduct awareness sessions for workers and community committees, emphasizing environmental, social, and OHS aspects necessary during implementation. Throughout the implementation phase, the contractor's OHS assistant will hold regular awareness sessions highlighting daily risks and addressing issues like Gender-Based Violence and Sexual Exploitation and Abuse (GBV&SEA), Grievance Redress Mechanism (GRM), and code of conduct.

10. GRIEVANCE MECHANISM

As part of an ongoing move to improve its accountability, FLOWS has in place a GM system for managing, responding to, and monitoring issues within its Program. The accumulated experience in PMT to respond and interact with all partners and beneficiaries enables it to improve and adopt an efficient GM, focusing on institutionalizing the experience in dealing with complaints and mainstream it in the system context. GM

awareness sessions have been conducted to explain the mechanism and introduce the system to the local communities, including female members and workers.

GM templates distributed to the local community that have full details on the system and complaint boxes placed in the subproject sites which will be opened weekly in a formal meeting with supervision from the local community committee that is selected earlier during the early intervention stage and is usually consisted of males and females.

The complaints are then registered and classified according to their type and raised to branch offices to be addressed and solved. Other communication means also introduced to beneficiaries and listed below:

- Complaints box at subproject location
- Telephone: 048600883
- SMS, Telephone, Viber and What's Up Number: +38348600883
- Face to face by during visits of PMT.

The grievance complaint form is published in the FLOWS web page <https://flows-ks.info/forma-e-ankeses/>. All cases received (including complaints, requests for information, suggestions, etc.) will be logged in the GRM register.

PMT has established a Grievance Redress Committee to handle GRM.

Initially, Hidromorava, along with the Committee members, will address complaints and assist people during implementation, serving as the first level of grievance redress.

If the claimant is not satisfied with the decision made by the first-tier GRM, they can file a grievance with the second-tier GRM in the MESPI/PMT, which consists of three members: two from MESPI and one from PMT.

This second-tier GRM, managed by the PMT, will have the mandate to review subproject grievances that cannot be resolved at the first GRM level and manage all other grievances related to the project.

PMT is tasked with keeping the grievance log updated, disclosing relevant information periodically on the FLOWS website, and keeping the World Bank informed about GRM status.

