

# GREEN AND FUTURE CITIES (GFC) PROJECT



ASAT5-W3

DÖŞEMEALTI DISTRICT  
WASTEWATER NETWORK  
CONSTRUCTION PROJECT

ASAT



ENVIRONMENTAL AND SOCIAL  
MANAGEMENT PLAN  
(ESMP)



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## ABBREVIATIONS

ACM	: Asbestos-Containing Materials (ACM)
AFAD	: Disaster and Emergency Management Presidency
ALDAŞ	: ALDAŞ Infrastructure Management and Consultancy Services Industry and Trade Inc.
AMP	: Asbestos Management Plan
ASAT	: Antalya Water and Wastewater Administration General Directorate
C-ESMP	: Contractor Environmental and Social Management Plan
CHSMP	: Community Health and Safety Management Plan
DBG	: Development Bank Group
DSİ	: General Directorate of State Hydraulic Works
EBRD	: European Bank for Reconstruction and Development
EIA	: Environmental Impact Assessment
EHS	: Environmental, Health, and Safety
EHSS	: Environmental, Health, Safety and Social
EHSGs	: World Bank Group Environmental, Health and Safety Guidelines
E&S	: Environment and Social
EPRP	: Emergency Preparedness and Response Plan
ESAP	: Environmental and Social Action Plan
ESF	: World Bank Environmental and Social Framework
ESMS	: Environmental and Social Management System
ESMP	: Environmental and Social Management Plan
ESSs	: Environmental and Social Standards
FHCs	: Family Health Centres
FI	: Financial Intermediary
GBV	: Gender-Based Violence
GFC	: Green and Future Cities Project
GHG	: Greenhouse Gas
GIIP	: Good International Industry Practice
GM	: Grievance Mechanism

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HPP	: Hydroelectric Power Plant
ILO	: International Labour Organization
IFC	: International Finance Corporation
IFIs	: International Financial Institutions
İLBANK	: İller Bankası A.Ş.
KPIs	: Key Performance Indicators
LMP	: Labor Management Plan
LOTO	: Lockout–Tagout
MGM	: General Directorate of Meteorology
MoEUCC	: Ministry of Environment, Urbanization, and Climate Change
PM	: Particulate Matter
PMU	: Project Management Unit
PIU	: Project Implementation Unit
PPE	: Personal Protective Equipment
PAP	: Project Affected Person
RAP	: Resettlement Action Plan
RCDs	: Residual Current Devices
RP	: Resettlement Plan
SCADA	: Supervisory Control and Data Acquisition
SEA	: Sexual Exploitation and Abuse
SEP	: Stakeholder Engagement Plan
SH	: Sexual Harassment
SMEs	: Small and Medium-Sized Enterprises
SDS	: Safety Data Sheets
SOPs	: Standard Operating Procedures
SUB-BORROWER	: ASAT
SUBPROJECT	: ASAT5-W3 Döşemealtı District Wastewater Network Construction
TAP	: The Portable Battery Manufacturers and Importers Association
TMP	: Traffic Management Plan
TÜİK	: Presidency of the Turkish Statistical Institute

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UKOME	:	Transportation Coordination Center
UNESCO	:	United Nations Educational, Scientific and Cultural Organization
WB	:	World Bank
WMP	:	Waste Management Plan
WHO	:	World Health Organization

## GLOSSARY OF TERMS

Associated facilities	<p>Facilities or activities that are not funded as part of the Subproject and are:</p> <ul style="list-style-type: none"><li>(a) directly and significantly related to the project;</li><li>(b) carried out, or planned to be carried out, contemporaneously with the project; and</li><li>(c) necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist.</li></ul> <p>For facilities or activities to be Associated Facilities, they must meet all three criteria.</p>
Contractor	<p>A person or organization providing services to an employer at the client worksite in accordance with agreed specifications, terms and conditions.</p>
Excavated material	<p>Materials/soils that are generated as a result of excavation and other similar activities carried out prior to construction</p>
Legally protected area	<p>Designated terrestrial, aquatic or marine ecosystems managed under the related legislation to protect and sustain the biodiversity features, natural and associated cultural resources.</p> <p>Legally protected areas of Türkiye include a diversity of natural ecosystems and associated features ranging from coastal zones to mountains, deltas, forests, plains, steppe, lakes, river systems, deep valleys, canyons, and glaciers.</p>
Material borrow site	<p>Sites, where loose material containing gravel, sand, silt, and clay, which is formed by the natural and geological processes of rock fracturing, fragmentation, alteration, transportation, and/or in-situ sedimentation, and which has the characteristics of slope debris, are extracted to be used as fill material.</p>
Off-site accommodation	<p>Accommodation of workers at hotels, rented housing, etc. available in the vicinity of Subproject area.</p>
On-site accommodation	<p>Accommodation of workers at temporary exploration camps, construction camps, dormitories, etc. established for the Subproject on site.</p>
Risk	<p>A combination of the likelihood of an occurrence of a hazardous event and the severity of injury or damage to the health of people caused by this event.</p>
Topsoil	<p>Part of soil that provides organic and inorganic materials, air and water required for vegetative growth, and is required to be stored separate from the subsoil.</p>

## EXECUTIVE SUMMARY

Antalya Province has experienced significant population growth in recent years, particularly due to rapid urbanization, migration towards central and surrounding districts, and the development of the tourism sector. In parallel with this population increase, new residential areas have emerged and population density in existing settlements has risen considerably. These developments have required strengthening urban infrastructure, rehabilitating existing facilities, and developing new infrastructure.

With the enactment of Law No. 6360, the service area of the Antalya Water and Wastewater Administration General Directorate (ASAT) was expanded to cover the entire provincial boundary. Within this framework, ASAT has identified the development of water and wastewater infrastructure in both rural and urban settlements through a sustainable and integrated planning approach as a strategic objective. Accordingly, short-, medium-, and long-term investment programs have been prepared to address the infrastructure needs arising from population growth.

In this context, the Döşemealtı District Wastewater Network Construction Project (Subproject), planned to be financed by the World Bank with İller Bankası A.Ş. (İLBANK) acting as the Financial Intermediary within the scope of the Green and Future Resilient Cities (GFC) Project, represents a significant investment aimed at strengthening the wastewater infrastructure in the region. The Subproject involves the construction of sewerage network lines that will serve existing and developing residential areas in Döşemealtı District. Through this investment, wastewater generated in the project area will be safely collected and conveyed to wastewater treatment facilities in an environmentally sound manner.

The Subproject aims to meet the increasing infrastructure demand in the rapidly developing Döşemealtı District while contributing to the protection of groundwater resources, the reduction of environmental risks, and the safeguarding of public health. In addition, the project is expected to enhance the capacity of the wastewater management system in the region and address existing infrastructure deficiencies.

Since the infrastructure works under the subproject are largely planned along existing road corridors and within publicly owned areas, no significant land acquisition requirement is anticipated. However, where necessary, land acquisition processes will be conducted in accordance with the relevant national legislation and the environmental and social standards of the financing institution.

As a result of the screening conducted in accordance with the Environmental Impact Assessment (EIA) Regulation, it has been determined that the Döşemealtı District Sewerage Network Construction Project is not included in Annex I or Annex II of the EIA Regulation. Therefore, the project is not subject to the EIA process under the national EIA legislation and an EIA Decision is not required. Nevertheless, project activities will be implemented in compliance with applicable national environmental legislation and the environmental and social requirements of the financing institution. The Subproject has been classified as Moderate Risk

in accordance with the İLBANK Environmental and Social Management System (ESMS) by İLBANK. Accordingly, this Environmental and Social Management Plan (ESMP) has been prepared to identify and manage potential environmental and social risks and impacts during the construction and operation phases.

During the implementation phase of the project, site mobilization, site preparation works, and construction activities will be carried out in stages. In order to minimize environmental and social impacts during construction, monitoring and control activities will be conducted within the scope of the Environmental and Social Management Plan to be implemented by the contractor.

Overall, the implementation of the Subproject is expected to strengthen the wastewater infrastructure in the region, reduce environmental pollution risks, and support sustainable urban development. The Subproject is also anticipated to contribute to the sustainability of regional economic activities, improve the quality of life, and enhance the service delivery capacity of local authorities.

# 1. INTRODUCTION

## 1.1. Background

The Green and Future Cities (GFC) Project (hereinafter referred to as “the Project”) is designed to support the development of sustainable and climate-resilient cities across Türkiye. It focuses on key sectors such as public transportation, water and sanitation, renewable energy, and energy efficiency. Through these investments, the Project aims to improve urban livability, operational efficiency, and overall productivity, while increasing cities’ ability to withstand the impacts of climate change.

The Project consists of three components:

- **Component 1. Integrated, multi-sectoral investments in participating municipalities:** This component will support demand-driven municipal investments contributing to more livable, productive, and resilient urban development in the participating municipalities. It will finance civil works, goods, consulting and non-consulting services for, inter alia, review and quality assurance of technical designs prepared by municipalities and construction supervision as needed by each municipality. Eligible investments under this component will fall under the following categories:
  - 1. Urban Transport:** construction or rehabilitation of resilient mass transit systems (such as trams and associated facilities); purchase of public transport vehicles (such as trams, electric and CNG buses); construction of non-motorized transport infrastructure; establishment of digital systems; road safety improvements; establishment of evacuation routes and emergency corridors; improvements for universal accessibility; and integrated greening along transport corridors. Investments will focus on supporting a modal shift towards sustainable mobility modes and improving access to main urban centers and, thus, their markets and employment opportunities.
  - 2. Water and Sanitation:** construction and rehabilitation of resilient drinking water, sewage, and stormwater networks, transmission lines, water tanks, pumping station, and water and wastewater treatment plants; and purchase of goods for related municipal services.
  - 3. Renewable Energy and Energy Efficiency:** construction of distributed renewable energy plants from sources such as solar and geothermal; energy efficiency improvements in municipal infrastructure services and onsite energy generation for utilities.
- **Component 2. Strengthening capacity of İLBANK and municipalities in municipal finance and urban management for future investment projects:** The component will support İLBANK and municipalities to build institutional and technical capacity in municipal finance and urban management to prepare integrated municipal infrastructure and financing plans. The component will support a next cohort of municipalities to develop investment plans and subproject pipelines for future financing, advance creditworthiness, and prepare technical (Project Information Documents (PIDs), technical designs, design reviews), environmental, and social studies for potential subprojects for the next project under the series of projects (SOP). The component will also explore innovative ways of

using available WBG financing instruments with İLBANK, including guarantees and blended financing, and of facilitating access to private capital to support municipalities with a broader package of financing for future municipal infrastructure investments. The component will target municipalities participating under this Project and potentially benefiting under subsequent projects.

- **Component 3. Project Management:** This component will finance project management and implementation support activities for İLBANK.

İller Bankası A.Ş. (İLBANK) acts as the Financial Intermediary (FI) under the GFC Project. Metropolitan municipalities and their affiliated utilities participate in the Project as sub-borrowers through sub-financing agreements executed with İLBANK.

The Antalya Water and Wastewater Administration (ASAT) General Directorate, acting as the Sub-borrower, has applied to İLBANK for the sub-financing of the ASAT5/W3 Döşemealtı District Wastewater Network Construction Project (hereinafter referred to as “the Subproject”).

For the implementation of the Subproject, ASAT has designated ALDAŞ Infrastructure Management and Consultancy Services Industry and Trade Inc. (ALDAŞ) to act as the Project Implementation Unit (PIU) on behalf of ASAT. In this capacity, ALDAŞ is responsible, on behalf of ASAT, for the overall management of all technical, administrative, environmental, social, and occupational health and safety aspects of the Subproject, including contractor supervision, coordination of project activities, and monitoring compliance with applicable environmental and social requirements.

İLBANK has established an Environmental and Social Management System (ESMS) effective from 24th of Dec 2023. The ESMS is designed to align with the World Bank (WB) Environmental and Social Framework (ESF, 2018) including Environmental and Social Standards (ESSs) forming part of the ESF. It also adheres to the environmental and social (E&S) policies and standards of other International Financial Institutions (IFIs) with which İLBANK collaborates. The ESMS will apply to all İLBANK projects and subprojects financed through International Financial Institutions (IFIs), including this Subproject.

The ESMS aims to ensure systematic identification, assessment, management, monitoring, and reporting of the E&S risks and impacts in IFI-financed projects and subprojects of İLBANK. This process will be implemented on an ongoing basis throughout the loan duration of respective İLBANK projects in line with the requirements of the national legislation, international agreements and conventions ratified by Türkiye and E&S standards of lending IFIs, such as WB for the GFC Project. As a key element of the ESMS, İLBANK has adopted and published an E&S Policy<sup>1</sup> applicable to all IFI-financed İLBANK projects and subprojects.

Under İLBANK’s ESMS and WB ESF (2018), subprojects are classified as High Risk, Substantial Risk, Moderate Risk or Low Risk taking into account relevant potential risks and impacts, such as the type, location, sensitivity and scale of a subproject; the nature and

<sup>1</sup> <https://www.ilbank.gov.tr/sayfa/ilbank-environmental-and-social-policy>

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magnitude of the potential E&S risks and impacts; and the capacity and commitment of the relevant sub-borrower.

İLBANK is considering financing the Subproject under the Green and Future Cities (GFC) Project. In line with the ESMS, İLBANK has conducted an E&S screening and risk classification for the Subproject. Based on this assessment, the Subproject has been classified as having “moderate” E&S risk.

Given this classification, the preparation of the E&S instruments required in line with the E&S risk category of the Subproject has been carried out by ALDAŞ Infrastructure Management and Consultancy Services Industry and Trade Inc., acting on behalf of the Sub-borrower (ASAT) within the Project Implementation Unit (PIU).

This Environmental and Social Management Plan (ESMP) has been prepared for the Subproject in line with the applicable E&S requirements as set out in Section 1.3.

A list of individuals/organizations involved in the preparation or contribution to the development of this ESMP is provided in Annex A.

A stand-alone Stakeholder Engagement Plan (SEP) has also been prepared for the Subproject to guide stakeholder information disclosure, consultation, and grievance management processes.

## **1.2. Objective of the Environmental and Social Management Plan (ESMP)**

This ESMP has been prepared to outline the measures to be taken during the construction (implementation) and operation (throughout the sub-financing agreement lifecycle) of the ASAT5-W3 Döşemealtı District Wastewater Network Construction Project to eliminate or offset adverse E&S impacts and risks, or to reduce them to acceptable levels; as well as the actions required to carry out these measures.

İLBANK’s Environmental and Social Management System (ESMS), and the World Bank Environmental and Social Framework (ESF), including the relevant Environmental and Social Standards (ESSs). The ESMP is also aligned with the World Bank Group Environmental, Health and Safety (EHS) Guidelines, including the General EHS Guidelines and the sector-specific guidelines for Water and Sanitation and Waste Management.

The overarching objective of the Subproject is to ensure environmental sustainability, protect public health, and improve the quality of life in the Döşemealtı District of Antalya Province by strengthening the existing wastewater management infrastructure. In this context, the ESMP provides a structured approach for integrating environmental and social considerations into Subproject planning, decision-making, and implementation processes, while promoting transparency, accountability, and effective stakeholder engagement.

Specifically, the ESMP aims to:

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- Identify potential environmental and social risks and impacts, with a particular focus on the construction of approximately 200 km of new sewerage lines and 1 pumping station, as well as the operational activities of the system;
- Define appropriate preventive and mitigation measures to avoid, minimize, or manage identified risks and impacts in accordance with the mitigation hierarchy;
- Establish clear institutional roles and responsibilities for the implementation of environmental and social management measures by the Sub-borrower (ASAT), contractors, and supervising entities;
- Set out monitoring, supervision, and reporting arrangements to ensure effective implementation of mitigation measures and compliance with applicable requirements, particularly regarding the protection of groundwater in the Kırkgöz Water Source feeding basin, the elimination of septic tanks, and integration with the Hurma Wastewater Treatment Plant;
- Provide a management framework for key issues such as occupational health and safety, community health and safety, third-party interactions along the network corridor, odor and pest control, and the enhancement of urban hygiene;
- Ensure that environmental and social management measures are implemented in a transparent and traceable manner, supported by regular reporting and effective communication with relevant stakeholders.

The ESMP also establishes a clear reporting and oversight mechanism, whereby contractors report environmental and social performance on a regular basis to ALDAŞ A.Ş., acting as the supervision consultant on behalf of the ASAT General Directorate. These reports are reviewed and consolidated by ALDAŞ A.Ş. and submitted periodically to İLBANK, which in turn reports the environmental and social performance of the Subproject to the World Bank in accordance with the agreed reporting intervals of the GFC Project.

Overall, the ESMP serves as the primary operational instrument for ensuring that environmental and social risks and impacts associated with the Subproject are managed in a proactive, systematic, and proportionate manner. It supports the achievement of the Subproject's development objectives—specifically reinforcing Antalya's natural capital by protecting groundwater and seawater quality—while maintaining consistency with the World Bank's “Green, Resilient and Inclusive Development” principles and İLBANK requirements.

### **1.3. Overview of E&S Requirements Applicable to the Subproject**

The Subproject will be implemented in compliance with the requirements of the applicable national environmental and social legislation of the Republic of Türkiye, as well as the international agreements and conventions to which Türkiye is a party. In addition, the Subproject will be planned and implemented in accordance with the environmental and social

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requirements of the İLBANK and WB, as well as relevant Good International Industry Practice (GIIP) standards.

In this context, the environmental and social management of the Subproject will be guided by the following key frameworks, policies, and standards:

➤ **National Legal and Regulatory Framework**

The Subproject will comply with all applicable national laws, regulations, and secondary legislation governing environmental protection, wastewater management, occupational health and safety, land use, and social considerations in Türkiye. Compliance with national permitting, approval, and monitoring requirements constitutes a fundamental prerequisite for Subproject implementation.

➤ **İLBANK Environmental and Social Management System (ESMS)**

İLBANK has established an Environmental and Social Management System (ESMS), effective as of 24 December 2023, which applies to all projects and subprojects financed through International Financial Institutions, including the GFC Project. The ESMS provides the institutional framework for the screening, classification, assessment, management, monitoring, and reporting of environmental and social risks and impacts associated with İLBANK-financed investments.

The Subproject is subject to the requirements of the İLBANK ESMS, including environmental and social screening, risk classification, preparation of appropriate E&S instruments, and ongoing monitoring and reporting throughout the project lifecycle.

➤ **World Bank Environmental and Social Framework (ESF, 2018)**

The Subproject will be implemented in accordance with the World Bank Environmental and Social Framework (ESF, 2018), including the relevant Environmental and Social Standards (ESSs) that form part of the ESF. The ESSs establish the requirements for identifying, assessing, and managing environmental and social risks and impacts, as well as for stakeholder engagement, labor and working conditions, community health and safety, land acquisition, and biodiversity protection, as applicable to the Subproject.

➤ **World Bank Group Environmental, Health and Safety Guidelines (EHSGs)**

The Subproject will be implemented in line with the World Bank Group General Environmental, Health and Safety Guidelines (2007), which provide internationally recognized performance levels and measures for environmental protection, occupational health and safety, and community health and safety. These guidelines will be applied to construction and modernization activities at the Hurma Wastewater Treatment Plant under the Subproject as Good International Industry Practice.

➤ **Sector-Specific Environmental, Health and Safety Guidelines**

In addition to the General EHSs, the following sector-specific World Bank Group Environmental, Health and Safety Guidelines are considered applicable to the Subproject and will be used as reference standards, where relevant:

- Environmental, Health and Safety Guidelines for Water and Sanitation (2007), addressing issues related to wastewater treatment, reuse of treated wastewater, and sludge management systems;
- Environmental, Health and Safety Guidelines for Waste Management Facilities (2007), as applicable to the handling, storage, and disposal of solid and hazardous waste generated during construction and rehabilitation activities.

➤ **Other Applicable Good International Industry Practice (GIIP)**

Where relevant, the Subproject will also take into account other internationally recognized GIIP standards and guidance documents applicable to wastewater treatment and municipal infrastructure projects, including:

- internationally accepted occupational health and safety management principles for construction activities;
- internationally recognized best practices related to wastewater treatment plant operation, sludge handling, and energy recovery systems;
- relevant technical standards and best practices issued by other international financial institutions for municipal wastewater infrastructure projects, where consistent with World Bank requirements.

Overall, the environmental and social management of the Subproject will be based on a combination of national legal requirements, İLBANK’s ESMS, the World Bank ESF and ESSs, and applicable GIIP. This integrated approach is intended to ensure that environmental and social risks and impacts associated with the Subproject are managed in a systematic, transparent, and proportionate manner throughout all stages of Subproject implementation.

Table 1 outlines the relevance of the World B ESSs to the Subproject.

**Table 1:** Relevance of the WB ESSs to the Subproject

ESSs	Definition	Relevance to the Subproject
ESS 1	Assessment and Management of E&S Risks and Impacts	Relevant to the Subproject
ESS 2	Labor and Working Conditions	Relevant to the Subproject
ESS 3	Resource Efficiency and Pollution Prevention and Management	Relevant to the Subproject
ESS 4	Community Health and Safety	Relevant to the Subproject
ESS 5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant to the Subproject

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ESS 6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant to the Subproject
ESS 7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not relevant in Türkiye
ESS 8	Cultural Heritage	Relevant to the Subproject
ESS 9	Financial Intermediaries	Not relevant to the Subproject
ESS 10	Stakeholder Engagement and Information Disclosure	Relevant to the Subproject

When national requirements differ from the levels and measures presented in the EHSs, the Subproject will achieve or implement whichever is more stringent.

A summary of the national legislation and international standards applicable to the management of environmental, social, health, and safety aspects of the Subproject is provided in Annex G.

#### 1.4. Review and Update

This ESMP will be reviewed and updated as necessary during Subproject implementation in order to reflect changes in national legislation, updates to İLBANK's environmental and social policies and practices, or other relevant developments. Circumstances that may warrant updates to the ESMP include, but are not limited to, changes in the organizational structure, the occurrence of significant incidents or accidents, or the introduction of new tools, software, or databases within İLBANK's Environmental and Social Risk Management System.

All ESMP-related updates, notifications, and reporting will be carried out by ALDAŞ on behalf of the Sub-borrower, and official communication and coordination with İLBANK will be undertaken directly by ALDAŞ.

#### 1.5. Implementation Arrangements

The Sub-borrower will hold ultimate responsibility for implementing this ESMP, ensuring compliance by the Sub-borrower and contractor teams (including sub-contractors engaged for the Subproject) throughout the sub-financing agreement lifecycle. The Sub-borrower will ensure that adequate financial and human resources are allocated to enable effective ESMP implementation across the Sub-borrower, supervision consultant, contractor, and sub-contractor organizations throughout the sub-financing agreement lifecycle.

The Sub-borrower will determine the arrangements for the Subproject's operation and will be responsible for ensuring compliance with the national legislation and Operation ESMP during its operation phase.

The roles and responsibilities of the Sub-borrower, contractor and sub-contractor teams concerning ESMP implementation are detailed in Chapter 5.

## 2. SUBPROJECT DESCRIPTION

### 2.1. Subproject Information

The Subproject involves the strengthening and modernization of the existing wastewater management infrastructure in the Döşemealtı District of Antalya Province through the construction of new sewerage networks and pumping station, and the operation of these facilities to ensure the safe conveyance of collected wastewater to the Hurma Wastewater Treatment Plant. Key technical information on the Subproject is summarized in Table 2.

The Subproject is located within the boundaries of the Döşemealtı District in Antalya Province, specifically covering the neighborhoods of Yeniköy, Bahçeyaka, Altınkale, Yağca and Yeşilbayır. Due to its permeable geological formation, the Döşemealtı region is of critical importance for groundwater reserves and is situated within the feeding basin of the Kırkgöz Water Source, one of Antalya's primary drinking water resources. Currently, domestic wastewater in the region is stored in technically inadequate septic systems; this situation poses a serious pollution threat to both groundwater and public health due to the risks of leakage and overflow.

The Subproject primarily focuses on the construction of a new collection network and the full integration of the region into the integrated wastewater system of the Antalya Metropolitan Municipality. The activities to be implemented under the Subproject include:

- Construction of approximately 200 km of new sewerage lines to expand the district's wastewater collection infrastructure and connection to Hurma Wastewater Treatment Plant.
- Installation of pipelines with diameters ranging from Ø200 mm to Ø800 mm (HDPE corrugated and concrete/reinforced concrete), designed in accordance with hydraulic capacity and topographical conditions
- Construction of 1 new pumping station at Yeşilbayır Neighbourhood to ensure continuity in areas where wastewater cannot be conveyed via gravity due to elevation differences
- Decommissioning of existing septic systems and ensuring the connection of all domestic wastewater to closed, standardized sewerage lines
- Ensuring the uninterrupted conveyance of collected wastewater via the existing main interceptor line to the Hurma Wastewater Treatment Plant, which provides advanced biological treatment
- Integration of modern infrastructure equipment to enhance operational efficiency and facilitate maintenance processes

Construction activities will primarily take place along designated routes and public roads within the Döşemealtı District. The Subproject does not involve the construction of a new treatment

plant; instead, it is a network expansion investment aimed at collecting existing wastewater and delivering it to the nearest and most suitable advanced treatment center (Hurma WWTP).

In summary, the Subproject is a strategic infrastructure investment involving the modernization and capacity increase of urban wastewater infrastructure to prevent uncontrolled wastewater discharges in the Döşemealtı region, protect the Kırkgöz Water Source, and reduce the pollution load reaching the Gulf of Antalya.

Additional information on the construction and operation phase activities and facilities, as well as Associated Facilities (AFs), is provided in the subsequent sections of this Chapter.

**Table 2:** Key Technical Information on the Subproject

Component	Features
<b>Sanitation</b>	
<b>Sewerage</b>	<p>The Subproject includes the construction of a new sewer network in the Döşemealtı District. The system will convey domestic wastewater to the Hurma Wastewater Treatment Plant via the existing main interceptor line.</p> <ul style="list-style-type: none"> <li>- Type of sewer: Conventional municipal wastewater sewer system</li> <li>- Length: Approximately 200 km</li> <li>- Diameter: Ø200 mm, Ø300 mm (HDPE Corrugated); Ø400 mm, Ø500 mm, and Ø800 mm (Concrete/Reinforced Concrete)</li> <li>- Material: HDPE Corrugated and Concrete/Reinforced Concrete pipes</li> <li>- System type: Mainly gravity sewer system with pumping station where required</li> <li>- Pressure rating: Not applicable for gravity sewers; PN10/PN16 for pressurized discharge lines</li> <li>- Capacity: Designed to serve the neighborhoods of Yeniköy, Bahçeyaka, Altınkale, Yağca and Yeşilbayır.</li> </ul>
<b>Wastewater Collector Line</b>	<p>The collector line, to which the planned sewer network will be connected, is already in place and transports the collected wastewater to the Hurma Wastewater Treatment Plant (WWTP).</p>
<b>Wastewater Treatment Facilities</b>	<p>The Subproject does not include the construction of a new treatment plant. Collected wastewater will be conveyed to the existing Hurma Wastewater Treatment Plant (WWTP).</p> <p>Hurma WWTP Specifications:</p> <ul style="list-style-type: none"> <li>- Design Capacity: Approx. 1,400,000 Population Equivalent (PE)</li> <li>- Average Capacity: Approx. 210,000 m<sup>3</sup>/day</li> <li>- Process: Advanced biological treatment (Bardenpho process) providing carbon, nitrogen, and phosphorus removal.</li> </ul>
<b>Pumping and Lifting Stations</b>	<p>The Subproject includes the construction of 1 new wastewater pumping station to ensure the continuity of flow in areas where gravity conveyance is not feasible due to elevation differences.</p> <ul style="list-style-type: none"> <li>- Quantity: 1 units</li> <li>- Function: Lifting collected wastewater to the next collection point or the main interceptor line.</li> </ul>

Component	Features
Others	The Subproject will include the installation or improvement of: <ul style="list-style-type: none"> <li>- Flow meters and monitoring instruments</li> <li>- Integration with automated control systems (SCADA)</li> <li>- Valves and pipeline control systems</li> <li>- Advanced pipe jointing technologies to ensure high sealing, specifically to protect the Kırkgöz Water Source.</li> </ul>

## 2.2. Subproject Location

The Subproject is situated within the administrative boundaries of the Döşemealtı District. The scope of the Subproject encompasses the construction of approximately 200 kilometres of sewerage network covering the neighbourhoods of Yeniköy, Bahçeyaka, Altinkale, Yağca and Yeşilbayır, along with 1 wastewater pumping station to be positioned at critical locations along the alignment.

The sewerage network pipelines are planned to be installed primarily within existing rights-of-way (RoW) of zoning roads and public areas. For the sites required for the wastewater pumping station, it is planned to utilise publicly-owned area. This strategic approach aims to eliminate the need for private land acquisition, thereby contributing to the mitigation and limitation of the Subproject's potential environmental and social impacts.

Further details on parcel ownership, land acquisition methods and status are provided in Section 3.4.

A map of the Subproject location is presented in **Figure 1**.

**Table 3:** Parcels Overlapping with the Subproject

District	Neighborhood/Village	Lot/ Parcel No.	Land Registry Type	Current Land Use
<b>Linear Subproject Facilities (e.g. Water Supply Network, Sewerage, etc.)</b>				
Döşemealtı	Yeniköy, Bahçeyaka, Altinkale, Yağca Yeşilbayır	Zoning roads and areas under public ownership		

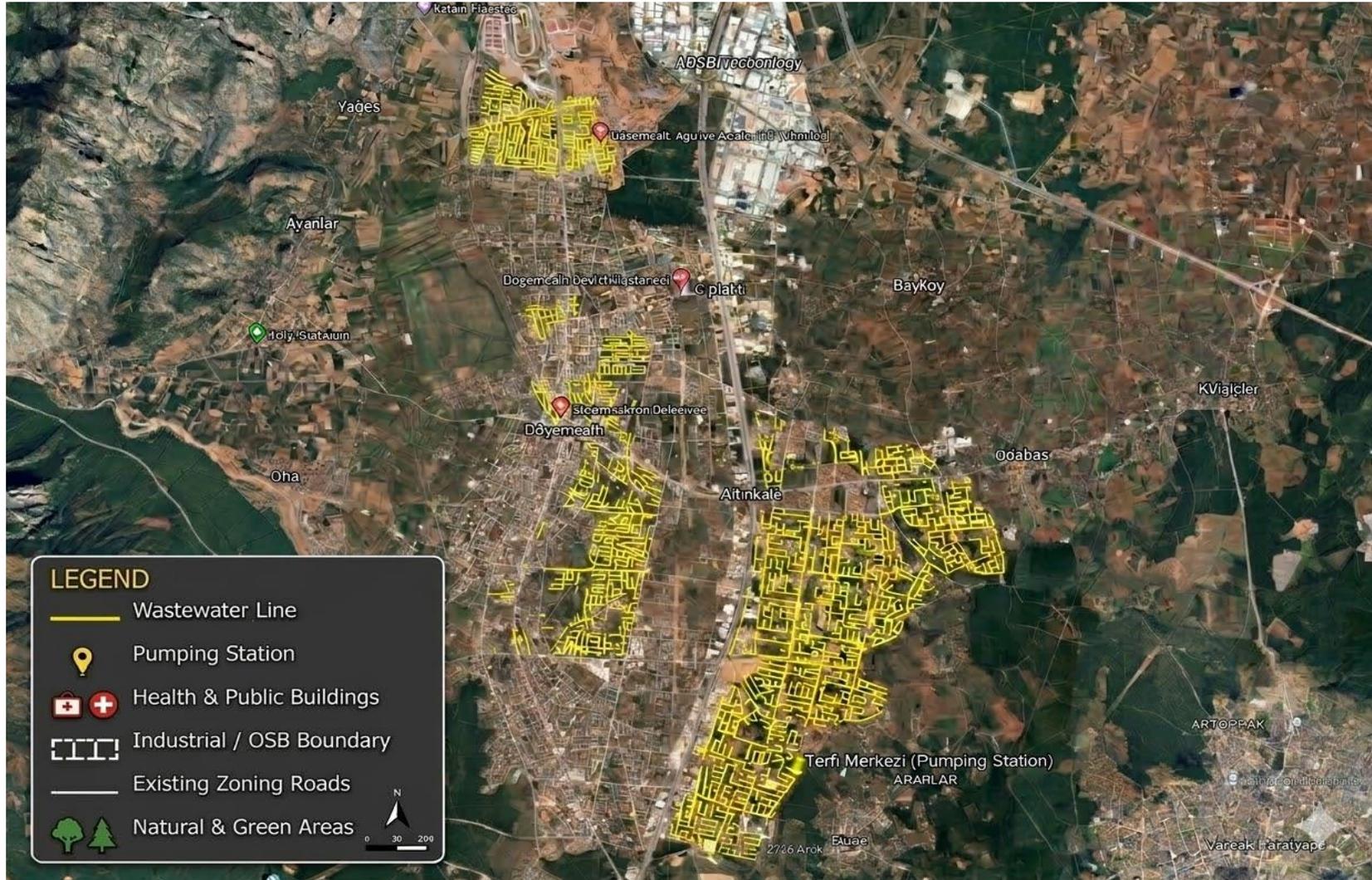


Figure 1: Map of Subproject Location

### 2.3. Site Access Route

The Subproject will be implemented in the already developed neighborhoods of the Döşemealtı District (Yeniköy, Bahçeyaka, Altinkale, Yağca and Yeşilbayır). Therefore, access to construction sites and pumping station areas will be provided entirely through existing urban zoning roads and neighborhood streets. Within the scope of the Subproject, no construction of new primary access roads is planned to reach the site camp or the working alignments.

### 2.4. Associated Facilities

There are no Associated Facilities (AFs) identified under the scope of this Subproject. According to the World Bank's ESF, an Associated Facility refers to a facility or activity that is not financed as part of the project but is directly and significantly related to it, carried out or planned to be carried out contemporaneously, and necessary for the project to be viable.

These facilities or activities must meet all the following criteria:

- Directly and significantly related to the project – Their existence or operation is essential for the project to function.
- Carried out or planned contemporaneously – They are developed, implemented, or operated at the same time as the project.
- Necessary for the project's viability – Without them, the project could not achieve its intended purpose.

Associated Facilities are subject to the World Bank's ESSs to ensure they comply with sustainability and risk management requirements.

Since there will be no associated facilities within the scope of the Subproject, this scope is not included in the assessment.

### 2.5. Other Institutions' Infrastructure to be Displaced

Based on the route assessments and feasibility studies conducted for the Subproject, no existing infrastructure belonging to other public institutions or private entities that overlaps with the Subproject corridor and would require relocation or management during construction has been identified.

Accordingly, no activities related to the relocation of third-party infrastructure are anticipated under the Subproject. Should any unforeseen infrastructure be encountered during construction, appropriate measures will be taken in coordination with the relevant institutions, in accordance with applicable legislation and project documentation.

### 2.6. Subproject Impact Area

Within the scope of this ESMP, the Area of Influence (AoI) of the Subproject has been defined in accordance with the World Bank's Environmental and Social Standard ESS1: Assessment and Management of Environmental and Social Risks and Impacts. The AoI represents the

spatial extent within which direct, indirect, and cumulative environmental and social impacts may occur during the construction and operation phases of the Subproject. In defining the AoI, due consideration has been given to the type and nature of project activities, construction methods, existing land use, proximity to settlements, access and traffic arrangements, and the range of potential environmental and social impact pathways.

For the transmission pipeline, the excavation corridor width (including pipe diameter) is approximately 6 m. Due to excavation works, temporary material stockpiling, equipment maneuvering, and temporary access arrangements, additional impacts are expected to occur on both sides of the pipeline alignment during construction. Accordingly, for the construction phase, an AoI corresponding to an influence buffer of approximately 10–20 m on each side of the pipeline centerline, resulting in an overall corridor of approximately 20–40 m, has been considered. Within this influence band, temporary impacts related to noise, dust generation, construction waste, temporary land use, and traffic and access disruptions are expected. These impacts are anticipated to be temporary in nature and limited to the construction period.

### Direct Impact Area

The direct impact area covers the routes of the sewerage network where excavation, pipe-laying, and backfilling activities will be carried out, as well as the locations where pumping stations will be constructed. The sewerage pipelines will largely be installed along existing cadastral roads and infrastructure corridors within the administrative boundaries of Döşemealtı District in Antalya Province. Since construction works will be implemented within existing road alignments and public infrastructure corridors, the physical footprint of the project is expected to remain limited to these areas.

Within the direct impact area, several sensitive receptors are located along or in close proximity to the project route. These include religious buildings, educational institutions, commercial establishments, sports facilities, accommodation facilities, healthcare services, and public-use areas.

In Altinkale Neighborhood, sensitive receptors located near the project route include commercial establishments such as Adıbey Catering, A101 Market, and Domino's Restaurant; religious buildings including Çukurcaaltı Mosque and Hacı Osman Mosque; educational institutions such as Şehit Metin Darbaş Middle School and a private education and rehabilitation center; and sports facilities such as the Akdeniz Akademi Swimming Pool.

In Yeşilbayır Neighborhood, facilities located within or near the project route include industrial facilities such as the M. Paşa Municipality Asphalt Plant; sports facilities including Padel Park Arena; educational institutions such as Döşemealtı Şehit Volkan Canöz High School and the Private Antalya Education and Rehabilitation Center; and commercial and industrial establishments including File Market, Antalya Tachograph, and Atakman Mercedes Service.

In Yeniköy Neighborhood, the project route passes in proximity to socially sensitive facilities including İbrahim Bilgin Mosque, Dilek Recep Özer Middle School, and Döşemealtı Vocational and Technical Anatolian High School. Commercial establishments such as BİM

Market and Antalya Sofrası Catering are also located along the project corridor. In addition, public and social facilities such as the Döşemealtı Sports Hall, Masal Park, and Yavuz Selim Student Dormitories are located within the broader impact area.

In Yağca Neighborhood, sensitive receptors located near the project alignment include commercial establishments such as A101 Market and Özkaya Market; public-use areas such as the covered market area; educational institutions including Nursel Ayhan Kadam Primary School; and religious buildings such as Yağca Mosque.

In Bahçeyaka Neighborhood, the project route passes near educational institutions including Saime Salih Konca Kindergarten and commercial establishments such as Solo Center.

### **Indirect Impact Area**

The indirect impact area includes the surrounding areas that may be indirectly affected by construction activities. During the construction phase, impacts such as noise, vibration, movement of construction equipment, transportation of materials, temporary traffic arrangements, and short-term access restrictions may occur.

Sensitive receptors located at a certain distance from the project route may experience limited indirect impacts. For example, the Döşemealtı Oral and Dental Health Clinic in Yeniköy Neighborhood is located approximately 100 meters from the project route and is therefore considered within the indirect impact area. However, these impacts are expected to be localized, temporary, and manageable.

### **Potential Environmental Impacts**

The main environmental impacts that may arise during the construction phase include dust emissions resulting from excavation activities, noise and vibration associated with construction equipment and machinery, generation of construction waste, and temporary traffic congestion due to construction-related vehicle movements. In addition, excavation works may lead to temporary surface runoff and sediment transport, particularly during rainy periods. Construction machinery and excavation activities may also cause accidental damage to existing infrastructure; however, this is not expected to be significant, as the project area largely consists of newly developing areas with limited existing infrastructure.

To minimize these impacts, environmental management measures such as regular watering for dust suppression, proper maintenance of construction equipment, appropriate management of excavation areas, and disposal of construction wastes in accordance with applicable regulations will be implemented.

### **Potential Social Impacts**

During the construction phase, certain short-term social impacts may occur for local communities and businesses. These may include temporary access restrictions, short-term disruptions to commercial activities, traffic congestion caused by construction vehicles, and disturbance related to construction noise.

However, since construction activities will be implemented in phases and work areas will be kept limited, these impacts are expected to remain temporary and manageable through appropriate traffic management and construction planning practices.

### **Cumulative and Positive Impacts**

From a cumulative impact perspective, the Subproject represents an important infrastructure investment aimed at expanding the existing wastewater infrastructure in Döşemealtı District and integrating local settlements into a comprehensive wastewater management system.

Since project activities mainly consist of excavation and pipe-laying works carried out within existing road corridors, significant cumulative adverse impacts in combination with other ongoing commercial, social, or infrastructure activities in the area are not anticipated.

Upon completion of the project, domestic wastewater generated within the service area will be safely collected and conveyed to the Hurma Wastewater Treatment Plant. This will prevent uncontrolled wastewater discharges and is expected to create positive environmental outcomes, particularly in terms of protecting groundwater resources, reducing environmental pollution, and improving overall environmental quality in the project area. Furthermore, the project is expected to contribute to public health protection, improved environmental hygiene conditions, and strengthening of sustainable wastewater management practices in the region.

