

European Bank for Reconstruction and Development

Project Feasibility Assessment Sustainable Infrastructure Group - Malatya Water and Wastewater Network

Non - Technical Summary

Reference:

0 | May 2026



© Arup

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 30678-00

Arup Mühendislik ve Müşavirlik Limited Şirketi
MM Plaza Nispetiye Mah. Baslik Sok. No: 3 Kat 1
34340 Levent, İstanbul
Türkiye
arup.com

Document Verification

Project title Project Feasibility Assessment Sustainable Infrastructure Group - Malatya Water and Wastewater Network

Document title Draft of Non - Technical Summary

Job number 306078-00

Document ref

File reference

Revision	Date	Filename	Non - Technical Summary		
0	16.02.2026	Description	Draft Issue		
			Prepared by	Checked by	Approved by
		Name	Arup	Aysegul Ogut	Justin Abbot
		Signature			
1	04.05.2026	Filename	Non - Technical Summary		
		Description	Final Issue		
			Prepared by	Checked by	Approved by
		Name	Arup	Aysegul Ogut	Justin Abbott
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			

Issue Document Verification with Document ☒

Contents

LIST OF ABBREVIATIONS	i
1 Project Description	1
1.1 Aim of the Project	1
2 Background to the Project	2
2.1 Rationale of the Project	2
2.2 Legal Aspects and Compliance with Relevant Environmental and Social Laws	2
2.3 Current Environmental and Social Situation and Considerations	2
2.4 History of the Project Development and Planning	2
3 Process of the Project	2
4 Environmental Benefits, Adverse Impacts and Mitigation Measures	3
4.1 Land Use Planning and Changes	3
4.2 Water Resources, Impacts and Management Measures	3
4.3 Habitats, Ecology (Flora and Fauna) and Nature Conservation, Impacts and Management Measures	3
4.4 Landscape and Visual Impacts, Impacts and Management Measures	4
4.5 Air Quality, Impacts and Management Measures	5
4.6 Climate Conditions and Meteorology	5
4.7 Noise and Vibration; Impacts and Management Measures	6
4.8 Waste Management	7
4.9 Raw Material Sourcing and Transportation	7
4.10 Road Safety, Impacts and Management Measures	7
4.11 Associated Infrastructure Impacts and Management Measures	7
4.12 Cumulative Impacts	8
4.13 Consistency with Policy, Law and Other Plans	8
4.14 Environmental Management Plans, Mitigation Measures and Compensatory Measures	8
5 Social Benefits, Adverse Impacts and Mitigation Measures	9
5.1 Socio-Economic Impacts	9
5.2 Impacts on Businesses and Employment	9
5.3 Impacts to Existing Infrastructure	9
5.4 Traffic and Accessibility Management	9
5.5 Land Acquisition	10
5.6 Contractor Management	10
5.7 Community Health and Safety	10
5.8 Working Conditions, Labour Management and Occupational Health and Safety	11
5.9 Vulnerable and Disadvantaged Groups	12
5.10 Social Management Plans, Mitigation Measures and Compensatory Measures	13
5.11 Cultural Heritage, Impacts and Management Measures	13
6 Monitoring of Impacts	15
7 Stakeholder Engagement	16
7.1 Grievance Mechanism	16

8	Environmental and Social Management Structure	17
	ANNEX-I: GRIEVANCE/COMMENT FORMS	18
Figures		
	Figure 1.1 Project Location	1

LIST OF ABBREVIATIONS

EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
ESA	Environmental and Social Assessment
ESAP	Environmental and Social Action Plan
ESP	Environmental and Social Policy
EU	European Union
H&S	Health and Safety
LMP	Labour Management Plan
MASKI	Malatya Water and Sewage Administration
NTS	Non-Technical Summary
OHS	Occupational Health and Safety
PM	Particulate Matter
Project	Malatya Water and Wastewater Network Project
PRs	Performance Requirements
SEP	Stakeholder Engagement Plan
WGM	Workers' Grievance Mechanism

1 Project Description

The Project consists of reconstruction of 466.8 km of water supply, 117.7 km of sewer, and 8.6 km of storm water networks that were damaged during the earthquakes on 6 February 2023 in the central districts of Yeşilyurt and Battalgazi of Malatya province.

With an area of approximately 12,313 km² and an elevation of about 964 meters above sea level, Malatya is located on a fertile plain irrigated by the Tohma Stream, a tributary of the Euphrates River. It borders Sivas and Erzinçan to the north, Kahramanmaraş to the west, Adıyaman to the south, and Elazığ and Diyarbakır to the east. The province consists of 13 districts, including the metropolitan districts of Battalgazi and Yeşilyurt. Malatya is known for its rich historical heritage, such as the ancient city of Arslantepe, and for its apricot production, which holds an important place in the global market.

The city's geographical location is shown in Figure 1.1.

1.1 Aim of the Project

An Environmental and Social Assessment (ESA) report was prepared to evaluate and manage the potential environmental and social impacts of the Project. It ensures that all environmental and social requirements are met during both the construction and operation phases. The report aims to identify risks, proposes mitigation measures, and outlines the necessary monitoring and institutional frameworks. Key objectives include compliance with national laws and EBRD standards, minimizing negative impacts, enhancing positive outcomes, and addressing stakeholder concerns. The ESA also serves as a guide for preparing an Environmental and Social Action Plan (ESAP) to monitor and implement mitigation measures throughout the Project.