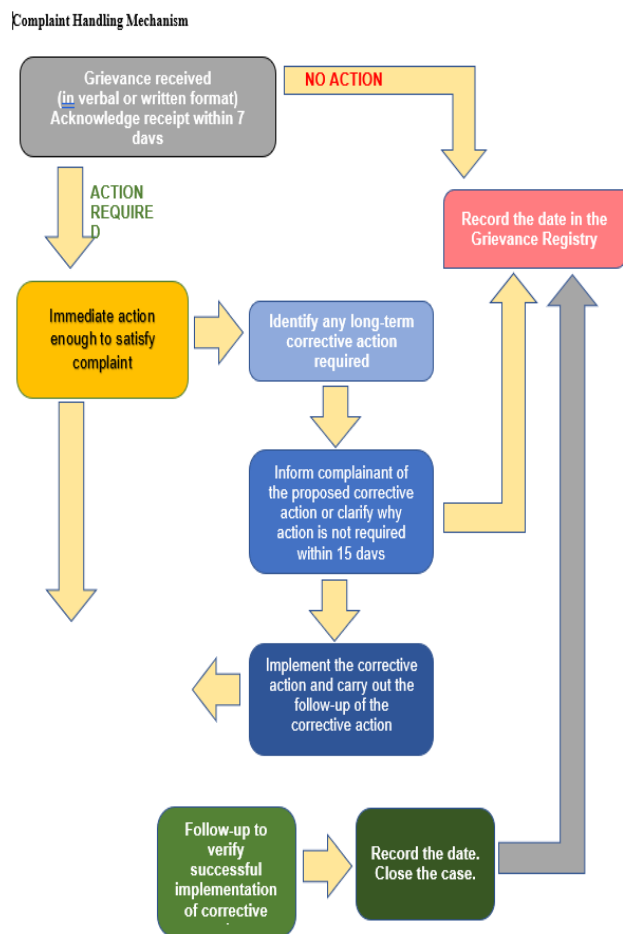


Figure 15. Complaint Handling Mechanism

Project Complaint Form	
Reference Number	
Full name (not mandatory) I would like to submit my complaint anonymously. I ask not to reveal my identity without my consent.	
Contact information Please indicate how you would like to be contacted (mail, phone, e-mail).	<input type="checkbox"/> By mail: Please provide the mailing address: _____ _____ – <input type="checkbox"/> By phone: _____ <input type="checkbox"/> By E-mail: _____
Preferred language of communication	<input type="checkbox"/> Albanian <input type="checkbox"/> Serbian <input type="checkbox"/> Other: _____
Description of incident for complaint	What happened? Where did it happen? Who did it happen to? What is the outcome of the problem?
Date of Incident / Complaint	
	<input type="checkbox"/> One time incident/complaint (date _____) <input type="checkbox"/> It happened more than once (how many times? _____) <input type="checkbox"/> Ongoing (currently experiencing a problem)
What would you like to see happen?	
<i>Contact information for questions and complaints:</i> FLAWS Project Address: Sheshi "Zahir Pajaziti", 2/2, Nr. 31, 10000 Prishtinë Tel: + 383 48 600 883 E-mail: complaints@flows-ks.info	Signature: _____ Date: _____

Figure 16. Complaint Form

11. IMPLEMENTATION AND REPORTING OF ESMP

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

Contractor: The Contractor is responsible for implementing the Environmental and Social Management Plan (ESMP). They are required to report on a monthly basis regarding the implementation of the ESMP. Additionally, the Contractor must monitor, keep records, and report to Hidromorava on various environmental and social issues, including safety, incidents, workers' grievances, and stakeholder engagement.

Supervisor: The Supervisor is tasked with monitoring and reporting weekly, as well as irregularly, on the implementation of mitigation measures and environmental issues to Hidromorava.

Hidromorava: Hidromorava plays a supervisory role in the implementation process. They receive reports from both the Contractor and Supervisor regarding environmental and social issues. Hidromorava is responsible for overseeing the execution of the ESMP and ensuring compliance with environmental and social standards.

PMT: The PMT, established for the FLOWS Program, within the Ministry of Environment, Spatial Planning and Infrastructure (MESPI), is primarily responsible for managing procurement, financial management, environmental and social compliance, and monitoring and evaluation reporting under the FLOWS. The PMT ensures that subproject development objectives are met and facilitates communication with relevant ministries and local government entities to ensure timely implementation of activities. The FLOWS PMT is responsible for reporting the implementation of the ESMP to the World Bank.

Municipalities: The Municipalities Inspectorate oversees the implementation of the ESMP within their respective areas, ensuring compliance with environmental and social standards

Annex 1 -ENVIRONMENTAL AND SOCIAL REQUIREMENTS FOR THE CONTRACTOR

Contractor shall meet the following Environmental, Social, Health and, Safety (including labor) requirements – thereafter called ESHS requirements.

The ESHS requirements include 9 sections:

1. Contractor Environmental and Social Management Plan (C-ESMP)
2. ESHS Training
3. Construction Site Management
4. Occupational Health and Safety (OHS)
5. Chance Find Procedures
6. Emergency Preparedness and Response
7. Stakeholder Engagement
8. Code of Conduct
9. Contractor Environmental and Social Reporting

1. Contractor Environmental and Social Management Plan (C-ESMP)

- ✓ Prepare and submit to FLOWS/PMT for approval a Contractor Environmental and Social Management Plan (C-ESMP).
- ✓ Include in the C-ESMP a detailed explanation of how the contractor’s performance will meet the ESHS requirements
- ✓ Ensure that sufficient funds are budgeted to meet the ESHS requirements, and that sufficient capacity is in place to oversee, monitor and report on C-ESMP performance.
- ✓ Put in place controls and procedures to manage their ESHS performance. Get prior written approval from Hidromorava before starting construction /rehabilitation activities.

2. ESHS Training

- ✓ Determine ESHS training needs in collaboration with Hidromorava and PMT.
- ✓ Maintain records of all ESHS training, orientation, and induction.
- ✓ Ensure, through appropriate contract specifications and monitoring that service providers, as well as contracted and subcontracted labor, are trained adequately before assignments begin.
- ✓ Demonstrate that its employees are competent to carry out their activities and duties safely. For this purpose, the Contractor shall issue a Competence Certificate for every person working on site (relative to trade and aspect of work assignment) that specifies which tasks can be undertaken by which key personnel.
- ✓ Training should include occupational health and safety measures, GBV HS and social health and safety measures, Environmental health and safety measures, waste management and hazardous materials management.

Orientation Training

- ✓ Provide ESHS orientation training to all employees, including management, supervisors, and workers, as well as to subcontractors, so that they are apprised of the basic site rules of work at/on the site and of personal protection and preventing injury to fellow employees.
- ✓ Training should consist of basic hazard awareness, site-specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate. Any site-specific hazard or color coding in use should be thoroughly reviewed as part of orientation training.

Visitor Orientation

- ✓ Establish an orientation program for visitors, including vendors that could access areas where hazardous conditions or substances may be present.