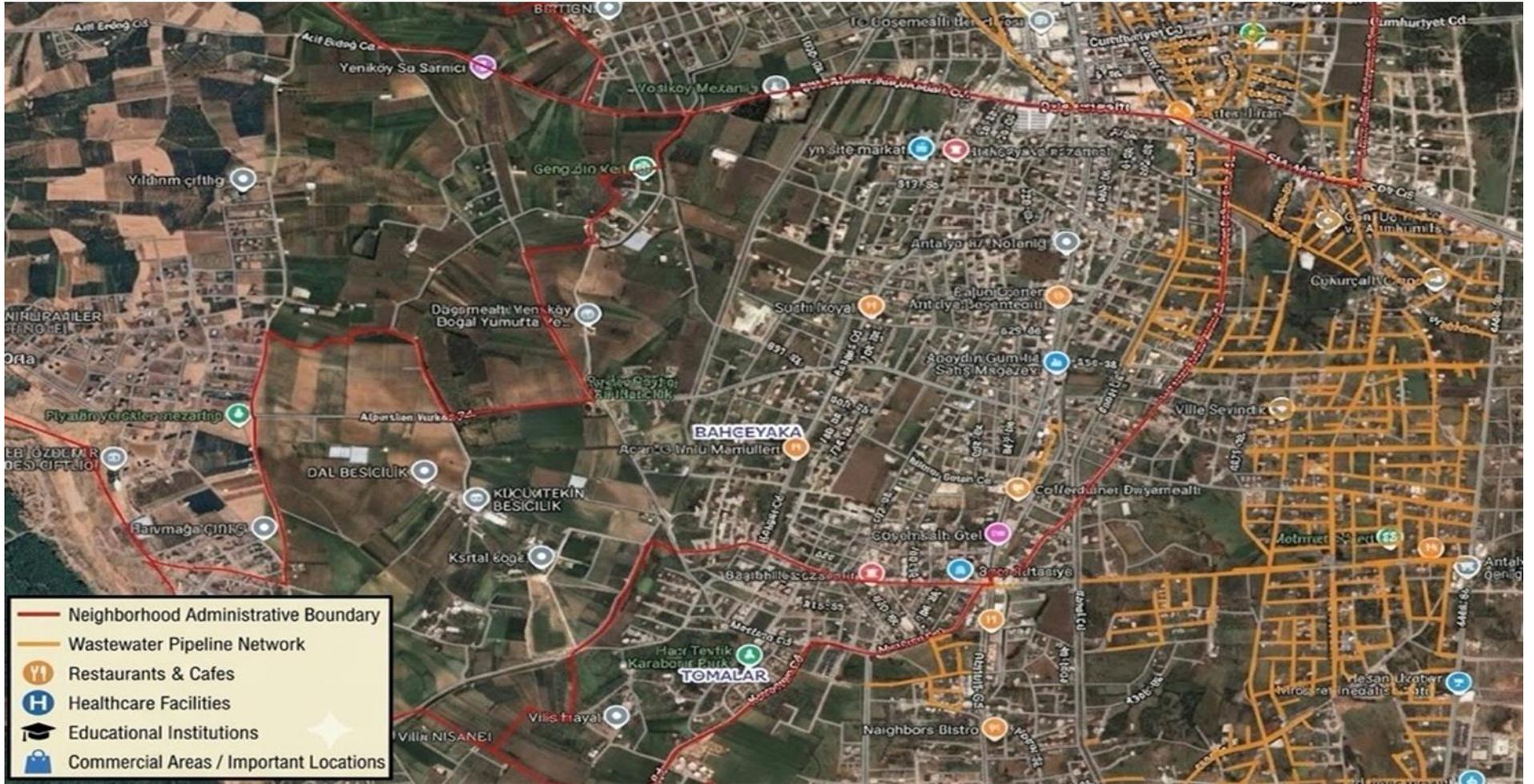


Figure 2: Bahçeyaka Neighborhood Wastewater Pipeline Project Route and Area of Influence



Figure 3: Yeniköy Neighborhood Wastewater Pipeline Project Route and Area of Influence

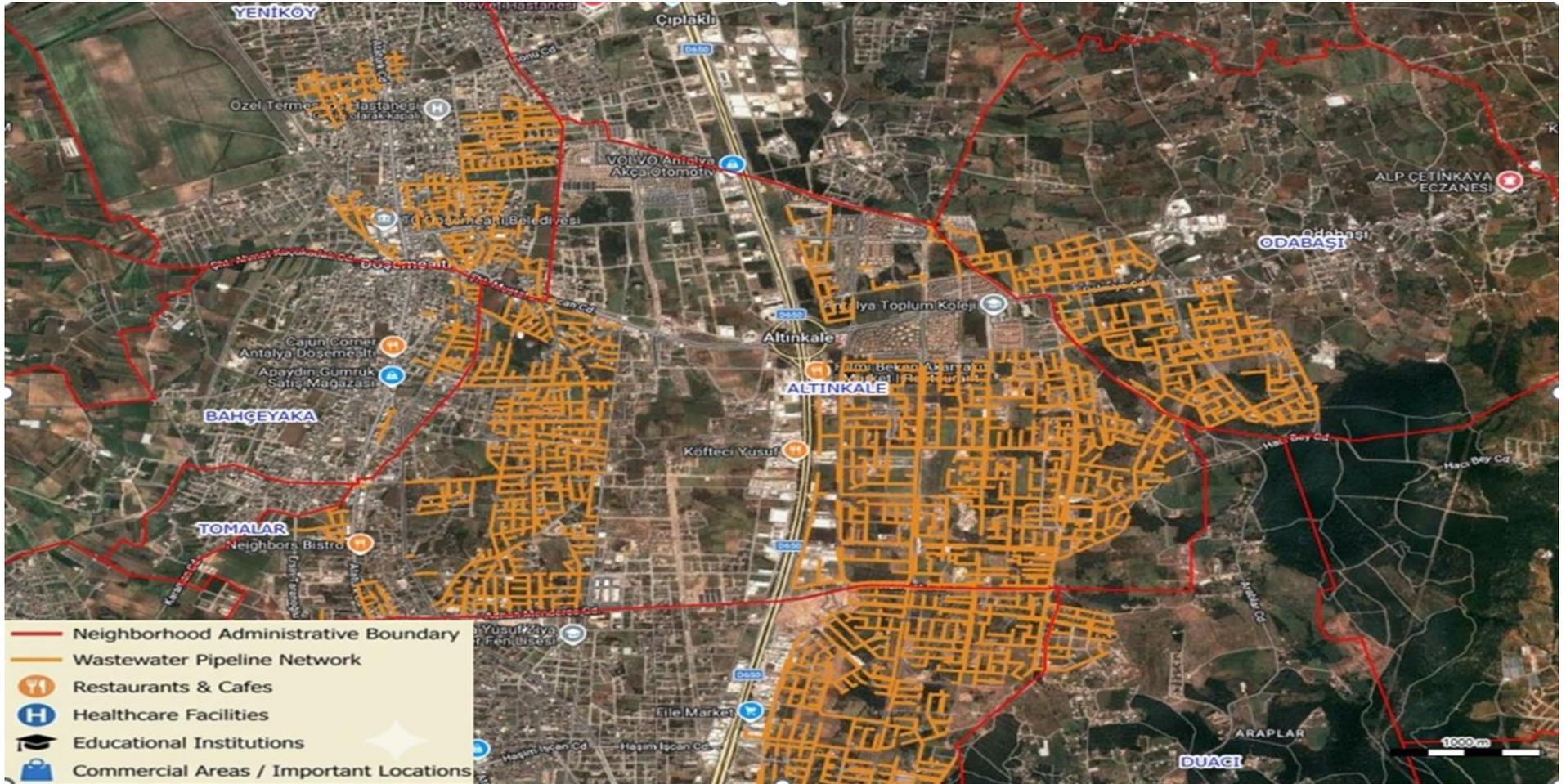


Figure 4: Altınkale Neighborhood Wastewater Pipeline Project Route and Area of Influence

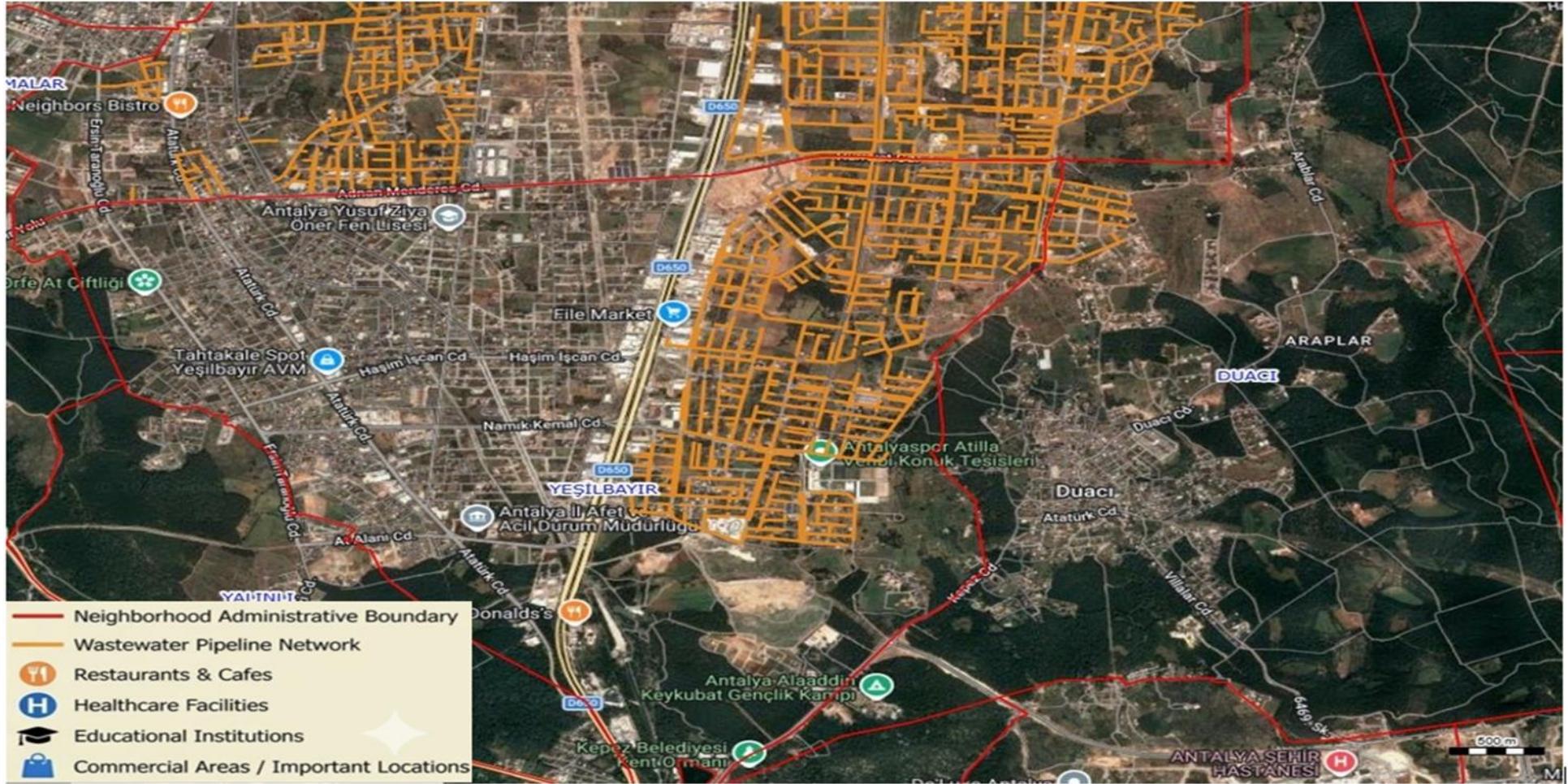


Figure 5: Yeşilbayır Neighborhood Wastewater Pipeline Project Route and Area of Influence

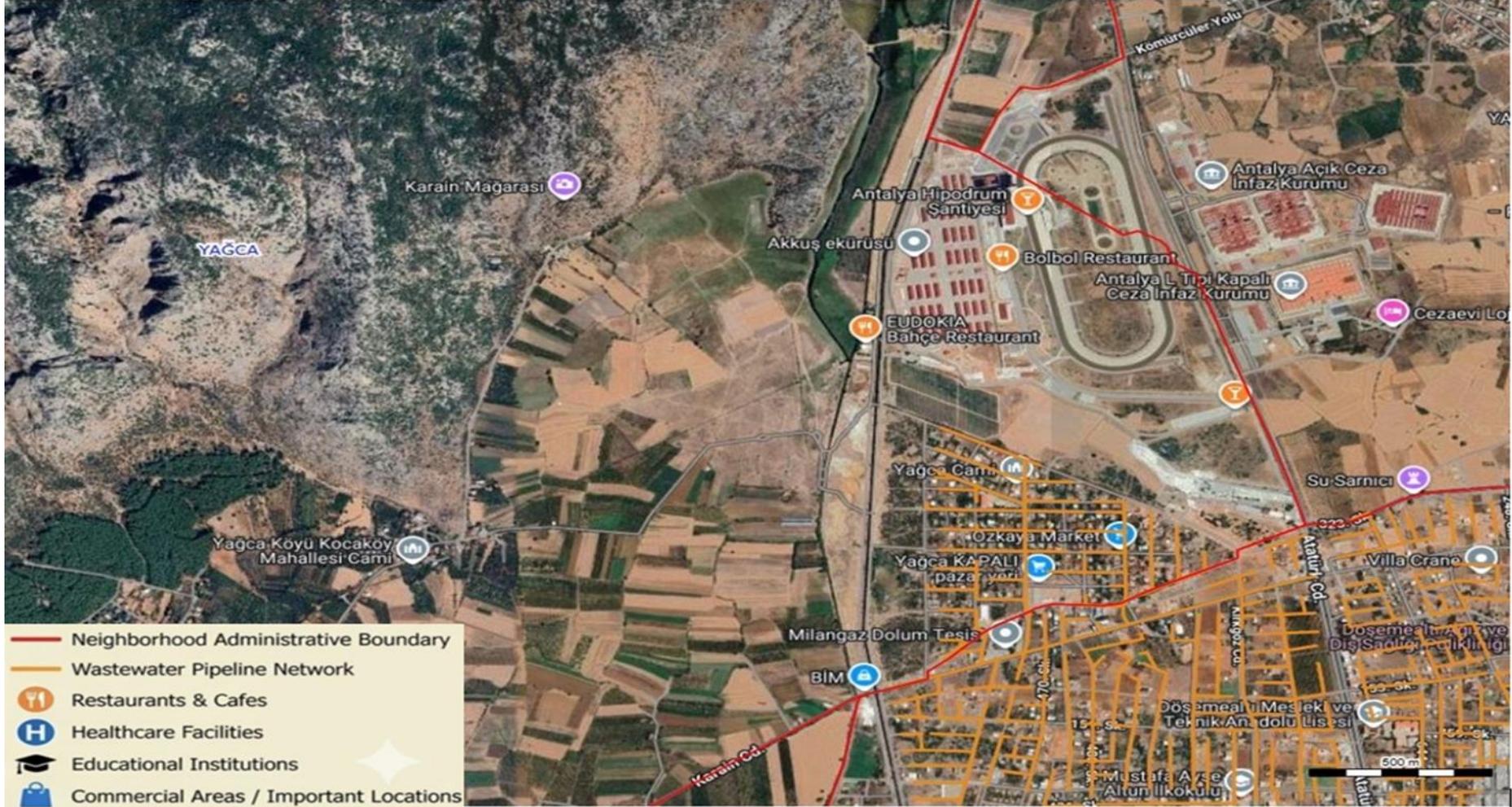


Figure 6: Yağca Neighborhood Wastewater Pipeline Project Route and Area of Influence

## 2.7. Environmental and Social Baseline

Within the scope of this Environmental and Social Management Plan (ESMP), a combined methodology based on desk-based studies and field observations was applied to determine the environmental and social baseline conditions in Döşemealtı District. In order to comprehensively characterize the existing conditions of the project area, both secondary data sources and on-site assessments were utilized. The main data collection and review methods used for the baseline assessment are summarized below.

### Data Collection and Review Methods

- **Use of Existing Data and Literature Review:**

To describe the biophysical and socio-economic characteristics of the Project Area, current technical reports prepared by the Antalya Water and Wastewater Administration (ASAT), zoning plans of the Döşemealtı Municipality, and sub-scale analytical studies prepared within the framework of the “Green and Future Cities Project” were reviewed. In addition, climate change projections prepared for the Antalya Basin and the Western Mediterranean Basin (reports of the Turkish State Meteorological Service and the General Directorate of Water Management) as well as the data presented in the ASAT Strategic Plan (2025–2029) were used as key reference sources.

- **Field Observations:**

Site visits were carried out by technical teams along the proposed sewer network routes and at the locations of the one planned pumping station. During these visits, potential sensitive receptors (such as residential areas, schools, places of worship, and other social facilities) were identified in situ, and the existing land-use characteristics of the Project Area were verified.

- **Hydrogeological Assessments:**

As the Project Area is located within the recharge basin of the Kırkgöz Water Source, the hydrogeological characteristics of the area were examined in detail. In this context, the permeable geological structure of the region, aquifer characteristics, and potential groundwater contamination risks were evaluated based on existing hydrogeological studies, groundwater protection zone maps, and relevant thematic datasets.

- **Socio-Economic Data:**

Population projections for the region, neighborhood-level demographic structure, and public health complaints related to the use of septic systems currently serving wastewater management were analyzed based on records obtained from ASAT and relevant municipal authorities. These data formed the basis for the assessment of existing social conditions and infrastructure needs within the Project Area.

**Table 4:** Summary of Baseline Field Studies

Subject	Date of the Field Study	Experts who Participated in the Field Study
Environmental and Social Site Visit	10 February 2026	Environmental and Social Specialist
Stakeholder Engagement Meeting	13 March 2026	Social Specialist

## 2.7.1. Physical Environment

### 2.7.1.1. Topography

The Döşemealtı District covers an area of 687 km<sup>2</sup> within the provincial boundaries of Antalya. The district's terrain generally exhibits a flat and slightly sloping morphology, and its average elevation from sea level is approximately 301 m. This structure provides a suitable foundation for urban development, agricultural activities, and infrastructure investments.

A significant portion of the district's topography can be classified as areas with a 0–5% slope. These areas offer suitable conditions especially for agricultural production, road and sewerage infrastructure, and drinking water networks. Flat lands are also evaluated as regions where the risk of flooding is relatively low.

In the eastern and northeastern parts of the district, the extensions of the Taurus Mountains are effective, and high-slope areas (approximately 15–30% slope) are observed around Göktünek Hill and Koca Mountain. These elevations influence the local hydrological regime, accelerating surface water flow and determining natural drainage systems. In infrastructure and settlement planning to be carried out in these areas, topographical constraints, erosion risk, and water management should be evaluated as critical factors.

In terms of land use, the western and central regions of the district are suitable for denser settlement and agricultural use, while mountainous areas are protected as forest and pasture. This differentiation is a parameter that must be considered both in environmental protection measures and in the planning of infrastructure projects.

In conclusion, the topographical structure of the Döşemealtı District offers a suitable ground generally for infrastructure, water management, and urban development projects.

### 2.7.1.2. Geology

In geological terms, the Döşemealtı District consists of the Beydağları autochthon, Antalya nappes, Yeşilbarak nappe, and Lycian nappes, as well as the Miocene–Quaternary neo-autochthonous units covering them.

The Beydağları autochthon is the most common geological unit in the district; it is represented by the Middle–Upper Triassic Kuyubaşı dolomite, the Beydağları formation consisting of Jurassic–Cretaceous neritic limestones, the Danian Çamlidere olistostrome, and the Küçükköy formation consisting of Upper Lutetian–Priabonian sandstone, claystone, and argillaceous limestones.

The Antalya nappes consist of rock assemblages developed in different geological periods and are observed in the region with the Çataltepe, Alakırçay, Tahtalıdağ, and Tekirova ophiolite nappes.

The Lycian nappes show a more limited distribution in the district and are represented by the Marmaris ophiolite nappe and the Domuzdağ nappe.

The Yeşilbarak nappe is observed with the Elmalı formation consisting of Upper Lutetian–Lower Miocene clastics and shows lateral continuity between the Beydağları autochthon and the Lycian nappes.

The neo-autochthonous cover units in the district consist of the Upper Burdigalian–Langhian Oymapınar limestone, the Serravallian Karpuzçay formation, the Tortonian Aksu formation, the Pliocene Gebiz limestone, Eskiköy, Yenimahalle, and Kurşunlu formations, and Quaternary alluvial and colluvial units.

Döşemealtı is located at the foothills of the Western Taurus Mountains. The geological structure of the district mainly consists of hard and durable rocks. These ground characteristics contribute to the absorption of seismic waves in the local soil and the reduction of the vibration to which structures are exposed. In the northern regions, the ground is generally stable, and the risk of liquefaction is low.

While areas containing carbonate units among the geological formations form steep peaks, conversely, the "Gölovaları" (poljes) developing due to karstic dissolution play an active role in the formation of intermountain plains. The lithological groups forming this rugged morphology work in harmony with tectonic activities (faulting, folding, etc.) and jointly control the general drainage system. Accordingly, while tectonically controlled drainage networks develop in the inner parts of the riverbeds, it is observed that rivers form a dendritic drainage network after emerging from steep and karstic limestone gorges.

### 2.7.1.3. Tectonics and Seismicity

Antalya and its surroundings are affected by damaging earthquakes occurring on the Fethiye-Burdur Fault Zone, the Pliny and Strabo trenches of the Hellenic-Cyprus Arc, the section extending into the Gulf of Antalya, and the faults along the Aksu Thrust.

Earthquakes generally concentrate along the Pliny and Strabo Trenches of the Hellenic-Cyprus Arc. Damaging and destructive earthquakes occur along these faults. On the other hand, intense micro-earthquake activity is also observed within the Gulf of Antalya. No damaging earthquakes have occurred along the Aksu Thrust Fault for hundreds of years. There is another fault thought to extend along the Gulf of Fethiye through Termessos and Phaselis. Since there are block rotations in the columns of the ruins, it is estimated that both ancient cities were destroyed by earthquakes. The Hellenic-Cyprus Arc extends near the southern coast of Türkiye, passing south of the island of Crete and moving in a northeasterly direction from the south of Rhodes towards the Gulf of Fethiye. Between the island of Crete and the Gulf of Fethiye, the Hellenic-Cyprus Arc exhibits the character of a left-lateral strike-slip fault with a reverse fault component along the Pliny and Strabo depressions. Additionally, the Hellenic-Cyprus Arc

forms a concave curve between the Gulf of Antalya, Northern Cyprus, and the Gulf of İskenderun. The northwestern continuation of this arc is represented by the Aksu Thrust Fault, which starts from the Gulf of Antalya and continues in a northwestern direction as a reverse fault. Another depression starts from the Pliny and Strabo Depressions and forms an outward arc toward the south of Cyprus. Along the aforementioned depressions, the African plate is subducting in a NNE direction under the Anatolian block.

- **Kale – Kekova Fault System**

This zone is an active fault system located between the Kaş and Demre districts, approximately 150 km west of Antalya, extending along a NE-SW direction. This fault system has been identified as a normal fault, and the hanging wall block directions have been determined as SE-NW. This is located at distance of approximately 150 km from the AOI of the Project.

- **Cyprus-Hellenistic Fault System**

This is an arc-shaped fault system starting from the south of the Gulf of Antalya and extending from the south of Rhodes towards the Gulf of Fethiye. It exhibits a strike-slip character with a reverse fault component. This is located at distance of approximately 200 km from the AOI of the Project.

- **Burdur Fault System**

This is a normal fault system existing in the province of Burdur, extending in a NE-SW direction, and exhibiting tectonic characteristics in the form of Holocene and surface rupture. This is located at distance of approximately 80 km from the AOI of the Project.

- **Eşen Fault System**

Located within the boundaries of Fethiye, this is a fault system in the Holocene category, partially strike-slip, but generally shaped by normal fault tectonics. However, it has been characterized as suspicious regarding its activity. This is located at distance of approximately 140 km from the AOI of the Project.

Due to the aforementioned earthquake mechanisms, there are historical earthquakes recorded during the non-instrumental period that have affected Antalya in general to date. Some of these were mentioned in the writings of Leonardo Da Vinci in 1459. It was stated that the earthquake occurred off the Gulf, the sea split, and large waves were formed. This information was accessed in 1743 from the records of the Marseille Chamber of Commerce. It was recorded that a great earthquake occurred, the waters receded, and a hill to the west of Sıçan Island was completely submerged. Again, in 1851, a major earthquake estimated to have occurred on the Fethiye-Rhodes Graben was entered into historical records.

Information Regarding Soil and Land Structure In seismic terms, according to the Earthquake Zones Map of Türkiye, Döşemealtı is located between the 1st and 2nd degree earthquake zones and carries a moderate level of earthquake risk. Although there are no active fault lines within the district, the Antalya city center and western parts are located within 1st and 2nd degree earthquake zones; seismic activity in the region is low and generally recorded as small-

magnitude earthquakes. In recent years, small earthquakes with magnitudes of 1.8–4.1 have been observed in the district. These tremors are generally difficult to feel and do not lead to serious structural damage.



Figure 7: Antalya Earthquake Map

Consequently, Döşemealtı district is one of Antalya's relatively safe areas due to its solid ground structure and low liquefaction risk. The location where the activity will take place, Antalya province. The location where the activity will be carried out, Döşemealtı District in Antalya Province, is in the second-degree earthquake zone. However, the medium-level earthquake risk persists, and the implementation of earthquake-resistant building design and ground studies is essential for the region's resilience against disasters.

Table 5: Geological Structure and Ground Characteristics of Döşemealtı District

Feature	Description
Geological Formation	Hard and durable limestone, marble, and ophiolitic rocks
Soil Type	Predominantly stable ground; occasionally loose alluvium
Liquefaction Risk	Low, especially in northern regions
Soil Investigation Requirement	Mandatory for new structures; retrofitting is recommended for existing buildings

According to the Earthquake Zones Map of Türkiye, Döşemealtı is situated between 1st and 2nd degree earthquake zones, carrying a moderate level of seismic risk. It is important to note that no active fault lines are located within the district boundaries. According to AFAD's Interactive Web Application of the Türkiye Earthquake Hazard Map<sup>2</sup>, the PGA475 value for the project area is 0.258 g.

<sup>2</sup> <https://tdth.afad.gov.tr/TDTH/main.xhtml>

Table 6: Seismic Activity Analysis of Döşemealtı District

Date	Magnitude (Mw)	Depth (km)	Impact
May 13, 2024	2.5	7	Micro-seismic activity; no felt
April 4, 2023	4.1	7	Felt by residents; no structural damage reported
November 30, 2023	1.8	5	Instrumental recording; no felt

#### 2.7.1.4. Soil and Land Composition

Data were taken from the "2002 Antalya Agricultural Master Plan." According to the report, major soil groups and the areas they cover are as follows:

- **Red Mediterranean Soils** In the Antalya basin, Red Mediterranean soils cover the widest area with 547,332 hectares. They are widespread especially in the southern and central parts of the basin and extend to the south of Lake Eğirdir in the north. They form a union with red-brown Mediterranean soils, which show a wide distribution particularly in the central basin. These soils are occasionally interrupted by alluvial and colluvial soils. In places where Red Mediterranean soils are located, the average annual precipitation is 800-1250 mm. For this reason, leaching exists in the profile. The majority of these soils are forest and shrubland; a very small part is used as dry and irrigated agriculture, pasture, or vineyard-orchard.
- **Red-Brown Mediterranean Soils** These soils, covering an area of 294,291 hectares in Antalya province, present a collective appearance especially in the central basin up to Lake Eğirdir. They are interrupted by many alluvial and colluvial soils, primarily brown forest soils, and they form a union with red Mediterranean soils. In places where these soils are located, the average annual precipitation is 750-900 mm, which is slightly lower compared to red Mediterranean soils. Despite this, it is at a level to provide leaching in the profile. A large part of red-brown Mediterranean soils is forest; the remaining small part is used as shrubland and in dry agriculture.
- **Brown Forest Soils** They cover the second largest area in the Antalya basin. It is a large soil group with the 326,246 hectares area it covers. Starting from Alanya in the southeast of the basin towards the northwest, they are located between Mediterranean soils and rendzinas. In places where these soils are located, although the average precipitation sometimes reaches 1000 mm, it is mainly around 600 mm. The natural vegetation of these soils is forest trees and shrubs. The vast majority consists of forests and shrublands with good canopy closure; the remaining part constitutes dry agriculture and pasture areas.
- **Chestnut Soils** It is one of the important soils of the Antalya basin and covers an area of 71,883 hectares. It shows a wide distribution in the undulating and slightly wavy geography located around Korkuteli in the west and Isparta and Yalvaç in the north of

the basin. It is mostly found together with colluvial soils. The natural vegetation of these soils is mainly various annual grasses, grass-shrub mixtures, sparse shrublands, and partly sparse forest areas.

- **Rendzina Soils** It is among the important soils of the coastal belt of the Antalya basin. It covers an area of 51,458 hectares in the province. It is found especially together with brown forest soils in the wavy and undulating topography in places where the plain joins high-sloped terrain between Antalya and Manavgat. The natural vegetation is maquis, herbaceous, and cultures. These soils, which are mostly shrubland, are partly used in dry agriculture and rarely in other forms.
- **Regosolic Soils** These are soils that cover very little area in the basin. They cover an area of 7,071 hectares. Natural vegetation is in the form of annual grass species.
- **High Mountain – Meadow Soils** It covers an area of 957 hectares in Antalya province. It is located in the regions of the Akdağ range, extending especially in the southeast of the basin, which are higher than 2,000 meters. Since the places where these soils are located are above the forest limit, the natural vegetation is forest and shrub, dense meadow grasses, and occasionally reedbeds.
- **Saline – Alkali Soils** This group, which covers a very small place in the Antalya basin, covers an area of 876 hectares and is located in the parts of Serik district in the Antalya plain close to the sea. Salinity and alkalinity are high to a degree that will not allow the cultivation of cultural plants. For this reason, the field presents dark-colored bare areas in places. The pastures on these soils are very weak and of poor quality.
- **Alluvial Soils** Although they do not cover a large area in the Antalya basin, it is a group of soils that has a very important place in the basin's agriculture. It covers an area of 119,558 hectares. These soils, formed mainly by rivers and partly by lakes in the basin, are found in every part of the basin since they do not have zonality. They do not have a special climate and natural vegetation. Alluvial soils formed by rivers are encountered as long thin strips or wide plains along Aksu, Manavgat, Köprüçayı, Doyran, Alara, Korkuteli stream, Onaç stream, Kocaçay, Yalvaç stream, Hoyran stream, and Senirkent stream, which constitute the main drainage network of the basin, and their side branches. These traverse the basin mainly in North-South and partly in West-East directions. Alluvials formed by lakes are found in the form of old beds of Eğirdir, Hoyran, Kovada in the north of the basin and Ketsel Lake in the west. A large part of the Antalya basin alluviums is non-saline. Although not much, soils exhibiting salinity and alkalinity are also encountered. Salinity and alkalinity are generally seen in areas exhibiting poor drainage. In alluvial soils located mainly in the coastal region and the upland plain unit of the basin, the topography is flat or near-flat. Irrigated agriculture is carried out in almost half of these soils, and dry agriculture is carried out in the other half. Meanwhile, use types such as shrub, pasture, meadow, vineyard-orchard are also present, albeit very little.

- **Hydromorphic – Alluvial Soils** These soils formed in regions where poor drainage conditions exist in the Antalya basin. It covers an area of 1,336 hectares. They were formed by rivers or lakes. The most important characteristic of these soils, as can be understood from their name, is that they are always wet. For this reason, they are generally not suitable for agriculture through plowing. However, the soil can be tilled in places with careful and intensive measures. The groundwater is high and ponding dominates the soil surface for most of the year. One-third of these soils in the Antalya basin exhibit salinity. It emerges due to insufficient natural slope, concave topography, rising saline groundwaters, floods, or evaporation.
- **Colluvial Soils** Although it does not cover a very large area in the Antalya basin, it is the other soil group that has an important place in the basin's agriculture. It covers an area of 51,339 hectares in the province. Agriculture is carried out by plowing in the majority of these soils. They are used in the form of dry agriculture, irrigated agriculture, and vineyard-orchard. Small amounts of other use types such as meadow-pasture, forest, and shrub are also found.
- **Non-Calcareous Brown Forest Soils** These soils, which have weak forest and shrub cover on them, are highly stratified soils. They cover an area of 220,087 hectares in Antalya province.
- **Organic Soils** Organic soils cover an area of 3,078 hectares in Antalya. The color is dark gray, blue, or green, and it is wet. It turns brown when it comes into contact with air.
- **Coastal Dune** Coastal dunes are found in the coastal strip. It hosts a very small number of shrubs and trees on it. Antalya province has 4,491 hectares of coastal dunes.
- **River Beds** These are stony-gravelly thin strips located along rivers, remaining under water for a large part of the year, and cover an area of 7,513 hectares.
- **Alluvial Coastal Marshes** They are located on the seashore. They are soils that are continuously wet or in a marshy state under the influence of sea and surface floods. These lands, which have no agricultural value, cover an area of 519 hectares in Antalya province.
- **Bare Rock and Debris** There is no soil cover on bare rocks. It covers a fairly large area of 338,843 hectares in Antalya province.

Döşemealtı district is located north of the Antalya provincial center, at the southern foothills of the Taurus Mountains, and represents a transition area where plains, plateaus, and mountainous areas coexist in terms of topography. A significant part of the district's land consists of undulating plateau surfaces and gently sloping agricultural areas; mountainous and rugged areas dominate the northern and western parts. This topographical difference creates diversity in the climatic characteristics, agricultural production forms, and settlement patterns of the region. In the district, typical karstic features such as karstic limestone formations, caves, sinkholes (düdens), dolines, and poljes, where underground water resources are fed, are commonly seen.

It has led to the extensive development of calcareous and terra rossa (red Mediterranean) soils in the district. While alluvial soils suitable for agriculture are mostly found in the plain floors and along the valleys, stony, shallow, and permeable soils dominate the mountainous and plateau areas. This diversity, on one hand, determines the agricultural production potential, and on the other hand, has a direct effect on water resources management, infrastructure planning, and settlement patterns.

### Vegetation

Döşemealtı district is located in a geography where mountainous and plain areas coexist, under the influence of the Mediterranean climate. The altitude and topographical differences of the district are the primary factors determining the diversity of the vegetation. These characteristics directly affect the distribution of natural ecosystems, agricultural activities, and settlement patterns. Döşemealtı draws attention as a region where different plant communities can be observed together, with both its natural flora richness and agricultural areas shaped by human influence.

In Döşemealtı, vegetation is seen in specific belts depending on the effect of altitude and topography:

- **0–600 m Altitudes (Lowland Maquis Belt):** In regions close to the coast and on low slopes, maquis-type plant communities compatible with summer drought dominate. Stunted species such as wild olive (delice), strawberry tree (kocayemiş), Greek strawberry tree (sandal), oleander (zakkum), and wild strawberry are common in this belt.
- **600–1,200 m Altitudes (Mixed Forest Belt):** Slope forests dominated by Turkish pine (kızıldağ) and oak species are found at these altitudes. Additionally, Aleppo pine and black pine species can be encountered.
- **1,200–2,100 m Altitudes (High Mountain Forest):** It is defined as a high forest belt consisting of cedar, fir, Scots pine, beech, and various juniper species. Pure cedar communities draw attention in the high parts of the Western Taurus Mountains.
- **2,100–2,300 m Altitudes (Alpine Meadow Belt):** Above the tree line, high pastures (alpine meadows) adorned with colorful flowers develop during the summer months.
- **Wide Plains of Teke Plateau:** Steppe-type vegetation, formed as a result of the destruction of oak forests, is prominent.

In Döşemealtı district, the natural forest cover has been reduced in some areas due to the effect of settlement, agriculture, and animal husbandry activities, and steppe plants with steppe characteristics have developed in place of these areas. The process of desertification is observed more clearly especially on the Teke Plateau and the flat areas of the district. Nevertheless, thanks to its fertile soil structure, Döşemealtı also stands out as an important agricultural region. In addition to the natural vegetation, typical Mediterranean cultural plants such as olives,

pomegranates, grapes, almonds, figs, and citrus fruits are widely grown, and in recent years, greenhouse farming and cut-flower activities have added diversity to the region's agriculture.

### 2.7.1.5. Meteorology and Climatic Characteristics

Döşemealtı district, while being located in the Mediterranean climate zone, exhibits more temperate and continental characteristics compared to coastal areas due to the increasing altitude. In the district, summer months are hot and dry, while winter months are mild and rainy. The average annual temperature is around 17–18 °C; temperatures can rise up to 35 °C in the summer months and drop to levels of 0–5 °C in the winter months. The annual average precipitation is over 1,000 mm, and the majority of the precipitation is concentrated in the winter and spring months.

Due to the effect of altitude (approximately 250–1,200 meters above sea level), day-night temperature differences are more pronounced compared to the coastal areas. This situation is a factor that must be taken into account, especially in terms of agricultural production and the sustainability of water resources. Furthermore, the transitional characteristic between continental and Mediterranean climates in the district creates diversity in the natural vegetation; in addition to maquis and Turkish pine forests, steppe and highland (yayla) characters are observed in the higher elevations.

Climate characteristics have a direct impact on agricultural production activities, drinking water and irrigation water demand, infrastructure needs, and energy efficiency in the district. Especially the increasing temperature and evaporation rate during the summer months are of critical importance in terms of water resources management.