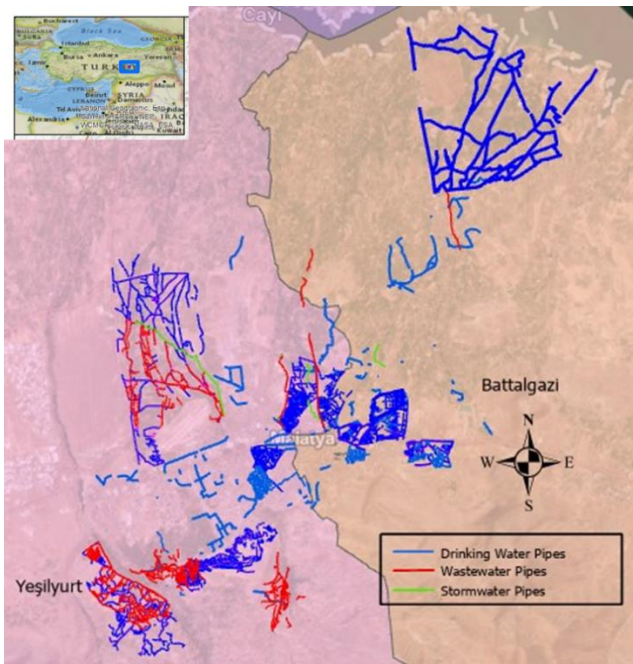


Figure 1.1 Project Location

The province consists of 13 districts: Akçadağ, Hekimhan, Arguvan, Kale, Arapgir, Kuluncak, Battalgazi, Pütürge, Darende, Yazıhan, Doğanşehir, Yeşilyurt, and Doğanyol. Battalgazi and Yeşilyurt are the central districts, home to most of Malatya's population, with 104 and 81 neighbourhoods, respectively. To the north of the central districts lie Elazığ Province and Karakaya Dam Lake; to the west is Akçadağ; to the east are Kale and Pütürge; and to the south is Adıyaman. Malatya has a total surface area of 12,313 km², with the central districts covering approximately 955 km².

2 Background to the Project

2.1 Rationale of the Project

On February 6, 2023, two devastating earthquakes struck southeastern Türkiye, affecting over 14 million people and causing significant destruction, including the loss of more than 50,000 lives and damage to over 500,000 buildings. In response to the disaster, the European Bank for Reconstruction and Development (EBRD) is considering financing a project to rehabilitate essential infrastructure in Malatya, one of the hardest-hit cities. The financing will be provided to the Republic of Türkiye, represented by the Ministry of Treasury and Finance İller Bankası A.Ş.(ILBANK) will act as the implementation agency whereas Malatya Water and Sewage Administration (MASKI) will be involved as the beneficiary.

2.2 Legal Aspects and Compliance with Relevant Environmental and Social Laws

The Project is committed to meeting both national legal requirements and the standards set by the European Bank for Reconstruction and Development (EBRD). It will be designed in compliance with Türkiye's environmental and social laws and the EBRD's Environmental and Social Policy (ESP) and Performance Requirements (PRs). The Project will also adhere to international agreements related to environmental protection and sustainable development.

2.3 Current Environmental and Social Situation and Considerations

On February 6, 2023, two major earthquakes (7.7 and 7.6 magnitudes) struck southeastern Türkiye, affecting over 14 million people and causing extensive damage, including the collapse of 6,600 buildings in Malatya. This led to infrastructure disruptions, particularly in water supply and wastewater systems, exacerbating water loss and treatment inefficiencies. The project aims to address these issues through urgent rehabilitation efforts.

2.4 History of the Project Development and Planning

Within the scope of the "Project Preparation Facility for Municipal Infrastructure to Support the Earthquake Recovery" project prepared by the Delegation of the European Union to Türkiye, drinking water, wastewater, and stormwater projects have been developed. The projects prepared within this framework have been reviewed, and the projections used in this study have been adopted accordingly.

The Project consists of the rehabilitation and construction of 466.8 km drinking water network, 117.7 km sewerage network and 8.6 km stormwater network.

The project includes a comprehensive Environmental and Social Assessment to ensure compliance with EBRD standards.

3 Process of the Project

The Environmental and Social Assessment (ESA) process is a key part of the Project's planning phase. It ensures that environmental and social factors are considered and integrated into the design and decision-making processes from the start. In this case, the Project is classified as Category B as per the EBRD's ESP, thus involves moderate environmental and social risks that can be easily mitigated. The ESA report focuses on identifying these risks and determines appropriate mitigation measures to be incorporated into the Project design.

For this Project, the environmental and social impacts are localized and manageable, in line with the EU's guidelines for EIA compliance. The Project's moderate risks, such as impacts on local communities and the environment, will be managed through tailored mitigation measures, ensuring adherence to both EU, EBRD ESP and national standards for environmental protection.

The local communities and stakeholders will have the opportunity to raise concerns or objections during the Project's consultation phases. Measures will be put in place to mitigate any adverse effects and any objections raised will be considered and integrated into the final project design, where necessary.

4 Environmental Benefits, Adverse Impacts and Mitigation Measures

4.1 Land Use Planning and Changes

The Project is not expected to cause significant permanent changes to land use, as most of the pipeline works will be carried out within existing road corridors and reinstated after construction activities are completed. During the construction phase, temporary land use changes may occur due to excavation works, temporary storage areas, construction camps, and traffic management arrangements. These temporary impacts may be more noticeable in areas with limited alternative routes or in less developed neighbourhoods, such as parts of Orduzu and Boran-Toygar.

The Project does not involve land acquisition or resettlement. As such, the overall environmental and social risks remain consistent with the criteria for a Category B project as per the EBRD's Environmental and Social Policy.

Overall, land use impacts are expected to be temporary, localized, and manageable through appropriate planning and restoration measures.

4.2 Water Resources, Impacts and Management Measures

Malatya is located in the Euphrates Basin, the largest basin in Turkey, covering 127,000 km² and with an annual water volume of over 28 billion m³. The primary water source for Malatya urban area comes from a catchment area in the foothills of Beydağı, situated 19 km from the city center, called Kaptaj. This water is used to meet the drinking needs of 185 neighborhoods in the Battalgazi and Yeşilyurt districts, with an average flow rate of 2,700 liters per second. The water is chlorinated before distribution, though no additional treatment is carried out.

Over recent years, the flow rate of the catchment has fluctuated, peaking at 2,769 l/sec in 2021. Water quality tests that were conducted before and after the February 2023 earthquake indicate that turbidity increased, particularly during aftershocks. While most water quality parameters remained within acceptable limits, there was an increase in iron and turbidity levels after the earthquake.

Agricultural activities in the region have led to nitrate contamination in both surface and groundwater. Several water sources show higher-than-acceptable nitrate levels, with groundwater from Cumali Kırmızıgül having the highest average at 14.81 mg/L.