- ✓ Visitors shall not enter hazard areas unescorted.
- ✓ Ensure that visitors shall always be accompanied by an authorized member of the contractor, or a representative of FLOWS/PMT, who has successfully fulfilled the ESHS orientation training, and who is familiar with the subproject site construction hazards, layout, and restricted working areas.

Contractor and subcontractor Training

- ✓ Ensure that all workers and subcontractors, prior to commencement of new assignments, have received adequate training and information enabling them to understand work hazards and to protect their health from hazardous ambient factors that may be present. The training should adequately cover the step-by-step process that is needed for subproject activities to be undertaken safely, with minimum harm to the environment, including:
 - Knowledge of materials, equipment, and tools
 - Known hazards in the operations and how they are controlled
 - Potential risks to health
 - Precautions to prevent exposure
 - Hygiene requirements
 - Wearing and use of protective equipment and clothing
 - Appropriate response to operation extremes, incidents and accidents

3. Construction Site Management

Narrow spaces

The Contractor must submit comprehensive work method statements to the Supervisor for prior approval. These statements should provide detailed procedures for each aspect of the project, considering the unique challenges posed by narrow spaces in some areas. Specifically:

- ✓ *Excavation Procedure:* Given the presence of narrow spaces, special attention must be given to techniques that allow for safe and efficient excavation within confined areas by using **mini excavators**. The methodology should include strategies for excavating trenches to the required depth and width, emphasizing the importance of maintaining vertical sides.
- ✓ *Removal of Surplus Material:* Specialized equipment, such as **mini dumpers** and **mini dump trucks**, should be employed to navigate these tight areas while ensuring timely and efficient removal of surplus material.
- ✓ *Shoring Equipment:* Given the potential for instability in narrow trenches, the Contractor must utilize appropriate **shoring equipment** to support trench walls and prevent collapse. This may involve the use of trench boxes or sheet piles designed for narrow spaces. The selection and implementation of shoring equipment should be in accordance with industry best practices and safety standards.
- ✓ *Machinery Requirements:* The Contractor should carefully consider machinery requirements to optimize efficiency and safety in narrow spaces. Utilization of compact and maneuverable equipment, such as mini excavators to navigate confined areas with minimal disruption to surrounding properties and structures. Also, tractor should ensure that all machinery used meets relevant safety regulations and is properly maintained throughout the duration of the project.

Vegetation

- ✓ Prevent any unnecessary destruction, scarring, or defacing of the natural surroundings in the vicinity of the construction site
- ✓ Protect all trees and vegetation from damage by construction operations and equipment, except where clearing is required for permanent works, approved construction roads, or excavation operations

- ✓ Revegetate damaged areas on completion of the works, and for areas that cannot be revegetated, scarifying the work area to a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion
- ✓ Use, as much as possible, local species for replanting and species that are not listed as a noxious weed
- ✓ Repair, replant, reseed or otherwise correct, as directed by Flows or PMT, and at the Contractor's own expense, all unnecessary destruction, scarring, damage, or defacing of the landscape resulting from the Contractor's operations
- ✓ Transport labor and equipment in a manner to avoid as much as possible damage to grazing land, crops, and property

Protection of the Existing Installations

- ✓ Safeguard all existing buildings, structures, works, pipes, cables, sewers, or other services or installations from harm, disturbance or deterioration during construction activities
- ✓ Coordinate with local authorities to identify existing infrastructure that might not be visible
- ✓ Repair any damage caused by the Contractor's activities, in coordination with concerned authorities.
- ✓ Take all reasonable precautions to prevent or reduce any disturbance or inconvenience to the owners, tenants or occupiers of properties to the construction activities, and more generally to the public
- ✓ Maintain safe access to public and private properties that might be affected by construction activities. If necessary, provide acceptable alternative means of passage or access to the satisfaction of the persons affected.
- ✓ Working during night hours is not permitted.

Waste from Construction Activities

- ✓ Collect and properly store and manage all solid wastes and hazardous wastes resulting from the construction activities, including construction debris and spoils, to prevent the contamination of soil and groundwater. In case chemicals are present they should be stored and disposed according to their Material Safety Data Sheets (MSDSs)
- ✓ Remove unneeded excavation material from construction sites as soon as possible
- ✓ Agree with relevant municipalities about construction waste disposal
- ✓ Carefully select waste disposal sites, to be approved by FLOWS or PMT.
- ✓ Minimize littering of roads by ensuring that vehicles are licensed and loaded in such a manner as to prevent falling off or spilling of construction materials, and by sheeting the sides and tops of all vehicles carrying mud, sand, other materials, or debris
- ✓ Transfer construction waste to assigned places in the selected waste disposal sites with documented confirmation.
- ✓ Properly dispose of solid waste and debris and hazardous waste at designated permitted sites waste disposal sites allocated by the local authorities and obtain a receipt of waste from the authorized landfill authority.