Environmental and Social Management Report (ESMP)

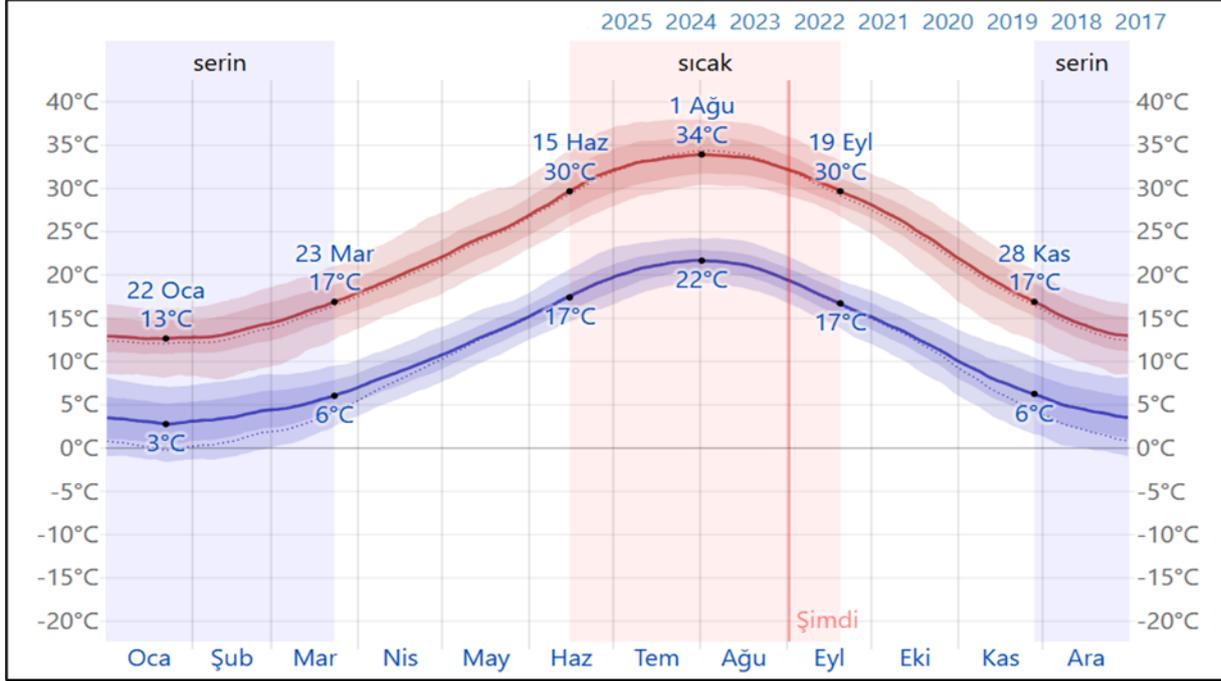


Figure 8: Annual Mean Temperature of Döşemealtı District<sup>3</sup>

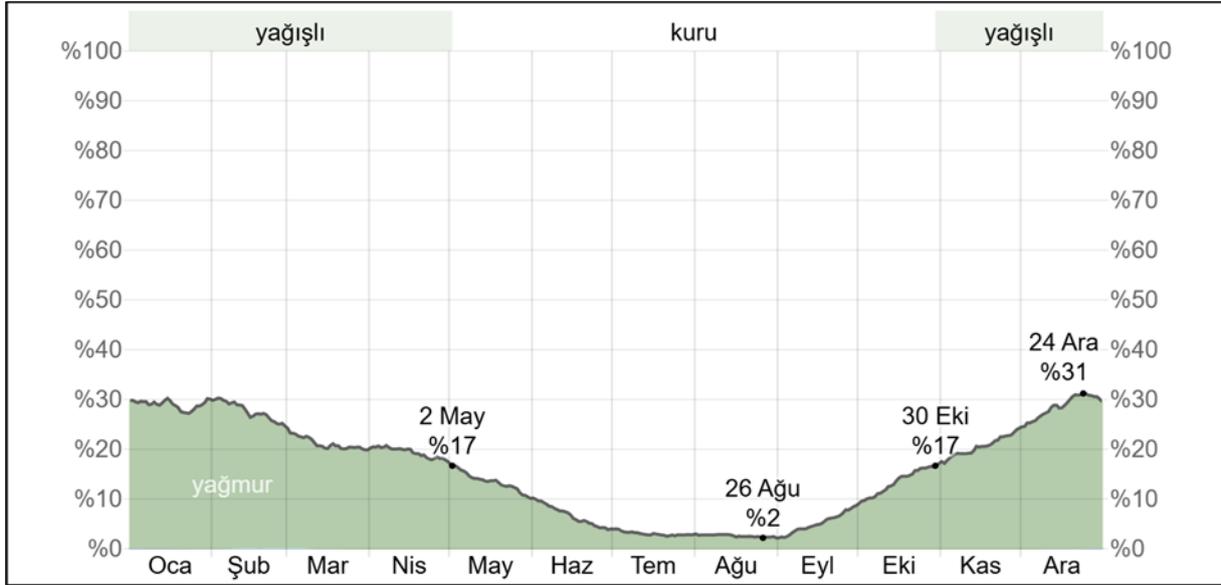


Figure 9: Average Daily Precipitation Probability of Döşemealtı District

<sup>3</sup> <https://tr.weatherspark.com/y/96471/D%C3%B6%C5%9Femealt%C4%B1-T%C3%BCrkiye-Ortalama-Hava-Durumu-Y%C4%B1-Boyunca>

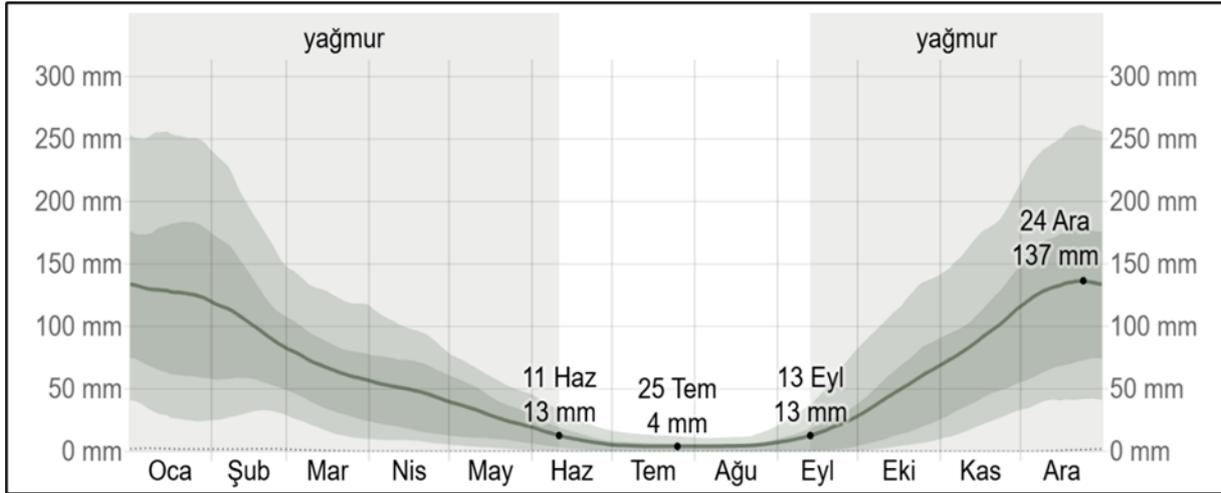


Figure 10: Average Monthly Rainfall of Döşemealtı District

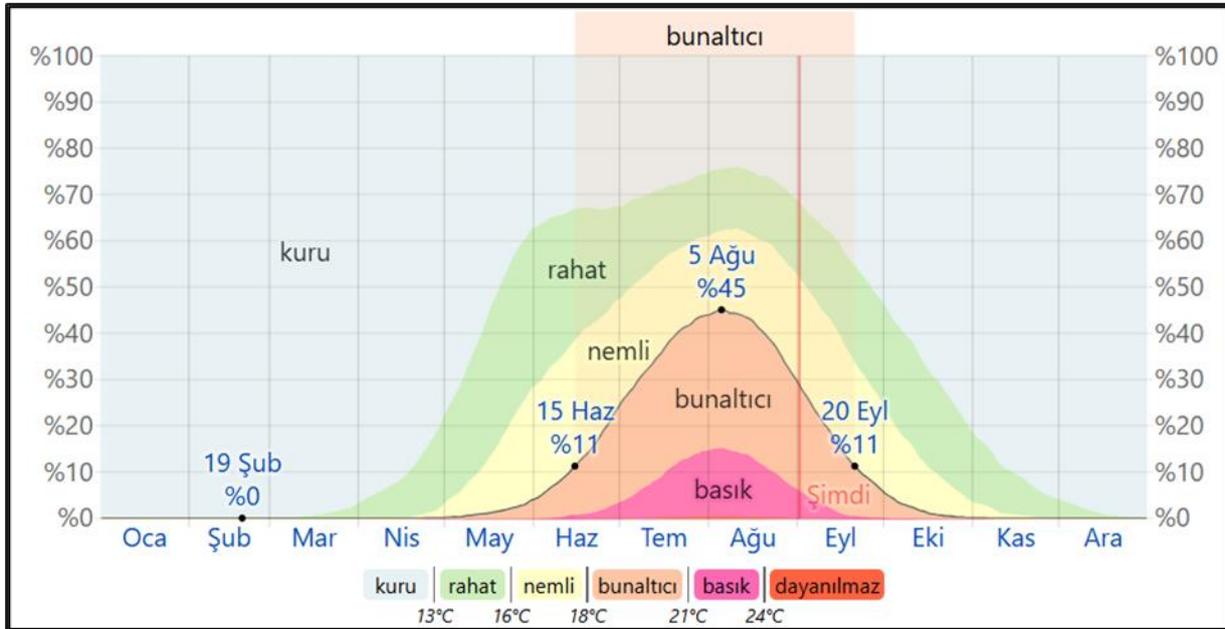


Figure 11: Humidity Comfort Level of Döşemealtı District

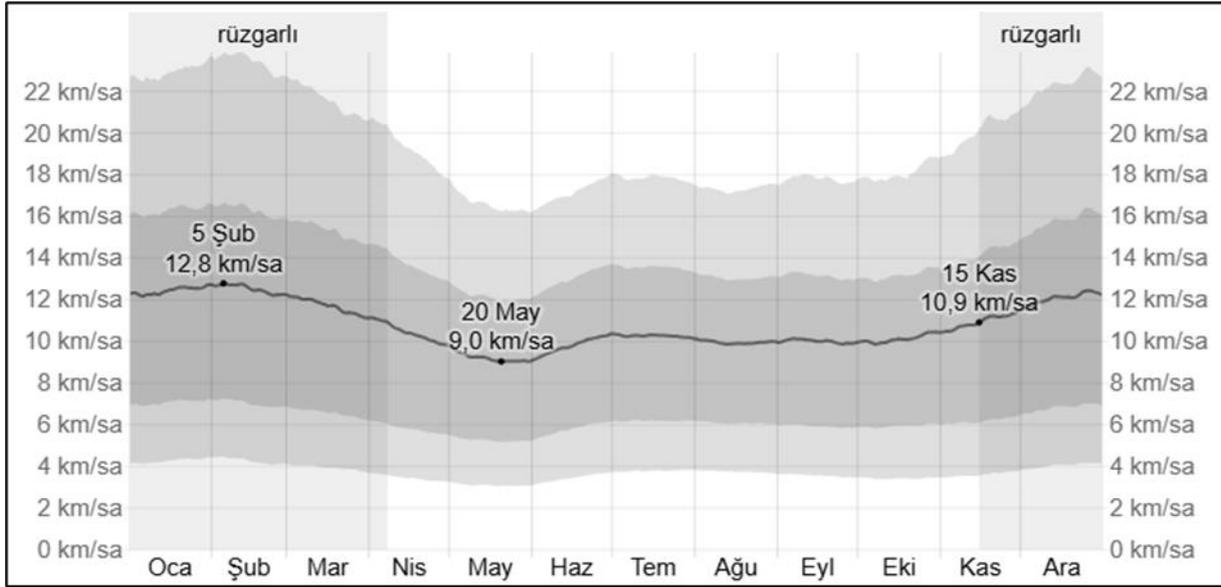


Figure 12: Average Wind Speed of Döşemealtı District

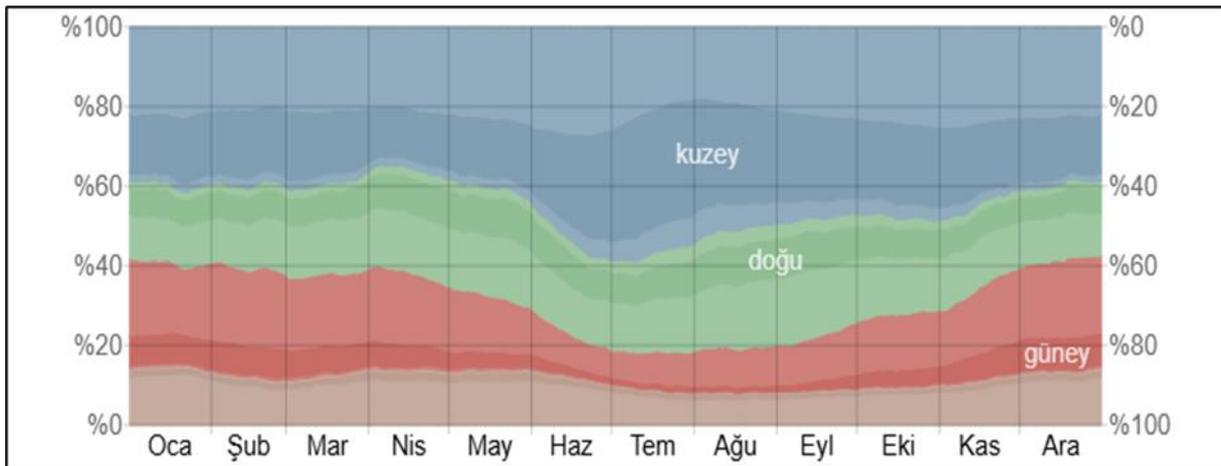


Figure 13: Wind Direction of Döşemealtı District

### 2.7.1.6. Air Quality

The air quality profile of the Döşemealtı district is characterized by its semi-rural nature and high atmospheric dispersion capacity provided by the prevailing wind regime. Based on the data from the National Air Quality Monitoring Network<sup>4</sup> operated by the Ministry of Environment, Urbanization, and Climate Change (MoEUCC), the ambient air quality in the project area is categorized between "Good" and "Satisfactory".

According to the quantitative baseline data, annual mean concentrations of PM<sub>10</sub> in the region range from 28 to 38  $\mu\text{g}/\text{m}^3$  remaining below the national regulatory limit of 40  $\mu\text{g}/\text{m}^3$ . However, it is observed that PM<sub>2.5</sub> levels occasionally exceed the World Health Organization (WHO) guideline value of 5  $\mu\text{g}/\text{m}^3$ . Due to the absence of heavy industrial activities in the vicinity, SO<sub>2</sub>

<sup>4</sup> <https://sim.csb.gov.tr/Services/AirQuality>

and NO<sub>x</sub> concentrations are significantly below the threshold limits and remain at negligible levels.

#### 2.7.1.7. Noise

The project area in the Döşemealtı district is characterized as an acoustically "quiet" zone with generally low baseline noise levels. Current noise sources are primarily limited to traffic flow on main access roads and seasonal agricultural activities. There are no heavy industrial facilities or continuous sources of significant noise pollution within the immediate vicinity of the project site.

Based on preliminary assessments, ambient noise levels in residential areas are estimated to range between 45–55 dBA. These values are consistent with the 55 dBA (daytime) and 45 dBA (nighttime) threshold limits for residential receptors established by both the Turkish Regulation on Assessment and Management of Environmental Noise and the World Bank Group/IFC General EHS Guidelines.

#### 2.7.1.8. Water Resources

The general hydrogeological structure of the Döşemealtı district is determined by karstic limestone formations, fissured-karstic aquifer systems, and alluvium-filled valleys. There is a strong hydraulic interaction between groundwater and surface waters. In the region, a large portion of precipitation infiltrates underground to feed the aquifers instead of turning into surface runoff. Consequently, while surface runoff is limited, the groundwater potential remains high.

Although there are no large perennial rivers within the boundaries of Döşemealtı, the Kırkgöz Creek, fed by karstic springs, the seasonal Karaman and Kovanlık creeks, and the episodic Düzlerçamı Creek constitute the hydrological integrity of the district. These water systems directly affect the region's groundwater regime and play a decisive role in terms of hydrogeological balance.

The primary river and creek systems passing through the district boundaries are as follows:

- Kırkgöz Creek: Originating from the Kırkgöz springs located in the northwest of the district, it constitutes one of the most important surface water systems in the region. The springs emerge to the surface from within karstic limestone formations and exhibit a high-discharge, perennial flow character. Further south, Kırkgöz Creek merges with the Düden Stream and advances toward the Antalya Plain. This system is of strategic importance for both surface drainage and groundwater recharge.
- Karaman Stream (Karaman Creek): Passing through the eastern parts of the district, it generates surface runoff particularly in the winter and spring months depending on precipitation. During the summer period, the flow rate decreases significantly or ceases. Karaman Stream is part of the Aksu River hydrological basin and plays an indirect role in the region's groundwater recharge.

- Kovanlık Creek: Located in the northeast of Döşemealtı, it is fed by surface runoffs coming from the foothills of the Taurus Mountains. The bed of the creek is generally limited by loose alluvium and limestone units. It is of a nature that may pose a flood risk during rainy periods.
- Düzlerçamı Creek: Passing through the Düzlerçamı forested area, this creek is an episodic waterway with short-term surface runoff. Its flow character is directly related to precipitation and dries up during summer periods. Nonetheless, it is important for natural drainage and erosion control in the region.

The Kırkgöz Water Resources Natural Site Area located in Döşemealtı District, as shown on the map below, was registered as a “Natural Site-Qualified Natural Protected Area” by Ministerial Approval dated 02.09.2022 and numbered E.4478389. The administrative process for the registration of the area identified as a “Natural Site-Strictly Protected Sensitive Area” is ongoing. The nearest section of the Project Area is approximately 530 m from the boundary of the Natural Site-Strictly Protected Sensitive Area, and no construction activities will be carried out within this protected area, as the Project Area lies outside its boundaries.

From a hydrological perspective, Döşemealtı is evaluated within the Kırkgöz–Düden groundwater system. This system is one of the primary recharge areas north of the Antalya Plain and plays a critical role in the provision of drinking water for the region.

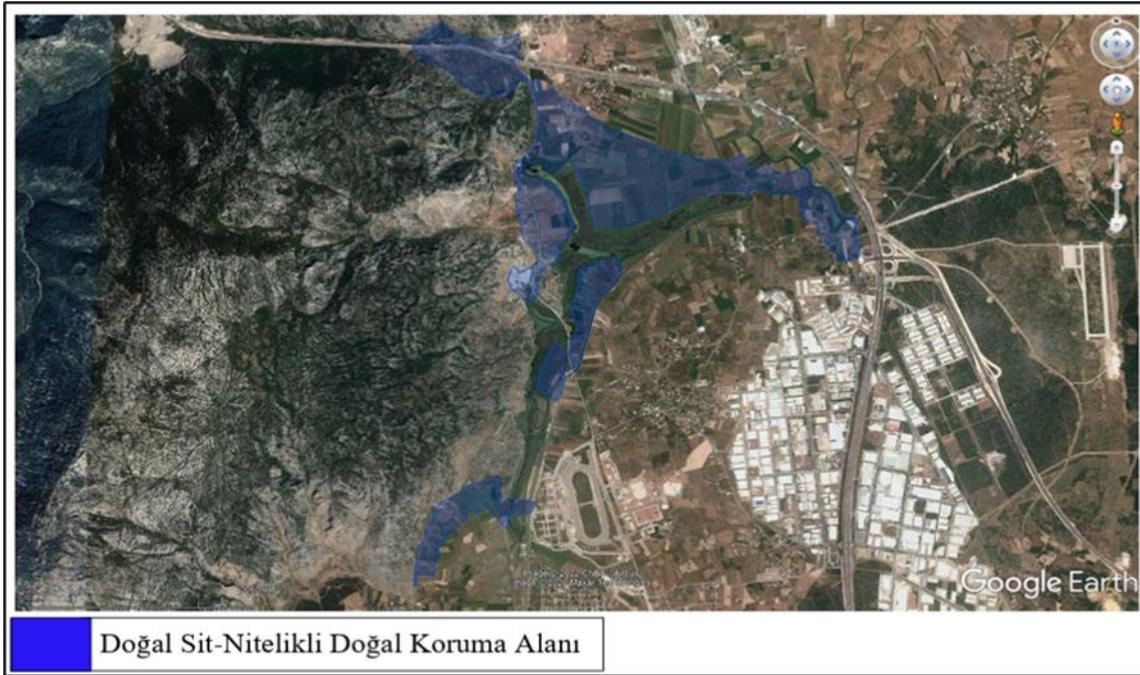
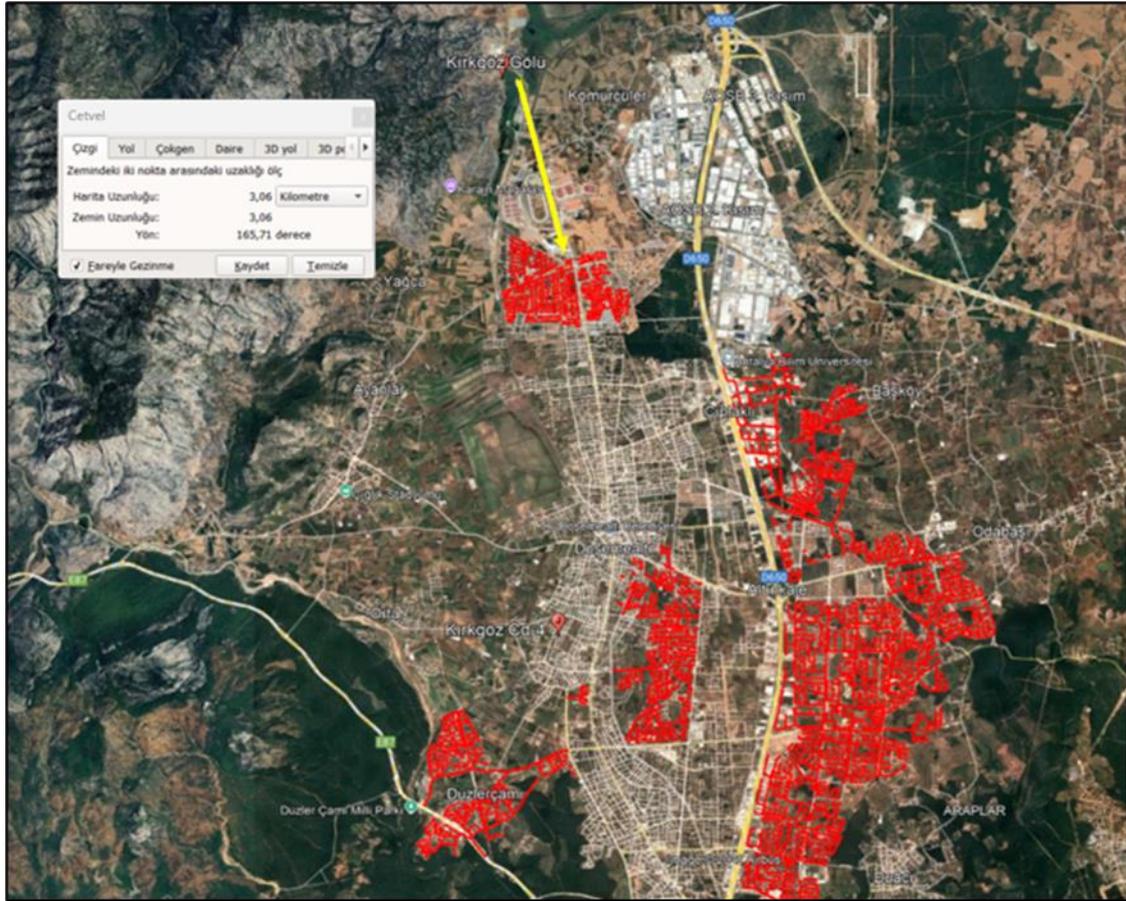


Figure 14: Kırkgöz Water Resources Natural Site Area



**Figure 15:** Linear Distance of the Kırkgöz Groundwater Resource to the Project Area

The Kırkgöz Water Spring is located to the northwest of the project area, at a distance of approximately 3 km as the crow flies. This spring is a karstic water discharge point of strategic importance for the provision of drinking and utility water for the Döşemealtı district and Antalya city. The spring is the product of a perennial hydrogeological structure emerging to the surface through high-permeability limestone formations and is connected to the Kırkgöz–Düden karstic aquifer system. Therefore, all activities to be carried out within the project site carry a potential risk of impact in terms of groundwater recharge areas and karstic aquifer systems.

Within the scope of the planned project, wastewater generated will be collected via a closed sewerage network and transmitted to the Hurma Wastewater Treatment Plant. The treatment system is designed to include biological and advanced treatment processes, ensuring discharge quality in compliance with the Regulation on Water Pollution Control and EU Water Framework Directive standards.

Through this application, the infiltration of wastewater into the groundwater at the project site will be prevented; thus, the risk of contamination of the karstic aquifers feeding the Kırkgöz Spring will be minimized. Furthermore, operating the sewerage system as a closed line will reduce the risk of diffuse pollution on hydrogeologically permeable soils and contribute to the protection of the region's drinking water reservoirs.

### 2.7.1.9. Natural Hazards (such as flooding, landslides, fire, etc.)

According to studies conducted by the Disaster and Emergency Management Authority (AFAD) and the General Directorate of Mineral Research and Exploration (MTA), the region is situated in a medium-to-high hazard zone regarding risks of earthquakes, floods, landslides, and forest fires.

#### Floods and Inundations

The Döşemealtı district is located on a karstic plateau topography. Due to the limited development of the surface drainage network, the infiltration of precipitation into the groundwater is high; however, during sudden and intense rainfall, surface runoff is likely to concentrate within a short duration. This situation increases the risk of flash floods, particularly along seasonal streams (Kovanlık, Karaman, and Düzlerçamı streams).

Based on meteorological data, the region is under the influence of the Mediterranean climate belt; the average annual precipitation ranges between 650–750 mm, with approximately 80% occurring during the November–March period. Short-term, high-intensity convective rainfall causes local flooding, especially in November and December. According to hydrometric measurements and State Hydraulic Works (DSİ) records within the district boundaries, the maximum short-term rainfall intensity can reach levels of 60–70 mm/h.

In previous years:

- During extreme precipitation events in 2002, 2015, and 2021, the Kovanlık and Karaman streams overflowed; flooding occurred on road platforms, agricultural lands, and low-elevation settlement areas. These events resulted from surface runoff concentration due to inadequate surface drainage infrastructure and irregular topography.

Geotechnically, the region sits upon high-permeability limestone and travertine formations. While these soil units allow direct infiltration, they cause water retention on the surface in areas with fine-grained alluvium. This leads to local drainage imbalances and surface flow concentrations due to heterogeneous soil transitions.

Soil erosion and sediment transport are also significant processes supporting flood events. Particularly in areas with sloped topography and loss of vegetation, sheet erosion and rill erosion processes caused by surface runoff are observed. This results in yield loss in agricultural lands, sediment accumulation in drainage channels, and a reduction in hydraulic conveyance capacity.

According to climate change projections, a 10–20% increase in the frequency of extreme precipitation is predicted by 2050<sup>5</sup>. Consequently, the Döşemealtı district possesses the potential to be exposed to more frequent and intense short-term flood events in the future.

#### Landslides

<sup>5</sup> WB Climate Risk Data Portal – Türkiye, 2021

While large-scale mass movements are limited across the district, landslides, erosion, and surface runoff scouring have been observed around Dağbeli, Killik, and Karaveliler. Furthermore, there is a potential for sinkhole (doline) formation due to the karstic soil structure.

### Drought and Water Stress

In the region where the Mediterranean climate is dominant, the decrease in precipitation and increase in temperature observed in recent years have led to a decline in groundwater reserves. In particular, the Kırkgöz–Düden karstic aquifer system is sensitive to climate change and carries the risk of seasonal water level fluctuations and reduced recharge.

According to the World Bank climate risk analysis, the Döşemealtı region has the potential for a 10–15% decrease in annual average precipitation and a +2°C increase in maximum temperatures by 2050<sup>6</sup>.

### Forest Fires and Ecosystem Hazards

Döşemealtı is a region with dense forest cover, including the Düzlerçamı Wildlife Development Area. The region possesses a climatic profile with a high risk of forest fire formation, especially in summer months, due to the combination of high temperatures (average maximum 35–40°C), low humidity (approximately 30–40%), and strong winds.

Fire events recorded within the last 20 years:

- **2008:** Approximately 120 hectares of forest area were damaged as a result of the fire in Döşemealtı and its surroundings.
- **2017:** The fire, triggered by high temperatures and wind, affected approximately 100 hectares, creating adverse effects on flora and fauna.
- **2023:** A fire in the region caused destruction in approximately 80 hectares of forest land.

In total, approximately 300 hectares of forested area in the Döşemealtı region have been affected by fires over the last 20 years. A significant portion of these areas is of critical importance for biodiversity and ecosystem services; ecological risks such as post-fire soil erosion, carbon emissions, and habitat loss are observed.

### 2.7.2. Biodiversity

The Subproject area is located within the administrative boundaries of Döşemealtı District in Antalya Province. The region lies within the Mediterranean biogeographical zone and is characterized by diverse ecosystems including Mediterranean maquis shrublands, pine forests, agricultural lands, and rural settlements. Antalya Province is recognized as one of the richest regions in Türkiye in terms of biodiversity, hosting more than 2,500 plant species, many of which are endemic to the region.

The project area is situated near important natural landscapes associated with the Taurus Mountains and forest ecosystems. These ecosystems support a wide range of flora and fauna

<sup>6</sup> WB Climate Risk Country Profile – Türkiye, 2021

typical of Mediterranean habitats. Biodiversity assessments, conducted through field surveys by ALDAŞ Environmental Specialists on February 23, 2026, alongside comprehensive literature reviews, indicate that the subproject area primarily consists of modified habitats, such as agricultural lands, rural settlements, and existing infrastructure corridors. No critical habitats were identified directly within the planned construction footprint.

### 2.7.2.1. Legally Protected and Internationally Recognized Areas

the most significant legally protected area is Güllük Dağı–Termessos National Park, which is located within the administrative boundaries of Döşemealtı District. The national park is designated under Turkish national legislation for nature conservation and protects important forest ecosystems, archaeological heritage, and wildlife habitats.

The nearest legally protected area to the Subproject is Güllük Dağı–Termessos National Park, which is located within the administrative boundaries of Döşemealtı District in Antalya Province. The nearest Project component is situated approximately 4.34 km in straight-line distance from the boundary of the national park. Given this distance and considering that the Project activities will be limited to existing infrastructure corridors and modified habitats, no direct impacts on the protected area are anticipated. In addition, standard environmental management measures will be implemented during the construction phase to prevent potential indirect impacts on nearby natural habitats.

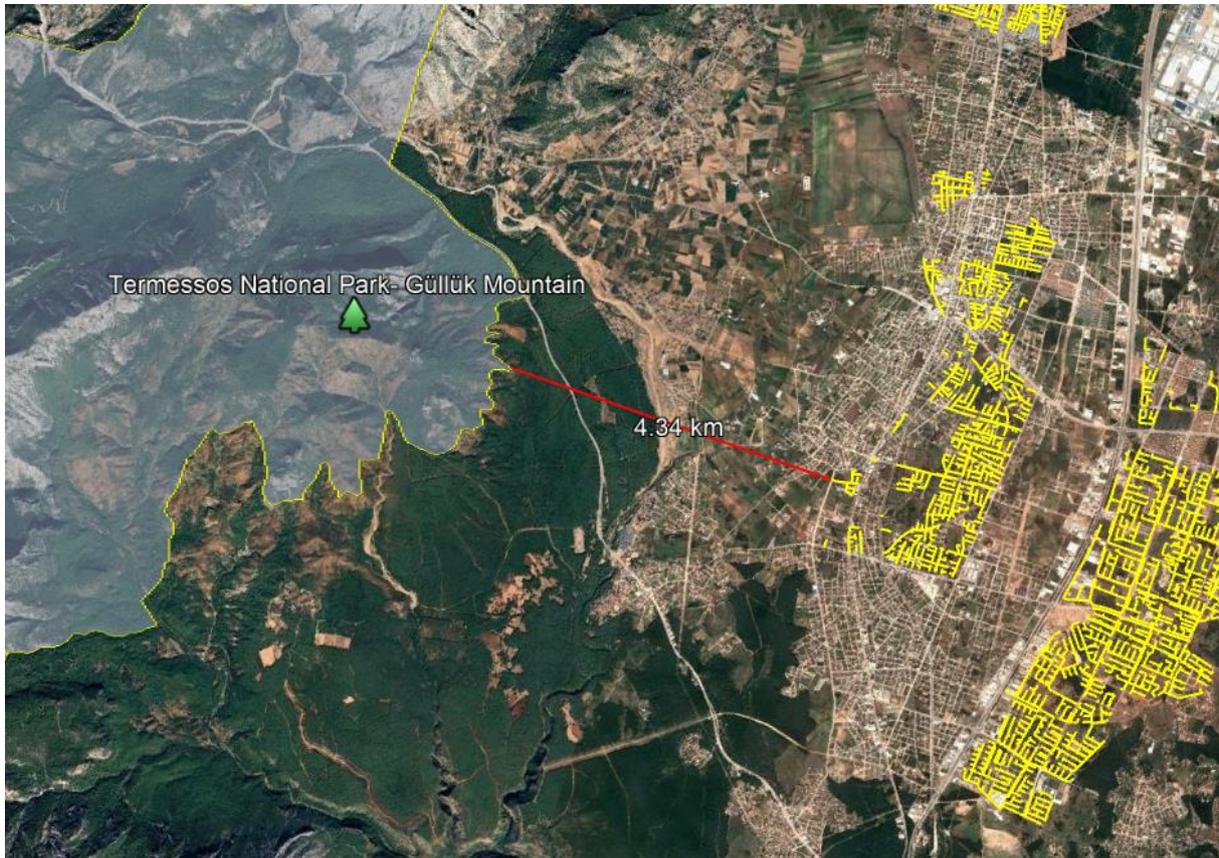


Figure 16: Closest distance between the Project Area and the boundary of Güllük Mountain–Termessos National Park

The Subproject activities are located outside the boundaries of the national park and other strictly protected areas. Therefore, no direct impacts on legally protected or internationally recognized biodiversity areas (such as national parks, nature reserves, or internationally recognized biodiversity sites) are expected.

Nevertheless, good construction practices and environmental management measures will be implemented to prevent indirect impacts on nearby natural habitats.

### 2.7.2.2. Habitats

The Döşemealtı Project Area and its influence zone are located within the Mediterranean phytogeographic region, biogeographically, and are primarily characterized by karstic plateau ecosystems. The habitat structure of the area, taking into account anthropogenic influences and natural geomorphological units, has been classified into the following categories:

#### Terrestrial Habitats (Natural and Semi-Natural)

The primary natural habitats of the region consist of Mediterranean vegetation zones developed over limestone and travertine formations.

Mediterranean Maquis and Shrubland Ecosystems: Habitats dominated by drought-resistant sclerophyllous (hard-leaved) species, widely distributed over the karstic plateau. These areas provide important refuges for biodiversity.

Turkish Red Pine (*Pinus brutia*) Forests: Represent the characteristic forest cover of the region. Concentrated particularly around Düzlerçamı and its surroundings, these habitats serve as critical corridors for both carbon sequestration and wildlife, especially red deer (*Cervus elaphus*).

#### Aquatic and Riparian Habitats

Although surface drainage networks are limited, they play a key role for aquatic biodiversity.

Kırkgöz-Düden Spring System: Provides a unique karstic aquatic habitat, supporting flora and fauna communities adapted to seasonal water level fluctuations.

Seasonal Streambeds (Riparian Habitats): These corridors along Kovanlık, Karaman, and Düzlerçamı streams act as local biodiversity hotspots during periods when water is present. These systems, combined with drainage channels, are sensitive to sediment transport and hydraulic transmission dynamics.

#### Modified Habitats (Anthropogenic Areas)

This category includes areas that have largely lost their original structure due to human activities. A significant portion of the Project alignment passes through these zones.

Agricultural Lands and Cultivated Areas: Include olive groves, orchards, and intensive greenhouse cultivation. In these areas, natural vegetation has largely been replaced by cultivated species.

Rural and Urban Settlements: Areas with intensive construction, increased impermeable surfaces, and the highest degree of habitat fragmentation.

### 2.7.2.3. Species

#### 2.7.2.3.1. Flora

The floral composition of the subproject area and its immediate surroundings is represented by characteristic Mediterranean phytogeographical vegetation communities. The plant presence in the region is classified as follows in terms of ecosystem functionality and conservation status:

**Vascular Flora Composition:** The dominant tree layer in the region is formed by Calabrian Pine (*Pinus brutia*), while Kermes Oak (*Quercus coccifera*) and Greek Strawberry Tree (*Arbutus andrachne*) stand out as primary components in the shrub and maquis layers. These species are examples of climax vegetation adapted to the regional climatological conditions.

**Endemism and Conservation Status:** Based on field observations and literature-based feasibility studies, no endemic or rare plant species categorized as "threatened" at national or international levels (e.g., IUCN) were identified directly on the subproject route or within the construction impact zone.

**Habitat Quality and Anthropogenic Impacts:** The vegetation structure along the project route exhibits a heterogeneous distribution. The plant cover consists of natural maquis and pine forests on one hand, and areas that have been modified or degraded due to intensive human activities on the other.

#### 2.7.2.3.2. Fauna

Based on a comprehensive review of existing literature, regional biodiversity databases, and official records from relevant authorities (e.g., AFAD, MTA, and Ministry of Agriculture and Forestry), the faunal composition of the subproject area is characterized by low sensitivity and common regional distribution. The following technical assessments are based on the available literature:

**Ecological Context and Connectivity:** According to regional wildlife records, the project route serves as a limited transition zone between larger habitat blocks and does not possess the characteristics of a primary "core habitat." While the presence of species such as the European Fallow Deer (*Dama dama*), Wild Goat (*Capra aegagrus*), and Wild Boar (*Sus scrofa*) is documented in the broader region, their primary ranges are situated outside the direct intervention zone of the project or are widely dispersed across the landscape. Consequently, it is assessed that the project will not impose restrictive impacts on the population dynamics of these species.

**Cave and Karstic Habitats:** Although the karstic formations of the region are known in the literature to provide potential roosting sites for certain bat species, no "Critical Habitats" or major breeding/hibernation caves have been identified within the subproject's direct footprint based on current geological and ecological records.

**Avifauna and Seasonal Movements:** Regional ornithological data indicate that seasonal wetlands and streams serve as secondary resting areas for migratory birds. Given that bird populations utilize the region as a broad corridor, the localized and temporary activities within the project site are not expected to exert permanent pressure on migration routes or habitat utilization.

**Endemism and Conservation Status Analysis:** Literature-based feasibility studies confirm that no critically endangered (CR), narrow-range, or endemic fauna species have been recorded within the project's immediate area of influence. The reptile and amphibian species reported for the region are ubiquitous across the Mediterranean basin and exhibit high adaptability to environmental changes.

#### 2.7.2.4. Ecosystem Services

The Döşemealtı project area and its zone of influence provide a diverse range of ecosystem services characteristic of Mediterranean biogeography, which are vital for maintaining regional ecological stability and supporting local livelihoods. Regarding provisioning services, the Kırkgöz–Düden aquifer system serves as the primary water source, meeting critical demands for both agricultural irrigation and potable water supply. The regulating services provided by the region's natural infrastructure are particularly significant; the karstic geological formation, combined with the existing vegetative cover, facilitates a natural infiltration capacity that minimizes flash flood risks and maintains regional hydraulic balances. Furthermore, the forest biomass, spanning over 300 hectares, functions as an active carbon sink for climate regulation while providing essential soil stabilization to prevent erosion and sediment transport in sloped terrains such as Dağbeli and Killik.

Supporting these functions are the supporting services, where nutrient cycling within the alluvium-rich agricultural plains preserves soil fertility, and the natural corridors surrounding Düzlerçamı ensure habitat connectivity for local wildlife. Integrated literature-based assessments indicate that the planned project activities are not expected to disrupt the fundamental functions of these ecosystem services, as potential temporary impacts can be effectively managed through standard environmental and social management protocols.

### 2.7.3. Socio-Economic Environment

#### 2.7.3.1. Demography and Population

The Döşemealtı district is situated to the north of the Antalya metropolitan area and stands out as a rapidly evolving residential hub in recent years. The district's population, which was 86,109 in 2023, reached 90,572 in 2024, representing a significant annual growth rate of approximately 5.2%. This demographic momentum places the district in a critical position, not only regarding housing demand and settlement expansion but also in terms of economic investments, industrial development, and the necessary scaling of social services.

Table 7: Population Change of Döşemealtı District by Years

Population Change of Döşemealtı District by Years			
Year	Total Population	Male Population	Female Population
2024	90.572	47.781	42.791
2023	86.109	45.055	41.054
2022	79.495	41.185	38.310
2021	73.809	37.710	36.099
2020	69.300	35.372	33.928
2019	65.794	33.610	32.184
2018	63.186	32.288	30.898
2017	59.948	30.789	29.159
2016	58.451	30.080	28.371
2015	55.462	28.497	26.965
2014	53.554	27.412	26.142
2013	52.013	26.678	25.335
2012	47.497	24.415	23.082
2011	44.272	22.313	21.959
2010	42.433	21.341	21.092
2009	40.555	20.414	20.141
2008	40.637	20.461	20.176

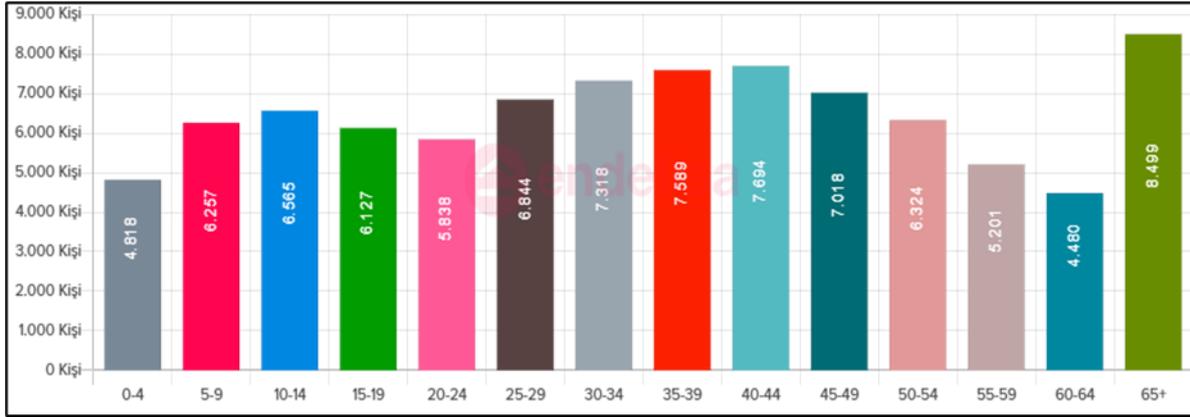


Figure 17: Demographic Composition of Döşemealtı District by Age Cohor<sup>7</sup>

### 2.7.3.2. Land Ownership Status and Land Use by Affected People

Technical assessments regarding the land ownership structure and existing land use patterns within the project's area of influence demonstrate that the planned activities are in full compliance with social safeguard policies. All technical alignments designated for the sewage network have been designed to pass through existing cadastral roads and official zoning corridors under the jurisdiction of the relevant municipality. As these areas are already registered as public rights-of-way, there is no requirement for private land intervention or land acquisition within the scope of the project. Consequently, the use or expropriation of parcels belonging to private individuals or legal entities is not sought.

Evaluations conducted in light of current land use models and literature data reveal that the project route does not overlap with areas utilized by the local population for informal socio-economic activities. No informal settlements, agricultural activities, or commercial uses have been identified along the route. Since all infrastructure works will be executed within public corridors in accordance with official zoning plans, no restrictions or adverse impacts on the existing living spaces or income sources of local communities are anticipated. In conclusion, the ownership status of the project is based entirely on public property, and there are no legal disputes that would impede the progress of the project or pose a risk in terms of tenure rights. There are no trees or plants on the lands in question. Therefore, no loss of plants or crops is expected under this subproject. In the event that any unforeseen land acquisition requirements or physical/economic displacement impacts are identified during implementation, documents consistent with ESS5 will be prepared and implemented prior to the commencement of works in the affected area; otherwise, the relevant component will be removed from the subproject scope.