In 2022, approximately 83.6 million m³ of groundwater was used for drinking and utility purposes. The majority of the water used by the Battalgazi and Yeşilyurt districts comes from the catchment area (87.02%), with the rest sourced from groundwater (12.98%).

To ensure sustainable and safe water supply, it is important to monitor water quality closely and develop appropriate management strategies, especially considering the challenges posed by agricultural pollution and natural events like earthquakes.

4.3 Habitats, Ecology (Flora and Fauna) and Nature Conservation, Impacts and Management Measures

The potential impacts of the proposed construction activities on the biological environment, both terrestrial and aquatic, have been assessed. These impacts are expected to affect the local flora and fauna directly or

indirectly, though the region is already influenced by human activities such as settlements and agriculture, which lessens the overall impact.

Terrestrial Flora and Fauna:

The Project Area does not include any sensitive or critical habitats. Construction activities may cause temporary disturbance due to dust and noise, which could impact agricultural areas and local fauna. However, these effects are expected to be short-term and after construction, the natural vegetation is anticipated to recover.

No significant impacts on flora and fauna populations are anticipated, as the area is already altered by human presence.

Aquatic Environment:

The nearby streams have been influenced by human activities and no significant aquatic biodiversity, such as fish species, has been identified. Construction activities will not change the water quality or affect riparian vegetation.

Although the project area is close to a sensitive water body, the project will not have a significant impact on this water body if mitigation measures are taken.

Protected Areas:

There are natural parks in and near the project area, but since the lines will pass through existing roads and mitigation measures will be taken, there will be no significant impact on the protected areas. As a result, the impact on these areas is considered as low in significance.

Mitigation Measures and Conclusion:

While impacts on the biological environment are expected to be low, mitigation measures such as controlling dust, noise and waste management are recommended to minimize any potential negative effects. If these measures are followed, the biodiversity is expected to remain stable or recover after construction.

The overall environmental impact on both terrestrial and aquatic ecosystems is minimal, and with proper management, the Project is not expected to significantly harm local flora, fauna or biodiversity. The impact during the operational phase is anticipated to be negligible.

4.4 Landscape and Visual Impacts, Impacts and Management Measures

Malatya is a province with diverse landscapes, featuring high mountains, plains, plateaus, and water resources. The highest peak is Ergenekon Mountain, which rises to 3,141 meters. Other important mountains include Süleyman and Ahır Mountains. These mountains provide stunning views and contribute to the local ecosystem's diversity. The Malatya Plain, also known as Battalgazi Plain, is the main agricultural area and is famous for its apricot production, with expansive yellowish-brown fields in summer.

In the higher regions, plateaus such as Pütürge and Arapgir are used by locals during the summer months, offering both scenic and cultural richness. Malatya is also home to the Euphrates River, which flows along its southern border, creating breathtaking landscapes, especially in the surrounding valleys. Additionally, streams and ponds used for irrigation further enhance the region's beauty.

The province experiences a continental climate, with hot, dry summers and cold, snowy winters. This climate impacts the local vegetation where apricot trees dominate the agricultural landscape. Malatya is one of Türkiye's leading apricot producers. Pine forests and oak trees are also common in the mountainous areas. To minimize the Project's impact on landscape and visual, several mitigation measures will be implemented during the construction phases:

- Visual pollution will be reduced by using relevant curtains (separators) whenever feasible in regard to discomfort that will be caused during the works. Furthermore, photographs and information about the city will be placed on the separators which will bring a more aesthetic look.
- Materials to be used during construction will be stored in closed and protected environment.
- All kinds of road, pavement, wall, pole, etc. damaged during the works will be repaired and restored.

4.5 Air Quality, Impacts and Management Measures

During the field visit, it was observed that reconstruction works in some areas of Malatya are contributing to dust formation. A continuous air quality monitoring station, established by the Ministry of Environment, Urbanization, and Climate Change in central Malatya, measures PM₁₀ and SO₂ levels, reflecting the baseline air quality conditions. The data is averaged from the 365 days before and after the earthquake. Coal and natural gas are used for heating throughout the region, and the Provincial Directorate of Environment, Urbanization, and Climate Change conducts inspections in coal storage areas and buildings.

The construction activities may lead to dust formation and air pollution, which could negatively impact sensitive receptors such as hospitals, schools, residential areas, livestock and agricultural land. Special attention will be given to minimizing these impacts, particularly in vulnerable areas. The contractor, in collaboration with MASKI, will implement several measures to limit dust and air pollution during construction.

The mitigation measures that will be implemented during both the construction and operation phases are as follows:

- Careful handling of excavated materials to prevent dust, soil stack monitoring and wind shields/barriers where necessary. Water trucks will be used for dust suppression, especially in dry conditions. PPE, such as dust masks, will be provided to workers in areas with excessive dust levels.
- The contractor will assess the presence of sensitive receptors before starting work and ensure that extra care is taken near these locations. The prevailing wind direction will also be monitored to avoid affecting these areas.
- Vehicles will have speed limits (30 km/h on unpaved roads) to minimize dust and vehicle routes will avoid densely populated areas. Well-maintained machinery and vehicles will be used to reduce emissions. Regular maintenance will ensure that equipment does not produce excessive exhaust emissions.
- Workers will receive training on emissions control and dust management.
- In case of encountering any asbestos containing material during the implementation of the Project, an Asbestos Management Plan will be developed to ensure safe handling and disposal of asbestos-containing materials. A certified expert will oversee the work and waste will be disposed of according to regulations.

4.6 Climate Conditions and Meteorology

Malatya has a harsh climate with hot, dry summers and cold, rainy winters. It experiences a mix of climate characteristics from Eastern, Southeastern, and Central Anatolia. The province is ideal for apricot cultivation due to its temperature and precipitation patterns. Average annual temperature is 13.7°C, with the highest reaching 42.7°C in summer and the lowest dropping to -22.2°C in winter. The region has limited forest cover,

but oak forests are found in the mountains, while poplar, willow, and walnut trees grow along rivers. Annual precipitation is 383.6 mm, with spring being the rainiest season.