Hazardous and Toxic Materials

- ✓ Toxic and deleterious wastes resulting from the Project Company's activities require special attention to forestall their introduction into the natural environment which could result in harm to people, aquatic life, or natural growth of the area. The Contractor shall take precautions relative to the conditions specified herein.
- ✓ Train workers regarding the handling of hazardous materials.
- ✓ Store hazardous materials as per the statutory provisions of the Manufactures.
- ✓ Provide adequate secondary containment for fuel storage tanks and for the temporary storage of other fluids such as lubricating oils and hydraulic fluids,
- ✓ Use impervious surfaces for refueling areas and other fluid transfer areas
- ✓ Train workers on the correct transfer and handling of fuels and chemicals and the response to spills

- ✓ Provide portable spill containment and cleanup equipment on site and training in the equipment deployment
- ✓ Deposit or discharge toxic liquids, chemicals, fuels, lubricants and bitumen into containers for salvage or subsequent removal to off-site locations.
- ✓ Treat hazardous waste separately from other waste
- ✓ Avoid the storage or handling of toxic liquid adjacent to or draining into drainage facility.
- ✓ Keep absorbent materials or compounds on Site in sufficient quantities corresponding to the extent of possible spills.

Area Signage

- ✓ Appropriately mark hazardous areas.
- ✓ Install warning signs
- ✓ Ensure that signage is in accordance with international standards and is well known to, and easily understood by workers, visitors and the general public as appropriate.
- ✓ Demarcate work sites with safety tape, fencing or barricades, as appropriate, to prevent unauthorized access to the construction sites
- ✓ Safeguard public safety by covering holes and by installing guardrails along temporary pathways.

Decommissioning of Worksites and Plant

- ✓ Clear construction sites of any equipment or waste, and ensuring that the sites are free from contamination.
- ✓ Dispose of or recycle any equipment or waste in an appropriate and environmentally sound manner.
- ✓ Hand construction sites over to the original owners, taking into account his/her wishes and national legislation.

4. Health and Safety

Severe Weather and Facility Shutdown

- ✓ Design and build work place structures to withstand the expected elements for the region and designate an area designated for safe refuge, if appropriate.
- ✓ Develop Standard Operating Procedures (SOPs) for subproject or process shut-down, including an evacuation plan.

Lavatories and Showers

- ✓ Provide adequate lavatory facility (toilets and washing areas) for the number of people expected to work at the construction sites.
- ✓ Provide toilet facility with adequate supplies of hot and cold running water, soap, and hand drying devices.
- ✓ Where workers may be exposed to substances poisonous by ingestion and skin contamination may occur, provide facility for showering and changing into and out of street and work clothes.

Potable Water Supply

- ✓ Provide adequate supplies of potable drinking water from a fountain with an upward jet or with a sanitary means of collecting the water for the purposes of drinking
- ✓ Ensure that water supplied to areas of food preparation or for the purpose of personal hygiene (washing or bathing) meets drinking water quality standards.

Clean Eating Area

- ✓ Where there is potential for exposure to substances poisonous by ingestion, make suitable arrangements to provide clean eating areas where workers are not exposed to the hazardous or noxious substances

Personal Protective Equipment (PPE)

- ✓ Identify and provide at no cost appropriate PPE to workers, the workers of subcontractors, as well as to visitors, which gives adequate protection.
- ✓ Ensure that the use of PPE is compulsory.
- ✓ Provide sufficient training in the use, storage and maintenance of PPE to its workers and workers of its subcontractors.
- ✓ Properly maintain PPE, including cleaning when dirty and replacement when damaged or worn out;
- ✓ Determine requirements for standard and/or task-specific PPE based on of Job specific Safety Analysis;
- ✓ Consider the use of PPE as a last resort when it comes to hazard control and prevention, and always refer to the hierarchy of hazard controls when planning a safety process.

Noise

Institute appropriate measures to reduce the exposure of workers to construction noise, including but not limited to:

- ✓ Avoid exposure to a noise level greater than 85 dB(A) for a duration of more than 8 hours per day without hearing protection. In addition, no unprotected ear should be exposed to a peak sound pressure level (instantaneous) of more than 140 dB(C).
- ✓ Enforce the use of hearing protection should be enforced actively when the equivalent sound level over 8 hours reaches 85 dB(A), the peak sound levels reach 140 dB(C), or the average maximum sound level reaches 110 dB(A).
- ✓ Provide hearing protective devices capable of reducing sound levels at the ear to at most 85 dB(A).
- ✓ Reduce the “allowed” exposure period or duration by 50 percent for every 3 dB(A) increase in in excess of 85 dB(A).
- ✓ Perform periodic medical hearing checks on workers exposed to high noise levels.
- ✓ Rotate staff to limit individual exposure to high levels.
- ✓ Install practical acoustical attenuation on construction equipment, such as mufflers.
- ✓ Use silenced air compressors and power generators.
- ✓ Keep all machinery in good condition.
- ✓ Install exhaust silencing equipment on bulldozers, compactors, crane, dump trucks, excavators, graders, loaders, scrapers and shovels.
- ✓ Post signs in all area where the sound pressure level exceeds 85 dB(A).
- ✓ Shut down equipment when not directly in use.
- ✓ Provide advance notice to occupants if an activity involving high level impact noise is in close proximity to buildings.