### 2.7.3.3. Employment and Means of Livelihood

The project area is located within the administrative boundaries of Döşemealtı District of Antalya Province. Due to its proximity to the Antalya city center, the district exhibits a settlement structure where both rural and urban economic activities coexist. The economic

<sup>7</sup> <https://www.endeksa.com/tr/analiz/turkiye/antalya/dosemealti/demografi>

structure of Döşemealtı generally reflects the broader economic characteristics of Antalya Province and is mainly based on agriculture, services, trade, and industrial activities. In recent years, with the northward expansion of Antalya's urban development, the district has experienced population growth, expansion of residential areas, and diversification of economic activities. This development has contributed to increased employment opportunities and the growth of various economic sectors within the district.

A significant portion of the population living in the rural neighborhoods of Döşemealtı earns their livelihood from agricultural activities. Across the district, open-field vegetable cultivation, greenhouse farming, fruit production, and limited olive cultivation are common practices. In addition, small and large livestock breeding constitutes an important source of income, particularly for households living in rural settlements. Agricultural activities are generally carried out in the form of small-scale family enterprises, and production is directed both toward local consumption and markets in the Antalya city center.

Industrial activities also play an important role in the economic structure of the district. The Antalya Organized Industrial Zone, located within the boundaries of Döşemealtı District, constitutes a significant source of employment for the local population. Manufacturing, storage, and logistics enterprises operating within the organized industrial zone employ a considerable portion of the regional workforce. Furthermore, due to the district's proximity to Antalya city center, a substantial share of the population residing in Döşemealtı works in the tourism, trade, and service sectors in the districts of Konyaaltı, Kepez, and Muratpaşa. This situation results in a high level of daily labor mobility between the district and the city center.

Small-scale commercial enterprises, local markets, service sector activities, and public institutions also represent important employment areas within the district center and surrounding neighborhoods. Retail trade, transportation services, small local businesses, construction activities, and public services account for a significant portion of employment in the district. Educational institutions, healthcare facilities, and local government bodies also provide stable employment opportunities within the public sector.

Based on the site observations and feasibility studies conducted within the neighborhoods covered by the project, it has been assessed that livelihoods in the settlements located along the project route are primarily based on small-scale agricultural activities, local trade, and service sector jobs. In addition, it has been observed that some households are employed in the Antalya city center and that there is daily labor mobility from the district to the urban employment areas.

#### 2.7.3.4. Education and Health Services

##### Education

Various educational institutions under the Ministry of National Education operate in the Döşemealtı district. These institutions include primary schools, secondary schools, high schools, and vocational training schools. There are 1 public and 1 private kindergarten, 2 Special Education Practice Schools, 18 public and 3 private primary schools, 19 public and 5 private secondary schools, 9 public and 4 private secondary education institutions (high

schools), and 1 Public Education Center. In these schools, education is provided to a total of 16,058 students with 1,123 teachers and 716 classrooms.

The education level of the population in the Döşemealtı district follows a parallel course with the district's educational infrastructure and literacy rates. The vast majority of the population over the age of 15 is literate; the literacy rate in the district is approximately 98%. This situation demonstrates that basic education services in Döşemealtı have been carried out effectively for many years.

When looking at the distribution of education levels in the district, approximately 30% of the population are primary school graduates, 40% are secondary and high school graduates, and 15–20% are higher education graduates. The rate of those who have never attended school or are illiterate is around 2–3%. This distribution reveals that basic education is widely provided in the district, the level of high school and vocational education is at a medium level, and access to higher education exists, albeit to a limited extent.

When evaluated in terms of gender, there is no significant difference between male and female literacy rates. In recent years, an increase in the education level of women has been observed, and the proportion of women among university and vocational school graduates is steadily rising. This situation is an indicator of the importance given to the education of girls in the district.

### Health Services

Located in the center of the district, this hospital offers emergency services, outpatient clinics, operating rooms, imaging centers, and laboratory services. Additionally, home health services and physical therapy units are available.

**Family Health Centers (ASM):** There is one Healthy Living Center and 10 Family Health Centers in the district. These centers meet the healthcare needs of citizens by providing primary healthcare services.

**Döşemealtı Vocational and Technical Anatolian High School:** Providing a field in Health Services, this school is an institution that offers education in the healthcare sector. It also provides dormitory services for the 2025-2026 academic year.

Although the district has a strong infrastructure for basic health services, referrals are made to public and private health institutions in the Antalya city center for cases requiring advanced treatment. Patients in the district can book outpatient and specialist appointments through the Central Physician Appointment System (MHRS); in emergencies, they can be quickly transferred to the center via 112 Emergency Health Services.

While public and private hospitals in Antalya offer advanced diagnostics, surgeries, and specialized branch services, transportation from the district to the center is easily provided by public transport, minibuses (dolmuş), private vehicles, and taxis. Döşemealtı State Hospital and Family Health Centers coordinate with central hospitals to organize appointments and patient

follow-ups. Thanks to the accessibility of transportation and coordination efforts, citizens in the district can access health services in a fast, safe, and effective manner.

### 2.7.3.5. Infrastructure Services

The existing wastewater infrastructure in the Döşemealtı District is inadequate and unsustainable in the face of rapidly increasing population pressure and unique environmental risks. Current wastewater disposal is largely provided through individual septic systems without an integrated and modern collection system, which equates to zero treatment capacity in compliance with environmental standards.

There are currently 290 km of existing sewage lines in Döşemealtı, and the construction of an additional 123 km is ongoing. However, these lines only serve local and priority areas, falling short of meeting the collection needs of the rapidly growing district as a whole.

This capacity gap is supported by quantitative data:

- As of 2024, the district population is 90,572.
- The current population of the 6 main neighborhoods within the project scope is 54,505.
- It is projected that the population of these 6 neighborhoods will rise to 157,971 by the year 2060, which marks the end of the project's design life.

The existing infrastructure lacks the capacity to carry and manage this future wastewater load.

### 2.7.3.6. Transportation and Traffic

Transportation within the borders of Antalya province is provided via highways, airways, and a light rail system. Additionally, Antalya's public transportation system meets the commuting needs of the city's population. The province possesses a highway network established to handle motorized vehicle traffic, while ring road systems and major avenues in central Antalya regulate the flow of traffic. All roads entering the center from within Antalya's provincial borders are state roads. Among these, the D-350 (E87 according to the European E-road system) connects Antalya to İzmir, while the D-400 road extends along the Mediterranean coast from Muğla to Mersin. Other state roads such as the D-650, D-685, and D-687 connect Antalya with neighboring provinces and districts, forming the backbone of intra-provincial transportation.

The Döşemealtı district is located approximately 26 km from the Antalya city center and has direct access to the province-wide transportation networks. Many bus companies operate for intra-provincial travel, and the Antalya Bus Terminal serves as the main hub providing connections between the city center, other districts, and other provinces. Thanks to these transportation facilities, Döşemealtı can easily access the city center and other districts. The terminal's connection to the Antray light rail system, which provides urban public transport, further enhances Döşemealtı's integration into the public transportation networks.

### 2.7.3.7. Cultural Heritage

Döşemealtı has been located within the borders of the Pisidia region throughout history, and there are numerous ancient settlements remains in its surroundings. The most important of these are:

**Termessos Ancient City:** Located in the southwest of the district, on Mount Güllük (Solymos). Dating back to the 4th century BC, the city is included in the UNESCO World Heritage Tentative List with its Hellenistic and Roman period remains, monumental fortification walls, theater, agora, and tomb structures. This is located at distance of approximately 25 km from the AOI of the Project.

**The King's Road (Döşeme Road):** The name "Döşeme," which gives the district its name, refers to the remains of the stone-paved ancient road reaching Termessos. This road is an important part of the ancient transportation network connecting the cities of Pisidia. This is located at distance of approximately 25 km from the AOI of the Project.

Roman period remains, cisterns, and stone-built burial chambers are encountered around Mount Katran and its vicinity, as well as near the villages of Kovanlık and Dağbeli. This is located at distance of approximately 10 km from the AOI of the Project.

Döşemealtı is known for its hand-woven carpet making. The traditional hand-woven carpet known as the "Döşemealtı Carpet" has a geographical indication registration and is one of the important cultural heritage elements of the region. This handicraft is considered within the scope of intangible cultural heritage with its traditional patterns, natural dyeing techniques, and wool craftsmanship.

### 2.7.3.8. Disadvantaged or Vulnerable Individuals or Groups

Within the Subproject area and its surroundings, vulnerable or disadvantaged groups may include elderly individuals, persons with disabilities, women, children, low-income households, and seasonal workers who may have limited access to resources or services.

During the implementation of the Subproject, particular attention will be given to ensuring that these groups are not disproportionately affected by construction activities. Communication and stakeholder engagement activities will aim to ensure that vulnerable groups have access to project-related information and grievance mechanisms.

In line with ESS10 requirements, stakeholder engagement processes will ensure that vulnerable groups have the opportunity to participate in consultations and receive project-related information in an accessible manner.

Temporary disturbances such as construction noise, restricted pedestrian access, or traffic disruptions will be managed through appropriate mitigation measures and communication with affected communities. Detailed information on the number and characteristics of vulnerable groups is provided in the Stakeholder Engagement Plan (SEP).

## 3. SUBPROJECT ACTIVITIES

### 3.1. Construction Phase

#### 3.1.1. Construction Activities

The construction phase of the Sub-Project involves the installation of a sewerage network approximately 200 km in length, covering the neighborhoods of Yeniköy, Bahçeyaka, Altinkale, Yağca and Yeşilbayır, along with the construction of pumping station required for the efficient operation of the system. The construction phase, including testing, commissioning, and provisional acceptance processes, is expected to be completed within approximately 36 months. A detailed implementation schedule regarding the construction activities is presented in Chapter 6 of this ESMP.

Construction activities will primarily be carried out within the designated zoning roads, existing road routes, and public areas allocated for the pumping station in the specified neighborhoods.

#### **Pre-construction Activities:**

Prior to the commencement of construction works, the mobilization of personnel, machinery, and equipment to the site will be ensured. In this context, site offices and material storage areas will be established at required locations.

During the site preparation phase, limited vegetation clearing, surface leveling, and necessary arrangements for the access of construction vehicles will be carried out along the pipeline route. Prior to excavation works on existing roads, the removal of asphalt or parquet paving will be performed. In the event that existing infrastructure elements belonging to other authorities (telecommunications, water, electricity, etc.) are encountered along the route, necessary displacement (relocation) or protection works will be conducted to prevent damage to these lines.

Considering the existing structures and infrastructure conditions in the Döşemealtı region, the probability of encountering asbestos-containing materials (ACM) is anticipated to be low; however, should old asbestos pipes be encountered during pipeline excavations, specific disposal procedures in accordance with national legislation and international OHS standards will be implemented.

#### **Construction Activities:**

Construction activities consist of two main components:

Sewerage Network: The construction of the approximately 200 km line includes trench excavation, pipe bedding (laying of sand-gravel), pipe laying, installation of manholes, backfilling, and compaction processes. Following leak tests, the superstructure will be reinstated.

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**Pumping Station:** This includes the construction of reinforced concrete structures, foundation works, and the installation of pump, valves, control panels, and automation (SCADA) systems required for the operation of these centers.

No blasting activities are envisioned during the construction works. Excavation works will proceed in stages; a section will not be bypassed until it is completed and closed, thereby minimizing local access restrictions.

**Construction Machinery and Equipment:**

The primary construction machinery to be used within the scope of the project includes: excavators, backhoe loaders, dump trucks, compactors (rollers), cranes, generators, concrete mixers, welding machines, and service vehicles. Periodic maintenance of all equipment will be performed, and it will be operated in accordance with environmental standards.

**Water Use and Wastewater Management:**

During the construction phase, water is required for dust suppression (sprinkling), concrete curing, equipment cleaning, and the domestic use of personnel. Water needs will primarily be met from the municipal network; in areas where the network is insufficient, it will be supplied via certified water tankers.

Domestic wastewater generated will be connected to the existing sewerage system or, in areas where the line has not yet reached, collected in leak-proof septic tanks and transported to treatment plants via licensed vacuum trucks.

**Waste and Hazardous Materials Management:**

The largest waste item resulting from construction activities will be excess excavated soil. Additionally, packaging waste, scrap metals, and domestic waste will be generated. Limited amounts of hazardous materials such as fuel, lubricants, hydraulic fluids, and paint will be used. These materials will be stored in designated areas with impermeable floors and secondary containment; waste oils and contaminated materials will be sent to licensed recycling/disposal facilities.

**Supply and Use of Other Resources and Materials:**

Basic filling materials (sand, gravel, aggregate), ready-mixed concrete, reinforcement steel, HDPE or corrugated pipes, valves, and mechanical equipment will be used in the project. Suitable excavated soil material will be reused to the maximum extent possible in backfilling operations. Additional aggregates required will be sourced from licensed quarries.

**Supply of Materials and Equipment:**

Basic consumables such as aggregate, concrete, pipes, and steel will be sourced from the local market and licensed suppliers. Specialized pumps and automation equipment to be used in pumping station will be procured from domestic or foreign suppliers based on technical specifications.

### Decommissioning of Temporary Construction Facilities:

Following the completion of construction, all site structures, temporary storage units, and service roads will be decommissioned and removed from the site. Worked areas will be reinstated to their original state through landscaping and superstructure arrangements and then handed over.

### Activities Outside the Scope of Proposed Financing:

According to current project information, all construction activities planned and detailed above are within the scope of the Sub-Project activities financed under the World Bank-supported program. No significant activities or facility components outside the scope of the proposed financing have been identified at this stage.

### 3.1.2. Construction Facilities

**Table 8: Construction Facilities**

Type	On-site or Off-site	Temporary or Permanent	List of Facilities
<b>Construction Camp Site</b>	On-site	Temporary	<ul style="list-style-type: none"> <li>• Offices and administrative units</li> <li>• Personnel changing and resting areas</li> <li>• Canteen and social facilities</li> <li>• Dormitories</li> <li>• Temporary toilets and showers</li> <li>• Sealed septic system</li> </ul>
<b>Work Areas</b>	On-site	Temporary	<ul style="list-style-type: none"> <li>• Material storage areas</li> <li>• Pipe stockpiling areas</li> <li>• Temporary excavation and backfilling areas</li> <li>• Machinery and equipment parking areas</li> </ul>
<b>Waste Storage Area</b>	On-site	Temporary	Hazardous / Non-hazardous Waste Storage Area
<b>Material and Excavation Areas</b>	Off-site	Temporary	<ul style="list-style-type: none"> <li>• Temporary storage area for excavated material</li> <li>• Stockpiling area for suitable backfill material</li> <li>• Aggregate, sand and gravel storage areas</li> </ul>

The contractor has not yet been selected, and details regarding the camp site will be finalized by the contractor following the tender award. Whether a camp will be established or located within the site boundaries will be determined based on the contractor's mobilization and site organization plans.

## 3.2. Operation Phase

### 3.2.1. Operation Activities

The operational phase of the Döşemealtı Sewerage Network and Pumping Station under the Sub-Project covers the safe, continuous, and sustainable operation of the system. All operational activities will be carried out under the responsibility of the Antalya Water and Wastewater Administration (ASAT) General Directorate.

During the operational phase, it is aimed to operate the newly constructed sewerage network and pumping station in compliance with the design criteria, national legislation, the World Bank Environmental and Social Standards (in particular ESS3 and ESS4), and the Environmental, Health, and Safety (EHS) Guidelines.

Activities to be carried out during this phase include the monitoring and control of wastewater collection, transmission, and pumping processes, as well as routine operation, network cleaning, maintenance, and repair works. Throughout the operational period, the hydraulic performance of the system, energy use, odor control, and occupational health and safety aspects will be regularly monitored. Any potential environmental and social impacts that may arise (such as potential leakages or odor) will be managed within the framework of existing institutional capacity and applicable management plans.

The system is designed to operate on the principle of gravity flow, in harmony with the natural topography of the region, aiming to safely convey collected domestic wastewater to the regional central treatment system via main interceptor lines. During the operational phase, system control and flow management will be ensured through isolation valves to be installed at strategic points.

In locations where the terrain slope does not allow for gravity flow, package-type pumping station are envisioned to transport wastewater to a higher elevation. It is planned that the wastewater collected in these centers will be discharged into the main network via pumps through pressurized lines (force mains). The transmission infrastructure has been designed to meet long-term requirements, taking into account the 2060 population projections and design flow parameters specified in the feasibility report.

The sealing standards of the system have been engineered in accordance with current technical specifications, focusing on the protection of the region's sensitive karstic groundwater structure and the minimization of environmental risks. Furthermore, it is planned to monitor all constructed infrastructure via SCADA (Supervisory Control and Data Acquisition) and to track operational efficiency through this digital platform.

The responsibility for the operation and maintenance of all infrastructure components (network lines, pumping station, and transmission structures) to be implemented under the project is planned to be undertaken by ASAT following the completion and provisional acceptance of the facilities.

ASAT will be responsible for monitoring the hydraulic performance of the network and transmission lines, maintaining watertightness, and conducting periodic sewer cleaning activities. The electromechanical control of the package-type pumping station, routine maintenance of the pumps, and ensuring the uninterrupted operation of the system will be carried out by the institution's technical teams.

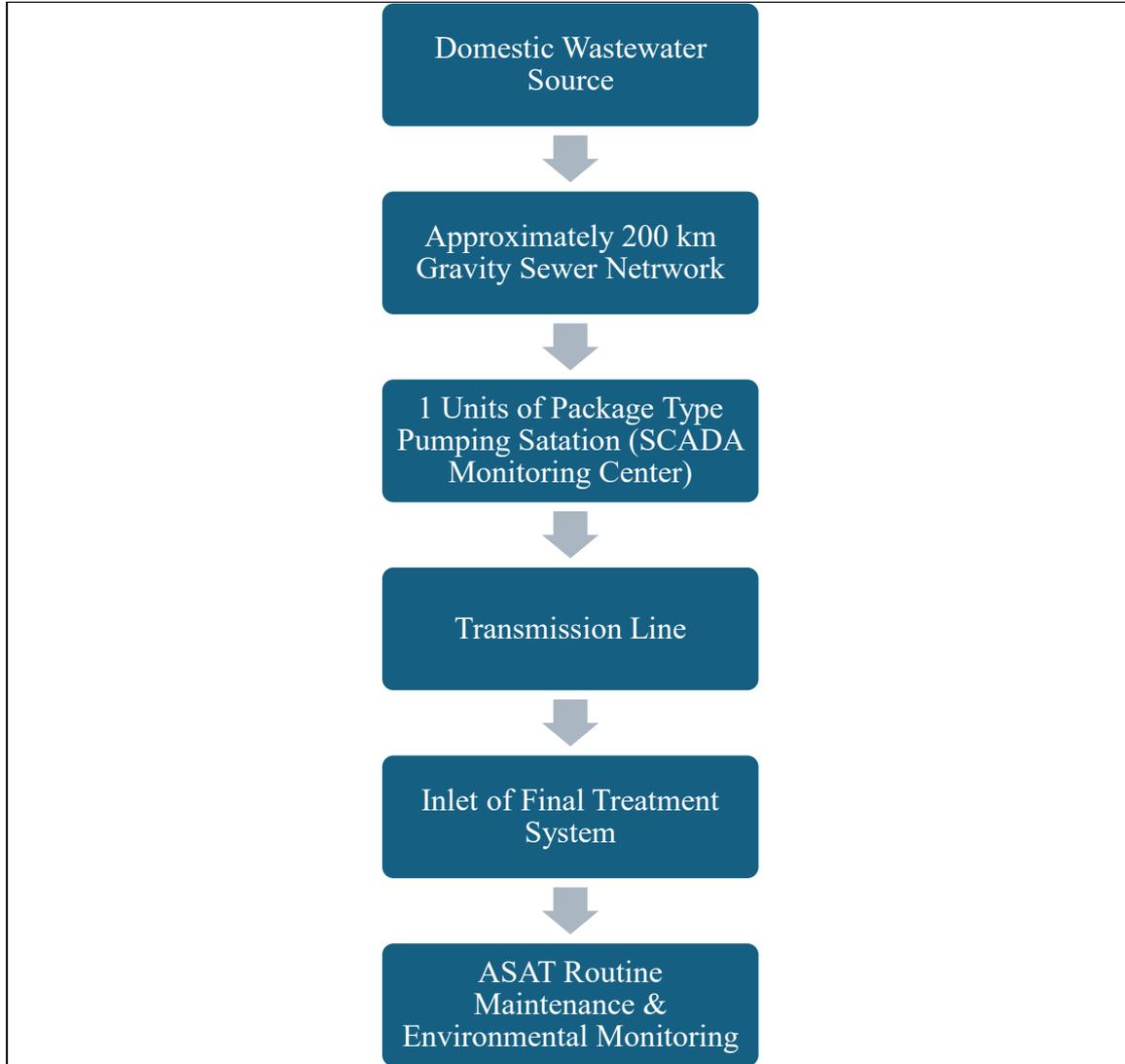


Figure 18: Process Flow Chart

### 3.2.2. Operation Facilities

The operational facilities and components of the Subproject are designed to establish a robust and sustainable wastewater management system for the Döşemealtı District. The key features of these facilities, as detailed in Table 2, are summarized below to outline the infrastructure that will be under operation:

- **Wastewater Sewerage Network:** The primary operational component consists of approximately 200 km of a conventional municipal wastewater sewer system. The

network is designed to serve the neighborhoods of Yeniköy, Bahçeyaka, Altinkale, Yağca, and Yeşilbayır. The system predominantly utilizes gravity-flow principles.

- **Pipe Specifications:** Smaller diameters (Ø200 mm, Ø300 mm) consist of HDPE Corrugated materials, while larger diameters (Ø400 mm, Ø500 mm, and Ø800 mm) utilize Concrete/Reinforced Concrete.
- **Sealing and Safety:** Advanced pipe jointing technologies will be employed to ensure high sealing performance, prioritizing the protection of the sensitive Kırkgöz Water Source.
- **Pumping and Lifting Stations:** To ensure flow continuity in areas where gravity conveyance is not technically feasible due to elevation differences, 1 new wastewater pumping station will be operated. These units function by lifting collected wastewater to the next collection point or the main interceptor line. For these pressurized discharge lines, a pressure rating of PN10/PN16 will be maintained.
- **System Control and Monitoring (SCADA):** The operation phase will be supported by an integrated automated control system. This includes the monitoring of flow meters, the operation of valves and pipeline control systems, and full integration with the ASAT SCADA system for real-time tracking of hydraulic performance.
- **Integration with Hurma WWTP:** Although the Subproject does not involve the construction of a new treatment plant, the operational management includes the safe conveyance of all collected wastewater to the existing Hurma Wastewater Treatment Plant (WWTP). This facility, with a design capacity of 1,400,000 PE, utilizes the advanced biological process for nutrient removal.

Information on Associated Facilities (AFs), is separately provided in Section 2.4.

### 3.3. Labor Requirements

Information on the number of workers to be employed during the construction and operation phases of the Sub-Project, as well as the planned accommodation arrangements, is summarized in **Hata! Başvuru kaynağı bulunamadı. Table 9.**

**Table 9** Expected number of workers and Accommodation requirement

Phase	Number of Workers (including contractors and subcontractors)	Planned Accommodation Arrangement
Construction Workers (at peak)	60 persons	40 persons
Operation Workers (at peak)	10 persons	-

### 3.4. Land Acquisition Status

Within the scope of the Döşemealtı District Wastewater Network Project, the planned infrastructure works will be carried out within existing public road corridors and infrastructure rights-of-way. The Project does not require the establishment of new facility areas or the

expropriation of privately owned land. The planned sewer network routes have been designed along existing zoning roads and publicly used areas, while the locations of the planned pumping stations are intended to be situated on parcels that are under public ownership or under the administration of relevant public institutions.

Accordingly, no land acquisition, expropriation, physical displacement, or economic displacement is anticipated within the scope of the subproject. The implementation of the Project is not expected to result in any infringement of private property rights, as all construction activities will be conducted within areas already designated for public use.

Therefore, no risks or impacts related to land acquisition and involuntary resettlement are anticipated under the World Bank ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement. Nevertheless, any potential temporary access restrictions or short-term disturbances arise during the construction phase, the necessary documents consistent with ESS5 will be prepared and implemented prior to the commencement of works in the affected area; otherwise, the relevant component will be removed from the subproject scope.

### 3.5. Permitting Status

The status of the permits, protocols, and approvals required prior to the commencement of construction is presented in Table 11.

Table 10: Status of Permits for the Construction Phase

Permit, License, Approval	Status (In place, Not in place)	Remarks/ Notes
<b>EIA Decision</b>	<b>Outside the Scope of EIA</b>	Under the Turkish Environmental Impact Assessment (EIA) Legislation, sewerage network projects (excluding treatment plants) are not listed in Annex 1 or Annex 2 of the EIA Regulation. Therefore, the project is officially considered "Outside the Scope of EIA.
<b>Project approval</b>	<b>In Force</b>	Technical designs and feasibility reports have been prepared and approved by the ALDAŞ and verified for compliance with World Bank Environmental and Social Standards (ESS).
<b>Zoning plan approval</b>	<b>In Force</b>	All planned sewerage lines pass through existing zoning or cadastral roads. The alignment within the current zoning plans is documented in the report appendices.
<b>Permit for non-agricultural land use</b>	<b>Not Applicable</b>	Since the pipelines follow existing roads and urban corridors, no additional permit for the use of agricultural land is required.
<b>Permit for use of pasture lands (change of allocation purpose)</b>	<b>Not Applicable</b>	The project area does not involve any designated pasture lands; therefore, no change of allocation purpose is necessary.

<b>Land Acquisition / Expropriation</b>	<b>In Place</b>	All construction activities are restricted to public right-of-way (public roads). No private land acquisition or physical/economic displacement is required.
<b>AYKOME Excavation Permit</b>	<b>To be obtained before construction</b>	Road excavation and infrastructure coordination permits will be obtained from the Antalya Metropolitan Municipality Infrastructure Coordination Center (AYKOME) prior to the commencement of civil works.
<b>EIA Decision for the ETL</b>	<b>Not Applicable</b>	The project utilizes existing energy grids for the 1 package-type pumping station. No additional Energy Transmission Line (ETL) construction is required.
<b>EIA Decision for Hurma Wastewater Treatment Plant</b>	<b>In Force</b>	Hurma Wastewater Treatment Plant is already in operation and holds all necessary environmental permits and licenses.
<b>Others</b>	<b>Not in Force</b>	-

## 4. ESMP MATRIX: RISK AND IMPACTS, MITIGATION AND MONITORING

As the Subproject involves both construction and operation activities, the ESMP comprises two components as follows:

- Construction ESMP Matrix
- Operation ESMP Matrix

The roles and responsibilities for implementing this ESMP are defined in Chapter **Hata! Başvuru kaynağı bulunamadı..**

Implementation arrangements for the ESMP are outlined in Section 1.5.

The Contractor's E&S management plans and procedures, which support the implementation of the E&S assessment documents, are listed in Section **Hata! Başvuru kaynağı bulunamadı..**

### 4.1. E&S Risk and Impacts of the Subproject

The construction of the wastewater network under this subproject is expected to result in low to moderate environmental and social risks and impacts, which are site-specific, temporary, and largely reversible in nature.

The fact that subproject activities will be implemented predominantly along existing cadastral and zoned road corridors significantly limits the spatial extent, magnitude, and permanence of potential environmental and social impacts by eliminating the need for new land acquisition.

During the construction phase, environmental and social risks are mainly associated with temporary impacts related to civil works, such as excavation, sewer pipe laying, construction traffic, and short-term disturbances. These risks are considered manageable and controllable through appropriate planning, implementation of mitigation measures in alignment with World Bank ESSs, and effective site management.

#### 4.1.1. Environmental Risks and Impacts

The environmental risks and impacts associated with the construction of approximately 200 km of wastewater network and related infrastructure under the Subproject have been comprehensively analyzed across the preparation, construction, and operation phases. The impacts anticipated during the construction phase are primarily site-specific, temporary, and reversible in nature. The fact that the network routes are predominantly planned along existing zoned roads and publicly allocated corridors eliminates the need for additional land acquisition and minimizes potential pressure on biodiversity and sensitive ecosystems.

The primary environmental risks likely to emerge during the construction phase encompass disturbances to soil structure due to large-scale excavation and backfilling works, wastewater pipe-laying activities, and heavy machinery traffic; temporary alterations in surface runoff regimes; dust emissions (PM10 and PM2.5); increased noise and vibration levels; and the management of construction and demolition waste. These risks will be strictly controlled through standard mitigation measures and effective site management implemented via an Environmental and Social Management Plan (ESMP) integrated with occupational health and safety (OHS) protocols.

While the operational phase is not included within the direct financing scope of this Subproject, it has been evaluated under a holistic approach within the framework of the ESMP. The operational management of the system will be carried out under the routine administrative and technical responsibility of the ASAT General Directorate. Environmental impacts during this period will be limited to localized and low-intensity elements such as periodic maintenance and repair activities and odor management. Existing operational procedures are deemed sufficient to ensure the effective management of these impacts.

This section outlines the potential E&S impacts and risks that may arise from Subproject activities during the construction and operation phases.

The typical Subproject activities are broadly categorized as follows:

- Construction phase
- Operation phase

General, cross-cutting potential environmental impacts that are anticipated to occur across all aspects of the Subproject are summarized below.

##### 4.1.1.1. Soil Erosion, Loss and Contamination

###### ➤ Construction Phase:

The construction activities for the approximately 200 kilometers of wastewater network and the installation of pumping station (lifting centers) under the Subproject involve significant volumes of excavation and backfilling activities. While the network routes follow existing road corridors, the pumping station will be constructed at designated node points. The deep excavations and foundation works required for these facilities involve a more intensive soil intervention compared to the network lines. In construction areas, physical deterioration of the soil structure may occur if the topsoil is not appropriately stripped or if the excavated material is stockpiled in an uncontrolled manner. The risk of permanent soil loss will be minimized by rapidly rehabilitating the excavated areas and the surroundings of the pumping station following construction.

During construction, particularly at pumping station sites and along sloped sections, stockpiled excavation materials pose a localized risk of soil erosion and sediment transport due to surface runoff during rainy periods. Furthermore, there is a potential risk of localized soil contamination in the event of improper storage or leakage of fuel, oil, or chemicals (such as concrete additives) from equipment at the construction and pumping station sites. These risks are manageable through the rigorous implementation of impermeable storage areas, secondary containment measures, and emergency response procedures.

#### ➤ **Operation Phase**

The operation of the system will be conducted under the responsibility of the ASAT and soil management risks during this phase are primarily limited to routine maintenance and emergency repair activities. During mechanical equipment maintenance, generator refuelling, and potential component replacements at the pumping station, there is a risk of localized soil contamination in the event of oil or fuel spills. However, the design of these facilities with impermeable reinforced concrete floors and the connection of their drainage systems to the wastewater network will largely prevent the risk of direct leakage into the soil.

Localized excavations required to address potential failures in the network lines or pumping station may pose limited erosion risks, such as soil displacement and sediment transport, especially during inclement weather. One of the most critical environmental risks during the operational period—soil contamination resulting from pipe leakages or overflows at pumping station—will be minimized through the use of modern piping materials, leak-tightness tests, and real-time monitoring via SCADA. Any deterioration of surrounding soil quality due to improper disposal of waste during maintenance activities will be kept under control through ASAT's existing operational procedures and environmental management practices.

#### **4.1.1.2. Dust and Exhaust Gases Emission**

##### ➤ **Construction Phase:**

During excavation, backfilling, pipe-laying, material transportation, and general construction site activities, there is a risk of dust generation. Open excavation areas, temporary material storage sites, and increased vehicle movements, particularly during dry and windy conditions, may lead to elevated concentrations of suspended particulate matter (PM). Where sections of

the water transmission line are located in proximity to residential areas, dust emissions may cause temporary nuisance and discomfort to local communities and other sensitive receptors.

Exhaust gas emissions generated by construction machinery, trucks, and other diesel-powered equipment, including NO<sub>2</sub>, SO<sub>2</sub>, CO, and particulate matter, may result in temporary deterioration of local air quality, especially during periods of intensive construction activity. In enclosed or semi-enclosed areas, accumulation of exhaust fumes during equipment dismantling and installation works may pose occupational health risks to workers.

➤ **Operation Phase:**

During the operation phase, risks related to dust and exhaust gas emissions are expected to be limited primarily to maintenance and repair activities. Short-term dust generation may occur during equipment replacement, cleaning, and maintenance works at the pumping station. Along the sewer line, localized dust emissions may arise due to temporary excavations and increased vehicle traffic associated with maintenance and repair activities.

**4.1.1.3. Odor**

➤ **Construction Phase:**

Potential odour impacts during the construction phase may arise primarily from excavation works, particularly in areas where existing wastewater infrastructure is encountered or where connections to existing sewer lines are established. Temporary odour generation may occur as a result of exposure of residual wastewater, sludge deposits, or organic material accumulated in existing infrastructure elements. In addition, excavation of soils that may contain decomposed organic matter under anaerobic conditions could also lead to short-term odour emissions.

However, the majority of construction activities under the Project involve the installation of new sewer infrastructure rather than extensive intervention in existing wastewater systems. Therefore, the likelihood of significant odour generation is considered limited. Any odour that may occur is expected to be localized, temporary, and limited to the immediate vicinity of active construction sites.

Furthermore, sewer installation works will progress linearly along the pipeline route, meaning that construction activities at any specific location will be short in duration. As a result, potential odour impacts are not expected to persist in a single location for extended periods.

Implementation of good construction practices—such as minimizing the exposure time of wastewater or sludge, prompt backfilling of excavated areas, proper handling and removal of excavated materials, and maintaining clean work sites—will further reduce the potential for odour nuisance to nearby receptors, including residential areas and local businesses located along the pipeline corridors.

Considering the nature of the activities and the temporary character of construction works, odour impacts during the construction phase are assessed as minor, short-term, and manageable through standard construction management measures.

### ➤ Operation Phase:

During the operation phase, potential odor generation is mainly associated with wastewater conveyance infrastructure components such as pumping station, sewer manholes, and sections of the sewer network where wastewater retention times may increase.

Odor in wastewater systems is typically related to the formation of gases such as hydrogen sulfide (H<sub>2</sub>S) under anaerobic conditions during the decomposition of organic matter. If wastewater remains stagnant for extended periods within the sewer network, the potential for odor formation may increase.

Within the scope of the Döşemealtı Wastewater Infrastructure Project, the sewer network and pumping station will be designed in accordance with appropriate hydraulic and engineering standards to ensure continuous wastewater flow and minimize retention times within the system. Maintaining adequate flow conditions within the sewer network significantly reduces the likelihood of anaerobic processes that may lead to odor formation.

In addition, pumping station will be designed as enclosed structures equipped with appropriate ventilation systems. Routine operation and maintenance practices, including periodic inspection, cleaning of sewer lines, and timely removal of blockages or sediment accumulation, will further mitigate potential odor risks.

Based on the engineering design standards of the wastewater conveyance system and the periodic operation and maintenance (O&M) protocols to be executed by the responsible utility (ASAT), it is assessed that odour emissions during the operational phase will remain localized, non-persistent, and at controllable levels. Accordingly, these impacts are not anticipated to constitute a significant nuisance for sensitive receptors or local communities within the project's area of influence.

#### 4.1.1.4. Climate Change and Greenhouse Gas (GHG) Emissions

### ➤ Construction Phase:

During the construction phase of the subproject, greenhouse gas (GHG) emissions will mainly originate from the use of construction machinery, transportation of materials, and fuel consumption associated with excavation, pipeline installation, and pumping station construction activities.

Construction equipment such as excavators, loaders, trucks, and other diesel-powered machinery will generate emissions primarily in the form of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O) as a result of fossil fuel combustion. In addition, vehicle movements associated with the transport of construction materials, equipment, and workforce to and from the construction sites will also contribute to indirect GHG emissions.

However, the majority of construction works will be temporary and spatially distributed along the sewer network alignment. As construction activities will progress sequentially along the pipeline corridors, the intensity of machinery use at any specific location will be limited in

duration. Consequently, the associated GHG emissions during the construction phase are expected to be short-term and relatively low in magnitude.

Implementation of good construction practices—such as proper maintenance of construction machinery, efficient fuel use, optimization of transportation routes, and minimizing unnecessary idling of equipment—will help reduce fuel consumption and associated GHG emissions.

Considering the temporary nature and relatively limited scale of construction activities, the contribution of the Project to overall greenhouse gas emissions during the construction phase is expected to be minor and localized.

➤ **Operation Phase:**

During the operation phase of the Subproject, greenhouse gas (GHG) emissions are primarily associated with the energy consumption required for system operation and wastewater management processes.

**Energy Use:** The electricity consumption required to operate the pumps located at the 1 pumping station will constitute the main source of indirect emissions during the operational phase. The selection of high-energy-efficiency motors and the hydraulic optimization of the system will minimize the carbon footprint per unit of wastewater handled.

**Process Emissions:** Anaerobic decomposition, which may occur if wastewater remains stagnant within the sewer network for extended periods, can lead to the emission of gases with high global warming potential, such as methane (CH<sub>4</sub>). However, the system is designed to ensure continuous flow and prevent sedimentation, thereby mitigating this risk.

**Maintenance and Efficiency:** Regular line cleaning and equipment maintenance to be carried out by ASAT will ensure the system operates at its design efficiency, preventing unnecessary energy consumption and associated emission increases. Overall, the carbon emissions during the operational phase of the project are anticipated to remain at manageable levels when compared to the provided environmental benefits, such as the protection of groundwater and the reduction in the use of septic tanks.

#### 4.1.1.5. Environmental Noise

➤ **Construction Phase:**

The primary sources of noise during construction will include heavy machinery used for excavation and other construction activities, as well as construction-related traffic associated with the transport of excavated material and construction supplies. Elevated noise levels during the construction phase may have the potential to exceed existing background noise levels at nearby sensitive receptors, which could result in temporary adverse effects on human health and well-being.

The actual magnitude of noise impacts will depend on several factors, including the type of equipment used, the duration and timing of construction activities, and the characteristics of the noise generated (e.g., continuous, intermittent, or irregular).

➤ **Operation Phase:**

During the operation phase, no significant noise sources are anticipated as a result of activities. Any noise generated during routine maintenance or short-term intervention activities is expected to be temporary in nature and remain within the range of existing ambient noise levels, resulting in limited environmental impact.

**4.1.1.6. Impacts Associated with Water, Energy and Raw Materials Use**

➤ **Construction Phase:**

Water use during the construction phase will mainly occur for dust suppression, equipment cleaning, and general site activities. Considering the scale of the project, the amount of water required for these purposes is expected to be limited and temporary. Appropriate site management practices will be implemented to ensure efficient water use and to prevent unnecessary consumption.

Energy consumption during construction will primarily result from the operation of construction machinery and equipment, as well as the transportation of materials and equipment. Excavators, trucks, and other diesel-powered machinery will consume fuel during excavation works and material transport. However, these activities are temporary and will progress linearly along with the pipeline alignment. Therefore, energy consumption will be limited in both duration and magnitude across the project area.

In terms of raw materials, the project will mainly require pipeline materials (such as HDPE or concrete pipes), concrete, steel reinforcement, backfilling materials, and other construction materials commonly used in infrastructure projects. These materials will be procured in accordance with relevant technical standards. In addition, where technically feasible, suitable excavated materials will be reused as backfill material during construction activities.

Overall, impacts associated with water, energy, and raw material use during the construction phase are expected to be temporary, limited in scale, and manageable through appropriate construction site management practices.

➤ **Operation Phase**

During the operational phase, the use of water, energy, and raw materials will mainly be associated with the operation of the wastewater conveyance system and pumping station.

Energy consumption will primarily arise from the electricity required to operate wastewater pumping station. Pumping station will be used in locations where wastewater cannot be conveyed solely by gravity due to topographical conditions. Nevertheless, the energy demand of pumping station is generally lower compared to that of wastewater treatment processes. Pumping system are expected to be designed according to appropriate capacity and efficiency criteria in order to optimize energy use.

Water use during the operational phase will be minimal and may occur mainly during periodic maintenance and cleaning activities. Such water use is expected to remain negligible in relation to the overall operation of the system.

Raw material use during operation will be limited primarily to spare parts, maintenance materials, and equipment components required for periodic maintenance and repair activities. As sewerage infrastructure is largely a passive system, continuous raw material consumption during operation is not anticipated.

#### 4.1.1.7. Waste

##### ➤ Construction Phase

Waste expected to be generated during the construction phase includes domestic waste, packaging waste, excavation waste and hazardous waste.

##### Domestic Solid Waste

Domestic solid waste will be generated by personnel working during the construction phase of the project. The domestic solid waste generated will mostly consist of organic waste. The amount of domestic solid waste generated by personnel has been calculated based on data from TÜİK (2024) indicating that an average of 1.52 kg of domestic solid waste per person per day will be produced in Turkey:

Number of personnel = 60 persons

Unit solid waste amount = 1.52 kg/person × day (TÜİK – 2024) Amount of solid waste produced = 60 × 1.52 kg/person × day = 91.2 kg/day

The resulting domestic solid waste will be stored in existing waste containers and collected by waste collection trucks operated by Döşemealtı District Municipality. It will then be disposed of at the solid waste landfill site owned by Antalya Metropolitan Municipality.