To minimize the Project's impact on climate change, several mitigation measures will be implemented during both the construction and operation phases:

- Optimal utilization of the available construction equipment and materials will be followed in such a way that reduces greenhouse gas emissions.
- Speed restrictions will be adopted by construction vehicles and equipment to optimize fuel efficiency.
- Regular maintenance of construction vehicles and equipment will be applied.
- Energy uses associated with construction vehicles and equipment will be monitored.
- The area of land clearance required will be minimized.
- Efficient driving guidelines to transportation vehicle drivers to promote fuel efficiency will be provided.

4.7 Noise and Vibration; Impacts and Management Measures

In Malatya, a mix of urban, semi-urban and rural areas experience varying levels of environmental noise, influenced by residential, industrial and natural factors. Fieldwork for the Project revealed that many areas have been damaged by earthquakes and are undergoing reconstruction, which has contributed to additional construction-related noise. Industrial activities in manufacturing and construction zones generate significant localized noise, while everyday activities in residential areas, such as commercial operations and daily routines, create moderate noise levels. In rural and semi-rural areas, ambient noise is mainly shaped by natural sources like wind and wildlife sounds.

Environmental noise in Türkiye is regulated by the Regulation on Environmental Noise Control (RENC), which aims to minimize disturbances to public peace and protect the physical and mental health of individuals exposed to environmental noise. This regulation includes provisions for noise mapping, acoustic reporting and environmental noise assessments to determine noise exposure levels, as well as mandates for action plans to reduce the negative effects of noise on human health and the environment.

The construction activities in Malatya will lead to increased noise from reconstruction efforts, industrial zones and daily residential activities, with potential noise impact on sensitive receptors such as hospitals, schools and agricultural areas, as well as risks of structural damage from vibrations near significant construction sites.

To minimize the Project's impact on noise and vibration, several mitigation measures will be implemented during both the construction and operation phases:

- Construction will be conducted during daytime hours (07:00–19:00) to comply with noise regulations.
- Noise screens and mufflers will be installed on machinery whenever feasible.
- Regular maintenance of equipment will be carried out to minimize noise.
- Vibration limits will be adhered to, with corrective actions taken if exceeded.
- Structural assessments will be conducted for buildings within 50 meters of vibration sources.
- Noise levels will be monitored in sensitive areas.
- A grievance mechanism will be established for noise complaints.
- Communication with local residents will be provided in advance of construction activities.
- During the procurement of equipment and machinery, the sound levels specified in the technical specifications/data sheets will be considered.
- The relevant provisions and limit values of the Regulation on Environmental Noise Control will be followed during the operation phase.

4.8 Waste Management

In Battalgazi, 247.7 tons of waste are produced daily in summer and 228.6 tons in winter, while Yeşilyurt generates 283.9 tons in summer and 262.8 tons in winter. The waste is sent to the Kapıkaya Regular Storage Area in Battalgazi, covering 52.8 hectares of state-owned land.

The Wild Storage Area in Battalgazi, owned by Malatya Municipality, has been generating electricity from methane gas since 2014, with two 1.2 MWe engines producing a total of 2.4 MWe.

Yeşilyurt has a 1st Class Waste Collection Center collecting 14 types of waste.

Wastewater from both districts is collected through a closed-pipe system and treated at the Municipality's Advanced Biological Wastewater Treatment Plant, operating since 2004.

Construction Phase Waste Management

During the construction, excavation waste as well as waste generated by workers will be sorted into organic, recyclable and non-recyclable categories. Excavation waste will be reused for trench filling where possible. Non-recyclable waste will be regularly collected and sent to the landfill. Waste oils and hazardous waste will be properly stored and disposed of in licensed facilities.

Operation Phase Waste Management

During the operation, waste from maintenance activities will continue to be sorted and reused where possible. Hazardous waste will be safely stored and sent for proper disposal, ensuring no waste is improperly handled.

4.9 Raw Material Sourcing and Transportation

Raw materials required for the Project (concrete, pipes, construction materials, etc.) will be sourced from local suppliers whenever possible and transportation will be carried out in the most efficient ways to minimize environmental impact. During transportation, transportation plans will be organized and appropriate transportation vehicles will be used to avoid increasing traffic density. The use of recycled materials will also be encouraged.

4.10 Road Safety, Impacts and Management Measures

During Project construction, the use of heavy construction machinery and transportation-related vehicles in particular may pose a risk to road safety. To minimize these risks, traffic arrangements will be made, signage will be strengthened and speed limits will be set in areas close to the construction site. In addition, trained traffic managers and safety officers will be deployed to prevent traffic accidents during road works in the Project area. ILBANK will ensure the contractor develops and implements a Traffic Management Plan in line with EBRD Environmental and Social Policy and Performance Requirements with cooperation from MASKI.

4.11 Associated Infrastructure Impacts and Management Measures

The Project may affect local infrastructure, including water supply, sewage systems, roads, utilities, waste management and energy supply. To manage these impacts, the Project will coordinate with relevant departments, such as the local gas distribution company, cable TV and internet companies and electricity distribution company, to prevent disruptions and provide temporary solutions if necessary. Traffic management plans will be implemented to minimize road closures and ensure safe access, while utility lines will be identified and protected in collaboration with local service providers. Additionally, waste management

practices will align with local policies to ensure proper disposal and recycling and efforts will be made to coordinate with energy providers to prevent disruptions in the local grid.

4.12 Cumulative Impacts

The ESA study has considered the potential cumulative effects of other existing and planned projects in the region. In addition to the Project, there are ongoing drinking water and infrastructure projects under construction in the area. Multiple project activities are creating additional cumulative environmental and social impacts.

These impacts include:

- Traffic and noise impacts due to the increased traffic during the construction of sewage and stormwater pipelines, in addition to the traffic load in the city.
- Wastewater and solid waste generation resulting from construction activities of the Projects, which will increase pollution load at discharge points and in waste management.
- Restricted access to drinking water for the local population due to project activities (e.g., water cuts, other infrastructure impacts).
- Positive impacts on the local economy due to the activities of the Projects.