First Aid and Accidents

- ✓ Ensure that qualified first-aid by qualified personnel is always available. Appropriately equipped first-aid stations should be easily accessible throughout the place of work.
- ✓ Provide workers with rescue and first-aid duties with dedicated training so as not to inadvertently aggravate exposures and health hazards to themselves or their co- workers. Training would include the risks of becoming infected with blood–borne pathogens through contact with bodily fluids and tissue.
- ✓ Provide eye-wash stations and/or emergency showers close to all workstations where immediate flushing with water is the recommended first-aid response.
- ✓ Provide dedicated and appropriately equipped first-aid room(s) where the scale of work or the type of activity being carried out so requires.
- ✓ Equip first aid stations and rooms with gloves, gowns, and masks for protection against direct contact with blood and other body fluids.

- ✓ Make widely available written emergency procedures for dealing with cases of trauma or serious illness, including procedures for transferring patient care to an appropriate medical facility.
- ✓ Immediately report all accidental occurrences with serious accident potential such as major equipment failures, contact with high-voltage lines, and exposure to hazardous materials, slides, or cave-ins to Hidromorava and FLOWS/PMT.
- ✓ Immediately investigate any serious or fatal injury or disease caused by the progress of work by the Contractor, and submit a comprehensive report to Hidromorava and FLOWS/PMT.

6. Emergencies

- ✓ Establish and maintain an emergency preparedness and response system, in collaboration with appropriate and relevant third parties including to cover: (i) the contingencies that could affect personnel and facility of the subproject to be financed; (ii) the need to protect the health and safety of subproject workers; (iii) the need to protect the health and safety of the Affected Communities
- ✓ The emergency preparedness and response system shall include:
 - Identification of the emergency scenarios
 - Specific emergency response procedures
 - Training of emergency response teams
 - Emergency contacts and communication systems/protocols (including communication with Affected Communities when necessary)
 - Procedures for interaction with government authorities (emergency, health, environmental authorities)
 - Permanently stationed emergency equipment and facility (e.g., first aid stations, firefighting equipment, spill response equipment, personal protection equipment for the emergency response teams).
 - Protocols for the use of the emergency equipment and facility.
 - Clear identification of evacuation routes and muster points.
 - Emergency drills and their periodicity based on assigned emergency levels or tiers.
 - Decontamination procedures and means to proceed with urgent remedial measures to contain, limit and reduce pollution within the physical boundaries of the subproject property and assets to the extent possible.

7. Stakeholder Engagement

- ✓ The Project Company will be required to undertake a process of stakeholder engagement with representative persons and communities directly affected by the activities it undertakes, including, if necessary, the public disclosure of its C-ESMP. The Project Company shall also maintain throughout the subproject good relations with local communities and will give these communities prior notice of plans and schedules as they might affect local people.
- ✓ The stakeholder engagement process will also be applicable in the event of land acquisition associated with changes in the footprint of activities.

Labour Force Management

Labour Influx

- ✓ Avoid contamination of fresh water sources.
- ✓ Provide opportunities for workers to regularly return to their families.
- ✓ Provide opportunities for workers to take advantage of entertainment opportunities away from rural host communities.
- ✓ Ensure that children and minors are not employed directly or indirectly on the subproject, and keep registration and proof of age for all employees on-site.

- ✓ Pay adequate salaries for workers to reduce incentive for theft.
- ✓ Pay salaries into workers' bank accounts.
- ✓ Get an appropriate mix of locally and non- locally procured goods to allow local subproject benefits while reducing risk of crowding out of and price hikes for local consumers.
- ✓ Identify authorized water supply source and prohibiting use from other community sources;
- ✓ Put in place measures to reduce water and electricity consumption;
- ✓ Employ locals to the extent possible;

Labor Conditions

- ✓ Implement the measures and commitments defined in the Labor Management Procedures.
- ✓ Provide all workers with terms and conditions that comply with Kosovo Labor Law and applicable International Labour Organization conventions on workplace conditions.