##### Excavation Soil, Construction and Demolition Waste

During the construction phase of the project, emphasis will be placed on recycling excavated soil and construction waste, particularly for reuse as infrastructure materials. In accordance with the Regulation on the Control of Excavated Soil, Construction and Demolition Waste, construction waste and excavated soil shall not be mixed together. Furthermore, if the excavated soil and construction waste generated cannot be reused on site or recycled, it will be transported to authorized storage areas using transport vehicles with the necessary permits, in accordance with the aforementioned regulation. During the construction carried out within the scope of the project, part of the material excavated will be used as fill material, while the majority will be disposed of in excavation sites with the necessary permits from the relevant municipality using authorized transport vehicles.

##### Packaging Waste

Packaging waste generated during the construction phase will be disposed of in accordance with the procedures and principles of the Packaging Waste Control Regulation. Packaging waste such as paper and cardboard, mixed packaging containing metal, plastic and glass materials will be collected separately from other types of waste in special waste bins. Waste bins will be

collected periodically by licensed packaging waste collectors. The expected amount of packaging waste is calculated as follows:

Amount of Packaging Waste Generated (Domestic) = 91.2 kg/day × 0.2 = 18.24 kg/day

The packaging waste generated will be stored separately at the facility and collected and disposed of by the Licensed Packaging Waste Collection and Sorting Facility contracted by Döşemealtı Municipality.

### **Hazardous Waste**

During the construction phase of the projects, there is potential for petroleum-based products such as lubricants, hydraulic fluids, or fuels to be released into the environment during storage, transport, or use in equipment. In addition, other hazardous waste that may be generated include contaminated/oily cloths, rags and filters, contaminated packaging materials, toner cartridges, paint residues, fluorescent tubes, cleaning wipes and filters, hazardous insulation materials, and pressurized cylinders.

Hazardous waste likely to be generated during the construction phase will be collected separately on-site in designated containers in accordance with the Waste Management Regulation. In the event of spills or leakages, hazardous liquids will be collected and contained in a fenced-off designated area equipped with a concrete base and connected to a closed drainage channel to ensure isolated collection and accumulation. A roof or overhead cover will be provided for the hazardous waste storage area to prevent waste containers from being exposed to rainwater, thereby preventing spills, leaks, and environmental pollution while also ensuring worker safety. Additionally, prevailing wind directions will be considered in the design of the storage area to prevent the spread of particulate matter, dust, or pollutants, thus reducing health risks to workers and the environment.

The waste generated will be temporarily stored at the source in accordance with the criteria defined for each waste type. Temporarily stored wastes will be labeled with the statements “hazardous” or “non-hazardous,” as well as the waste code, the amount stored, and the storage date. These wastes will be delivered to licensed disposal/recycling facilities under separate waste codes. In accordance with the “Communiqué on the Transportation of Waste by Road,” published in the Official Gazette dated 20.03.2015 and numbered 29301, hazardous wastes will be transported by licensed vehicles.

### **Waste Batteries and Accumulators**

Waste batteries will be collected separately in waste battery bins. The collected waste batteries will be delivered to the Portable Battery Manufacturers and Importers Association (TAP) (authorized waste battery collector) for disposal at the licensed facility.

This waste will be handled in accordance with the procedures and principles of the Regulation on the Control of Waste Batteries and Accumulators. An agreement will be made with authorized companies to ensure the disposal of waste. If these wastes are not processed appropriately, they may cause adverse effects on human health and the environment.

➤ **Operation Phase:**

During the operation phase of the Subproject, waste generation is primarily associated with the operation of pumping station and routine maintenance activities. As the sewer network functions as a passive conveyance system, the volume of waste generated during operation is expected to be limited and largely maintenance related.

The main types of waste expected during operation include:

- **Waste batteries and accumulators:** Generated from batteries reaching the end of their service life in pumping station and electrical equipment.
- **Hazardous waste:** Such as used oils, filters, or certain chemicals utilized during maintenance, which could pose environmental risks if not managed properly.
- **Electrical and electronic waste:** Generated during the maintenance or replacement of control panels, monitoring devices, and other electrical equipment.
- **Packaging and minor maintenance waste:** Limited amounts resulting from the packaging of spare parts and materials.

To mitigate potential environmental impacts, the following measures will be implemented:

- Waste will be segregated at source by type and stored in designated temporary storage areas.
- Hazardous waste and waste batteries/accumulators will be sent to licensed recycling or disposal facilities in accordance with applicable national regulations.
- The responsible utility, ASAT, will ensure that waste management practices comply with national legislation and regulations, including proper storage, record-keeping, and transfer to licensed facilities.

Overall, waste generated during the operation phase is expected to remain limited, manageable, and associated with environmental risks minimally. Proper implementation of waste management measures, combined with the controlled conveyance of wastewater to the treatment facility, will contribute to protecting local water resources and reducing environmental pollution.

#### 4.1.1.8. Impacts Associated with Asbestos Containing Materials

➤ **Construction Phase:**

During the construction phase of the Döşemealtı Wastewater Infrastructure Project, the presence of asbestos-containing materials (ACMs) is not expected given the current infrastructure and project conditions. However, in the unlikely event that ACMs are encountered during construction, they will be managed in accordance with the Asbestos-Containing Materials (ACM) Management Plan prepared by the contractor under the Project's Environmental and Social Management framework. In line with this plan, any identified ACMs will be safely collected, temporarily stored in designated areas, and disposed of in compliance with national regulations. All procedures will be implemented to minimize potential risks to both the environment and worker health and safety.

➤ **Operation Phase:**

During the operation phase, the presence of asbestos-containing materials (ACMs) is not anticipated. In the unlikely event that ACMs are identified during operation, all responsibilities for safe handling, collection, storage, and disposal will rest entirely with ASAT. All necessary procedures and precautions will be implemented and supervised by ASAT to ensure compliance with applicable regulations and to prevent environmental or health risks.

#### 4.1.1.9. Biodiversity Risks and Impacts

➤ **Construction Phase:**

During the construction phase, activities carried out within the Subproject component sites may result in limited impacts on existing biodiversity in the project area. Temporary disturbance to small mammals, birds, and reptile species may occur due to soil disturbance, short-term noise, and increased human presence associated with construction activities. However, no legally protected species or critical or sensitive habitats have been identified within the project area. In addition, as the Subproject wastewater network is planned predominantly along existing cadastral roads and publicly allocated areas, the risk of natural habitat disturbance is minimized. Accordingly, project activities are not expected to result in permanent or significant adverse impacts on biodiversity or protected areas. However, given the proximity of the subproject site to protected areas, measures will be taken to prevent wildlife from entering the site, and if observed, they will be safely removed from the site without causing harm.

➤ **Operation Phase:**

No adverse impacts on biodiversity are anticipated during the operation phase of the proposed project.

#### 4.1.2. Social Risk and Impacts

The rehabilitation and construction activities under the Subproject are expected to generate some social risks and impacts; however, these are anticipated to be localized, temporary, and reversible in nature. The fact that project activities will be largely implemented within existing road corridors, publicly owned land, and Subproject boundaries significantly limits the spatial extent and permanence of potential social impacts.

During the construction phase, temporary disturbances to the daily life of local communities may occur as a result of construction activities, including traffic disruptions, temporary access restrictions, increased noise and dust levels, and occupational health and safety risks. Works along the sewer pipeline corridors, particularly at road crossings and temporary excavation areas, may result in short-term limitations on mobility and access for local users.

Since the majority of construction works will be carried out on publicly owned land, no loss of land ownership, physical displacement, or involuntary resettlement is expected. Nevertheless, temporary and indirect impacts may occur on a limited number of local businesses within the Subproject area due to access restrictions and construction-related disturbances.

The operation phase of the Subproject will be managed by the ASAT General Directorate. Social impacts during operation are expected to be limited, infrequent, and temporary, occurring primarily during routine maintenance and repair activities. Such impacts may include short-term noise, traffic and access restrictions, as well as occupational health and safety risks for operational staff. These impacts are considered manageable within existing institutional capacity and standard operational procedures.

#### 4.1.2.1. Labor and Working Conditions

##### ➤ Construction Phase:

The Contractor shall be responsible for human resources management during the pre-construction and construction phases of the Project. The Contractor will comply with World Bank Environmental and Social Standards (ESS2 – Labor and Working Conditions), national labor legislation, social security regulations, and occupational health and safety laws, as well as with the principles and standards of the International Labor Organization (ILO). In line with the ILO conventions and applicable national legislation, the Contractor shall implement the following measures:

- Prohibition of child labor, ensuring that no persons under the age of eighteen (18) are employed
- Elimination of forced labor and implementation of a Human Resources Policy consistent with the European Convention on Human Rights and the Turkish Constitution
- Non-discrimination and equal opportunity in employment relations, regardless of language, race, gender, political opinion, philosophical belief, or religion
- Provision of written employment contracts to all workers, clearly defining job descriptions, working hours, wages, rights, and obligations
- Ensuring workers' access to a functioning Project-level Grievance Mechanism.

##### ➤ Operation Phase:

Project operations will be carried out by ASAT, and no construction workforce or site-based construction activities will be involved during this phase. Therefore, no additional labor-related risks are anticipated. Operational staff will perform their duties in accordance with existing ASAT occupational health and safety procedures, and appropriate personal protective equipment (PPE) will be used during routine operation, monitoring, and maintenance activities. Labor-related risks are minimal but continued compliance with labor standards and municipal protocols is essential.

#### 4.1.2.2. Occupational Health and Safety (OHS)

##### ➤ Construction Phase:

If adequate measures are not implemented, construction activities may result in incidents and accidents that could pose risks to workers' health and safety. Potential Occupational Health and Safety (OHS) risks that may arise during the construction phase include, but are not limited to, the following:

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- Working at height
- Exposure to moving objects and equipment
- Slips, trips, and falls
- Exposure to noise, vibration, and dust
- Manual handling of materials
- Unintentional collapse or cave-ins
- Exposure to asbestos-containing materials
- Electrical hazards
- Traffic-related risks associated with increased vehicle movement
- Occupational accidents and injuries
- Hazards related to unhygienic or unhealthy living conditions for workers
- Risk of exposure to communicable diseases (such as COVID-19, HIV/AIDS, malaria, hepatitis B virus, etc.).

➤ **Operation Phase:**

During the operation phase, the operation of the Subproject will be carried out by ASAT. Occupational Health and Safety (OHS) measures will be implemented in order to ensure the safe and continuous operation of the facilities, in accordance with applicable national legislation and ASAT's established OHS procedures.

**4.1.2.3. Community Health and Safety**

➤ **Construction Phase:**

Within the scope of the subproject, the following potential Community Health and Safety (CHS) risks and impacts associated with construction activities have been identified:

- Increased traffic volume, speeding, road deterioration, and associated risks of traffic accidents and injuries during transportation activities
- Damage to existing underground public utility cables and pipelines, leading to temporary service disruptions
- Increased noise and vibration levels affecting nearby communities
- Risks related to Gender-Based Violence (GBV), Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH)
- Temporary restrictions or disruptions to community access to homes, workplaces, schools, and other social services due to construction activities
- Potential impacts of construction activities on vulnerable and disadvantaged groups.

➤ **Operation Phase:**

During the operation phase, Subproject will be operated and managed by ASAT, and the safe and continuous operation of the facilities will be of critical importance for community health and safety. Water supply and treatment processes will be carried out in accordance with applicable standards, and drinking water quality will be regularly monitored in line with national legislation and World Bank ESS4 requirements.

#### 4.1.2.4. Traffic Safety

##### ➤ Construction Phase:

The transportation of construction materials, vehicle movements during construction activities, and excavation works along access routes (including roads serving schools, residential areas, and commercial premises) may result in temporary traffic disruptions. These disruptions may cause inconvenience to local communities and pose safety risks for pedestrians. In addition, road closures and traffic management works may have adverse effects on nearby commercial establishments by limiting customer access.

Traffic-related construction activities may also impede mobility for disadvantaged and vulnerable individuals, potentially affecting their ability to carry out daily activities and access essential services.

##### ➤ Operation Phase:

During the operation phase, the Project's impacts on traffic are expected to be limited, localized, and short-term, and no significant or long-term adverse traffic-related effects are anticipated.

#### 4.1.2.5. Pedestrian Safety

##### ➤ Construction Phase:

During the construction phase of the Subproject, roadside works, excavation areas, and material transportation may pose temporary risks to pedestrian safety. These risks are particularly relevant near schools, hospitals, mosques, and parks, where pedestrian and public transport activity is high, and where unsafe conditions could lead to accidents or injuries.

Measures to ensure pedestrian safety during construction will include:

- Barricading and clear signage of excavation and work areas,
- Establishing temporary pedestrian routes and directional signage to provide safe alternatives,
- Noise and dust control within work areas to reduce distractions,
- Deployment of traffic or safety personnel during peak hours, especially near school entrances/exits.

These measures are expected to keep pedestrian safety risks limited and manageable during the construction phase.

##### ➤ Operation Phase:

During the operation phase, as the sewer lines and pumping station function as passive systems, risks to pedestrian safety are minimal. However, temporary risks or access restrictions may occur during maintenance and repair activities, particularly near schools, hospitals, mosques, and parks, where pedestrian traffic is high.

Operational phase mitigation measures will include:

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- Proper signage and protective barriers around maintenance areas,
- Guidance for safe pedestrian movement and, if necessary, provision of temporary alternative routes,
- Scheduling maintenance works outside peak pedestrian hours where feasible,
- Full implementation of occupational health and safety procedures for operational staff.

With these measures, pedestrian safety risks during the operation phase are expected to remain temporary, limited, and manageable.

#### **4.1.2.6. Loss of Land and Livelihoods**

##### **➤ Construction Phase:**

Construction works for the sewer line are planned predominantly along existing cadastral roads and publicly owned or allocated areas. Accordingly, no permanent land take, physical displacement, or adverse impacts on land ownership or land use rights are anticipated under the Project.

Nevertheless, during the construction phase, excavation and construction activities along the transmission line corridor—particularly at road crossings and in publicly accessible areas—may result in temporary and indirect impacts on livelihoods, including small-scale agricultural activities, informal commercial activities, or income-generating activities dependent on daily mobility. These impacts are expected to be localized, short-term, and reversible, and limited to the duration of construction works.

##### **➤ Operation Phase**

No additional impacts on land use or livelihoods are anticipated during normal operation of the Subproject. Any temporary access restrictions that may arise during maintenance and repair activities are expected to be short-lived and limited in scope and are not anticipated to result in permanent or significant loss of income.

#### **4.1.2.7. Disadvantaged and Vulnerable Individuals or Groups**

##### **➤ Construction Phase**

As the Subproject will be implemented primarily within existing facility boundaries, cadastral roads, and publicly allocated areas, the Project is not expected to result in direct or permanent adverse impacts on disadvantaged or vulnerable individuals or groups.

However, construction-related impacts such as noise, dust, increased traffic, and temporary access restrictions may cause short-term inconvenience, particularly for elderly persons, children, people with disabilities, low-income households, and individuals whose livelihoods depend on daily mobility.

Vulnerable groups residing near the transmission line corridor or using public spaces along the alignment may be relatively more sensitive to temporary access constraints, reduced mobility,

and safety risks during construction. These impacts are expected to be local, temporary, and limited to the construction period.

➤ **Operation Phase**

During normal operation of the facilities, no additional or atypical social impacts on disadvantaged or vulnerable groups are anticipated. Temporary disturbances such as short-term noise or access limitations may occur during maintenance and repair activities; however, these impacts are expected to be minor, localized, and temporary in nature.

**4.1.2.8. Cultural Heritage**

➤ **Construction Phase**

No known cultural heritage sites or archaeological assets have been identified within or in the immediate vicinity of the Project excavation areas. Nevertheless, there remains a possibility of encountering previously unknown or chance archaeological finds during excavation and earthworks.

➤ **Operation Phase**

As no excavation or land-disturbing activities are foreseen during the operation phase—other than limited maintenance and repair works—no significant impacts on archaeological or cultural heritage resources are anticipated during operation.

## 4.2. Pre-Construction ESMP Matrix

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans / Procedures
<b>Documentation</b>					
1		All Project Stakeholders	<ul style="list-style-type: none"> <li>The Contractor shall, in line with the requirements of the Environmental and Social Management Plan (ESMP), Stakeholder Engagement Plan (SEP), and the Contractor Management Plan prepared by the Employer, carry out pre-construction baseline field surveys to measure key environmental parameters (such as water, soil, air quality, etc.).</li> <li>Within the scope of the Contractor Environmental and Social Management Plan (C-ESMP), the Contractor shall prepare Subproject-specific Management Plans describing how Environmental and Social (E&amp;S) risks and impacts will be managed during the Project lifecycle.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and Social Management Plan (ESMP)</li> <li>Stakeholder Engagement Plan (SEP)</li> <li>Contractor Environmental and Social Management Plan (C-ESMP), including: <ul style="list-style-type: none"> <li>Labor Management Plan (LMP)</li> <li>Occupational Health and Safety (OHS) Management Plan</li> <li>Community Health and Safety Management Plan</li> <li>Emergency Preparedness and Response Plan (EPRP)</li> <li>Asbestos Management Plan</li> <li>Chance Finds Procedure</li> <li>Traffic Management Plan</li> </ul> </li> </ul>
<b>Labor and Working Conditions</b>					
2	Contractor Workers' Accommodation Conditions	Workers	<ul style="list-style-type: none"> <li>Where workers' camps are to be established, a Workers' Camp Management Plan shall be prepared in accordance with the IFC and EBRD guideline "Workers' Accommodation:</li> </ul>	<ul style="list-style-type: none"> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Construction Site / Camp Plan</li> <li>Environmental and Social Management Plan (ESMP)</li> <li>Emergency Preparedness and Response Plan (EPRP)</li> </ul>

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			<p>Processes and Standards” (2009), and camp areas shall be established in compliance with this Plan.</p> <ul style="list-style-type: none"> <li>• Designated non-smoking areas shall be allocated within construction and camp sites.</li> <li>• Clean and sufficient numbers of toilet and shower facilities shall be provided, and regular cleaning and maintenance of these facilities shall be ensured.</li> <li>• Workers’ camp areas shall be arranged in a manner that ensures workers’ health, safety, and comfort. Accommodation units shall be kept clean and hygienic, and heating and cooling shall be provided through appropriate climate control systems.</li> <li>• Laundry facilities shall be provided to improve workers’ living conditions.</li> <li>• Dormitory floors shall be covered with appropriate materials to ensure adequate accommodation comfort.</li> <li>• Each worker shall be provided with a personal locker in dormitories.</li> <li>• Adequate personal space shall be provided for each worker to ensure privacy.</li> <li>• Clear and understandable emergency plans shall be prepared for emergencies such as fire, natural disasters, and theft, and regular trainings shall be provided to all workers.</li> </ul>		
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			<ul style="list-style-type: none"> <li>• Fire alarm systems and firefighting equipment shall be installed at construction and camp sites; all equipment shall be regularly tested and maintained.</li> <li>• Workers shall receive regular training on codes of conduct.</li> </ul>		
	<p>Risks or Impacts Related to Labor, Working Conditions, and Workers' Rights</p>	<p>Workers</p>	<ul style="list-style-type: none"> <li>• Particular emphasis shall be placed on non-discrimination and equal opportunity principles. All employment-related decisions (including recruitment, compensation, wages and benefits, working and employment conditions, access to training, assignment, promotion, termination or retirement, and disciplinary practices) shall be made independently of personal characteristics unrelated to job requirements. Wages, working hours, and other benefits shall be determined in accordance with the Turkish Labor Law.</li> <li>• Workers shall be provided with written contracts containing clear and understandable documented information on their rights under national labor legislation, including provisions related to working hours, wages, overtime, compensation, and notification at the commencement of employment and in the event of any material changes to employment conditions.</li> <li>• Work permits of all personnel employed under the Project shall be verified, and</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental and Social Management Plan (ESMP)</li> <li>• Construction Site / Camp Plan</li> <li>• Labor Management Plan (LMP)</li> </ul>

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			<p>measures shall be taken to prevent child labor, forced labor, and the employment of persons under the age of 18.</p> <ul style="list-style-type: none"> <li>Workers shall receive training on non-discrimination and codes of conduct. Trainings provided to workers shall include explanatory information on Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH).</li> <li>A Workers' Grievance Mechanism shall be established to enable workers to raise workplace-related concerns. Workers shall be informed about the grievance mechanism during recruitment and shall be ensured easy and confidential access to this mechanism.</li> </ul>		
3	Occupational Health and Safety Risks or Impacts	<ul style="list-style-type: none"> <li>Workers</li> <li>Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>A Project Implementation Unit (PIU) to be established by ASAT, ALDAŞ Supervision Consultant, and the Contractor's project team shall operate on a full-time basis and include personnel responsible for effectively supervising and controlling implementation, comprising at least one environmental specialist, one social specialist, and one Occupational Health and Safety (OHS) specialist.</li> <li>An Emergency Preparedness and Response Plan (EPRP) covering occupational and community health and safety shall be prepared to manage situations requiring immediate response during construction activities under the</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and Social Management Plan (ESMP)</li> <li>Contractor Environmental and Social Management Plan (C-ESMP)</li> <li>Labor Management Plan (LMP)</li> <li>Occupational Health and Safety (OHS) Management Plan</li> <li>Emergency Preparedness and Response Plan (EPRP)</li> <li>Daily OHS Reports for Construction Site and Camp Areas</li> </ul>

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			<p>Project (such as fire, earthquake, etc.) and shall be communicated to all workers.</p> <ul style="list-style-type: none"> <li>• Traffic management plans and the required signage shall be prepared and installed at designated locations prior to the commencement of works.</li> <li>• Job-specific collective protection measures will be implemented as a priority. Prior to the commencement of works, work permit systems will be established, and activities will start only after the safety of the working area has been ensured. In accordance with Occupational Health and Safety legislation, priority will be given to collective protection measures in risk control; personal protective equipment (PPE) will be applied as a complementary measure where risks cannot be completely eliminated through collective protection measures. Job-specific on-the-job trainings will be provided to employees by authorized technical personnel. In addition, task-specific drills will be conducted to prevent panic among personnel in the event of a possible emergency. Within this scope, appropriate PPE such as ear protection, helmets, and reflective vests, suitable for the tasks performed, will be provided to workers in order to</li> </ul>		
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			<p>minimize occupational health and safety risks.</p> <ul style="list-style-type: none"> <li>Workers shall receive appropriate induction, health, and safety training and shall be adequately informed prior to and during their employment.</li> <li>In accordance with the Regulation on First Aid, the Contractor shall ensure the presence of a sufficient number of certified first aiders, at a minimum ratio of one (1) certified first aider for every ten (10) personnel employed under the Project.</li> </ul>		
4	Gender-Based Violence (GBV) Risk; Sexual Exploitation and Abuse / Sexual Harassment (SEA/SH) against workers; Gender inequality	Workers	<ul style="list-style-type: none"> <li>The Contractor shall develop a Code of Conduct (CoC), incorporate it into workers' employment contracts, and ensure workers' awareness and socialization through regular training activities.</li> <li>Upon recruitment, workers shall receive training on the Code of Conduct, Sexual Exploitation and Abuse / Sexual Harassment (SEA/SH), Gender-Based Violence (GBV), and the relevant World Bank requirements.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Labor Management Plan (LMP)</li> </ul>
<b>Community Health and Safety</b>					
5	Community Health and Safety Risks	<ul style="list-style-type: none"> <li>Workers</li> <li>Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>All required legal permits, approvals, and authorizations necessary for construction activities shall be obtained prior to the commencement of works.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> </ul>

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				<ul style="list-style-type: none"> <li>Contractor Company</li> </ul>	
6	Traffic-Related Risks	Local Communities	<ul style="list-style-type: none"> <li>Prior to construction activities, the Contractor shall obtain all required official permits from the Provincial Directorate of Traffic for road closures, traffic diversions, and other traffic management measures necessary to ensure the safe use of roads.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>Traffic Management Plan</li> </ul>
<b>Stakeholder Engagement and Information Disclosure</b>					
7	Risks and impacts on stakeholders will be managed through appropriate stakeholder engagement, information disclosure, and grievance mechanisms. Particular attention shall be given to preventing disadvantaged or vulnerable individuals and groups from being exposed to disproportionate risks.	Local Communities	<ul style="list-style-type: none"> <li>During the pre-construction period, Public Consultation Meetings shall be organized in the areas where works will be carried out, within the scope of the Environmental and Social Management Plan (ESMP). Through these meetings, local communities shall be informed about the Project, and their views and recommendations shall be received and duly considered.</li> <li>A grievance mechanism shall be established under the ESMP, and the functioning of this mechanism as well as public access to it shall be regularly monitored.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder Engagement Plan (SEP)</li> </ul>

### 4.3. Construction ESMP Matrix

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
<b>ESS2 - Labor and Working Conditions</b>					
1	Risks associated with labor and working conditions (contracts, wages, working hours, discrimination, child/forced labor, accommodation)	<ul style="list-style-type: none"> <li>Direct workers (ALDAŞ / PIU site personnel)</li> <li>Contractor and subcontractor workers</li> </ul>	<ul style="list-style-type: none"> <li>All workers will be provided with written employment contracts that clearly and comprehensively set out their rights under applicable national labor legislation. Such contracts will include, inter alia, provisions on working hours, wages and overtime payments, compensation, and employment-related benefits, as well as the relevant rights and obligations arising from the requirements of ESS2. Workers will be informed of these terms and conditions at the commencement of the employment relationship and will be duly notified of any material changes thereto during the course of employment.</li> <li>Full compliance with the principles of non-discrimination and equal opportunity will be ensured. In this context, all decisions related to recruitment and employment—including hiring, wages and compensation, social benefits, working conditions and terms of employment,</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and Social Management Plan (ESMP)</li> <li>Construction Site / Camp Plan</li> <li>Contractor Environmental and Social Management Plan (C-ESMP)</li> <li>Labor Management Plan (LMP)</li> <li>Occupational Health and Safety (OHS) Management Plan</li> <li>Emergency Preparedness and Response Plan (EPRP)</li> <li>Workers' Grievance Mechanism</li> <li>Applicable national labor legislation and related regulations</li> </ul>

			<p>access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices—will be made without regard to personal characteristics that are not related to the inherent requirements of the job. Wages, working hours, and all other financial and social entitlements will be determined in accordance with the applicable provisions of the Turkish Labor Law and relevant national legislation.</p> <ul style="list-style-type: none"> <li>• Workers will be provided, in full and in a timely manner, with weekly rest periods (weekly day off), annual paid leave, sick leave, maternity/childbirth leave, and family and compassionate leave, in accordance with the provisions of the Turkish Labor Law No. 4857 and other applicable national legislation.</li> <li>• In accordance with applicable national legislation and the World Bank Environmental and Social Standards (in particular ESS2 – Labor and Working Conditions), all forms of child labor will be strictly prohibited, and it will be ensured that no individuals below the minimum working age are employed, directly or indirectly, under the Subproject.</li> <li>• In accordance with applicable national legislation and the World Bank Environmental and Social Standards (in</li> </ul>		
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			<p>particular ESS2 – Labor and Working Conditions), a Subproject-specific Labor Management Plan (LMP) will be prepared and implemented to ensure the protection of workers’ rights, the regulation of working conditions, the implementation of occupational health and safety measures, and the effective management of workers’ grievances for all workers engaged under the Subproject.</p> <ul style="list-style-type: none"> <li>• In the event that on-site or off-site accommodation is provided to workers under the Subproject, the planning, operation, and management of workers’ accommodation facilities will be carried out in accordance with applicable national legislation, the World Bank Environmental and Social Standards (in particular ESS2), and the guidance note “Workers’ Accommodation: Processes and Standards” (2009) published by the IFC and the EBRD. Within this scope, the Camp Management Plan will be effectively implemented and regularly monitored. Emergency response teams will be established in line with the Emergency Preparedness and Response Plan, and regular emergency training will be provided to all workers engaged at the Subproject sites. Hygiene conditions in common-use facilities, including offices, dormitories, canteens,</li> </ul>		
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			<p>bathrooms, and toilets, will be ensured on a periodic basis, and cleaning activities will be recorded on daily, weekly, and monthly schedules. Across the camp area, exposed electrical cables will be placed within appropriate protective conduits to minimize electrical hazards. In addition, the use of cigarettes and tobacco products will be strictly prohibited in dormitories to reduce fire risk, and compliance with this prohibition will be monitored through regular inspections.</p>		
2	OHS - General Hazards	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>Authorized visitors</li> </ul>	<ul style="list-style-type: none"> <li>To address emergency risks associated with the construction phase of the Subproject, Subproject-specific Risk Assessment, Occupational Health and Safety (OHS) Management Plan, and Emergency Preparedness and Response Plan will be developed and effectively implemented in accordance with applicable national legislation, the İLBANK Environmental and Social Management System (ESMS) and related implementation procedures, the World Bank Environmental and Social Standards (in particular ESS2 – Labor and Working Conditions and ESS4 – Community Health and Safety), and the World Bank Group Environmental, Health and Safety (EHS) Guidelines.</li> <li>Monitoring and record-keeping activities, as well as accident and</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>Construction Site / Camp Plan</li> <li>C-ESMP</li> <li>Labor Management Plan (LMP)</li> <li>Occupational Health and Safety (OHS) Management Plan</li> <li>Emergency Preparedness and Response Plan (EPRP)</li> <li>Applicable National Occupational Health and Safety (OHS) Legislation currently in force</li> </ul>

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			<p>incident investigation reports, including audit procedures established to verify and document the effectiveness of measures for the prevention and control of exposure to occupational hazards, will be systematically maintained in an orderly and accessible manner for a minimum period of ten (10) years.</p> <ul style="list-style-type: none"> <li>• Within the scope of the Sub-Project, all deep excavation areas and pumping station pits present potential risks of falls and injuries in terms of occupational health and safety during the construction of the sewer lines and the one pumping station. Guardrails and barrier systems will be installed in these areas, and workers will be required to use safety harnesses and personal protective equipment (PPE) during operations; all PPE shall be provided by the contractor. Furthermore, emergency equipment will be maintained on-site at all times to ensure rapid response to any potential emergencies</li> <li>• To minimize slip and trip hazards within work areas, proper housekeeping and orderly site conditions shall be maintained at all times; for trenching and excavation works, appropriate excavation, shoring, and support techniques shall be implemented to prevent collapses and similar hazards.</li> </ul>		
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			<ul style="list-style-type: none"> <li>• To prevent fire and explosion risks during construction activities, fire prevention measures shall be implemented in accordance with applicable national legislation and internationally recognized occupational health and safety standards; flammable and explosive materials shall be safely stored; fire-fighting equipment shall be provided at appropriate and easily accessible locations; and workers shall receive the necessary training on fire response and emergency procedures.</li> <li>• The entire Subproject site shall be enclosed with lockable modular security barriers during the construction phase in order to prevent uncontrolled access that may pose risks to the life and property of third parties. Access to the site shall be restricted to authorized personnel only. In this context, entry and exit points shall be controlled, and a sufficient number of security personnel with clearly defined roles and responsibilities shall be employed to ensure the continuity of access control.</li> <li>• In order to ensure occupational health and safety at the construction site, minimum personal protective equipment (PPE) requirements—including, at a minimum, safety helmets, high-visibility vests, and safety footwear—shall be fully provided for all workers</li> </ul>		
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			<p>and visitors, and their use shall be continuously monitored and enforced. In addition, task-specific PPE (such as gloves, eye protection, hearing protection, respiratory protective equipment, etc.), depending on the nature of the activity and site conditions, shall be appropriately provided and used.</p> <ul style="list-style-type: none"> <li>• Where risks arising from Subproject activities cannot be fully eliminated or adequately reduced through collective protection measures or work organization methods, processes, or practices, health and safety signage shall be installed for the purpose of informing and warning workers and third parties. Such signage shall be placed at clearly visible and easily understandable locations in accordance with national legislation and relevant standards, and its effective and continuous use on site shall be ensured.</li> <li>• To support occupational health and safety at the construction site, site cleanliness and housekeeping standards shall be established and implemented by all workers as part of their daily activities. Compliance with these standards shall be monitored through inspections in order to ensure the continuity of a safe, orderly, and</li> </ul>		
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			<p>accessible working environment across the site.</p>		
<p>3</p>	<p>OHS – Physical Hazards: Confined Spaces</p>	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> <li>• ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>• Authorized visitors</li> </ul>	<p>In the event that confined space work is required during the construction activities of the Subproject, the following measures shall be implemented to prevent and control risks specific to confined spaces:</p> <ul style="list-style-type: none"> <li>• Situations requiring work in confined spaces shall be minimized to the extent practicable; work methods and site organization shall be planned in a manner that reduces the need for entry into confined spaces.</li> <li>• Standard Operating Procedures (SOPs) specific to confined space entry shall be applied for all activities requiring entry into confined spaces, and such entries shall be subject to controlled authorization.</li> <li>• Prior to entry into confined spaces, the relevant areas shall be isolated, and all energy sources and flow lines shall be safely disconnected or shut off in order to prevent accidental activation or flooding.</li> <li>• The atmosphere within confined spaces shall be monitored prior to entry and throughout the work using multi-gas detection devices; oxygen (O<sub>2</sub>) levels as well as the presence of flammable and hazardous gases (such as H<sub>2</sub>S and CO) shall be measured, and entry shall not be</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Occupational Health and Safety (OHS) Management Plan</li> <li>• Emergency Preparedness and Response Plan (EPRP)</li> <li>• Applicable National Occupational Health and Safety (OHS) Legislation currently in force</li> </ul>

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			<p>permitted unless safe working conditions are ensured.</p> <ul style="list-style-type: none"> <li>• Where safe atmospheric conditions cannot be achieved, entry into confined spaces shall be prohibited; where necessary, mechanical or portable ventilation equipment shall be used to establish and maintain a safe atmosphere.</li> <li>• Appropriate personal protective equipment (PPE), including respiratory protective equipment and lifelines where required, shall be used during confined space work, and a trained standby attendant shall be stationed outside the confined space at all times.</li> <li>• Emergency response, rescue, and evacuation arrangements shall be established prior to the commencement of confined space work, and rescue and first-aid equipment shall be readily available at the work location.</li> <li>• Workers assigned to confined space activities shall receive appropriate training on confined space hazards, the use of gas detection equipment, safe working practices, and emergency response procedures.</li> <li>• Workers required to enter confined spaces shall be confirmed as medically fit for confined space work based on assessment by the occupational physician.</li> </ul>		
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			<ul style="list-style-type: none"> <li>The effectiveness of confined space control measures shall be regularly verified through site inspections and monitoring activities.</li> </ul>		
4	OHS – Physical Hazards: Electrical Hazards	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>Authorized visitors</li> </ul>	<ul style="list-style-type: none"> <li>All temporary and permanent electrical installations to be used at the construction site shall be installed in accordance with applicable national legislation and relevant standards and shall be inspected by authorized and competent personnel.</li> <li>Energized electrical panels, cables, and equipment shall be clearly identified and appropriately labeled, and access by unauthorized persons shall be prevented.</li> <li>Prior to maintenance, repair, and installation works, the relevant electrical circuits shall be de-energized; lockout–tagout (LOTO) procedures shall be implemented to prevent accidental re-energization.</li> <li>All extension cords, sockets, and portable electrical tools used at the construction site shall be regularly inspected; damaged, worn, or non-compliant equipment shall be immediately removed from service.</li> <li>Electrical equipment to be used in wet or damp conditions shall be suitably insulated; residual current devices (RCDs) and effective grounding systems shall be installed and maintained.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Occupational Health and Safety (OHS) Management Plan</li> <li>Emergency Preparedness and Response Plan (EPRP)</li> <li>Applicable National Occupational Health and Safety (OHS) Legislation currently in force</li> </ul>

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		<ul style="list-style-type: none"><li>• Electrical cables shall be protected against vehicle traffic, mechanical impact, and crushing risks, or shall be safely suspended where appropriate.</li><li>• Safe approach distances shall be defined for high-voltage lines and areas presenting electrical hazards, and such areas shall be clearly marked with warning signage.</li><li>• Electrical works shall be carried out exclusively by personnel with the required training and qualifications; in exceptional cases where live work is unavoidable, a permit-to-work system shall be applied.</li><li>• Adequate lighting shall be provided throughout the construction site; temporary lighting systems shall be installed as necessary to prevent accidents in poorly lit areas.</li><li>• The implementation of measures related to electrical hazards shall be regularly monitored through site inspections and audits.</li><li>• Insulating mats with appropriate specifications shall be provided in front of and around electrical panels to protect against the risk of electric shock. An effective grounding (earthing) system shall be installed for all electrical installations and equipment, and its continuity shall be periodically tested</li></ul>		
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			<p>and recorded by authorized personnel. Electrical panels and installations shall be locked and access-controlled, with access permitted only to authorized personnel. Single-line diagrams, warning signs, and emergency instructions shall be clearly displayed on electrical panels. Electrical equipment and protective devices shall be selected to be suitable for site and environmental conditions, and maintenance, inspection, and testing of electrical installations shall be carried out in a planned and periodic manner, with any identified non-compliances promptly corrected.</p>		
5	OHS – Physical Hazards: Fall Protection	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>Authorized visitors</li> </ul>	<ul style="list-style-type: none"> <li>Activities requiring work at height shall, where feasible, be carried out from ground level; where this is not possible, engineering and organizational control measures aimed at reducing fall risks shall be implemented as a priority.</li> <li>Prior to commencing work at height, task-specific risk assessments shall be conducted; based on these assessments, a Working at Height Procedure and a permit-to-work system shall be applied.</li> <li>Criteria for the use of fall protection systems shall be determined in accordance with Law No. 6331 on Occupational Health and Safety and the relevant regulations. For all activities requiring work at height and involving a</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Occupational Health and Safety (OHS) Management Plan</li> <li>Emergency Preparedness and Response Plan (EPRP)</li> <li>Applicable National Occupational Health and Safety (OHS) Legislation currently in force</li> </ul>

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			<p>risk of falling, collective protection measures shall be prioritized based on the results of the risk assessment; where the risk of falling cannot be eliminated, personal fall prevention and fall arrest systems shall be implemented. The fall protection systems to be used shall be selected considering the nature of the work and the existing risks. Fall protection systems to be used shall be appropriate to the structure, the task being performed, and the required movements (including ascent, descent, and horizontal movement), and shall be selected based on the risk assessment.</p> <ul style="list-style-type: none"> <li>• Work platforms, scaffolding, temporary working areas, and openings shall be equipped with appropriate guardrails, mid-rails, and toe boards to prevent fall hazards.</li> <li>• Where collective protection measures are insufficient, personal fall arrest systems shall be used. In this context, safety lifelines made of at least 16 mm (5/8 inch) diameter two-in-one nylon or materials of equivalent strength shall be used; rope lifelines are replaced immediately before signs of aging or fiber deterioration occur.</li> <li>• Anchorage points, lifelines, and fall arrest equipment shall have adequate capacity for their intended use; visual</li> </ul>		
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			<p>and functional inspections shall be conducted prior to each use.</p> <ul style="list-style-type: none"> <li>• Personnel assigned to work at height shall be confirmed as fit for such work based on an assessment by the workplace physician; only trained and authorized personnel shall be permitted to perform work at height.</li> <li>• Hand tools and equipment used during work at height shall be secured against falling; work areas shall be controlled to prevent risks related to falling objects.</li> <li>• Work at height activities shall be regularly monitored through site inspections and record-keeping, and any non-compliances shall be promptly addressed.</li> <li>• Where electric hand tools are used during work at height, in accordance with World Bank ESS2 and ESS4, workers shall be required to use a secondary (backup) safety connection in addition to the primary fall arrest system.</li> </ul>		
6	OHS – Physical Hazards: Rotating and Moving Equipment	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> <li>• ALDAŞ / Project Implementation Unit (PIU)</li> </ul>	<p>During the construction activities the Subproject, the following occupational health and safety measures shall be implemented in order to prevent risks such as entrapment, crushing, drawing-in, cutting, and impact that may arise from rotating and moving machinery and equipment (including construction machinery, pump,</p>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Occupational Health and Safety (OHS) Management Plan</li> <li>• Emergency Preparedness and Response Plan (EPRP)</li> </ul>