4.13 Consistency with Policy, Law and Other Plans

The Project will comply with Turkish legislation, the EBRD's Environmental and Social Policy (ESP) and Performance Requirements (PRs) in line with environmental, social and economic objectives. It will also be designed and implemented in line with local government and municipal plans.

4.14 Environmental Management Plans, Mitigation Measures and Compensatory Measures

A detailed Environmental Management Plan (EMP) will be prepared to manage the environmental impacts of the Project. This plan will include measures to be implemented to prevent environmental degradation during construction and operations. Mitigation measures will include measures to minimize potential impacts identified in areas such as water resources, air quality, soil health and biodiversity.

5 Social Benefits, Adverse Impacts and Mitigation Measures

5.1 Socio-Economic Impacts

There are 185 neighbourhoods in total, 81 of which are affiliated to the Yeşilyurt Municipality and 104 of which are affiliated to the Battalgazi Municipality. 54 neighbourhoods are affected by the stormwater network, 44 neighbourhoods are affected by the sewage network and 99 neighbourhoods are affected by the drinking water network. The water, sewage and stormwater network project cover 93 of the neighbourhoods. Therefore, these 93 neighbourhoods are defined as the Direct Area of Social Influence. The other 92 neighbourhoods are defined as Indirect Areas of Social Influence.

Economic Characteristic

Malatya has recorded remarkable growth in its economic structure between 2016 and 2021. Industrial GDP increased by 336.6% during this period, from 2,095 million TL to 9,149 million TL, and outperformed the 266.7% increase nationwide. The manufacturing sector grew by 355.2%, again outperforming the Turkish average (269.3%). While the share of industry in Malatya's total GDP was 14% in 2016, it increased to 23.6% in 2021, and the share of the manufacturing sector increased from 11.9% to 20.8%. These increases show that the importance of the industrial and manufacturing sectors in the provincial economy is gradually increasing.

Industrial enterprises in the province are concentrated in Yeşilyurt district. 65.6% of industrial facilities and 85.9% of employment are in this district. There are 2 Organized Industrial Zones (OIZs) and 1 Small Industrial Site (SSI). There are 378 operating facilities in the 1st and 2nd Organized Industrial Zones. However, there are currently no plans for additional industrial zones, free zones or special economic zones.

5.2 Impacts on Businesses and Employment

The Project is expected to create temporary employment, with 200 direct workers, 50% of whom will be locals. Efforts will be made to source materials and services locally to support the regional economy. Local businesses near construction sites may experience short-term disruptions, including reduced accessibility, noise, dust and odor, potentially affecting all businesses in the city.

5.3 Impacts to Existing Infrastructure

The Project area is located within an urban environment where various existing infrastructure systems are already present. These include local road networks, residential buildings, utility lines (such as water supply, wastewater, stormwater drainage, electricity, telecommunications), and other municipal services. Most of the pipeline works will be implemented within existing road corridors where infrastructure networks are already established. As a result, construction activities will require careful coordination to avoid disruption to existing utilities and services.

Temporary impacts on traffic flow and access to properties may occur during construction; however, traffic management measures and coordination with relevant authorities will be implemented to minimize disruption. Any affected infrastructure will be reinstated or restored following construction works.

5.4 Traffic and Accessibility Management

ILBANK will ensure the contractor develops and implements a Traffic Management Plan in line with EBRD Environmental and Social Policy and Performance Requirements and in coordination with MASKI. The plan must be prepared at least 30 days before construction begins and will include staff training on its implementation. Key elements of the plan include:

- A phased construction schedule, work start and end dates and an overview of current conditions near construction sites.
- Identification of impacted areas and proposed mitigation measures.
- Traffic diversion strategies, such as material transport routes, entry/exit points, parking areas and intersections.
- Temporary pedestrian and vehicle pathways, signage and traffic control measures (e.g., barriers and warning systems).
- Routes for oversized vehicles, construction access, loading/unloading zones and supply vehicle roads.
- Anticipated interactions between pedestrians and vehicles, with related safety measures.
- Responsibilities of personnel for traffic management and emergency response procedures.
- Compliance with a 30 km/h speed limit for all vehicles, with clearly visible project area markings.
- Community information via brochures, posters and direct communication at local centers.
- Minimization of peak-hour disruptions and training for project drivers on road safety and traffic rules.
- Adherence to vehicle weight limits and transportation of hazardous materials by licensed carriers.
- Coordination with local authorities on heavy vehicle routes and advance public communication.
- Securing construction sites to prevent unauthorized access and repairing any road damage caused by the Project.
- Restoration of impacted roads post-construction and installation of clear traffic and warning signs. Work will be restricted to daytime hours, with special considerations for vulnerable groups during route planning.

5.5 Land Acquisition

No land acquisition is required for this project. The Project will be carried out on existing infrastructure, focusing on improvements and repairs. Therefore, there will be no need for new land purchases or property transfers. The Project will be implemented by upgrading and modernizing the current areas, with an emphasis on enhancing capacity and functionality.

5.6 Contractor Management

Contractor management will ensure safety, comply with environmental standards and ensure compliance with Turkish laws and international EBRD Performance Requirements. Contractors will be held accountable for meeting these standards, particularly in terms of labour rights and occupational health and safety.

5.7 Community Health and Safety

During the construction phase, infrastructure works will take place across a large part of Malatya central districts, directly affecting 113 neighbourhoods in the Battalgazi and Yeşilyurt districts, while an additional 72 neighbourhoods may experience indirect impacts. The project involves the renewal of water supply, wastewater, and stormwater systems throughout the urban area. Although different social groups may be affected to varying degrees, the municipality plans to minimize disruption by completing works in each excavation site within the same day where possible and avoiding night-time construction activities. These measures are intended to reduce potential Community Health and Safety risks. Further details on Community Health and Safety considerations are provided below.

Physical Safety Risks

Construction activities may create temporary safety risks related to open trenches, excavation areas, exposed infrastructure, insufficient street lighting, and the operation of heavy machinery. These risks may include restricted access, increased accident potential, and safety concerns for pedestrians and road users.