Grievance Mechanism for Workers

The Contractor will put in place a Grievance Mechanism for its workers and the workers of its subcontractors that is proportionate to its workforce. The GM shall be distinct from the subproject level Grievance Mechanism for affected individuals and communities, and shall adhere to the following principles:

- ✓ *Provision of information.* All workers should be informed about the grievance mechanism at the time they are hired, and details about how it operates should be easily available, for example, included in worker documentation or on notice boards.
- ✓ *Transparency of the process.* Workers must know to whom they can turn in the event of a grievance and the support and sources of advice that are available to them. All line and senior managers must be familiar with their organization's grievance procedure.
- ✓ *Keeping it up to date.* The process should be regularly reviewed and kept up to date, for example, by referencing any new statutory guidelines, changes in contracts or representation.
- ✓ *Confidentiality.* The process should ensure that a complaint is dealt with confidentially. While procedures may specify that complaints should first be made to the workers' line manager, there should also be the option of raising a grievance first with an alternative manager, for example, a human resource (personnel) manager.
- ✓ *Non-retribution.* Procedures should guarantee that any worker raising a complaint will not be subject to any reprisal.
- ✓ *Reasonable timescales.* Procedures should allow for time to investigate grievances fully but should aim for swift resolutions. The longer a grievance is allowed to continue, the harder it can be for both sides to get back to normal afterwards. Time limits should be set for each stage of the process, for example, a maximum time between a grievance being raised and the setting up of a meeting to investigate it.
- ✓ *Right of appeal.* A worker should have the right to appeal to the World Bank or national courts if he or she is not happy with the initial finding.
- ✓ *Right to be accompanied.* In any meetings or hearings, the worker should have the right to be accompanied by a colleague, friend or union representative.
- ✓ *Keeping records.* Written records should be kept at all stages. The initial complaint should be in writing, if possible, along with the response, notes of any meetings and the findings and the reasons for the findings. Any records on SEA shall be registered separately and under the strictest confidentiality.
- ✓ *Relationship with collective agreements.* Grievance procedures should be consistent with any collective agreements.
- ✓ *Relationship with regulation.* Grievance processes should be compliant with the national employment code

Protection from Sexual Exploitation and Abuse

- ✓ Provide repeated training and awareness raising to the workforce about refraining from unacceptable conduct toward local community members, specifically women.

- ✓ Inform workers about national laws that make sexual harassment and gender-based violence a punishable offence which is prosecuted.
- ✓ Prohibit its employees from exchanging any money, goods, services, or other things of value, for sexual favors or activities, or from engaging any sexual activities that are exploitive or degrading to any person.
- ✓ Develop a system to capture gender-based violence, sexual exploitation and workplace sexual harassment related complaints/issues.
- ✓ Adopt a policy to cooperate with law enforcement agencies in investigating complaints about gender-based violence.

Protection from Child Labor

- ✓ Exclude all persons under the age of 18 and verify that workers are older than 18 when hiring.
- ✓ Review and retain copies of verifiable documentation concerning the age of workers.

8. Code of Conduct

- ✓ Contractors shall ensure that all employees, including those of subcontractors, are informed about and sign Code of Conduct:

9. Contractor Environmental and Social Reporting

Contractors shall monitor, keep records and report on the following environmental and social issues:

- ✓ *Safety*: hours worked, lost time injury (LTI), lost workdays, recordable incidents and corresponding Root Cause Analysis (lost time incidents, medical treatment cases), first aid cases, high potential near misses, and remedial and preventive activities required (for example, revised job safety analysis, new or different equipment, skills training, and so forth).
- ✓ *Environmental incidents and near misses*: environmental incidents and high potential near misses and how they have been addressed, what is outstanding, and lessons learned.
- ✓ *Major works*: those undertaken and completed, progress against subproject schedule, and key work fronts (work areas).
- ✓ *ESHS requirements*: noncompliance incidents with permits and national law (legal noncompliance), subproject commitments, or other ESHS requirements.
- ✓ *ESHS inspections and audits*: by Project Company, Independent Engineer, FLOWS/PMT and its implementing partners, or others—to include date, inspector or auditor name, sites visited and records reviewed, major findings, and actions taken.
- ✓ *Workers*: list of workers at each site, confirmation of ESHS training, indication of origin (expatriate, local, nonlocal nationals), gender, age with evidence that no child labor is involved, and skill level (unskilled, skilled, supervisory, professional, management).
- ✓ *Training on ESHS issues*: including dates, number of trainees, and topics.
- ✓ *Footprint management*: details of any work outside boundaries or major off-site impacts caused by ongoing construction—to include date, location, impacts, and actions taken.
- ✓ *External stakeholder engagement*: highlights, including formal and informal meetings, and information disclosure and dissemination—to include a breakdown of women and men consulted and themes coming from various stakeholder groups, including vulnerable groups (e.g., disabled, elderly, children, etc.).
- ✓ *Details of any security risks*: details of risks the Project Company may be exposed to while performing its work—the threats may come from third parties external to the subproject.
- ✓ *Worker grievances*: details including occurrence date, grievance, and date submitted; actions taken and dates; resolution (if any) and date; and follow-up yet to be taken—grievances listed should include those received since the preceding report and those that were unresolved at the time of that report.
- ✓ *External stakeholder grievances*: grievance and date submitted, action(s) taken and date(s), resolution (if any) and date, and follow-up yet to be taken—grievances listed should include those received since the preceding