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		<p>on-site personnel</p> <ul style="list-style-type: none"> <li>• Authorized visitors</li> </ul>	<p>conveyors, cranes, generators, cutting and drilling equipment, etc.):</p> <ul style="list-style-type: none"> <li>• All machinery and equipment with rotating or moving parts shall be fitted with appropriate protective guards and physical barriers designed to prevent workers from coming into contact with such parts.</li> <li>• The removal, bypassing, disabling, or rendering ineffective of protective guards shall be strictly prohibited and shall be monitored through regular site inspections.</li> <li>• During maintenance, repair, cleaning, and adjustment activities, equipment shall be fully stopped, de-energized, and subject to lockout–tagout (LOTO) procedures to prevent accidental start-up.</li> <li>• Access to areas where rotating and moving equipment is located shall be restricted to authorized personnel only, and appropriate warning signs and safety markings shall be clearly displayed.</li> <li>• Workers shall be provided with equipment-specific safe work instructions, and machinery and equipment shall be operated exclusively by trained and authorized personnel.</li> <li>• The use of loose-fitting clothing, accessories, or personal items that could</li> </ul>		<ul style="list-style-type: none"> <li>• Applicable National Occupational Health and Safety (OHS) Legislation currently in force</li> </ul>
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			<p>pose a risk of entanglement while working with moving equipment shall be strictly prohibited.</p> <ul style="list-style-type: none"> <li>• Periodic maintenance and inspections of rotating and moving equipment shall be carried out in accordance with manufacturer instructions and applicable national legislation; equipment found to be unsafe or non-compliant shall not be used on site.</li> <li>• Adequate lighting shall be provided in work areas to ensure clear visibility of machinery and moving parts at all times.</li> </ul>		
7	OHS – Physical Hazards: Welding and Hot Works	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> <li>• ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>• Authorized visitors</li> </ul>	<p>During the construction activities of the Subproject, welding, cutting, grinding, and similar hot work activities pose potential risks including fire, explosion, burns, eye and skin injuries, and secondary accidents. In order to prevent and control these risks, the following occupational health and safety measures shall be implemented:</p> <ul style="list-style-type: none"> <li>• Welding and hot work activities shall, to the extent practicable, be carried out in designated areas established for such works. Where site conditions require hot works to be performed outside designated areas, a Hot Work Permit system shall be implemented.</li> <li>• Prior to the commencement of any hot work activities, the work area shall be inspected to ensure the absence of flammable or explosive materials. Where necessary, such materials shall be</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Occupational Health and Safety (OHS) Management Plan</li> <li>• Emergency Preparedness and Response Plan (EPRP)</li> <li>• Applicable National Occupational Health and Safety (OHS) Legislation currently in force</li> </ul>

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			<p>removed from the area or adequately isolated.</p> <ul style="list-style-type: none"><li>• Workers engaged in welding and hot work activities shall be provided with task-specific personal protective equipment (PPE), including welding masks, face shields, flame-resistant work clothing, welding gloves, and appropriate safety footwear, and the consistent use of such PPE shall be enforced.</li><li>• Fire extinguishers, fire blankets, and other necessary firefighting equipment shall be readily available at the hot work locations throughout the duration of the activities.</li><li>• Appropriate physical barriers and shielding systems shall be used to prevent the spread of sparks and hot metal particles generated during welding and cutting activities to surrounding areas.</li><li>• Adequate ventilation shall be provided for hot work conducted in enclosed or semi-enclosed spaces in order to prevent the accumulation of hazardous gases and fumes.</li><li>• Pressurized gas cylinders shall be stored and secured in a safe manner, protected against tipping or falling during use, and kept away from heat sources at all times.</li></ul>		
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			<ul style="list-style-type: none"> <li>• Upon completion of welding and hot work activities, the work area shall be inspected for fire hazards, and fire watch shall be maintained for an appropriate period where necessary.</li> <li>• Welding and hot work activities shall be performed exclusively by trained and authorized personnel; the assignment of temporary or untrained workers to hot work tasks shall not be permitted.</li> </ul>		
8	OHS – Physical Hazards: Industrial Vehicle Driving and Site Traffic	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> <li>• ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>• Authorized visitors</li> </ul>	<p>During the construction activities of the Subproject, the use of industrial vehicles such as trucks, excavators, loaders, cranes, and similar equipment may give rise to occupational health and safety risks, including collisions, crushing incidents, overturning, manoeuvring accidents, and potential impacts on third parties. In order to prevent and effectively control these risks, the following mitigation measures will be implemented:</p> <ul style="list-style-type: none"> <li>• Operators of industrial vehicles will be required to hold the necessary professional qualifications, relevant training certificates, and valid driving licenses appropriate to the type of equipment they operate.</li> <li>• All vehicle operators will undergo occupational health and safety medical examinations prior to commencement of work and at regular intervals thereafter.</li> <li>• An internal site traffic management system will be established; vehicle</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Occupational Health and Safety (OHS) Management Plan</li> <li>• Emergency Preparedness and Response Plan (EPRP)</li> <li>• Traffic Management Plan (TMP)</li> <li>• Applicable National Occupational Health and Safety (OHS) Legislation currently in force</li> </ul>

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			<p>routes and pedestrian walkways will be separated to the extent possible, speed limits will be defined, and compliance with these limits will be regularly monitored.</p> <ul style="list-style-type: none"> <li>• Vehicles with limited rear visibility will be equipped with audible and visual reverse warning systems, which will be maintained in proper working condition.</li> <li>• Where necessary, trained signallers/flagmen will be assigned in areas with intensive vehicle movements to guide vehicle operations safely.</li> <li>• Entry and exit of vehicles to and from the construction site will be controlled; designated parking and waiting areas will be identified in advance to prevent irregular parking.</li> <li>• Internal site roads will be regularly inspected, and hazards such as slippery surfaces, potholes, or uneven ground will be promptly remedied or appropriately marked and barricaded.</li> <li>• Periodic maintenance and inspections of all vehicles and equipment will be conducted, and any unsafe vehicles will be immediately removed from service.</li> <li>• During loading and unloading operations, workers will be prevented from entering vehicle manoeuvring zones, and all such activities will be</li> </ul>		
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			<p>carried out while maintaining safe distances.</p> <ul style="list-style-type: none"> <li>Rules related to site traffic and vehicle operation will be regularly communicated to workers, and compliance will be ensured through routine supervision and enforcement activities.</li> </ul>		
9	<p>OHS – Physical Hazards: Ergonomics, Repetitive Motion, Manual Handling Lifting</p>	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>Authorized visitors</li> </ul>	<p>During the construction activities of the Subproject, tasks involving manual handling of heavy loads, improper lifting techniques, repetitive movements, awkward postures, and prolonged physical exertion may result in musculoskeletal disorders and occupational accidents. In order to prevent and minimize these risks, the following occupational health and safety measures will be implemented:</p> <ul style="list-style-type: none"> <li>Mechanical handling aids (such as cranes, forklifts, trolleys, lifting devices, and similar equipment) will be used to the greatest extent practicable to reduce the need for manual lifting and carrying of loads.</li> <li>Where manual handling cannot be avoided, the weight of loads to be lifted will be limited, and heavy loads will be handled by more than one worker and/or with appropriate mechanical assistance.</li> <li>Workers will receive regular training on proper lifting and carrying techniques, ergonomic postures, and risks associated with repetitive movements.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Occupational Health and Safety (OHS) Management Plan</li> <li>Emergency Preparedness and Response Plan (EPRP)</li> <li>Applicable National Occupational Health and Safety (OHS) Legislation currently in force</li> </ul>

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			<ul style="list-style-type: none"> <li>• Hand tools and equipment will be selected to minimize excessive force and to support neutral body postures; the use of non-standard or improvised tools will not be permitted.</li> <li>• Ergonomic arrangements will be made at workstations to accommodate workers of different physical characteristics and body sizes.</li> <li>• For workers with left-hand dominance, hand tools, equipment, and work arrangements will be selected and adapted to ensure ergonomic suitability.</li> <li>• Rest breaks and job rotation practices will be implemented for tasks involving prolonged or repetitive physical activities.</li> <li>• Working conditions that may increase musculoskeletal strain will be regularly observed, and corrective actions will be taken where unsafe or unsuitable conditions are identified.</li> <li>• Ergonomic risks will be monitored as part of occupational health and safety risk assessments, and additional control measures will be implemented as necessary.</li> </ul>		
10	OHS – Chemical Hazards	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> </ul>	<p>During the construction activities of the Subproject, the use of chemical substances such as fuels, oils, solvents, paints and coating materials, welding gases, cleaning chemicals, concrete additives, and similar</p>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Occupational Health and Safety (OHS) Management Plan</li> </ul>

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		<ul style="list-style-type: none"> <li>• ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>• Authorized visitors</li> </ul>	<p>materials may be required. Exposure to these substances through contact, inhalation, or accidental spills may pose occupational health and safety risks to workers. In order to prevent and control these risks, the following occupational health and safety measures will be implemented:</p> <ul style="list-style-type: none"> <li>• The use of chemical substances will be minimized to the extent practicable, and less hazardous alternatives will be preferred where feasible.</li> <li>• Up-to-date Safety Data Sheets (SDS) will be obtained for all chemicals used on site, made readily accessible to workers, and communicated in a clear and understandable manner.</li> <li>• All chemicals used on site will be properly labelled in accordance with national legislation and the requirements of World Bank ESS2, and stored in appropriate, sealed, and leak-proof containers.</li> <li>• Chemical storage areas will be protected from sunlight, rain, and wind; access will be restricted to authorized personnel only; and secondary containment measures (such as impermeable surfaces, drip trays, or bunding) will be provided to prevent and control spills.</li> <li>• Appropriate personal protective equipment (PPE) (including chemical-resistant gloves, safety goggles/face shields, masks or respiratory protection,</li> </ul>	<ul style="list-style-type: none"> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• Emergency Preparedness and Response Plan (EPRP)</li> <li>• Applicable National Occupational Health and Safety (OHS) Legislation currently in force</li> </ul>
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			<p>and suitable work clothing) will be used when handling chemicals; PPE selection will be based on the specific task and the hazardous properties of the chemicals involved.</p> <ul style="list-style-type: none"> <li>• Workers will receive regular training on chemical hazards, safe handling, storage and transport practices, as well as actions to be taken in the event of spills or exposure.</li> <li>• Spill kits, absorbent materials, and first aid equipment will be readily available on site to respond to chemical spills, leaks, or exposure incidents.</li> <li>• Eating, drinking, and smoking will be strictly prohibited in areas where chemicals are handled, and compliance with personal hygiene rules will be ensured.</li> <li>• In the event that asbestos or similar hazardous substances are encountered, all works will be immediately suspended, and special procedures in line with applicable national legislation and World Bank requirements will be implemented.</li> <li>• Risks related to chemical substances will be regularly monitored as part of occupational health and safety risk assessments, and corrective and preventive actions will be promptly implemented where non-compliances are identified.</li> </ul>		
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11	OHS – Excavation Works	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>Authorized visitors</li> </ul>	<ul style="list-style-type: none"> <li>During the construction activities of the Subproject, occupational health and safety risks may arise due to foundation works, trenching, and infrastructure excavations, including risks of cave-ins, falls, crushing, flooding, damage to underground utilities, and interactions with heavy machinery. In order to prevent and control these risks, the following occupational health and safety measures will be implemented:</li> <li>Prior to the commencement of excavation works, task-specific occupational health and safety risk assessments will be prepared, and excavation methods will be determined based on these assessments.</li> <li>Excavation activities will be carried out in compliance with the Regulation on Occupational Health and Safety in Construction Works, relevant national legislation, World Bank ESS2, and applicable occupational health and safety guidelines.</li> <li>Appropriate slope grading, shoring, trench support, or stabilization systems will be applied in excavation areas to prevent the risk of collapse.</li> <li>Safe access and egress to trenches and excavation areas will be provided through suitable ladders or ramps.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Occupational Health and Safety (OHS) Management Plan</li> <li>Emergency Preparedness and Response Plan (EPRP)</li> <li>Applicable National Occupational Health and Safety (OHS) Legislation currently in force</li> </ul>
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			<ul style="list-style-type: none"><li>• Excavation areas will be secured with lockable modular safety barriers to prevent unauthorized access, and appropriate warning signs will be installed.</li><li>• Excavation zones will be clearly segregated from the operating areas of heavy machinery, and workers will be prevented from working beneath suspended loads.</li><li>• Underground utilities (such as electricity, water supply, sewerage, and telecommunications lines) will be identified prior to excavation works, and coordination with relevant authorities will be ensured where necessary.</li><li>• In adverse weather conditions, particularly during heavy rainfall, excavation works posing a risk of flooding or ground instability will be suspended or additional preventive measures will be implemented.</li><li>• The use of appropriate personal protective equipment (PPE) (including safety helmets, high-visibility vests, safety footwear, and task-specific additional PPE) will be mandatory for all workers involved in excavation activities.</li><li>• Safe working distances will be established between workers and operating machinery; flaggers or</li></ul>		
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			<p>spotters will be assigned during equipment manoeuvring where required.</p> <ul style="list-style-type: none"> <li>• Good housekeeping practices, including proper material storage and site cleanliness, will be implemented in excavation areas to minimize slip, trip, and fall hazards.</li> </ul>		
12	Risks associated with management of employee grievances	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> <li>• ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>• Authorized visitors</li> </ul>	<p>During the construction phase of the Subproject, social risks may arise if workers are unable to raise grievances and requests related to working conditions, wages and social benefits, occupational health and safety practices, discrimination, harassment, workload, accommodation conditions, or management practices, or if such grievances are not addressed in an effective and timely manner. Such situations may lead to worker dissatisfaction, increased labour turnover, deterioration of labour relations, and secondary occupational health and safety risks.</p> <ul style="list-style-type: none"> <li>• In order to prevent and effectively manage these risks, the following measures will be implemented:</li> <li>• A Worker Grievance Mechanism will be established and implemented for all direct and contracted workers engaged under the Subproject, in line with the World Bank Environmental and Social Standards (ESS2 – Labor and Working Conditions) and within the framework</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Stakeholder Engagement Plan (SEP)</li> <li>• Labor Management Plan (LMP)</li> <li>• Worker Grievance Mechanism</li> </ul>

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			<p>of the Subproject-specific Labor Management Plan (LMP).</p> <ul style="list-style-type: none"> <li>• The grievance mechanism will be free of charge, accessible, confidential, protective against retaliation, and designed to operate in a non-discriminatory manner.</li> <li>• All workers will be informed, at the time of recruitment and throughout the period of employment, about the functioning of the grievance mechanism, available submission channels, and the grievance review and resolution process.</li> <li>• Grievances may be submitted through written, verbal, and electronic channels, and measures will be taken to ensure that barriers related to literacy levels or language do not prevent access to the mechanism.</li> <li>• Physical grievance boxes will be installed at the construction sites and camp areas under the Subproject, in locations that are easily accessible to workers. In addition, QR codes integrated into these grievance boxes will enable workers to submit grievances and notifications digitally.</li> <li>• The use of grievance boxes and the QR-code-based submission system will be clearly explained to workers through regular briefings and notices.</li> </ul>		
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			<ul style="list-style-type: none"> <li>All grievances received will be formally recorded, reviewed within predefined timeframes, and resolved in a timely manner.</li> <li>Confidentiality of workers' personal information will be strictly maintained throughout the grievance process, and any form of pressure, retaliation, sanction, or discriminatory practice against workers submitting grievances will be strictly prohibited.</li> <li>Records of worker grievances will be regularly monitored and recurring or systemic issues will be analysed in order to identify and implement appropriate corrective and preventive measures.</li> <li>The implementation and effectiveness of the Worker Grievance Mechanism will be monitored and reported in accordance with the requirements of the İLBANK Environmental and Social Management System (ESMS).</li> </ul>		
13	Risk of Gender-Based Violence (GBV), Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) affecting workers, Gender inequality	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> </ul>	<ul style="list-style-type: none"> <li>During the construction activities of under the Subproject, the presence of workers from different subcontractors and trades on the same site, the engagement of temporary labour, camp and construction site arrangements, hierarchical working relationships, and power imbalances may create potential risks related to Gender-Based Violence (GBV), Sexual Exploitation and Abuse / Sexual Harassment (SEA/SH), and</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Stakeholder Engagement Plan (SEP)</li> <li>Labor Management Plan (LMP)</li> <li>Worker Grievance Mechanism</li> <li>Applicable National Legislation and Relevant Institutional Regulations</li> </ul>

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		<ul style="list-style-type: none"> <li>• Authorized visitors</li> <li>• Local communities</li> </ul>	<p>gender inequality. Such risks may adversely affect the physical and psychological safety of workers, disrupt labour relations, and result in significant social non-compliance within the scope of the Subproject.</p> <ul style="list-style-type: none"> <li>• In order to prevent and effectively manage these risks, the following preventive and mitigation measures will be implemented:</li> <li>• A zero-tolerance approach to gender-based violence, sexual exploitation and abuse, and sexual harassment will be adopted under the Subproject, in line with the World Bank Environmental and Social Standards, in particular ESS2 (Labor and Working Conditions) and ESS4 (Community Health and Safety).</li> <li>• Codes of Conduct will be prepared for all contractor and subcontractor personnel, incorporated as an integral part of employment contracts, and signed in writing by workers prior to commencement of employment.</li> <li>• The Codes of Conduct will explicitly prohibit all forms of inappropriate behaviour, including sexual harassment, sexual exploitation and abuse, coercive behaviour, discrimination, threats, and retaliation.</li> <li>• In line with the principle of gender equality, no gender-based discrimination will be permitted in</li> </ul>		
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			<p>recruitment, job assignment, remuneration, working conditions, or termination of employment.</p> <ul style="list-style-type: none"> <li>• Confidential, survivor-centred worker grievance and reporting mechanisms specific to GBV / SEA / SH (Gender-Based Violence / Sexual Exploitation and Abuse / Sexual Harassment) cases will be implemented at Subproject construction sites and camp areas.</li> <li>• QR-code-enabled grievance boxes installed at construction sites and camp areas will be designed to allow the secure and anonymous submission of sensitive complaints, including those related to sexual harassment and abuse.</li> <li>• During the handling of such complaints, confidentiality, survivor safety, and protection against retaliation will be ensured, and no information will be shared with third parties without the informed consent of the survivor.</li> <li>• All workers will receive regular awareness-raising and training on gender equality, prevention of sexual harassment and abuse, appropriate workplace behaviour, and the use of grievance mechanisms.</li> <li>• Construction site and camp arrangements will take into account adequate lighting, layout of common areas, and accommodation conditions in order to enhance worker safety.</li> </ul>		
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			<ul style="list-style-type: none"> <li>Records related to GBV, sexual harassment, and sexual exploitation and abuse cases will be regularly monitored, and additional preventive measures will be developed where systematic risks are identified.</li> <li>All measures and actions implemented under this scope will be monitored and reported in accordance with the requirements of the İLBANK Environmental and Social Management System (ESMS).</li> </ul>		
<b>ESS3 – Resource Efficiency and Pollution Prevention and Management</b>					
<b>Resource Efficiency (Energy Use, Water Use and Raw Material Use)</b>					
14	Energy Use, Water Use and Raw Material Use	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> </ul>	<ul style="list-style-type: none"> <li>Regular maintenance and inspections will be carried out for construction machinery, vehicles, and equipment used during construction activities; unnecessary idling and practices leading to energy waste will be prevented.</li> <li>Good site practices aimed at reducing energy consumption will be implemented at construction sites; lighting and electrical equipment will be used only for the duration necessary for the works.</li> <li>Water use will be limited to dust suppression, equipment cleaning, and personnel needs; measures will be implemented to ensure efficient water use and to prevent unnecessary consumption.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>Community Health and Safety Management Plan</li> <li>Traffic Management Plan</li> <li>Waste Management Plan</li> </ul>

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			<ul style="list-style-type: none"> <li>• Pipes, concrete, steel, aggregates, and other construction raw materials will be procured only in the quantities required; proper storage conditions will be ensured to minimize material loss and deterioration.</li> <li>• Clean and uncontaminated excavated materials will be reused on site or beneficially utilized, where technically feasible.</li> <li>• Material planning and logistics processes will be managed efficiently to reduce the volume of waste generated from raw material use.</li> <li>• All measures will be implemented in compliance with applicable national legislation, the World Bank Environmental and Social Standard ESS3 – Resource Efficiency and Pollution Prevention and Management, and İLBANK environmental and social procedures.</li> </ul>		
<b>Management of Soil Resources</b>					
15	Soil disturbance and erosion	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> <li>• ALDAŞ / Project Implementation Unit (PIU)</li> </ul>	<ul style="list-style-type: none"> <li>• Unnecessary disturbance of vegetation cover and soil will be avoided during construction activities; excavation and site works will be strictly limited to areas required within the scope of the Project.</li> <li>• Excavation, backfilling, and pipeline installation works will, to the extent feasible, be scheduled under dry weather</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>• Community Health and Safety Management Plan</li> <li>• Traffic Management Plan</li> </ul>

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		<p>on-site personnel</p> <ul style="list-style-type: none"> <li>Local communities</li> </ul>	<p>conditions; activities that may increase the risk of soil disturbance and erosion will be temporarily suspended during periods of heavy rainfall or strong winds.</p> <ul style="list-style-type: none"> <li>In sloped areas, appropriate drainage arrangements will be implemented for trench excavations and exposed soil surfaces in order to control surface runoff; temporary berms and diversion channels will be established as necessary.</li> <li>Soil and materials generated from excavation works will be stockpiled in a controlled manner; appropriate measures will be taken to prevent dispersion of stockpiles due to rainfall or wind.</li> <li>Suitable ground arrangements will be implemented on temporary access roads and working areas within the construction site to reduce runoff-induced erosion, and uncontrolled vehicle traffic will be prevented.</li> <li>Clean and uncontaminated topsoil will be stripped and stored separately, where technically feasible, and reused for surface reinstatement and landscaping in areas where construction activities have been completed.</li> <li>Under the Subproject, following completion of pipe laying and backfilling works along the transmission</li> </ul>		<ul style="list-style-type: none"> <li>Waste Management Plan (related to excavation and spoil wastes)</li> </ul>
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			<p>line corridor, exposed areas will be stabilized as soon as practicable.</p> <ul style="list-style-type: none"> <li>All measures related to soil disturbance and erosion control will be implemented in compliance with applicable national legislation, the World Bank Environmental and Social Standard ESS3 – Resource Efficiency and Pollution Prevention and Management, and relevant Good International Industry Practice (GIIP).</li> </ul>		
16	Impacts on topsoil	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> <li>Local communities</li> </ul>	<ul style="list-style-type: none"> <li>During construction activities, unnecessary disturbance and loss of topsoil will be avoided; excavation and fill works will be strictly limited to areas that are essential for the implementation of the Project.</li> <li>In previously undisturbed areas where topsoil stripping is required, the stripping depth will be determined based on site-specific conditions, and unnecessary removal of soil will be avoided.</li> <li>Stripped topsoil will be stored separately from other excavated materials in designated temporary storage areas; measures will be taken to prevent mixing, compaction, and contamination during storage.</li> <li>Topsoil stockpiles will be appropriately stabilized to prevent erosion and dispersion caused by rainfall and wind,</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>Community Health and Safety Management Plan</li> <li>Traffic Management Plan</li> <li>Waste Management Plan (related to excavation and soil-related wastes)</li> </ul>

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			<p>and prolonged storage will be avoided to the extent practicable.</p> <ul style="list-style-type: none"> <li>To reduce the risk of soil structure degradation and compaction, topsoil handling will be avoided under wet weather conditions as far as practicable.</li> <li>Under the Subproject, following completion of pipe laying and backfilling activities along the transmission line corridor, stored topsoil will be reinstated in technically feasible areas.</li> <li>Measures aimed at preserving the quality, structure, and natural characteristics of the topsoil will be implemented in a manner consistent with existing land use and local environmental conditions.</li> <li>All measures will be implemented in compliance with applicable national legislation, World Bank ESS3 – Resource Efficiency and Pollution Prevention and Management, and relevant Good International Industry Practice (GIIP).</li> </ul>		
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**Management of Air Pollution**

17	Emissions to air during construction	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / Project</li> </ul>	<ul style="list-style-type: none"> <li>To reduce dust emissions that may occur during construction activities, excavation areas, internal site roads, and material storage areas will be regularly watered under dry and windy weather conditions.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>Asbestos Management Plan</li> </ul>
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		<p>Implementati on Unit (PIU) on-site personnel</p> <ul style="list-style-type: none"> <li>Local communities</li> </ul>	<ul style="list-style-type: none"> <li>The beds of trucks and vehicles used for excavation, backfilling, and material transportation will be covered to prevent dust dispersion caused by the transport of loose and uncovered materials.</li> <li>Construction machinery and vehicles used on site will be subject to regular maintenance and inspections; equipment generating excessive smoke, exhaust emissions, or fuel leakage will not be permitted for use.</li> <li>Unnecessary idling of construction machinery and vehicles will be prevented, and improper operating practices that may increase emissions will be avoided.</li> <li>Excavated and fill materials will be removed from the site as soon as technically feasible or otherwise stabilized in a controlled manner.</li> <li>Material stockpiling areas within the construction site will be properly organized; fine and loose materials that may generate dust will be stored using appropriate control methods.</li> <li>Where construction activities are carried out in areas close to residential settlements, potential impacts on air quality will be taken into consideration and additional dust control measures will be implemented as necessary.</li> </ul>		<ul style="list-style-type: none"> <li>Community Health and Safety Management Plan</li> <li>Traffic Management Plan</li> <li>Applicable National Legislation and Relevant Standards</li> </ul>
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			<ul style="list-style-type: none"> <li>• In the event that asbestos or similar hazardous air pollutants are identified or suspected during rehabilitation, demolition, or dismantling works in existing structures, all related activities will be immediately suspended and managed in accordance with the İLBANK Environmental and Social Management System, applicable national legislation, World Bank ESS3, and the World Bank Group Environmental, Health, and Safety (EHS) Guidelines.</li> <li>• If asbestos-containing materials are identified, their removal, transportation, temporary storage, and disposal will be carried out exclusively by authorized and licensed contractors, using appropriate personal protective equipment and controlled methods.</li> <li>• All activities related to asbestos and similar hazardous materials will be monitored, documented, and reported in line with İLBANK environmental and social procedures.</li> <li>• All measures and practices will be implemented in compliance with applicable national legislation, the İLBANK Environmental and Social Management System, World Bank ESS3 – Resource Efficiency and Pollution Prevention and Management, and the</li> </ul>		
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			World Bank Group Environmental, Health, and Safety (EHS) Guidelines.		
<b>Waste Management</b>					
18	Generation of non-hazardous and hazardous wastes during construction	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / Project Implementation Unit (PIU) on-site personnel</li> </ul>	<ul style="list-style-type: none"> <li>Non-hazardous and hazardous wastes generated during construction activities shall be managed in accordance with the principles of waste minimization at source, and the promotion of reuse and recovery.</li> <li>The waste management hierarchy (prevention, reduction, reuse, recycling, recovery, and disposal) shall be applied at construction sites.</li> <li>Non-hazardous wastes (including surplus excavation material, packaging wastes, metal, wood, plastic, and domestic-type wastes) shall be segregated by type and stored under appropriate conditions in designated temporary waste storage areas.</li> <li>Hazardous wastes (such as waste oils, oily rags, contaminated packaging, paint and chemical wastes, batteries and accumulators, etc.) shall be stored separately from other wastes in leak-proof, labelled, and closed containers.</li> <li>Separate temporary waste storage areas for hazardous and non-hazardous wastes shall be established at construction sites in compliance with applicable national legislation and regulations, World Bank Group Environmental, Health, and</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>Community Health and Safety Management Plan</li> <li>Waste Management Plan</li> <li>Applicable national legislation and related regulations</li> </ul>

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			<p>Safety (EHS) Guidelines, and İLBANK Environmental and Social Management System requirements.</p> <ul style="list-style-type: none"> <li>• Temporary waste storage areas shall have impermeable flooring, be protected against rain and wind, have controlled access, and be appropriately signposted; measures shall be taken to prevent risks of leakage, spillage, and environmental dispersion.</li> <li>• Secondary containment measures shall be applied during the temporary storage of hazardous wastes, and the co-storage of incompatible wastes shall be avoided.</li> <li>• Transportation and disposal of non-hazardous and hazardous wastes shall be carried out exclusively by companies authorized and licensed in accordance with applicable legislation.</li> <li>• All records related to waste generation, temporary storage, transportation, and disposal shall be regularly maintained to ensure traceability.</li> <li>• During rehabilitation works under the Subproject, clean excavation materials arising from transmission line works shall be reused on-site where technically feasible or otherwise managed appropriately.</li> <li>• Where hazardous wastes and potentially hazardous materials are handled, relevant personnel shall be required to</li> </ul>		
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			<p>use appropriate personal protective equipment (PPE).</p> <ul style="list-style-type: none"> <li>• Where canteens are established and food preparation is carried out at construction or camp sites, waste vegetable oils and other organic kitchen wastes shall be collected separately in accordance with applicable national legislation; waste vegetable oils shall be temporarily stored in leak-proof and labelled containers and transferred to licensed companies, while other organic kitchen wastes shall be managed as non-hazardous wastes.</li> <li>• All waste management practices shall be implemented in compliance with applicable national legislation, İLBANK Environmental and Social Management System requirements, World Bank ESS3, and the World Bank Group Environmental, Health, and Safety (EHS) Guidelines.</li> </ul>		
<b>Wastewater Management</b>					
19	Wastewater generation during construction (e.g., wastewater from camp areas and construction sites)	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> <li>• ALDAŞ / Project Implementation Unit (PIU)</li> </ul>	<ul style="list-style-type: none"> <li>• During construction activities under the Subproject, domestic wastewater generated from construction sites and camp areas, as well as process- and surface-runoff wastewater arising from construction activities, shall be managed in a controlled manner.</li> <li>• Direct discharge of domestic wastewater generated at camp areas (including</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>• Community Health and Safety Management Plan</li> <li>• Waste Management Plan</li> </ul>

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		<p>on-site personnel</p>	<p>offices, dormitories, canteens, showers, and WC facilities) into the environment shall be strictly prohibited.</p> <ul style="list-style-type: none"> <li>• Domestic wastewater generated at camp and construction sites shall be collected through watertight septic systems with adequate capacity or via sewerage systems approved by the relevant authority.</li> <li>• The design, operation, and maintenance of septic systems shall be carried out in accordance with applicable national legislation, and filling levels shall be regularly monitored.</li> <li>• Wastewater collected in septic systems shall be removed exclusively by authorized and licensed vacuum trucks and transported to disposal or treatment facilities permitted by the relevant authority.</li> <li>• During construction activities, wastewater potentially generated from equipment and vehicle washing and concrete residues shall be prevented from directly entering soil, surface waters, or drainage systems.</li> <li>• Waters contaminated with hazardous substances, oils, or chemicals shall not be discharged into domestic wastewater systems or septic tanks; such waters shall be managed in accordance with relevant hazardous waste and chemical management procedures.</li> </ul>		
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			<ul style="list-style-type: none"> <li>Efficient water use shall be promoted at construction and camp sites to minimize wastewater generation and prevent unnecessary water consumption.</li> <li>All wastewater management practices shall be regularly monitored; maintenance and emptying records shall be maintained and made available for inspection as required.</li> <li>Wastewater management practices shall be implemented in compliance with applicable national legislation, the İLBANK Environmental and Social Management System, World Bank ESS3 – Resource Efficiency and Pollution Prevention and Management, and the World Bank Group Environmental, Health, and Safety (EHS) Guidelines.</li> </ul>		
<b>Management of Chemicals and Hazardous Substances</b>					
20	Release of hazardous substances to the environment due to accidents that may occur during the construction phase	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / PIU site team</li> <li>Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>Where feasible under the Subproject, the use of hazardous substances shall be avoided; where use is unavoidable, the quantity used and the duration of use shall be minimized.</li> <li>Storage, transport, and use processes shall be managed in compliance with applicable national legislation, World Bank ESSs, and İLBANK environmental and social procedures, in order to prevent uncontrolled releases of hazardous substances to the environment as well as uncontrolled</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>Emergency Preparedness and Response Plan (EPRP)</li> <li>Community Health and Safety Management Plan</li> <li>Waste Management Plan</li> </ul>

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			<p>reactions that may lead to fire or explosion.</p> <ul style="list-style-type: none"> <li>• The types and quantities of hazardous substances used under the Subproject shall be identified, recorded, and maintained in an up-to-date inventory and summary table including, at a minimum:             <ul style="list-style-type: none"> <li>(i) the name and description of the hazardous substance (e.g., mixture composition);</li> <li>(ii) classification (code, class, or category);</li> <li>(iii) internationally recognized or nationally defined reporting threshold values;</li> <li>(iv) monthly usage quantities; and</li> <li>(v) hazardous characteristics of the substance (e.g., flammability, toxicity, etc.).</li> </ul> </li> <li>• The potential for fire, explosion, or similar uncontrolled reactions shall be analysed, and preventive measures addressing these risks shall be identified during the planning stage.</li> <li>• Personnel working with hazardous substances shall be regularly trained on spill prevention, safe handling, use of personal protective equipment (PPE), and hazardous-substance-specific drills under the Emergency Preparedness and Response Plan (EPRP).</li> </ul>		
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			<ul style="list-style-type: none"> <li>• Clear and implementable response procedures for potential spills, leakages, or other chemical emergencies shall be defined, including:                         <ul style="list-style-type: none"> <li>(i) internal and external notification processes;</li> <li>(ii) roles and responsibilities of designated persons and teams;</li> <li>(iii) a decision-making process to assess incident severity and determine the appropriate response method;</li> <li>(iv) facility and site evacuation routes where required; and</li> <li>(v) cleanup and disposal activities, incident investigation processes, safe re-entry conditions for workers, and actions to ensure spill response equipment is restored to a ready-for-use condition.</li> </ul> </li> <li>• To ensure effective response to accidental releases of hazardous substances, a Subproject-specific spill and chemical emergency response plan shall be developed and implemented throughout the construction period.</li> </ul>		
<b>Environmental Noise and Vibration</b>					
21	Generation of noise and vibration during construction	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> <li>• ALDAŞ / PIU site team</li> </ul>	<ul style="list-style-type: none"> <li>• Management of noise and vibration impacts arising from construction activities shall be carried out in accordance with applicable national legislation, the World Bank Environmental and Social Standards (in</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> </ul>

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		<ul style="list-style-type: none"> <li>Local Communities</li> </ul>	<p>particular ESS1 and ESS4), the World Bank Group Environmental, Health, and Safety (EHS) Guidelines, and İLBANK environmental and social procedures.</p> <ul style="list-style-type: none"> <li>To minimize noise and vibration levels, low-noise equipment and machinery shall be selected where feasible, and all machinery and vehicles used shall be subject to regular maintenance and inspections.</li> <li>High noise- and vibration-generating activities (such as excavation, breaking, and compaction) shall, to the extent practicable, be scheduled during daytime hours; the duration and frequency of such activities shall be limited in areas close to residential settlements.</li> <li>Appropriate site layout measures shall be implemented at construction sites to reduce noise propagation.</li> <li>Potential impacts of construction-induced vibrations on nearby structures and infrastructure shall be taken into account; the use of vibration-generating equipment shall be carefully controlled, and additional precautions shall be applied for works carried out in proximity to sensitive receptors.</li> <li>On-site and off-site construction traffic shall be managed to minimize noise; practices that increase noise levels, such as unnecessary engine idling, sudden</li> </ul>		<ul style="list-style-type: none"> <li>Community Health and Safety Management Plan</li> <li>Traffic Management Plan</li> <li>Stakeholder engagement and grievance management mechanisms</li> <li>Applicable national legislation and relevant standards</li> </ul>
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			<p>acceleration, and harsh braking, shall be avoided.</p> <ul style="list-style-type: none"> <li>Stakeholder engagement and grievance management mechanisms shall be operated to ensure effective handling of noise- and vibration-related complaints; additional mitigation measures shall be implemented where required.</li> <li>Appropriate personal protective equipment (PPE) (such as earplugs and earmuffs) shall be provided to workers at risk of noise exposure, and their use shall be monitored.</li> </ul>		
<b>ESS4 – Community Health and Safety</b>					
<b>Infrastructure Design and Safety</b>					
22	<p>Risks to the public during access to Subproject facilities (e.g., physical trauma related to structural collapse, burns and smoke inhalation from fire, injuries due to falls or contact with heavy equipment, etc.)</p>	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / PIU site team</li> <li>Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>During construction activities, project areas shall be physically demarcated to prevent uncontrolled public access to construction sites and work areas; temporary construction zones and public areas shall be clearly segregated.</li> <li>Taking into account risks related to structural stability, excavations, formwork, scaffolding, and temporary structures shall be designed and installed in accordance with sound engineering practices; additional safety measures shall be implemented in areas with a risk of collapse or overturning.</li> <li>To mitigate risks related to fire, explosion, and smoke generation,</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>Contractor Environmental and Social Management Plan (C-ESMP)</li> <li>Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>Community Health and Safety Management Plan</li> <li>Stakeholder engagement and grievance management mechanisms</li> </ul>

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			<p>flammable materials shall be safely stored, activities that may generate open flames or sparks shall be conducted in controlled areas, and firefighting equipment shall be made readily accessible throughout the construction sites.</p> <ul style="list-style-type: none"> <li>• To reduce risks of falls, collisions, or contact with heavy equipment within and around construction sites, hazardous areas shall be appropriately marked, and open pits, excavation areas, and work-at-height locations shall be fenced and secured.</li> <li>• Movements of construction machinery and vehicles shall be planned and managed in a controlled manner; pedestrian routes and vehicle routes shall be segregated to the extent practicable, and additional precautions shall be applied in areas close to locations frequently used by the public.</li> <li>• Where activities may affect public safety, advance information shall be provided as necessary, and working hours and work areas shall be arranged with due consideration for public safety.</li> <li>• Emergency preparedness and response arrangements applicable to the construction phase shall be implemented to address potential accidents or emergency situations, and such</li> </ul>		
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			<p>arrangements shall be planned to also cover community health and safety.</p> <ul style="list-style-type: none"> <li>• A grievance mechanism shall be operated to enable effective assessment of complaints and notifications from the public; additional mitigation measures shall be promptly implemented based on identified risks.</li> </ul>		
<b>Traffic and Road Safety</b>					
23	Traffic- and road-safety risks during construction (e.g., traffic-related injuries and fatalities due to accidents, collisions, etc.)	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> <li>• ALDAŞ / PIU site team</li> <li>• Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>• Prior to commencement of construction activities, a Site-Specific Traffic and Road Safety Management Plan covering construction sites and temporary access roads shall be prepared and implemented. The Plan shall be compliant with World Bank ESS4 (Community Health and Safety) and İLBANK Environmental and Social Procedures.</li> <li>• Under the Subproject, along the transmission line route, vehicle and pedestrian movements shall be clearly segregated and work areas shall be marked with appropriate traffic control devices.</li> <li>• Site access and egress points shall be clearly defined; warning signs, speed limit signs, reflective guidance equipment, and, where necessary, traffic cones/barriers shall be installed at these locations.</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>• Community Health and Safety Management Plan</li> <li>• Stakeholder engagement and grievance management mechanisms</li> <li>• Traffic Management Plan</li> <li>• Applicable national legislation and relevant authority regulations (UKOME, General Directorate of Highways, etc.)</li> </ul>

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			<ul style="list-style-type: none"> <li>• For works conducted in proximity to residential areas, existing roads, and third-party routes, temporary traffic arrangements shall be implemented in coordination with relevant authorities (municipality, UKOME, etc.).</li> <li>• Where partial or full road closures are required, information materials clearly indicating alternative routes, access times, and affected road sections (leaflets, directional posters, and on-site notices) shall be prepared and displayed at visible locations around the site and shared with local communities. Where necessary, information disclosure shall also be conducted through neighborhood headmen (muhtars) and relevant local stakeholders under the SEP.</li> <li>• Speed limits for construction vehicles shall be clearly defined within and around the site, and compliance with these limits shall be regularly monitored.</li> <li>• In areas where heavy machinery and trucks maneuver—particularly during reversing—bankmen shall be assigned and reversing alarm/warning systems shall be used.</li> <li>• Additional safety measures shall be implemented at road crossings and temporary road passages during pipe transport, excavation, and backfilling works; adequate lighting shall be provided for night works.</li> </ul>		
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			<ul style="list-style-type: none"> <li>The technical condition and mandatory insurance of all vehicles entering the construction sites shall be verified; non-compliant vehicles shall be denied access.</li> <li>Drivers and site personnel shall receive regular training on traffic safety and vehicle-pedestrian interaction within construction sites.</li> <li>Traffic-related accidents, near-miss incidents, and hazardous situations occurring during construction shall be recorded; root cause analyses shall be conducted and corrective/preventive actions shall be implemented.</li> <li>Where public roads are temporarily affected, works shall be completed as quickly as practicable and road surfaces, temporary pavements, and signage shall be safely reinstated.</li> </ul>		
24	Pedestrian safety risks during construction (e.g., serious injuries resulting from collisions with moving vehicles)	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / PIU site team</li> <li>Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>During construction activities, areas with pedestrian movement and routes used by construction vehicles shall be physically segregated to the maximum extent practicable; pedestrian crossings shall be delineated using lockable modular safety barriers.</li> <li>Under Subproject, temporary and safe pedestrian corridors shall be established in residential areas, at road crossings, and around open excavation zones.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>Contractor Environmental and Social Management Plan (C-ESMP)</li> <li>Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>Community Health and Safety Management Plan</li> <li>Stakeholder engagement and grievance management mechanisms</li> </ul>