Vulnerable groups such as elderly people, children, and individuals with disabilities may be more sensitive to these impacts, particularly in neighbourhoods with higher concentrations of these populations. In addition, sensitive receptors such as schools, health facilities, and religious buildings may experience temporary access or safety challenges during construction works.

The operation of heavy machinery on narrow or irregular streets may also increase safety risks and traffic disruption in certain areas. To minimize impacts, construction works will be carefully managed through safety measures such as securing excavation areas, providing appropriate signage and barriers, implementing traffic management arrangements, and limiting works to daytime hours where possible.

Some risks may also arise during operation and maintenance activities; however, these are expected to be less frequent and manageable through standard safety procedures.

Public Health Risks:

Airborne Dust: Construction activities may worsen air quality, affecting those with respiratory issues.

Noise Pollution: Loud construction noise and vehicle operations can disrupt sleep and cause stress, with Akpınar, Samanlı, Şıkşık, Taştepe, and Toptaş neighbourhoods being the most impacted.

Water Contamination: Risks to drinking water quality due to infrastructure work are heightened in Atatürk, Çolakoğlu, Dabakhane, İnönü, İlyas, İzzetiye, Konak, Taştepe, Toptaş neighbourhoods due to existing issues with water pressure and leakage.

Social and Psychological Impacts: The extended construction period and lack of communication may lead to stress and anxiety, especially in areas with vulnerable populations such as Akpınar, Cumhuriyet, Dolomantepe, Hidayet, Merkez Fatih, Topsöğüt, Yeşilkaynak neighbourhoods .

5.8 Working Conditions, Labour Management and Occupational Health and Safety

This section of the report reviews the labour and working conditions for Malatya Water and Wastewater Network Project, focusing on workforce management, health and safety and the handling of subcontractors. The assessment compares Turkish labour laws with EU standards and highlights challenges due to the recent earthquake.

The Project plans to hire 200 workers for the construction phase, half of whom will be local. Ensuring fair employment practices, worker safety and adherence to legal standards is crucial, especially in the post-earthquake context. The Project aims to provide a safe working environment, protect workers' rights and maintain compliance with both local and international labour standards.

Overall, the Project seeks to manage labour effectively, ensuring fair treatment and safety while addressing challenges caused by the earthquake.

Worker-Employer Relations

The Project focuses on maintaining respectful and fair worker-employer relationships. It ensures that employment is voluntary, with no forced labour and promotes equal opportunities for all workers regardless of gender, race or other factors. Workers will have the right to form unions and engage in collective bargaining without fear of retaliation. Open communication between workers and management will be encouraged to address concerns effectively. The goal is to create a dignified, safe and supportive work environment for all employees.

Grievance Related Issues

A grievance mechanism will be implemented to resolve worker complaints fairly and promptly, protecting workers' rights and the Project's reputation.

Worker's Rights

The Project prioritizes workers' protection by ensuring their health and safety, fair working hours and proper wages. It will follow safety regulations to prevent hazards, guarantee fair wages and ensure workers aren't exploited. Overtime pay will be in line with local laws and working hours will comply with legal limits. The Project will also follow international labour standards, including those from the ILO, to protect workers from child labour, forced labour and ensure fair conditions for all.

Work Force

The labour market and working conditions in Malatya have been significantly affected by the earthquake. Currently, MASKI employs a total of 1,008 staff members, including 86 women and 922 men.

A dedicated grievance mechanism is in place for MASKI employees. Complaint boxes are located in areas where workers can access them privately, such as dining halls, and employees are encouraged to submit complaints or feedback through these channels. In addition, regular surveys, including anonymous employee satisfaction surveys, are conducted. A designated Grievance Management Representative is responsible for receiving complaints, forwarding them to the relevant departments, monitoring the resolution process, and ensuring that grievances are addressed within 30 days. Monthly reports on grievances are submitted to MASKI management.

The Hizmet-İş trade union is active within the institution, and a collective labour agreement was signed on 1 January 2025.

Occupational Health Safety Related Impacts

This section reviews this Project's OHS practices to ensure compliance with national laws and international standards, such as EBRD PR 2 and PR 4, during both construction and operation. The assessment involved examining physical conditions, existing OHS policies, previous project performance and MASKI's capacity to manage safety. The goal is to ensure worker safety through alignment with both Turkish regulations and international safety standards.

Sub-Contractor and Supplier Management

MASKI will ensure subcontractors comply with national and international labour standards, conducting regular monitoring to uphold workers' rights. Subcontractors will be required to implement the Project's occupational health and safety policies and their workers will have access to grievance mechanisms.

Contractor Responsibilities

The Contractor will develop and implement a Labour Management Plan (LMP), ensure stakeholder communication, maintain transparency and establish a grievance mechanism to resolve workers' concerns. They will also ensure compliance with national and international standards on child and forced labour.

5.9 Vulnerable and Disadvantaged Groups

Measures will be implemented to protect vulnerable groups during construction. For children and the elderly, construction zones will be clearly marked and safe, accessible pathways will be provided. Low-income groups will have minimal disruption to transportation routes and any structural damage to nearby housing will be monitored and compensated. For individuals with disabilities, accessible routes and regular updates will be provided, with temporary transportation services to minimize disruption and ensure access to essential services.

5.10 Social Management Plans, Mitigation Measures and Compensatory Measures

This section provides an overview of the Social Management Plans, Mitigation Measures and Compensatory Measures to be implemented in this Project, as per the ESA Report.

Social Management Plans:

The Social Management Plans (SMP) are designed to address and manage social impacts throughout the Project lifecycle. These plans include stakeholder engagement, grievance mechanisms and managing social risks that may arise during construction and operation. The ILBANK's Social Expert will be responsible for overseeing the SMP implementation, ensuring the effective handling of social issues identified in the ESA report and managing the grievance mechanism (GM). Although ILBANK's Grievance Mechanism will be the primary mechanism for the Project, the existing Alo 185 Hotline, along with the MASKI's website and other communication channels, will also serve as tools for receiving grievances and ensuring timely responses. ILBANK will track and address complaints, with an organized process for verification, investigation and feedback.