report and those that were unresolved at the time of that report. Grievance data should be gender-disaggregated.

✓ *Major changes to Contractors environmental and social practices.*

Deficiency and performance management: actions taken in response to previous notices of deficiency or observations regarding ESHS performance and/or plans for actions to be taken should continue to be reported to FLOWS/PMT until it determines the issue is resolved satisfactorily.

ANNEX 2 – PROJECT SITE LOCATIONS

WATER PIPELINE NETWORKS



Figure 4: Line 0 (187m)



Figure 5: Line 1A (3600m) and the river rising at the Perlepnica, market in blue

Line 2_ in total 2252m



Figure 6: Line 2C (1008m)



Figure 7: Line 2B (1244m)

Line 3_ in total 2933m



Figure 8. Line 3A (1945m)



Figure 9: Line 3B (988m). The location for the Mirusha river crossing is marked in blue, while the path of the pipeline extending beyond the asphalted road is highlighted in yellow

WATER STORAGE TANK IN PERLEPNICA



Figure 10. The location of the new water storage tank with volume of 3500 m³ in Perlepnica

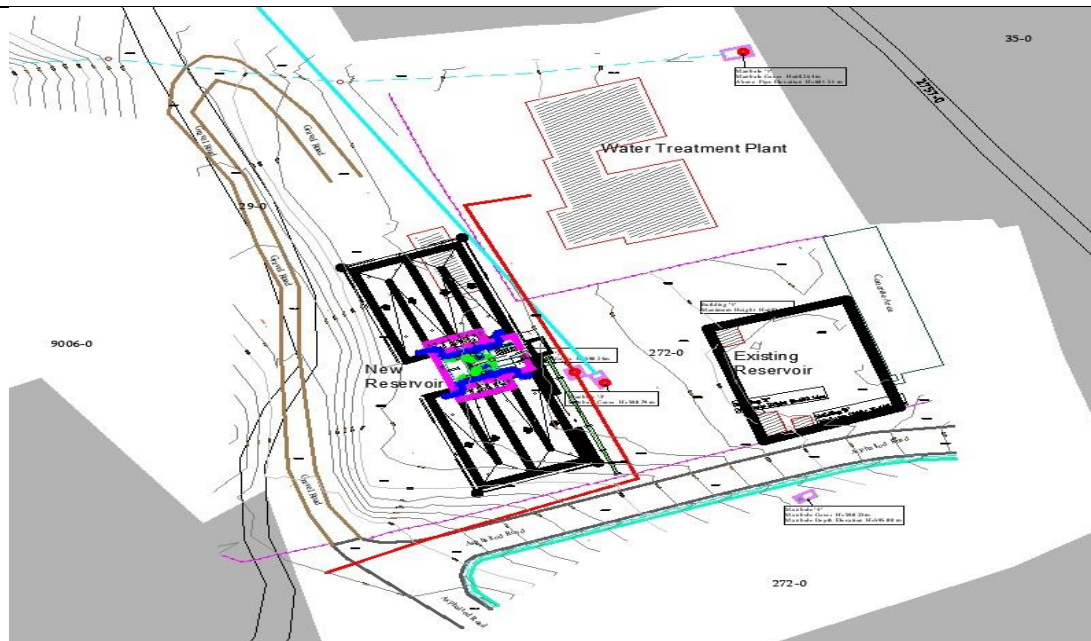


Figure 11. Planned situation of the reservoir in Perlepnica

PUMPING STATIONS



PS Perlepnica in Perlepnica village



PS Velekince in Velekince village



PS Baja & PS Prison in Gjllan



Figure 13. Overview maps PS Velekince, PS Perlepnica, PS Baja and PS Prison

ANNEX 3 – ENVIRONMENTAL AND SOCIAL SCREENING

Table 6. Environmental and social Risk Questionnaire for the subproject ‘Rehabilitation and Upgrade of the Water Supply System in Municipality of Gjilan’