		<ul style="list-style-type: none"> <li>• In areas where pedestrian crossings are unavoidable, adequate warning and directional signage, reflective markings, and appropriate lighting for night works shall be provided.</li> <li>• Where construction vehicles are required to manoeuvre in areas with pedestrian presence, flagmen shall be assigned and vehicle movements shall be conducted in a controlled manner.</li> <li>• Low-speed operation shall be mandatory for all construction vehicles through the establishment of site-specific speed limits, which shall be visibly marked and enforced.</li> <li>• Near schools, markets, public-use areas, and residential zones, additional barriers and temporary pedestrian arrangements shall be implemented to enhance pedestrian safety during excavation and pipe-laying works.</li> <li>• Where route changes or temporary closures affecting pedestrian safety are required, information notices shall be disseminated through neighbourhood headmen (muhtars) and local stakeholders, and necessary guidance shall be provided.</li> <li>• Pedestrian safety-related complaints and notifications shall be received through the Subproject Grievance Mechanism, recorded, and addressed promptly</li> </ul>	<ul style="list-style-type: none"> <li>• Traffic Management Plan</li> </ul>
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			through appropriate corrective measures.		
<b>Emergency Preparedness and Response</b>					
25	<p>Risks and impacts on communities arising from potential emergency events during construction (unexpected events resulting from natural and human-induced hazards, typically in the form of fire, explosion, leakage or spill; which may occur due to various causes such as failure to implement operating procedures designed to prevent such events, extreme weather conditions or lack of early warning, traffic accidents, structural failures, etc.)</p>	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> <li>• ALDAŞ / PIU site team</li> <li>• Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>• A Subproject-specific Emergency Preparedness and Response Plan (EPRP) covering both natural and human-induced hazards shall be prepared and implemented for construction activities. The Plan shall include scenarios such as fire, explosion, hazardous material spills/leakages, extreme rainfall and storms, traffic accidents, and structural failures.</li> <li>• Emergency plans shall be aligned with World Bank ESS4, the İLBANK Environmental and Social Management System, and applicable national legislation, and shall be updated taking into account local conditions, proximity to residential areas, and site-specific characteristics.</li> <li>• Emergency response teams shall be established at construction and camp sites, with clearly defined roles and responsibilities.</li> <li>• Emergency trainings and drills shall be regularly conducted for all workers prior to the commencement of construction activities and throughout the construction period, with particular focus on fire, spill/leakage, and evacuation scenarios.</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• C-ESMP</li> <li>• Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>• Community Health and Safety Management Plan</li> <li>• Emergency Preparedness and Response Plan (EPRP)</li> <li>• Stakeholder engagement and grievance management mechanisms</li> <li>• Traffic Management Plan</li> </ul>

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			<ul style="list-style-type: none"><li>• All necessary preventive and protective measures shall be implemented during the storage and use of hazardous materials to prevent uncontrolled spills, leakages, fires, or explosions that may pose risks to communities.</li><li>• Along the Subproject sections where construction sites are located in close proximity to residential areas, additional safety distances, barriers, and warning systems shall be provided to prevent adverse impacts on the public during emergency situations.</li><li>• In the event of extreme weather conditions (such as heavy rainfall, storms, or extreme temperatures), high-risk activities shall be temporarily suspended, sites shall be secured, and community safety shall be prioritized.</li><li>• Notification and communication procedures to be applied in emergency situations shall be defined, and coordination shall be ensured with relevant public authorities, emergency response units, and local stakeholders.</li><li>• In the event that any serious incident or accident affecting communities occurs, the incident shall be immediately recorded, appropriate corrective and preventive actions shall be implemented, and relevant stakeholders shall be informed.</li></ul>		
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			<ul style="list-style-type: none"> <li>Community complaints and notifications related to emergency situations shall be received and effectively managed through the Subproject Grievance Mechanism.</li> </ul>		
<b>Security Personnel</b>					
26	Risks arising from security arrangements during the construction phase for persons within and around the Subproject sites	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / PIU site team</li> <li>Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>Within the scope of the Subproject work, where direct or contracted security personnel are deployed to protect project personnel, facilities, equipment, and other project assets, the potential risks posed by the applied security arrangements to workers, visitors, and local communities within and around the project sites shall be systematically assessed.</li> <li>Security arrangements to be implemented under the Project shall comply with the principles of proportionality, Good International Industry Practice (GIIP), applicable national legislation governing the recruitment, codes of conduct, training, equipment, and supervision of security personnel, and the requirements of the World Bank Environmental and Social Framework (ESF), in particular ESS4 (Community Health and Safety).</li> <li>The use of force by direct or contracted security personnel deployed at the treatment plant site under the Subproject shall be limited strictly to preventive and</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>C-ESMP</li> <li>Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> <li>Community Health and Safety Management Plan</li> </ul>

			<p>defensive purposes and shall be proportionate to the nature and level of the threat encountered; any use of force beyond these purposes shall not be permitted.</p> <ul style="list-style-type: none"> <li>• For direct or contracted security personnel assigned under the Project:             <ul style="list-style-type: none"> <li>(i) reasonable screening and verification processes shall be conducted to confirm that such personnel have not been involved in past human rights abuses, mistreatment, or similar misconduct</li> <li>(ii) adequate training shall be provided on the use of force (including, where applicable, firearms) and interaction with communities, and appropriate standards of respectful conduct toward workers and affected communities shall be adopted</li> </ul> </li> <li>• Any allegations of illegal activities, mistreatment, or abuse involving security personnel assigned under the Subproject shall be promptly investigated; necessary corrective and preventive measures shall be taken by the relevant parties to prevent recurrence, and notifications shall be made to the competent authorities where required.</li> </ul>		
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**ESS5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement**

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27	Economic Displacement	<ul style="list-style-type: none"> <li>Potentially affected land users and agricultural producers (in case of temporary land use, access restrictions, or limitations on livelihood activities)</li> <li>Potentially affected small-scale businesses</li> <li>Potentially affected local communities</li> </ul>	<ul style="list-style-type: none"> <li>During the implementation of activities under the Subproject, should impacts that may lead to economic displacement arise, priority will be given to avoiding such impacts; where avoidance is not feasible, efforts will be made to minimize them to the greatest extent possible.</li> <li>Under the Subproject, where construction activities along the transmission line corridor result in temporary impacts on agricultural production, temporary land use, or other income-generating activities, these impacts will be managed so as to be eliminated within the shortest possible time.</li> <li>In cases where construction activities lead to temporary access restrictions or limitations on land use, affected persons and groups will be informed in advance, and the activities will be supported through alternative arrangements where feasible.</li> <li>Where economic losses occur, fair, timely, and appropriate compensation measures will be implemented in accordance with the applicable national legislation and the requirements of World Bank ESS5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement).</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and Social Management Plan (ESMP)</li> <li>Contractor Environmental and Social Management Plan (C-ESMP)</li> <li>Stakeholder Engagement Plan (SEP)</li> <li>Resettlement Action Plan (RAP)</li> <li>Community Health and Safety Management Plan</li> </ul>
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			<ul style="list-style-type: none"> <li>• In situations involving a risk of income loss, alternative access routes, temporary work arrangements, or adjustments to activity scheduling will be considered to the extent practicable.</li> <li>• Potential impacts related to economic displacement will be disclosed to stakeholders through information sharing and consultation processes conducted under the Stakeholder Engagement Plan (SEP), and stakeholder feedback will be taken into account.</li> <li>• Should grievances related to economic displacement arise, they will be addressed in an effective, accessible, and retaliation-free manner through the Subproject-specific Grievance Mechanism.</li> <li>• Risks related to economic displacement and the mitigation measures implemented in this context will be monitored and reported as part of the Monthly and Quarterly Environmental and Social Monitoring Reports.</li> </ul>		
28	Physical Displacement	<ul style="list-style-type: none"> <li>• Potentially affected land users and agricultural producers (in case of temporary land use,</li> </ul>	<ul style="list-style-type: none"> <li>• During the implementation of the Subproject, any potential impacts that may lead to physical displacement will be avoided to the extent possible; where avoidance is not feasible, such impacts will be minimized through appropriate technical and organizational measures.</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental and Social Management Plan (ESMP)</li> <li>• Contractor Environmental and Social Management Plan (C-ESMP)</li> <li>• Resettlement Action Plan (RAP)</li> </ul>

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		<p>access restrictions, or limitations on livelihood activities)</p> <ul style="list-style-type: none"> <li>• Potentially affected small-scale businesses</li> <li>• Potentially affected local communities</li> </ul>	<ul style="list-style-type: none"> <li>• Under the Subproject, if construction activities along the transmission line corridor have the potential to result in physical displacement affecting residential areas or permanently occupied structures, alignment optimization, technical alternatives, or adjustments to construction methods will be considered.</li> <li>• In the event that a risk of physical displacement arises, potentially affected persons and households will be informed in advance, and transparent, inclusive consultation processes will be conducted.</li> <li>• If physical displacement becomes unavoidable, appropriate resettlement and compensation measures will be implemented in accordance with World Bank ESS5 and applicable national legislation, with the objective of ensuring that affected persons' living conditions and standards of living are maintained at least at pre-project levels.</li> <li>• During any resettlement process, priority will be given to ensuring safe housing conditions, access to basic services, and the preservation of social cohesion for affected persons.</li> <li>• All processes related to physical displacement will be supported through information disclosure and consultation activities carried out under the</li> </ul>		<ul style="list-style-type: none"> <li>• Stakeholder Engagement Plan (SEP)</li> <li>• Community Health and Safety Management Plan</li> </ul>
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			<p>Stakeholder Engagement Plan (SEP), and stakeholder feedback will be duly considered in decision-making.</p> <ul style="list-style-type: none"> <li>Any grievances related to physical displacement will be addressed through the Subproject-specific Grievance Mechanism, in an effective, accessible, and retaliation-free manner.</li> <li>Risks related to physical displacement and the mitigation measures implemented will be monitored and reported through the Monthly and Quarterly Environmental and Social Monitoring Reports.</li> </ul>		
29	Grievance Management	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / PIU site team</li> <li>Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>Within the scope of the Subproject, a functional Grievance Mechanism has been / shall be established at the earliest possible stage of project development, in line with the provisions of World Bank ESS10 (Stakeholder Engagement and Information Disclosure), covering activities under the Subproject.</li> <li>The Grievance Mechanism has been / shall be structured to ensure that all grievances, requests, and feedback submitted by workers, local communities, land users, temporarily or permanently affected persons, and other relevant stakeholders are addressed in an accessible, transparent, impartial, and timely manner.</li> <li>Where land acquisition, expropriation, or temporary land use is required,</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and Social Management Plan (ESMP)</li> <li>Contractor Environmental and Social Management Plan (C-ESMP)</li> <li>Stakeholder Engagement Plan (SEP)</li> <li>Community Health and Safety Management Plan</li> <li>Grievance Mechanism Procedure</li> <li>Labor Management Procedure (LMP)</li> <li>Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> </ul>

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			<p>specific concerns raised by displaced persons or other affected parties—particularly those related to land use, expropriation, temporary use, compensation, relocation, loss of income or livelihoods, and livelihood restoration—shall be assessed without delay in a documented and traceable manner.</p> <ul style="list-style-type: none"> <li>• The structure, operation, submission channels, responsible units, assessment and response timelines, and closure procedures of the Grievance Mechanism are defined in detail under the Subproject-specific Stakeholder Engagement Plan (SEP), which has been prepared in full compliance with ESS10 requirements.</li> <li>• The effectiveness of the Grievance Mechanism shall be regularly monitored under the Subproject; based on monitoring findings, necessary improvements shall be made to the operation of the mechanism, and the Stakeholder Engagement Plan and related environmental and social documents shall be updated as required.</li> </ul>		
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**ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources**

30	Impacts on Habitats	<ul style="list-style-type: none"> <li>• Based on available project</li> </ul>	<ul style="list-style-type: none"> <li>• Based on current project information, construction activities along the Subproject route are not expected to cause significant impacts on natural,</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental and Social Management Plan (ESMP)</li> </ul>
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		<p>information, no protected, sensitive, or critical habitats have been identified along the wastewater network line route and pumping station.</p>	<p>critical, or sensitive habitats. Nevertheless, should any unforeseen impacts on habitats occur during construction, works shall be temporarily suspended and necessary preventive measures shall be implemented.</p> <ul style="list-style-type: none"> <li>To preserve habitat integrity during construction, work areas shall be kept within the narrowest feasible limits, and temporary use areas shall be managed in a controlled manner.</li> <li>Potential impacts on habitats shall be monitored in accordance with World Bank ESS6 and İLBANK Environmental and Social Management System requirements; coordination with relevant institutions shall be ensured in the event of unexpected situations.</li> </ul>	<ul style="list-style-type: none"> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Contractor Environmental and Social Management Plan (C-ESMP)</li> <li>Monthly and Quarterly Environmental and Social Monitoring Reports (ESMRs)</li> </ul>
31	Impacts on Flora Species	<ul style="list-style-type: none"> <li>Based on available project information, no protected, endemic, or sensitive flora species or habitats have been identified along the Project areas.</li> </ul>	<ul style="list-style-type: none"> <li>Based on desktop studies and current project information for the Subproject, no impacts on protected, endemic, or sensitive flora species are expected. However, should any unforeseen impacts on flora occur during construction, affected areas shall be delineated and appropriate preventive and/or corrective measures shall be implemented.</li> <li>Unnecessary vegetation clearance shall be avoided during construction; work areas shall be kept within the narrowest feasible limits, and following completion of activities, disturbed areas</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<p>Environmental and Social Management Plan (ESMP)</p>

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			<p>shall be reinstated in harmony with the surrounding environment.</p> <ul style="list-style-type: none"> <li>Potential impacts on flora species shall be monitored in accordance with World Bank ESS6 and İLBANK Environmental and Social Management System requirements; coordination with relevant institutions shall be ensured in the event of unexpected situations.</li> </ul>		
32	Impacts on Fauna Species	<ul style="list-style-type: none"> <li>Based on available project information, no protected, endemic, or sensitive fauna species or habitats have been identified along the Project areas.</li> </ul>	<ul style="list-style-type: none"> <li>Based on current project information, construction activities along the sewer line are not expected to cause significant impacts on protected, endemic, or sensitive fauna species. Nevertheless, should any unforeseen impacts on fauna occur during construction, activities shall be temporarily suspended and necessary preventive measures shall be implemented.</li> <li>To minimize potential temporary impacts of noise, vibration, and human presence on wildlife during construction, works shall be conducted in a controlled manner and work areas shall be kept within the narrowest feasible limits.</li> <li>Prior to construction, field surveys will be conducted to determine the presence and distribution of these species in the Subproject area. In particular, nesting and sheltering areas will be identified for these species, Disturbance or destruction</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and Social Management Plan (ESMP)</li> </ul>

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			<p>of these habitats will be avoided during construction activities.</p> <ul style="list-style-type: none"> <li>• Construction works will be carried out gradually, allowing sufficient time for fauna species that may be present in the area to escape or move to a suitable habitat area.</li> <li>• Potential impacts on fauna species shall be monitored in accordance with World Bank ESS6 and İLBANK Environmental and Social Management System requirements; coordination with relevant institutions shall be ensured in the event of unexpected situations.</li> </ul>		
33	Invasive Alien Species	<ul style="list-style-type: none"> <li>• Based on available project information, no invasive alien species have been identified along the Subproject areas.</li> </ul>	<ul style="list-style-type: none"> <li>• During the Subproject activities, the risk of introduction and spread of invasive alien species through construction activities, material supply, equipment transport, and site logistics shall be duly considered.</li> <li>• Construction equipment, vehicles, and materials brought to the project site shall be cleaned and inspected to prevent the transport of soil, plant residues, or living organisms; particular attention shall be paid to equipment and materials originating from different basins or ecological regions.</li> <li>• Local and site-appropriate species shall be prioritized for excavation backfilling and landscaping works; the use of invasive or potentially invasive plant species shall be strictly prohibited.</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental and Social Management Plan (ESMP)</li> </ul>

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			<ul style="list-style-type: none"> <li>The presence of invasive alien species within and around the project site shall be monitored during construction and operation phases; relevant technical units and competent authorities shall be informed in the event of suspected cases.</li> <li>Contractor personnel shall be informed about activities that may lead to the spread of invasive alien species, and guidance shall be provided to raise awareness among site staff.</li> <li>Management of risks related to invasive alien species shall be carried out in accordance with national legislation, opinions of relevant institutions, and Good International Industry Practice (GIIP); additional measures shall be implemented under the ESMP where deemed necessary.</li> </ul>		
34	Impacts on Ecosystem Services	<ul style="list-style-type: none"> <li>Local communities in and around the project area</li> <li>Land users engaged in agricultural activities</li> <li>Users benefiting from water supply and</li> </ul>	<ul style="list-style-type: none"> <li>During construction and operation phases, the protection of regulating and supporting ecosystem services—such as water supply, the natural water cycle, flood regulation, erosion control, and support of local ecosystems—shall be taken into consideration.</li> <li>During sewer line and pumping station construction works, where forested areas, agricultural lands, or areas with natural vegetation are encountered, activities shall be carried out in a manner compatible with existing land use and under controlled conditions.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and Social Management Plan (ESMP)</li> <li>Stakeholder Engagement Plan (SEP)</li> <li>Waste Management Plan</li> <li>Emergency Preparedness and Response Procedure</li> <li>Environmental procedures implemented in line with applicable national legislation and institutional opinions</li> </ul>

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		irrigation services	<ul style="list-style-type: none"> <li>Following activities such as excavation, filling, and temporary land use, disturbed areas shall be rehabilitated and reinstated to restore ecosystem services.</li> <li>Management of impacts on ecosystem services shall be carried out in accordance with national legislation, opinions of relevant institutions, and Good International Industry Practice (GIIP); additional measures deemed necessary based on monitoring results shall be implemented under the ESMP.</li> </ul>		
<b>ESS8 – Cultural Heritage</b>					
35	Impacts on Tangible Cultural Heritage	<ul style="list-style-type: none"> <li>All direct and subcontracted workers of the Contractor</li> <li>ALDAŞ Inc. Project Implementation Unit (PIU) and site teams</li> <li>Local communities in and around the construction site</li> <li>Relevant Museum Directorates and</li> </ul>	<ul style="list-style-type: none"> <li>Based on current project information, preliminary assessments, and available inventories, no registered or known tangible cultural heritage assets have been identified within the Subproject.</li> <li>Accordingly, no direct or permanent impacts on tangible cultural heritage are expected for under the Subproject.</li> <li>Nevertheless, a precautionary approach shall be adopted, particularly for linear excavation and trenching works to be carried out under the Subproject, with respect to the potential presence of unforeseen subsurface cultural heritage assets.</li> <li>In the event that any chance find is encountered during construction activities under Subproject, all works in the affected area shall be immediately</li> </ul>	<ul style="list-style-type: none"> <li>ASAT,</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and Social Management Plan (ESMP)</li> <li>Chance Finds Procedure</li> <li>Stakeholder Engagement Plan (SEP)</li> <li>Applicable National Legislation (Law No. 2863 on the Protection of Cultural and Natural Assets and related regulations)</li> </ul>

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		<p>authorized cultural heritage institutions</p> <ul style="list-style-type: none"> <li>• İLBANK and relevant financing / stakeholder institutions</li> <li>• Other stakeholders related to the Subproject</li> </ul>	<p>suspended; the find shall be secured, and the relevant Museum Directorate(s), authorized Cultural Heritage Protection Boards, İLBANK, and relevant authorities shall be promptly notified.</p> <ul style="list-style-type: none"> <li>• No works shall recommence in the area until written opinions and instructions are obtained from the competent authorities.</li> <li>• The Contractor and site personnel shall be informed and trained—particularly prior to excavation works along sewer line and pumping station construction—on the identification of chance finds and the procedures to be followed.</li> <li>• A Subproject-specific Chance Finds Procedure compliant with World Bank ESS8 (Cultural Heritage) shall be implemented for the Subproject.</li> </ul>		
36	Impacts on Intangible Cultural Heritage (ESS8 – Cultural Heritage)	<ul style="list-style-type: none"> <li>• All direct and subcontracted workers of the Contractor</li> <li>• ALDAŞ Inc. Project Implementation Unit (PIU) and site teams</li> <li>• Local communities in and around the</li> </ul>	<ul style="list-style-type: none"> <li>• Based on the current project information, the construction activities planned under the Subproject are not expected to cause any direct or indirect impacts on local communities’ daily life practices, traditional knowledge, or cultural practices.</li> <li>• No specific sensitive areas or practices related to intangible cultural heritage have been identified within the Subproject areas.</li> <li>• Nevertheless, should any concerns or sensitivities related to intangible cultural</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT,</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental and Social Management Plan (ESMP)</li> <li>• Chance Finds Procedure</li> <li>• Stakeholder Engagement Plan (SEP)</li> <li>• Applicable National Legislation (Law No. 2863 on the Protection of Cultural and Natural Assets and related regulations)</li> </ul>

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		<p>construction site</p> <ul style="list-style-type: none"> <li>• Relevant Museum Directorates and authorized cultural heritage institutions</li> <li>• İLBANK and relevant financing / stakeholder institutions</li> <li>• Other stakeholders related to the Subproject</li> </ul>	<p>heritage be raised by local communities during the construction process, such issues shall be addressed within the scope of the Stakeholder Engagement Plan (SEP).</p> <ul style="list-style-type: none"> <li>• All notifications and grievances related to intangible cultural heritage shall be received and addressed through the Subproject-specific Grievance Mechanism.</li> <li>• The Subproject, shall be implemented in compliance with the requirements of World Bank ESS8 (Cultural Heritage).</li> </ul>		
37	Chance Finds	<ul style="list-style-type: none"> <li>• All direct and subcontracted workers of the Contractor</li> <li>• ALDAŞ Inc. Project Implementation Unit (PIU) and site teams</li> <li>• Local communities in and around the</li> </ul>	<ul style="list-style-type: none"> <li>• In the event that any archaeological, historical, cultural, or paleontological chance find is encountered during construction activities, all works in the area where the find is discovered shall be immediately suspended.</li> <li>• The area of the chance find shall be secured, access by unauthorized persons shall be prevented, and necessary temporary protective measures shall be taken to avoid any damage to the find.</li> <li>• The occurrence of the chance find shall be promptly reported to the relevant</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT,</li> <li>• ALDAŞ Supervision Consultant</li> <li>• Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental and Social Management Plan (ESMP)</li> <li>• Chance Finds Procedure</li> <li>• Stakeholder Engagement Plan (SEP)</li> <li>• Applicable National Legislation (Law No. 2863 on the Protection of Cultural and Natural Assets and related regulations)</li> </ul>

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		<p>construction site</p> <ul style="list-style-type: none"> <li>• Relevant Museum Directorates and authorized cultural heritage institutions</li> <li>• İLBANK and relevant financing / stakeholder institutions</li> </ul> <p>Other stakeholders related to the Subproject</p>	<p>Museum Directorate(s), authorized cultural heritage institutions, and İLBANK; no works shall recommence in the area until written opinions and instructions are received from the competent authorities.</p> <ul style="list-style-type: none"> <li>• Construction activities shall resume only after the required examinations and assessments have been completed by the authorized institutions and written approval has been granted.</li> <li>• All Contractor personnel and site workers involved in the Subproject shall receive information and training—prior to commencement of works and refreshed as necessary—on the identification of chance finds, possible types of finds, procedures to be followed, and notification obligations.</li> <li>• All notifications made, instructions received, and measures implemented with respect to chance finds shall be recorded, and such records shall be retained within the Subproject’s environmental and social monitoring and reporting processes.</li> </ul>		
<b>ESS10 – Stakeholder Engagement and Information Disclosure</b>					
38	Risks Related to Stakeholder Engagement	<ul style="list-style-type: none"> <li>• All direct and contracted workers of the Contractor</li> </ul>	<ul style="list-style-type: none"> <li>• Prior to the commencement of construction activities and throughout the construction period, affected or potentially affected stakeholders shall be provided with clear, accurate, and timely</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT,</li> <li>• ALDAŞ Supervision Consultant</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental and Social Management Plan (ESMP)</li> <li>• Stakeholder Engagement Plan (SEP)</li> <li>• Grievance Mechanism</li> </ul>

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		<ul style="list-style-type: none"> <li>• ALDAŞ / PIU site team</li> <li>• Local Communities</li> </ul>	<p>information on the Project scope, duration of activities, potential impacts, and mitigation measures to be implemented.</p> <ul style="list-style-type: none"> <li>• Stakeholder engagement activities shall be carried out in accordance with the Stakeholder Engagement Plan (SEP) prepared for the Subproject; information disclosure and communication activities shall be conducted using methods appropriate to local conditions and stakeholders' needs.</li> <li>• Continuous communication shall be maintained with local communities and other relevant stakeholders that may be directly or indirectly affected by construction activities; sudden schedule changes, road crossings, excavation works, and similar activities shall be announced in advance.</li> <li>• An accessible and functional Grievance Mechanism shall be operated to enable stakeholders to submit their views, requests, and concerns regarding project activities; the recording, assessment, and provision of feedback on grievances shall be ensured.</li> <li>• Information regarding the Grievance Mechanism shall be visibly disclosed at site entrances, camp areas, and other appropriate public locations; written, visual, and/or digital tools (such as QR codes) shall be used where necessary.</li> </ul>	<ul style="list-style-type: none"> <li>• Contractor Company</li> </ul>	
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			<ul style="list-style-type: none"> <li>To mitigate risks arising from social sensitivities, misinformation, or communication gaps that may occur during construction activities, on-site personnel shall be informed and trained on stakeholder communication and codes of conduct.</li> <li>The effectiveness of the stakeholder engagement process shall be regularly monitored, and corrective measures shall be implemented as necessary based on identified gaps.</li> </ul>		
39	Risks Related to Grievance Management	<ul style="list-style-type: none"> <li>All direct and contracted workers of the Contractor</li> <li>ALDAŞ / PIU site team</li> <li>Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>A Project-specific Grievance Mechanism shall be established and effectively operated from the commencement of the construction phase, in compliance with World Bank ESS10 (Stakeholder Engagement and Information Disclosure) and İLBANK environmental and social procedures. The Grievance Mechanism shall form part of the Stakeholder Engagement Plan (SEP) and shall cover both the Workers' Grievance Mechanism and grievances from local communities and other external stakeholders.</li> <li>The Grievance Mechanism shall be designed to be free of charge, accessible, transparent, and usable by local communities, workers, subcontractors, and other relevant stakeholders without risk of retaliation.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT,</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor Company</li> </ul>	<ul style="list-style-type: none"> <li>Environmental and Social Management Plan (ESMP)</li> <li>Stakeholder Engagement Plan (SEP)</li> <li>Grievance Mechanism</li> </ul>

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		<ul style="list-style-type: none"><li>• Physical grievance boxes shall be installed at construction and camp sites; in addition, alternative submission channels such as QR-code-based digital applications, telephone, and written submissions shall be provided.</li><li>• All stakeholders shall be regularly informed, both prior to construction and throughout the construction period, about the operation of the grievance mechanism, submission methods, and grievance assessment process.</li><li>• All grievances received shall be recorded; the receipt, assessment, resolution, and closure of grievances shall be monitored and documented within defined timeframes.</li><li>• Grievances related to noise, traffic, access restrictions, occupational health and safety, environmental impacts, and labor-related issues shall be prioritized, and additional corrective and preventive measures shall be implemented where deemed necessary.</li><li>• Specific arrangements shall be made to facilitate access to the grievance mechanism for vulnerable groups and disadvantaged stakeholders.</li></ul> <p>Summary information on grievances and their resolution status shall be incorporated into monitoring and reporting activities under the Monthly</p>		
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			and Quarterly Environmental and Social Monitoring Reports (ESMRs).		
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## 4.4. Operation ESMP Matrix

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
<b>ESS2 – Labor and Working Conditions</b>					
1	Risks associated with labor and working conditions	Workers	<ul style="list-style-type: none"> <li>For the operation phase of the Subproject, a project-specific Labor Management Plan (LMP) will be prepared, implemented, and updated as necessary, taking into account the nature of project activities, workforce profile, and site conditions.</li> <li>All Workers engaged under the Subproject will be provided with clear, understandable, and written information and documentation regarding their terms of employment and working conditions. Such information and documentation will include, inter alia, applicable national labor and employment legislation, any valid collective bargaining agreements, working hours (including shift arrangements), wages, overtime, compensation, social benefits, and workers' rights recognized under World Bank ESS2.</li> <li>It will be ensured that information and documentation related to terms of employment are provided at the commencement of the employment relationship and re-provided in the event of</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>OHS Management Plan</li> </ul>

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			<p>any material changes to working conditions.</p> <ul style="list-style-type: none"><li>• All wages, overtime payments, and other entitlements of personnel employed under the Project will be paid regularly and in a timely manner, in compliance with national legislation, İLBANK implementation procedures, and World Bank ESS2 requirements.</li><li>• Taking into account the nature of project activities and operational conditions, Workers will be granted weekly rest periods, annual leave, sick leave, maternity and family leave in accordance with national legislation and World Bank requirements.</li><li>• Decisions related to employment and working conditions will not be based on personal characteristics unrelated to job requirements; such decisions will be made solely on the basis of professional qualifications, experience, and the nature of the work.</li><li>• All processes related to recruitment, remuneration, working conditions, training and capacity building, task allocation, promotion, disciplinary measures, and termination of employment contracts will be carried out in line with the principles of equal opportunity and fair treatment, and any form of discrimination will be prevented.</li></ul>		
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			<ul style="list-style-type: none"> <li>• In connection with project activities, and in accordance with Article 71 of the Turkish Labor Law No. 4857, the Regulation on the Procedures and Principles of Employing Child and Young Workers, as well as İLBANK implementation procedures and World Bank ESS2 provisions, age and identity verification mechanisms will be established to prevent child labor, including for contractors and subcontractors.</li> <li>• To prevent practices such as forced labor, debt bondage, and human trafficking in connection with the Project, project-specific labor management arrangements will be fully implemented for all workers, including those employed by contractors and subcontractors.</li> <li>• In cases where accommodation is provided to workers on-site or near the site during operation or maintenance activities, the provisions of “Workers’ Accommodation: Processes and Standards – IFC and EBRD Guidance Note (August 2009)” will be complied with, and adequate accommodation conditions will be ensured to protect workers’ health, safety, and well-being and to meet their physical, social, and cultural needs.</li> <li>• During operation and maintenance activities carried out at pump station, transmission and distribution lines, and associated structures, site-specific labor risks will be identified, taking into account</li> </ul>		
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			<p>shift work, confined spaces, electrical and mechanical equipment, chemical use, and outdoor works, and additional mitigation measures will be implemented accordingly.</p> <ul style="list-style-type: none"> <li>• Personnel assigned to high-risk activities and confined space works will be ensured to possess the required professional qualifications and to have received all necessary training.</li> <li>• During works conducted in open areas in the summer months, measures such as adjustment of working hours, provision of shaded areas, and supply of sufficient drinking water will be implemented to protect workers' health.</li> <li>• It will be ensured that personnel provided by subcontractors are also subject to and fully compliant with the labor management arrangements, OHS requirements, and World Bank ESS2 provisions applied under the Project.</li> </ul>		
2	OHS- General Hazards	Workers	<ul style="list-style-type: none"> <li>• To address emergency situations and occupational health and safety risks that may arise during the operation phase of the Project, a Project-specific Operational Risk Assessment, an Occupational Health and Safety (OHS) Management Plan, and an Emergency Preparedness and Response Plan will be prepared, implemented, and regularly reviewed in line with project activities.</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> <li>• OHS Management Plan</li> <li>• Emergency Preparedness and Response Plan</li> </ul>

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		<ul style="list-style-type: none"><li>• Within the scope of monitoring, measurement, and record-keeping activities, all relevant documentation—including accident and incident notifications, incident investigation reports, and inspection records—will be retained for a minimum period of ten (10) years in order to prevent exposure to occupational hazards and to verify the effectiveness of control and mitigation measures.</li><li>• In order to minimize the risks of slips, trips, and falls, work areas will be kept orderly, ground conditions will be regularly inspected, and non-slip surfaces and warning signage will be installed where deemed necessary.</li><li>• In accordance with the provisions of the Regulation on the Protection of Buildings from Fire, engineering, administrative, and organizational measures will be implemented to prevent fire and explosion risks, and the continuity and functionality of fire detection and fire-fighting systems and equipment will be ensured.</li><li>• Minimum requirements for workwear and safety footwear to be used by Workers across the site will be defined, and full compliance with these requirements will be ensured.</li><li>• Where risks cannot be completely eliminated or sufficiently reduced through collective protection measures or work organization during operational activities,</li></ul>		
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			appropriate health and safety signage will be installed and effectively used in accordance with applicable legislation and standards.		
3	Risks Related to the Management of Workers' Grievances	<ul style="list-style-type: none"> <li>Workers</li> </ul>	<ul style="list-style-type: none"> <li>All direct and contracted workers employed under the Project will be informed, during the recruitment process, about the functioning of the workers' grievance mechanism, application channels, confidentiality principles, and the assurance that they will not be subject to any retaliation or adverse treatment for submitting grievances.</li> <li>The workers' grievance mechanism will be designed to be easily accessible, understandable, and secure at operation sites and administrative units, and will be made available to all project workers through multiple communication channels (written, verbal, electronic, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> </ul>

**ESS3 – Resource Efficiency and Pollution Prevention and Management**

**Resource Efficiency (Energy Use, Water Use and Raw Material Use)**

4	Energy Use, Water Use and Raw Material Use	<ul style="list-style-type: none"> <li>Workers</li> <li>Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>Operational personnel shall receive regular training on the protection of water resources and emergency response procedures in the event of pollution.</li> <li>Wastewater flow rate, and alarm statuses shall be continuously monitored via SCADA or remote monitoring systems at the transmission line and facilities.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> </ul>
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			<ul style="list-style-type: none"> <li>Valves, connections, and other mechanical equipment shall be subject to periodic maintenance and inspection procedures.</li> <li>Rapid response teams shall be kept on standby for leaks or emergencies; water loss and environmental impact shall be minimized by implementing temporary shutdown or isolation methods.</li> </ul>		
<b>Management of Air Pollution</b>					
5	Emissions to Air During Operation	<ul style="list-style-type: none"> <li>Workers</li> <li>Local Communities</li> </ul>	<ul style="list-style-type: none"> <li>It is anticipated that the activities carried out at the drinking water treatment plant within the scope of the project will not cause offensive odor levels under normal operating conditions. Nevertheless, to prevent potential odor and emission risks, potential emission points such as chemical preparation and dosing areas, tanks, and enclosed channels shall be identified and monitored regularly.</li> <li>Maintenance and cleaning work must be carried out regularly to ensure that emissions and odours are kept under control.</li> <li>The measures taken shall be implemented in compliance with the relevant national legislation, İLBANK implementation principles, and the World Bank Environmental, Health, and Safety (EHS) Guidelines.</li> <li>In the event of changes in operating conditions or the emergence of extraordinary circumstances, additional</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> </ul>

			ventilation measures, local enclosure applications, or operational improvements shall be technically and operationally evaluated to mitigate the risk of odor formation.		
<b>Management of Wastes</b>					
6	Generation of non-hazardous and hazardous waste during operation	<ul style="list-style-type: none"> <li>Workers</li> <li>Local Community</li> <li>Regional Flora and Fauna Communities</li> <li>Natural Resources</li> </ul>	<ul style="list-style-type: none"> <li>Management of wastes generated within the scope of the project in accordance with the waste management hierarchy,</li> <li>Separation of recyclable wastes at the source and collection in distinct waste containers,</li> <li>Provision of training to Workers on waste management practices,</li> <li>Removal of materials excavated during pipe replacement, etc., from the site at routine intervals without delay, as they cannot be reused for backfilling operations,</li> <li>Disposal of excavation materials by transporting them to the disposal sites designated by the District Municipality via transport vehicles, without accumulation and/or temporary storage,</li> <li>Development and implementation of safe delivery, storage, handling, and spill response procedures for chemicals, in accordance with Safety Data Sheets (SDS),</li> <li>Immediate containment and cleaning of spilled substances,</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> </ul>

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			<ul style="list-style-type: none"> <li>• Provision of training to personnel regarding safe delivery, storage, handling, and spill response procedures,</li> <li>• Taking necessary precautions against leakages and spills during the maintenance of vehicles, heavy machinery, and equipment on-site to prevent soil pollution; collection of used oil filters in a separate lidded container, ensuring they are strictly not disposed of in trash bins or sent to landfill sites,</li> <li>• Avoidance of any practices that may pose a threat to personnel or public health during all activities related to the collection, temporary storage, transportation, and disposal of wastes.</li> </ul>		
<b>Management of Wastewater</b>					
7	Generation of Wastewater	<ul style="list-style-type: none"> <li>• Workers</li> <li>• Regional Flora and Fauna Communities</li> <li>• Natural Resources</li> </ul>	<ul style="list-style-type: none"> <li>• The tightness and structural integrity of the on-site wastewater transmission, collection, and temporary storage systems shall be regularly inspected; maintenance activities aimed at preventing risks of uncontrolled leakages and overflows shall be conducted.</li> <li>• In the event of changes in operating conditions or the occurrence of extraordinary circumstances, additional technical and operational measures shall be evaluated and implemented against any potential impacts on the quantity and character of wastewater generation.</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> </ul>

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			<ul style="list-style-type: none"> <li>Domestic wastewater originating from the personnel employed during the operational phase shall be managed by establishing a connection to the existing sewage infrastructure; in cases where no infrastructure is available, it shall be managed through leak-proof septic systems in accordance with relevant national legislation, ensuring that uncontrolled discharge of such wastewater into the receiving environment is prevented.</li> </ul>		
<b>Stormwater Management</b>					
8	<p>The risk of surface and groundwater pollution resulting from the transport of stormwater runoff containing oil and grease, total suspended solids (TSS), metals, and other vehicle-related pollutants into water bodies through uncontrolled surface runoff.</p>	<ul style="list-style-type: none"> <li>Local Community</li> <li>Regional Flora and Fauna Communities</li> </ul>	<ul style="list-style-type: none"> <li>Stormwater drainage systems shall be kept separate from process and domestic wastewater systems; thereby preventing uncontrolled cross-connections and environmental risks.</li> <li>Complaints regarding stormwater and surface runoff management shall be recorded through the grievance mechanism operated within the scope of the project and shall be finalized following necessary technical evaluations.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> </ul>
<b>Management of Environmental Noise and Vibration</b>					
9	<p>Noise and vibration generation during operation</p>	<ul style="list-style-type: none"> <li>Workers</li> </ul>	<ul style="list-style-type: none"> <li>Mechanical equipment used during the operational phase of the project shall be selected from equipment with low noise levels and vibration-reducing features, or shall be upgraded to ensure such characteristics.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> </ul>

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		<ul style="list-style-type: none"> <li>• To control noise and vibration impacts, mechanical equipment shall be mounted on vibration dampers (isolators), elastic couplings, and appropriate pedestal systems; structure-borne vibration transmission shall be limited.</li> <li>• Acoustic insulation, noise barriers, or enclosed housing systems shall be implemented for equipment with potentially high noise levels; in enclosed spaces, ventilation performance and noise control shall be evaluated concurrently.</li> <li>• It shall be ensured that noise levels resulting from operational activities do not exceed the limit values specified in the relevant national legislation and the acceptable levels defined within the scope of the World Bank EHS Guidelines.</li> <li>• During maintenance, repair, or temporary high-flow operational conditions where noise and vibration impacts may increase, activities shall be scheduled during daytime hours as much as possible and their durations shall be limited.</li> <li>• In work areas with a risk of noise exposure, appropriate personal protective equipment (earplugs, earmuffs, etc.) shall be provided to Workers, and training regarding their use shall be conducted.</li> </ul>		
<p><b>ESS4 - Community Health and Safety</b></p>				
<p><b>Structural Safety of Subproject Infrastructure</b></p>				

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<p>10</p>	<p>Risks posed to the public while accessing Subproject facilities (such as physical trauma associated with failure of structures, burns and smoke inhalation from fire, injuries suffered as a consequence of falls or contact with heavy equipment, etc.)</p>	<ul style="list-style-type: none"> <li>Local Community</li> </ul>	<ul style="list-style-type: none"> <li>All facilities, structures, and equipment within the scope of the project shall be operated and maintained in accordance with the relevant national legislation, İLBANK implementation principles, World Bank Environmental, Health, and Safety (EHS) Guidelines, and Good International Industry Practice (GIIP) to minimize safety risks to third parties.</li> <li>Pumping station, and critical infrastructure components shall be protected against unauthorized access through fencing, enclosure applications, locked gates, and controlled access systems.</li> <li>Fire detection, warning, and suppression systems in compliance with national fire regulations shall be installed in areas with fire risks; regular maintenance and inspections of these systems shall be carried out.</li> <li>Risks of falls and injuries in open channels, tanks, pits, and areas with elevation differences shall be mitigated through the use of guardrails, covers, and warning signs.</li> <li>Traffic regulations, speed limits, and directional signage shall be implemented for vehicles and heavy equipment operating within the facility site; additional safety measures shall be taken at intersection points with public areas.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>Emergency Preparedness and Response Plan</li> </ul>
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Environmental and Social Management Report (ESMP)

			<ul style="list-style-type: none"> <li>An Emergency Preparedness and Response Plan, covering risks to which the public may be exposed in case of emergencies, shall be prepared and regularly updated.</li> <li>During maintenance and repair activities, temporary work sites near public areas shall be demarcated with modular safety barriers featuring locking mechanisms and directional signage; areas shall be secured upon completion of the works.</li> </ul>		
11	Air emissions and odor	<ul style="list-style-type: none"> <li>Local Community</li> </ul>	<ul style="list-style-type: none"> <li>Although significant continuous air emissions or odor formation are not expected at the drinking water treatment plant operated within the scope of the project due to the nature of the activities, operating conditions shall be monitored regularly and any anomalies shall be recorded.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> </ul>
<b>Emergency Preparedness and Response Plan</b>					
12	<p>Risks and impacts on communities due to potential emergency events during operation (unanticipated incidents, arising from both natural and man-made hazards, typically in the form of fire, explosions, leaks or spills, which may occur for a variety of different reasons, including failure to</p>	<ul style="list-style-type: none"> <li>Workers</li> <li>Local Community</li> </ul>	<ul style="list-style-type: none"> <li>Within the scope of the Subproject, an Emergency Preparedness and Response Plan covering fire, chemical leaks/spills, natural disasters (including earthquakes), and similar emergencies shall be prepared and implemented in accordance with the provisions of the "Regulation on Emergencies in Workplaces."</li> <li>The emergency plan shall be developed in coordination with local authorities, fire departments, health units, and other relevant emergency response organizations;</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>ESMP</li> <li>Emergency Preparedness and Response Plan</li> </ul>

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	implement operating procedures that are designed to prevent their occurrence, extreme weather or lack of early warning, traffic accidents, structural failures, etc.).		<p>information sharing with these institutions shall be ensured when necessary.</p> <ul style="list-style-type: none"> <li>• Basic training on first aid, firefighting, and chemical spill response shall be provided to facility personnel to ensure rapid and effective response to emergencies.</li> <li>• As part of emergency preparedness, regular drills shall be conducted, and the results of these drills shall be recorded to implement necessary improvements.</li> <li>• To minimize the risks to which communities may be exposed during emergencies, appropriate warning, directional, and informational arrangements shall be provided around the facility.</li> <li>• For facility and infrastructure sections located near residential areas and public use zones, additional preventive measures for emergencies shall be evaluated and implemented as required.</li> </ul>		
<b>ESS5 - Land Acquisition, Restrictions on Land Use and Involuntary Resettlement</b>					
13	The operational phase of the subproject is not expected to result in any significant impacts.	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>• There will be no land acquisition, land use restrictions, or involuntary resettlement during the operational phase of the subproject.</li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>	<ul style="list-style-type: none"> <li>• Not Applicable</li> </ul>
<b>ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources</b>					
14	Limited local-scale biodiversity impacts due to vegetation management, surface water use, and	<ul style="list-style-type: none"> <li>• Regional Flora and Fauna Communities</li> </ul>	<ul style="list-style-type: none"> <li>• Vegetation control on access roads, facility sites, and permanent above-ground structures within the scope of the project shall be carried out using environmentally compatible methods.</li> </ul>	<ul style="list-style-type: none"> <li>• ASAT</li> </ul>	<ul style="list-style-type: none"> <li>• ESMP</li> </ul>

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	maintenance activities during the operational phase		<ul style="list-style-type: none"> <li>During maintenance and operational activities, care shall be taken to prevent the spread of invasive plant species; where deemed necessary, revegetation shall be performed using local and native species.</li> <li>Impacts on natural habitats during project activities shall be kept limited; unnecessary vegetation clearing and land degradation shall be avoided.</li> </ul>		
<b>ESS8 – Cultural Heritage</b>					
18	No impacts are anticipated during the operation phase of the Subproject	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>	<ul style="list-style-type: none"> <li>The Subproject operation will comply with the applicable requirements set by the national cultural heritage authorities.</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable</li> </ul>
<b>ESS10 - Stakeholder Engagement and Information Disclosure</b>					
19	Stakeholder Engagement and Information Disclosure	<ul style="list-style-type: none"> <li>Local Community</li> </ul>	<ul style="list-style-type: none"> <li>Information disclosure and participation of relevant stakeholders regarding the activities to be carried out during the operational phase of the project shall be maintained in accordance with World Bank ESS10 principles.</li> <li>Key project information (operational activities, planned maintenance works, temporary service interruptions, and communication channels) shall be announced to the public through appropriate and accessible communication tools.</li> <li>Communication with stakeholders, including local authorities, relevant public institutions, and end-users, shall be conducted in a transparent and timely manner.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>SEP</li> </ul>

Environmental and Social Management Report (ESMP)

			<ul style="list-style-type: none"><li>• The Grievance Mechanism implemented within the scope of the project shall remain active during the operational phase, ensuring that stakeholders can easily submit their opinions, requests, and complaints.</li><li>• Received complaints and feedback shall be recorded, evaluated, and responded to within reasonable timeframes.</li><li>• Significant developments regarding environmental and social issues that may arise during the operational phase shall be appropriately reported to the relevant stakeholders.</li></ul>		
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## 4.5. Monitoring and Reporting

Acting as the Project Implementation Unit (PIU) on behalf of the Sub-borrower, the Antalya Water and Wastewater Administration (ASAT) General Directorate, ALDAŞ Infrastructure Management and Consultancy Services Industry and Trade Inc. (ALDAŞ) is responsible for monitoring and reporting the environmental and social (E&S) performance of the Subproject.