Mitigation Measures:

The ESA report includes specific mitigation measures to reduce negative social impacts. These measures will focus on minimizing disruptions to local communities, preventing adverse effects on vulnerable groups and enhancing the positive social outcomes of the Project. Some of the key mitigation actions include:

- Implementing occupational health and safety measures for workers and nearby communities.
- Ensuring proper stakeholder engagement through ongoing consultation and participation in decision-making processes.
- Managing potential impacts on local infrastructure, such as roads and water services, by ensuring proper coordination with the relevant authorities.

Compensatory Measures:

If adverse social impacts cannot be fully mitigated, compensatory measures will be employed. These measures may include:

- Compensation for any involuntary land acquisition or displacement, ensuring fair compensation and resettlement assistance for affected individuals and communities.
- Offering alternative livelihood support and restoration programs for individuals whose livelihood may be affected by the Project activities.
- Continuous monitoring of affected communities during both the construction and operational phases to ensure compensation is sufficient and effective.

These plans and measures aim to ensure that the social impacts of the Project are well-managed, any negative impacts are minimized and communities that are affected by the Project are properly supported. Regular monitoring and reporting will be conducted to assess the effectiveness of these measures, ensuring compliance with the ESA report and relevant regulations.

5.11 Cultural Heritage, Impacts and Management Measures

Malatya, with its strategic location connecting Central Asia, the Middle East, and Mesopotamia, has a rich history dating back over 9,000 years. Archaeological sites, including the UNESCO-listed Arslantepe Mound, reveal continuous habitation from the Paleolithic to the Islamic period. The region, home to many ancient civilizations like the Hittites, Assyrians, and Romans, is also known for its cultural and architectural heritage, with notable sites such as the Great Mosque of Malatya and Silahtar Mustafa Pasha Caravanserai. Recent earthquakes in 2023 caused damage to local museums and some religious structures, though significant

archaeological sites, including Arslantepe, sustained damage to their protective measures rather than their core structures. Malatya's diverse cultural and natural heritage continues to be a vital part of its identity.

Given that most identified heritage sites are outside the immediate project footprint, significant adverse impacts are not anticipated. Nevertheless, appropriate mitigation measures will be taken, including the implementation of a Chance Find Procedure, to reduce impacts to cultural heritage to be at minor or negligible levels.

6 Monitoring of Impacts

The planned monitoring activities for various environmental and social impacts throughout the different phases of the Project are summarized below:

Air Quality: During the construction and operation phases, dust and particulate matter (PM₁₀) levels will be monitored. Additionally, maintenance and exhaust emission decal records of all machinery and equipment will be reviewed. Complaints related to air quality will also be tracked.

Soils and Land Use: In the construction and operation phases, the number of spill or leakage incidents will be recorded, along with the corrective measures taken to address these issues in accordance with national and international standards. Complaints related to land use and soil contamination will also be monitored.

Environmental Noise: Throughout all phases of the Project, noise levels (measured in decibels) will be monitored whenever there is a complaint, particularly focusing on working hours. Complaints related to noise disturbances will also be recorded.

Waste Management: In all project phases, the waste management plan, along with records of waste handling and temporary storage areas, will be monitored to ensure proper waste disposal practices are followed.

Landscape and Visual: During the construction phase, any grievances related to landscape changes and visual pollution will be recorded and addressed accordingly.

Community Health, Safety and Security: Throughout all phases, on-site observations will be made regarding the work sites and traffic management. Additionally, records of stakeholder consultations and related grievances will be kept to ensure community health and safety.

Labour Force and Working Conditions: In all phases, the number of incidents related to labour force and working conditions will be monitored. Training requirements, as well as the number of training hours provided to workers, will be documented. Worker grievances and the agreements with contractors and sub-contractors will also be tracked.

Workers/Occupational Health and Safety: In the construction and operation (maintenance and repair), health and safety (H&S) records will be maintained, covering accidents, employment and training. The emergency preparedness plan will be followed and personnel grievances will be documented. Additionally, the periodical review and monitoring of the ESA report performance will be conducted. The existence and validity of legal environmental and health and safety permits will be verified.

Information collected through these monitoring activities will be crucial for improving management plans at every phase of the Project. While impact assessments aim to cover all potential impacts and provide appropriate responses, unanticipated issues may still arise. Monitoring will ensure that such unforeseen impacts can be managed or mitigated before they escalate into significant problems. By continuously gathering relevant data, the monitoring process will optimize the implementation of mitigation/management plans and support effective environmental protection throughout the Project's lifecycle.

7 Stakeholder Engagement

Within the scope of the ESA studies carried out for the Project, the Stakeholder Engagement Plan (SEP), which is a public document, was prepared. The SEP was developed as a public document to present stakeholder engagement, consultation and disclosure plans, including the requirements of national environmental legislation and relevant international environmental and social standards, as well as the EBRD PR10 Environmental and Social Sustainability targets.

In the context of the Project, it's crucial to identify stakeholders early on to inform them about the Project and ensure their active involvement. Specifically, the following individuals and groups should be informed:

- Individuals likely to be directly or indirectly affected by the Project
- Entities with an interest in the Project
- Entities with potential to influence Project outcomes or company operations

Additionally, it's essential to identify vulnerable or disadvantaged groups likely to be impacted by the Project during stakeholder identification.

Potential stakeholders who may be affected by or influence the Project include:

- National and local public institutions and organizations
- Non-Governmental Organizations
- Local residents
- Local businesses
- The Project personnel, including contractors

7.1 Grievance Mechanism

A Grievance Mechanism (GM) has been established for the Project to ensure that concerns, complaints, and feedback from stakeholders are addressed in a timely, fair, and effective manner. The mechanism aims to identify and resolve issues early, supporting positive relationships between project workers, local communities, and other stakeholders.

Stakeholders can submit their grievances through multiple accessible channels, including ILBANK, MASKI, and national communication platforms such as the Presidency's Communication Centre and the Foreigners Communication Centre. All grievances are recorded, acknowledged promptly, and addressed within defined timeframes.

The GM will operate in a transparent and impartial manner. Stakeholders may also submit complaints anonymously if they prefer. Sensitive issues, including those related to sexual exploitation and abuse or sexual harassment (SEA/SH), will be handled with strict confidentiality.