No	ENVIRONMENTAL AND SOCIAL CHECKLIST QUESTIONNAIRE	YES	NO	Notes
1	Does the proposed activity include new construction and extension of activity?	x		Construction of a new water main pipeline in Gjilan Construction of new reservoir will be next to the existing water WTP in Perlepnica
2	Does the proposed activity include rehabilitation activities?	x		Replacement of the existing water supply pipelines in Gjilan Small works for connection of the new water reservoir with existing one and filtering station will be executed as well
3	Does the proposed activity belong in Annex I of the Law on Environmental Impact Assessment (list of Projects for which full EIA is mandatory)?		x	The projects fall under the Annex 2 of the Kosovo Law on EIA
4	Does the proposed activity require other type of EA under the national legislation?	x		The simplified EIA for this subproject is under the drafting process
5	Does the proposed activity require specific public consultations under the national legislation?	x		Public debate is part of the EIA process under the national legislation
6	Does the project use natural resources such as land, water, materials or energy, particularly any resources which are non-renewable or in short supply?	x		Standard construction materials will be used in course of sub-project activity
7	Is the project activity performed in or potentially affects an archaeological or cultural heritage site?		x	
8	Will the project activity be a source of dust, pollutants or some hazardous, toxic or harmful substances in the air?	x		
9	Will the project be a source of greenhouse gases or ozone depletion substances?		x	Except for emissions from construction machinery used in construction phase, no source of greenhouse gases will be present on site in operation phase
10	May the project cause microclimate changes?		x	

11	Will the project be a source of noise and vibration?	x		During the construction phase emissions of noise and vibrations will be present on site
12	Will the project generate significant quantities of waste (hazardous, non-hazardous, inert waste)?	x		The new pipeline route will run parallel to the existing AC pipeline, which will remain intact, thereby eliminating the creation of asbestos waste. The majority of waste generated will consist of non-hazardous construction waste and inert waste.
13	Will the Project involve the use, storage, transport, handling or production of substances or materials which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health?		x	Except for storage of constructional materials (sand, concrete, pipes steel) in constructional phase, there will be no storage of materials in operational phase
14	Will the project generate additional waste water?		x	
15	Are there any risks of contamination of surface waters?	x		One river crossing is planned, and mitigation measures will be implemented to prevent potential contamination of surface water in the event of incidents or accidents, such as spillage of fuel or grease from construction machinery and materials.
16	Are there any risks of contamination of ground waters?	x		The only potential risk of contamination arises from accidental fuel or grease spillage or leakage.
17	Are there any activities which will lead to physical changes of the water body?		x	No activities will be undertaken that could lead to physical changes in water bodies.
18	Will the project contribute to pollution of international waters?		x	
19	Are there any risks of physical changes of the terrain, soil pollution, sediment loads, erosion, etc.?	x		Physical changes to the terrain are expected to be minimal as the majority of the reservoir will be constructed underground. Measures such as gabions and storm drainage will be employed to mitigate erosion risks and sediment loads, minimizing the potential for soil pollution.
20	Will the project involve the use of pesticides or fertilisers?		x	
21	Are there any areas at or around the location that are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the Project?		x	
22	Will the project be located in or near some sensitive or protected area?		x	
23	Are there any areas or features of high landscape or scenic value at or around the location which could be affected by the Project?		x	

24	Will this project affect some critical habitats (forest, wetlands, marshlands, aquatic ecosystems)?		x	
25	Will this project affect some endangered plant/s?		x	
26	Will this project affect some endangered animal species?		x	
27	Is there a right of way issue or need for land acquisition?		x	Activities are planned to be undertaken in public property of Municipality of Gjilan, thus avoiding any right of way issues of land acquisition.
28	Are there any routes or facilities at or around the location which are used by the public for access to recreation or other facilities, which could be affected by the Project?	x		The access road to the reservoir and water filtering station passes through Perlepnica, but there's an alternative route around the settlement, ensuring continued public access to their properties, homes, and facilities
29	Are there any transport routes at or around the location that are susceptible to congestion or which cause environmental problems, which could be affected by the Project?	x		
30	Does the Project location cover a previously undeveloped area where there will be a loss of green field land?		x	
31	Are there existing land uses within or around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying that could be affected by the Project?	x		
32	Are there areas within or around the location which are densely populated or built up, that could be affected by the Project?	x		
33	Will the implementation of the project cause physical displacement of individuals, families or businesses?		x	
34	Will the project require a temporary or permanent land acquisition?		x	
35	May the project cause an impact on community assets?		x	Project aims to improve community assets and their utilization
36	May the project cause an impact on community health and safety?	x		To safeguard community health, rigorous safety measures will address work-related risks, road safety, noise and dust levels, site awareness, access control, and labor management, ensuring a secure environment for workers and residents alike