If complainants are not satisfied with the response, they have the right to escalate their concerns or seek resolution through legal channels.

8 Environmental and Social Management Structure

The Project will be implemented through a clearly defined E&S management structure to ensure effective oversight and compliance throughout all phases.

The Republic of Türkiye, represented by the Ministry of Treasury and Finance, acts as the Borrower, while the EBRD is the Lender. ILBANK serves as the implementing agency and has established a Project Implementation Unit (PIU) responsible for the overall coordination of the Project, including environmental and social management in line with international requirements.

MASKI, as the beneficiary institution, will support the implementation and will be responsible for the operation of the Project. ILBANK PIU will work in coordination with MASKI to ensure that environmental and social requirements are effectively applied.

The PIU will be supported by a PIU Support Consultant to ensure compliance with financing requirements, including the Environmental and Social Action Plan (ESAP). In addition, a Project Supervision and Monitoring Consultant will act as the Employer's Representative during the implementation phase and will oversee construction activities.

Contractors will be responsible for carrying out construction works in accordance with project-specific environmental and social requirements. Their performance will be supervised and monitored by the supervision consultant in coordination with the PIU.

This management structure ensures clear roles and responsibilities, effective monitoring, and compliance with national legislation and international standards, supporting the sustainable implementation of the Project. The organisation chart showing the responsibilities and relations of EBRD, ILBANK, MASKI, Contractors and Consultants during construction phase of the Project is given in the Figure 8.1.

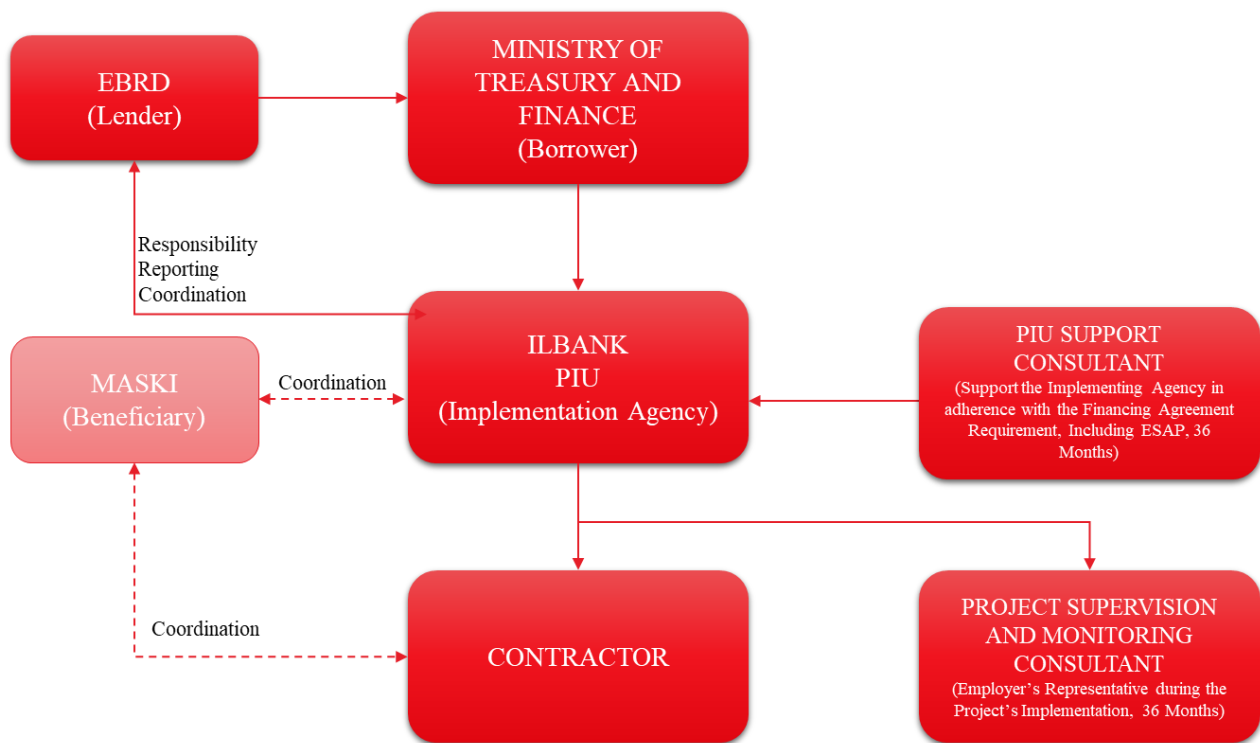


Figure 8.1 Organisation Chart Showing Responsibilities and Relationships during Construction Phase of the Project

ANNEX-I: GRIEVANCE/COMMENT FORMS

GRIEVANCE/COMMENT FORM (NOTIFICATION AND COMMUNICATION OPENING FORM)

GRIEVANCE/COMMENT FORM	
Case #	
Complainant full Name	
Contact Information Please mark how you wish to be contacted (Mail, telephone, e-mail)	By Post: <i>(Please provide mailing address)</i> By Telephone: By E-mail:
IDENTIFICATION OF THE CONCERN / INCIDENT / GRIEVANCE	
Description of Concern / Incident / Grievance What is your grievance? What happened? Where did it happen? Who did it happen to? What is the result of the problem?	
Date of Concern / Incident / Grievance	One-time incident/grievance (Date) Definition
RESOLUTION PROPOSAL	
What would you like to see happen to resolve the problem?	
Date: Please return this form to: • Details will be provided further.	

GRIEVANCE/COMMENT CLOSE OUT FORM (NOTIFICATION AND COMMUNICATION OPENING FORM)

GRIEVANCE/COMMENT CLOSE OUT FORM		
Close-out Inspection		
Close-out Date		
Case #		
Assessment of Grievance/Suggestion		
Action Taken		
List of Documents that verify the Action		
Date of Action		
Inspector Official	Full Name _____ Signature _____	
Assessment of Monitoring		
Necessity of Monitoring	Necessary	Not Necessary
Duration of Monitoring		
Responsible Party		
Date Completed		
Results of Monitoring		
Signature of Complainant (if willing)	_____	