Monitoring and reporting activities related to the Subproject will be carried out in line with the obligations defined under the Environmental and Social Management Plan (ESMP), the Stakeholder Engagement Plan (SEP), and the relevant sub-management plans, with a particular focus on the construction phase. Information obtained within this framework will be compiled and submitted to İLBANK through Monthly and Quarterly Environmental and Social Monitoring Reports (ESMR), in accordance with the procedures and principles set out in the sub-financing agreement.

Monitoring reports prepared for each reporting period will cover all construction activities carried out within the scope of the Döşemealtı Sewerage Network and Pumping Station works and will include, at a minimum, the following elements:

- General status of the Subproject and level of implementation progress (status of sewerage network construction works, construction of pumping station, and related infrastructure activities, key milestones achieved, and overall scheduling);
- Status of compliance with obligations under national legislation (current status of relevant permitting and approval processes, inspections conducted by competent authorities, and any identified findings, where applicable);
- Status of compliance with the Environmental and Social Standards (ESSs) under the World Bank Environmental and Social Framework (ESF) and İLBANK's environmental and social requirements, including the level of implementation of mitigation measures defined under the ESMP and related plans;
- Records of occupational accidents, near-miss incidents, and environmental incidents occurring under the Subproject, together with information on corrective and preventive actions taken in response to such incidents;
- Current environmental and social organizational structure and capacity related to the Subproject (assigned personnel and the general status of training and awareness-raising activities);
- Summary information on stakeholder information disclosure and engagement activities conducted under the Stakeholder Engagement Plan (SEP), as well as the functioning of Subproject-specific grievance mechanisms;
- Environmental and social non-compliances identified during monitoring activities, along with corrective actions developed and their implementation status.

## Environmental and Social Management Report (ESMP)

Monitoring activities will be primarily based on site observations, periodic reports submitted by contractors, audit and inspection records, and information obtained through grievance mechanisms. Within this framework, the effective implementation of mitigation and preventive measures defined for the Subproject will be regularly assessed on site.

While continuous or comprehensive environmental monitoring programs are not envisaged under this ESMP, additional monitoring activities may be initiated where required based on site conditions, received grievances, or requests from competent authorities. In such cases, the relevant monitoring activities will be conducted in accordance with applicable national legislation, World Bank requirements, and İLBANK procedures.

The monitoring and reporting process aims to ensure the timely identification of environmental and social risks during Subproject implementation, the prompt adoption of necessary mitigation measures, and transparent, traceable, and consistent reporting to İLBANK and the World Bank.

Key performance indicators (KPIs) of this ESMP will be monitored, verified, and evaluated within the scope of the Subproject monitoring stage. The KPIs for both construction and operation phases of the Subproject are presented in **Table 11**.

**Table 11:** Key Performance Indicators for Both Construction and Operation Phases of the Subproject

Monitoring Focus	KPI
<b>Documentation</b>	
Following ESMP Project specific plans will be developed and be in place.	Full compliance with Subproject's ESMP
<b>Air Quality</b>	
Air Quality incidents	Minimization and continued improvement in the number of the reported air quality related incidents.
Non-Compliance with air quality standards	Zero grievances per year
Community grievances	Minimization and continued improvement in the number of air quality related community grievances
Violation on speed limit	Minimization and continued improvement in the number of reported violations on speed limit
<b>Noise</b>	
Noise and Vibration incidents	Minimize and continued improvement in number of reported noise and vibration related incidents
Non-Compliance with Project standards	Zero Non-Compliance Reports (NCRs) per year
Number of noise-related community grievances	Zero grievances per year
Community grievances	Minimization and continued improvement in the number of noise related community grievances
<b>Water / Wastewater</b>	

## Environmental and Social Management Report (ESMP)

Monitoring Focus	KPI
Spill incident	Minimization and continued improvement in the number of the reported water quality related incidents.
Non-Compliance with Subproject standards	Zero NCRs per year
Wastewater collection system	Zero grievances per year
Water quality analyses	Meeting set national and international water quality standards for surface and groundwater impacted and/or near the Subproject
Flood incidents	No infrastructure damage and damage to loads/humans
Wastewater and Water loss records in network	Sustainable low wastewater and water loss records
<b>Waste</b>	
Waste Generation	Minimization of total waste generated Decrease in the ratio of hazardous waste generated to total waste (by contamination + by generation)
Waste Disposal	Increase in the ratio of recovered/reused/recycled waste to total waste generated
<b>Soil Quality</b>	
Spill incident	Minimization and continued improvement in the number of the reported soil quality related incidents
Non-Compliance with Subproject standards	Zero NCRs per year
Soil quality accidents	Zero accident per year
Number of soil-related community grievances	Zero grievances per year
<b>Traffic</b>	
Number of non-compliances against the mitigation controls identified in Traffic Management Plan	Decreasing number/ continuous improvement in number of reported non-compliances
Number of drivers found to be exceeding speed limits or driving unsafely	Zero exceedance per year
Number of road traffic accidents involving: Accidental injuries and deaths, Spillages (such as cargo or fuel), Wildlife-vehicle collisions.	Zero accidents per year
Number of traffic-related grievances	Zero grievances per year
<b>Health, Safety and Environment</b>	
% of scheduled HSE Inspection	>90
% of attendance at HSE meetings	>90

## Environmental and Social Management Report (ESMP)

Monitoring Focus	KPI
% of closing of NCRs	100
Reporting safe observations	100%
Reporting unsafe observations	100%
Reporting near misses	100%
Reporting number of incidents	100%
Reporting number of accidents	100%
Reporting day-loss	100%
% of Toolbox attending	>90
% of Risk Assessment compliance	>90
% of Legal Requirements compliance	100%
Results of scheduled audits	>85
HSE training carried out to training matrix > 90% of all training to matrix	>90
% of attendance at scheduled trainings	>90
Engagement in HSE program by individual managers and supervisors	>90
Engagement in HSE program by contractor's	>90
<b>Labor and Working Conditions</b>	
Number of worker grievances closed out within the target timeframe	100% compliance with labor laws and regulations Zero unresolved health and safety incidents within the target timeframe 100% availability of required PPE 90% or higher worker satisfaction rate
<b>Community Health and Safety</b>	
Number of communicable and non-communicable diseases and injuries.	Negative Trend/No significant increase in communicable and non-communicable disease and injury rates per 1,000 residents per annum.
Number of community health safety & security grievances from local communities as recorded in the grievance management system.	Decreasing number/ continuous improvement in number of grievances
Number of reported community health & safety incidents	Zero incidents per year
Number of reported air quality or noise incidents	Zero incidents per year
Direct and indirect threats posed by construction activities against traffic and pedestrians	Zero number of drivers found to be exceeding speed limits or driving unsafely Zero accidental injuries and deaths, Zero traffic-related grievances
Access to the Construction Site - Security Fence/ Protection Tape	Zero Number of unauthorized accesses to the Subproject area

## Environmental and Social Management Report (ESMP)

Monitoring Focus	KPI
<b>Trainings</b>	
Training records	<p>Trainings on ESMP and SEP documents. Providing all trainings (including GM, GBV, SEA/SH) to all Workers.</p> <p>100% of scheduled training sessions conducted 80% or higher participant satisfaction rate Zero participants without completion certificates if applicable</p>
<b>Disclosure</b>	
Grievance Records, Disclosure meeting participant records, ESMP, SEP, GM will be disclosed at Project web site in two languages (English and Turkish).	All grievances closed-out within the target timeframe ESMP, Project specific SEP and GM will be prepared and disclosed at the Project web site
<b>Vulnerable Groups</b>	
Incidents, Grievances, Toolbox talks and trainings, Information/ disclosure	<p>All grievances closed-out within the target timeframe</p> <p>Sufficient information provided to the VGs</p>
<b>Grievance Mechanism</b>	
Grievance Records, GM disclosure	<p>All grievances closed-out within the target timeframe</p> <p>GM disclosure to the PAPs, stakeholders GM disclosure at Subproject web site</p>
<b>Cultural Heritage</b>	
Existence of a Chance Find	Zero Grievance Records

**Table 12:** Construction Environmental and Social Monitoring Table

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
1	Pre-construction and Construction	Risks or impacts related to labor, working conditions, and workers' rights	<ul style="list-style-type: none"> <li>Working Conditions</li> <li>Camp Site Conditions</li> </ul>	Executive Office	<ul style="list-style-type: none"> <li>Workers' complaints</li> </ul>	<ul style="list-style-type: none"> <li>Weekly during the construction phase</li> </ul>	<ul style="list-style-type: none"> <li>World Bank General ESF Guidelines</li> <li>Occupational Health and Safety Law</li> <li>IFC &amp; EBRD Accommodation Guidelines</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>The number of employee complaints that are not closed within the target time</li> </ul>	Within contract price
2	Pre-construction and Construction	Occupational health and safety	<ul style="list-style-type: none"> <li>Disease/health incidents</li> <li>Trainings and training materials (presentations, participant lists, attendance/signature sheets, etc.)</li> </ul>	On the construction site and in the site office	<ul style="list-style-type: none"> <li>On-site inspections</li> <li>Interviews with Workers</li> <li>Grievance records</li> <li>Training and on-the-job briefing records</li> <li>Sample contracts</li> <li>Internal and external audits</li> <li>Accident and near-miss records</li> <li>Existence of an</li> </ul>	<ul style="list-style-type: none"> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>World Bank General ESF Guidelines</li> <li>Occupational Health and Safety Law</li> <li>Regulation on Health and Safety Conditions for the Use of Work Equipment</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of non-compliance reports closed</li> <li>Percentage of risk assessment compliance</li> <li>Percentage of compliance with legal requirements</li> <li>Results of planned audits</li> </ul>	Within contract price

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
			On-site OHS practices (use of PPE, safe work methods, etc.) Legal / regulatory requirements Drill / exercise reports Site observations, non-compliance records, and corrective actions taken Near-miss incident records and forms OHS meetings and committee activities Daily OHS site		adequate OHS organizational structure				<ul style="list-style-type: none"> <li>• Percentage of participation in planned training</li> <li>• Reporting of near misses</li> <li>• Percentage of people attending toolbox talks</li> </ul>	

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
			inspection forms Permit-to-work systems and permit lists <ul style="list-style-type: none"> <li>• Incident/accident reports</li> <li>• Grievances</li> <li>• Trainings and training materials (presentations, participant lists, etc.)</li> <li>• On-site OHS practices (use of PPE, etc.)</li> <li>• Legal requirements</li> <li>• Drill/exercise reports</li> </ul>							

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
3	Construction Stage	Risk of gender-based violence (GBV), Sexual exploitation and abuse/sexual harassment (SEA/SH) on workers Gender inequality,	<ul style="list-style-type: none"> <li>Incoming Complaint Reports</li> </ul>	Monitoring will also be carried out in the areas affected by the construction site and on the construction site itself.	<ul style="list-style-type: none"> <li>Grievance Mechanism</li> </ul>	<ul style="list-style-type: none"> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>World Bank General Guidelines</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of participants in Behaviour Training</li> </ul>	Within contract price
4	Construction Stage	Community Health and Safety	<ul style="list-style-type: none"> <li>Restriction of Social Life</li> </ul>	Monitoring will also be carried out in areas affected by the construction site.	<ul style="list-style-type: none"> <li>Providing personnel with training on environmental and social issues, including instructions on precautions to take during work and managing interactions with the public.</li> </ul>	<ul style="list-style-type: none"> <li>Continuously during the construction</li> </ul>	<ul style="list-style-type: none"> <li>IFC Guide Regulation on Traffic Signs</li> <li>DBG General OHS Rules</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>The number of public health, safety and security complaints recorded in the complaint register/diary.</li> <li>The number of reported public health and safety</li> </ul>	Within contract price

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
					<ul style="list-style-type: none"> <li>Monitoring the placement and condition of safety and informational signage to ensure public safety and minimal disruption to daily life.</li> <li>Tracking public access to residential, commercial, hospital, or shopping areas during trenching, excavation, or backfilling works.</li> <li>Observing and ensuring safe access for individuals or groups to homes, workplaces, hospitals, and shopping centers during excavation activities.</li> <li>Reviewing permits and approved layouts for road</li> </ul>				<p>incidents</p> <ul style="list-style-type: none"> <li>The percentage of attendance at Consultation Meetings.</li> </ul>	

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
					closures and traffic diversions. • Monitoring safety measures and traffic signs associated with road closures and traffic management. • Checking and enforcing traffic-related safety procedures on-site.					
5	Construction Stage	Traffic	• Traffic Safety	On the streets and avenues where construction work is carried out and their connecting roads	• The safety and adequacy of pedestrian crossings and pedestrian areas in the construction area will be checked.	• Continuously during the project construction	• Highways Traffic Law • DBG General Occupational Health and Safety Rules • Regulations on Traffic Signs	• ASAT • ALDAŞ • Supervision Consultant • Contractor	• The number of permits for road closures and diversions • The number of traffic-related complaints	Within contract price
6	Construction Stage		• Risk of soil erosion • Loss of soil in excavation	Construction site, pipeline route, storage areas	• Visual inspection • Point checks • Excavation and fill monitoring records • Complaint records	• Continuously throughout the project	• Regulation on the Control of Soil Pollution and Management of Contaminated	• ASAT • ALDAŞ • Supervision Consultant • Contractor	• Number of detected soil erosion or pollution events • Number and	Within contract price

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Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
		Soil Environment	and filling areas • Leakage and spill incidents		• Environmental incident reports	construction.	Sites with Point Sources • Regulation on Waste Management • Law on Soil Conservation and Land Use and Related Regulations		duration of corrective measures taken	
7	Construction Stage	Air Quality	• Dust generation • Emissions from vehicles and construction machinery	In areas where construction machinery is concentrated for the project	• In areas where dust generation is observed during excavation, irrigation is carried out to control emissions from backfill material storage areas and construction machinery.	• During the construction of the project • In case of a complaint	• IFC EHS Guidelines • Relevant regulations of the Ministry of Environment, Urbanization and Climate Change • Regulation on Air Quality Assessment and Management	• ASAT • ALDAŞ • Supervision Consultant • Contractor	• Number of dust and emission incidents • Grievance records and resolution time	Within contract price
8	Construction Stage	Impacts on Water Resources	• Dust and Material Transport Control	In the construction site building and the	• Visual inspections and grievance monitoring.	• Daily	• Percentage of daily dust control measures implemented	• ASAT • ALDAŞ • Supervision Consultant • Contractor	• IFC EHS Guidelines • Ministry of Environment, Urbanization and	Within contract price

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
				work area in general			<ul style="list-style-type: none"> <li>Number of Grievance</li> </ul>		Climate Change Air Quality Assessment and Management Regulation	
9	Construction Stage	Impacts on Water Resources	<ul style="list-style-type: none"> <li>Surface Water Flow</li> </ul>	In the entire work area	<ul style="list-style-type: none"> <li>Observations and field checks</li> </ul>	<ul style="list-style-type: none"> <li>Weekly during construction and after rainy days</li> </ul>	<ul style="list-style-type: none"> <li>Temporary drainage channels and pits must be appropriately placed and functional</li> <li>Soil stock areas must be covered or compacted..</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>The percentage of non-compliance issues identified during field inspections that are corrected in a timely manner</li> </ul>	Within contract price
10	Pre-construction and Construction	Wastewater Pollution	<ul style="list-style-type: none"> <li>Wastewater</li> </ul>	<ul style="list-style-type: none"> <li>In the construction site building and the work area in general</li> </ul>	<ul style="list-style-type: none"> <li>Industrial site building wastewater connections are made to existing networks on the land (Septic tank pumping receipts if there is no sewage connection)</li> </ul>	<ul style="list-style-type: none"> <li>Daily during the project construction phase</li> </ul>	<ul style="list-style-type: none"> <li>Urban Wastewater Treatment Regulation</li> <li>IFC, EHS Guide</li> <li>World Bank General ESG Guidelines</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Wastewater collection system</li> </ul>	Within contract price

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
11	Pre-construction and Construction	Atık	<ul style="list-style-type: none"> <li>Hazardous Waste</li> </ul>	In the construction site building and the work area in general	<ul style="list-style-type: none"> <li>By monitoring temporary storage areas in case of hazardous waste generation.</li> </ul>	Daily during the project construction phase	<ul style="list-style-type: none"> <li>Waste Management Regulation</li> <li>Regulation on Health and Safety Measures When Working with Asbestos</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Waste Generation</li> <li>Waste Disposal (Hazardous Waste)</li> </ul>	Within contract price
12	Pre-construction and Construction	Waste	<ul style="list-style-type: none"> <li>Domestic Waste</li> </ul>	<ul style="list-style-type: none"> <li>Throughout the construction site building and work area</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring the fill levels of containers and conducting visual inspections to ensure that no waste is left scattered around the site.</li> <li>Providing separate containers for recyclable waste and keeping records for three months.</li> </ul>	Daily during the project construction phase	<ul style="list-style-type: none"> <li>Waste Management Regulation</li> <li>Zero Waste Regulation</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Waste Generation</li> <li>Waste Disposal (Domestic Waste)</li> </ul>	Within contract price
13	Pre-construction and Construction	Waste	<ul style="list-style-type: none"> <li>Packaging Waste</li> </ul>	<ul style="list-style-type: none"> <li>Throughout the construction site building and work area</li> </ul>	<ul style="list-style-type: none"> <li>Collecting packaging waste in separate containers;</li> <li>Collection and segregation;</li> <li>Keeping records of packaging waste</li> </ul>	Daily during the project construction phase	<ul style="list-style-type: none"> <li>Waste Management Regulation</li> <li>Zero Waste Regulation</li> <li>Packaging Waste Control</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Waste Generation</li> <li>Waste Disposal (Packaging)</li> </ul>	Within contract price

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
				•	delivered to authorized companies.		Regulation			
14	Pre-construction and Construction	Waste	• Waste Oil	• In construction sites where work machines operate	• In construction sites where work machines operate	• Daily during construction stage	• Waste Management Regulation on Waste Oils	• ASAT • ALDAŞ • Supervision Consultant • Contractor	• Waste Generation • Waste Disposal (Hazardous Waste)	Within contract price
15	Pre-construction and Construction	Waste	• Excavation Waste	• Monitoring of excavation work areas and work trucks carrying excavation waste	• Observation of excavation works to be carried out in the field by Site Controllers • Checking whether the trench openings in the excavated areas affect access to places used by citizens individually or collectively, such as residences, workplaces, hospitals, and shopping centres	• Daily during construction stage	• Waste Management Regulation on Zero Waste Control of Excavation and Demolition Wastes	• ASAT • ALDAŞ • Supervision Consultant • Contractor	• Disposal of Excavation Waste	Within contract price

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
					<ul style="list-style-type: none"> <li>Monitoring of lorries and construction machinery during the transport of excavation waste by Site Controllers</li> </ul>					
16	Construction	Environmental Noise Level	Noise	<ul style="list-style-type: none"> <li>Areas where construction machinery working on the project is concentrated</li> </ul>	<ul style="list-style-type: none"> <li>Noise levels are measured using portable devices at the nearest sensitive receivers, particularly in areas with a high concentration of construction machinery.</li> <li>Measurements are carried out by an authorised environmental laboratory in the event of a grievance</li> </ul>	<ul style="list-style-type: none"> <li>If any noise-related grievances are received on a monthly basis during the project construction period</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Noise Control Regulation (Environmental Noise Limits :                             <ul style="list-style-type: none"> <li>LAeq,5min.day: 65 dB(A)</li> <li>LAeq,5min.evening: 60 dB(A)</li> <li>LAeq,5min.night : 55 dB(A)</li> </ul> </li> <li>(Daytime): For the time period 07:00-19:00</li> <li>(Laksham): For the time period 19:00-23:00</li> <li>(Lnight): For the time period 23:00-07:00</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Health Directorate</li> <li>ASAT</li> <li>ALDAŞ Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Noise and Vibration incidents</li> <li>Non-Compliance Records with Project Standards</li> <li>Number of community grievances regarding noise</li> </ul>	Within contract price

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Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
17	Construction	Socio-economic Environment	<ul style="list-style-type: none"> <li>Stability Risks</li> <li>Infrastructure Damage</li> </ul>	<ul style="list-style-type: none"> <li>Throughout the construction site building and work area</li> </ul>	<ul style="list-style-type: none"> <li>Incident records</li> <li>Receipts of compensation payments</li> </ul>	<ul style="list-style-type: none"> <li>Monthly during construction stage</li> </ul>	<ul style="list-style-type: none"> <li>Penal Code</li> <li>World Bank General EHS Guide</li> <li>WBG Water and Sanitation EHS Guide</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Emergency Assembly Points</li> <li>Infrastructure damage and disruption of the services</li> </ul>	Within Contract Price
18	Construction	Cultural Heritage	Artifacts/ Areas of Historical or Cultural Value	Excavation Areas	<ul style="list-style-type: none"> <li>On-site inspection</li> <li>Chance Find Procedure</li> </ul>	<ul style="list-style-type: none"> <li>In case of a chance find comparison of archaeological and cultural structures.</li> </ul>	<ul style="list-style-type: none"> <li>In case of a chance find comparison of archaeological and cultural structures.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Number of Chance Find records and reports</li> </ul>	Within Contract Price
19	Pre-construction and Construction	Grievance Mechanism	Internal and External Grievances	Throughout the construction site building and work area	<ul style="list-style-type: none"> <li>Number and content of grievances received.</li> <li>Number of open and closed grievances.</li> <li>Average grievance response and closure time</li> <li>Determination of grievance channels</li> </ul>	<ul style="list-style-type: none"> <li>In case of any grievance</li> </ul>	<ul style="list-style-type: none"> <li>World Bank General EHS Guide</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Grievance Records,</li> <li>Number of Grievances</li> <li>Percentage of grievances closed within the targeted time</li> </ul>	Within Contract Price

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
20	Pre-construction and Construction	Emergencies	<ul style="list-style-type: none"> <li>Designated emergency assembly points</li> <li>Emergency response team</li> <li>Training provided to the emergency team</li> </ul>	<ul style="list-style-type: none"> <li>Throughout the site building and work area</li> </ul>	<ul style="list-style-type: none"> <li>Emergency Preparedness and Response Plan</li> <li>Emergency Response Team</li> <li>Emergency response members' assignment documents</li> <li>Emergency response team members' training records</li> </ul>	<ul style="list-style-type: none"> <li>During the construction of the project</li> </ul>	<ul style="list-style-type: none"> <li>Information Training on Emergency First Aid and Emergency Preparedness precautions</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Emergency Assembly Point Count</li> <li>Number of Emergency Response Team Personnel</li> <li>Number of Emergency Response Team Trainings</li> <li>Percentage of Participation in Emergency Response Team Trainings</li> </ul>	Within Contract Price
21	Pre-construction and Construction	Stakeholder Engagement and Disclosure of Information	<ul style="list-style-type: none"> <li>Stakeholder engagement activities</li> </ul>	<ul style="list-style-type: none"> <li>Throughout the site building and work area</li> </ul>	<ul style="list-style-type: none"> <li>Continuous visual monitoring</li> <li>Checks whether a community information system (signs, verbal announcements, etc.) is in place before work commences</li> <li>Announcement of</li> </ul>	<ul style="list-style-type: none"> <li>Monthly during construction stage</li> </ul>	<ul style="list-style-type: none"> <li>World Bank General Guide</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> <li>ALDAŞ</li> <li>Supervision Consultant</li> <li>Contractor</li> </ul>	<ul style="list-style-type: none"> <li>Number of stakeholder engagement activities</li> <li>Number of grievances received</li> <li>Number of corrective actions implemented</li> </ul>	Within Contract Price



Table 13: Operation Environmental and Social Monitoring Table

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
1	Operation	Occupational health and safety risks or impacts	<ul style="list-style-type: none"> <li>Incident/accident reports</li> <li>OHS practices in the site (use of PPE etc.)</li> <li>Legal Requirements</li> </ul>	<ul style="list-style-type: none"> <li>Work areas (areas excavate for maintenance and repair)</li> </ul>	<ul style="list-style-type: none"> <li>Accident records</li> <li>Existence of an adequate OHS organization structure</li> </ul>	<ul style="list-style-type: none"> <li>During Maintenance and Repair Work</li> </ul>	<ul style="list-style-type: none"> <li>Occupational Health and Safety Regulation</li> <li>Regulation on Health and Safety Conditions in the Use of Work Equipment</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of closing Non-Conformance Reports</li> <li>Reporting of near-miss accidents</li> <li>Risk Assessment compliance percentage</li> <li>Legal Requirement compliance percentage</li> </ul>	Own Resources of ASAT
2	Operation	Impacts on Water Resources	<ul style="list-style-type: none"> <li>Water source flow rate, leakage control, leaks at pipe connection points</li> </ul>	<ul style="list-style-type: none"> <li>Wastewater treatment plant inlet and outlet points, transmission line</li> </ul>	<ul style="list-style-type: none"> <li>Visual inspections, pipe pressure and flow tests, routine maintenance reports</li> </ul>	<ul style="list-style-type: none"> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Wastewater flow rate and transmission line pressure values must be in accordance with design values.</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>Number of leaks, with design values</li> </ul>	Own Resources of ASAT

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Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
				critical points						
3	Operation	Impacts on Soil (Contamination, Erosion)	<ul style="list-style-type: none"> <li>Contaminated soil</li> </ul>	<ul style="list-style-type: none"> <li>Work areas (excavation areas for maintenance and repair)</li> </ul>	<ul style="list-style-type: none"> <li>Sampling and on-site/laboratory measurements</li> </ul>	<ul style="list-style-type: none"> <li>In the Event of a Fault</li> </ul>	<ul style="list-style-type: none"> <li>Regulation on Soil Pollution Control and Point Source Contaminated Sites</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>Amount of contaminated soil</li> <li>Records/report of environmental spills/leaks</li> </ul>	Own Resources of ASAT
4	Operation	Community health and safety risks	<ul style="list-style-type: none"> <li>Community safety measures</li> </ul>	<ul style="list-style-type: none"> <li>Work areas (for maintenance and repair)</li> </ul>	<ul style="list-style-type: none"> <li>Accident Records</li> <li>Grievance Records</li> </ul>	<ul style="list-style-type: none"> <li>In case of grievance</li> </ul>	<ul style="list-style-type: none"> <li>World Bank General EHS Guidelines</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>Minimum number of community health, safety, and security grievances from local public.</li> <li>Minimum number of community health and safety incidents reported.</li> </ul>	Own Resources of ASAT
5	Operation	Noise	<ul style="list-style-type: none"> <li>Noise levels of on-site equipment</li> </ul>	<ul style="list-style-type: none"> <li>Pumping stations</li> </ul>	<ul style="list-style-type: none"> <li>Noise measurement with a noise</li> </ul>	<ul style="list-style-type: none"> <li>Annually, in case of grievance</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Noise Control Regulation limit</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>Measured noise levels must not exceed the limit</li> </ul>	Own Resources of

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
			and pump		meter, field observation		values		values.	ASAT
6	Operation	Greenhouse Gas Emissions	<ul style="list-style-type: none"> <li>Electricity consumption, pump efficiency, CO<sub>2</sub> emissions</li> </ul>	<ul style="list-style-type: none"> <li>Pumping station</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance and production records</li> </ul>	<ul style="list-style-type: none"> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Design values and energy efficiency targets</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>Energy efficiency, emission levels</li> </ul>	Own Resources of ASAT
7	Operation	Emergencies	<ul style="list-style-type: none"> <li>Number of determined assembly points</li> <li>Number of personnel assigned to the emergency response team</li> <li>Number of trainings given to the emergency team</li> <li>Number of personnel attending emergency</li> </ul>	<ul style="list-style-type: none"> <li>Work areas (excavation areas for maintenance and repair)</li> </ul>	<ul style="list-style-type: none"> <li>Emergency Preparedness and Response Plan</li> <li>Assignment documents of Emergency Response Team members</li> </ul>	<ul style="list-style-type: none"> <li>Continuous</li> </ul>	<ul style="list-style-type: none"> <li>Information Training on First Aid and Emergency Preparedness measures</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>Incident/Accident Records</li> </ul>	Own Resources of ASAT

## Environmental and Social Management Report (ESMP)

Ref.	Sub-Project Phase	Subject	Monitoring Parameter	Monitoring Location	Monitoring Method	Monitoring Frequency	Reference / Threshold (If appropriate)	Institutional Responsibility	Key Performance Indicators	Cost (If not included in subproject budget)
			trainings							
8	Operation	Stakeholder Engagement	Grievance Mechanism	<ul style="list-style-type: none"> <li>Work sites (for maintenance and repair)</li> </ul>	<ul style="list-style-type: none"> <li>Grievance Records</li> </ul>	<ul style="list-style-type: none"> <li>In case of any Grievance Record</li> </ul>	<ul style="list-style-type: none"> <li>WBG Conservation Policies</li> </ul>	<ul style="list-style-type: none"> <li>ASAT</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholder information before maintenance and repair works and number of grievance records</li> </ul>	Own Resources of ASAT

## 4.6. List of Associated Plans and Procedures

The Environmental and Social (E&S) management plans and procedures to be prepared by the Contractors are listed in **Table 14** below. These plans and procedures will be reviewed and revised every six (6) months in the event of any significant changes

**Table 14:**Plans and Procedures Associated

Management Plan or Procedure	Relevant Subproject Phase (Construction only, Operation only, both Construction and Defect Liability Period (DLP))
Contractor Environmental and Social Management Plan (C-ESMP)	Construction Phase
Labor Management Plan (LMP)	Construction Phase
Occupational Health and Safety Management Plan (OHSMP)	Construction Phase
Community Health and Safety Management Plan (CHSMP)	Construction Phase
Emergency Preparedness and Response Plan (EPRP)	Construction Phase
Asbestos Management Plan (AMP)	Construction Phase
Chance Find Procedure	Construction Phase
Traffic Management Plan (TMP)	Construction Phase
Waste Management Plan (WMP)	Construction Phase

## 4.7. Management of Change

ASAT General Directorate is obliged to notify İLBANK in writing, using the İLBANK Change Notification Form template (Annex C – İLBANK Framework), of any significant changes occurring at any stage of the Sub-Project that may affect environmental and/or social performance, including changes arising from the activities of ASAT General Directorate and/or the contractor.

- Changes requiring notification may include, but are not limited to, the following:
- Changes in administrative and/or organizational structures affecting decision-making processes,
- Changes in assigned environmental, social, and/or occupational health and safety (OHS) personnel,
- Legislative or regulatory changes affecting the implementation of the Sub-Project (e.g. the entry into force of new permits, license, or approval procedures),
- Design changes, including revisions to the Sub-Project description, the addition of new temporary or permanent areas/facilities (on-site or off-site), changes in workforce numbers, and changes in on-site or off-site worker accommodation arrangements,
- Changes to the implementation schedule,

- Changes related to environmental and social (E&S) issues (e.g. identification of new biodiversity features or cultural heritage assets, the emergence of additional resettlement requirements, etc.),
- Changes in the contractor or construction supervision consultant at any stage of the Sub-Project, including:
- Clarification of E&S commitments, roles, and responsibilities with the new contractor or supervision consultancy firm, and
- Replanning and implementation of E&S training programs for the personnel of the new contractor or supervision consultancy firm.

Such changes will be reviewed by İLBANK, and were deemed necessary, the relevant E&S documents and management plans will be updated accordingly

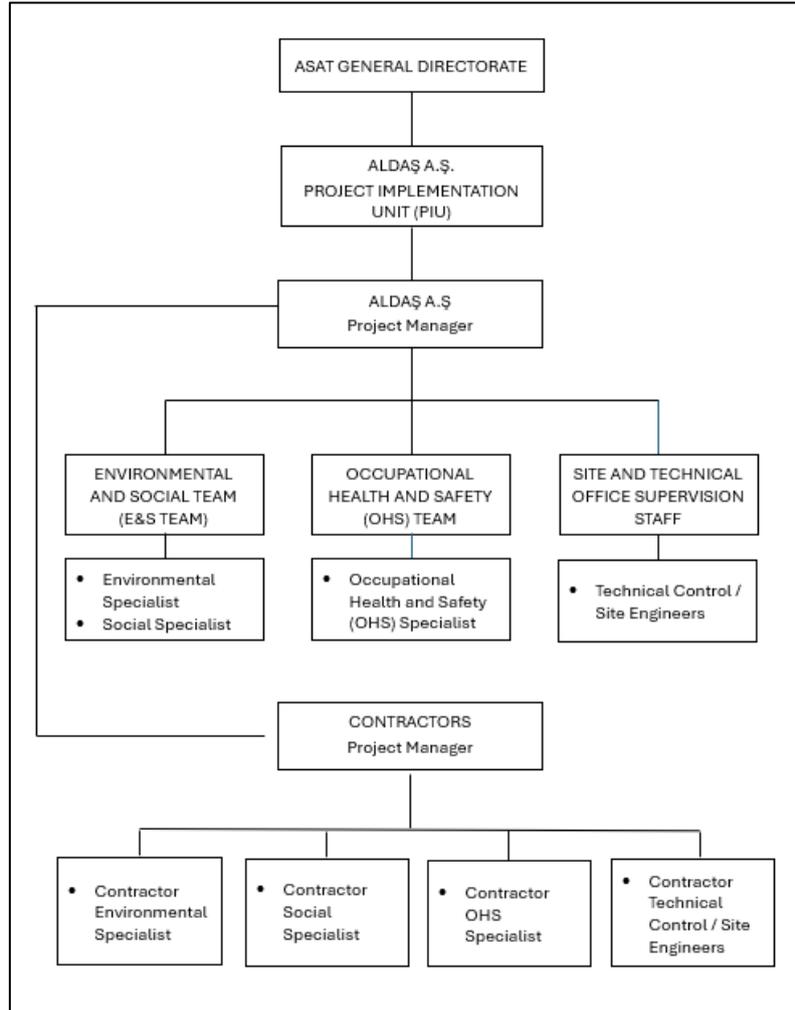
## 5. CAPACITY DEVELOPMENT AND TRAINING

### 5.1. Organizational Capacity

The Antalya Water and Wastewater Administration (ASAT) General Directorate, acting as the Sub-borrower, holds the ultimate responsibility for the implementation of this Environmental and Social Management Plan (ESMP) throughout the lifecycle of the sub-financing agreement. For the implementation of the Döşemealtı District Wastewater Network Construction Project, ASAT has designated ALDAŞ Infrastructure Management and Consultancy Services Industry and Trade Inc. (ALDAŞ) to act as the Project Implementation Unit (PIU) on behalf of ASAT.

In this context, ALDAŞ, as the PIU, is responsible for the overall technical, administrative, environmental, social, and occupational health and safety management of the Subproject on behalf of ASAT, including contractor supervision, coordination of project activities, and monitoring of compliance with the ESMP, national legislation, İLBANK requirements, and the World Bank Environmental and Social Framework.

The organizational structure of the PIU (ALDAŞ) is presented in **Figure 19**. The PIU comprises qualified management, technical, environmental, social, and occupational health and safety personnel, with sufficient authority and resources to ensure effective implementation of the ESMP and compliance with the requirements of İLBANK and the World Bank. All key positions within the PIU are currently filled and operational.



**Figure 19:** Organizational Structure – Project Implementation Unit (PIU)

ASAT will ensure the continuity of the PIU throughout the duration of the sub-financing agreement by maintaining ALDAŞ’s mandate as the PIU and by ensuring the availability of adequate technical and financial resources. Acting on behalf of ASAT, the PIU (ALDAŞ) will be responsible for the overall coordination, supervision, and monitoring of environmental and social performance for the Subproject.

At a minimum, the Environmental and Social (E&S) team within the PIU (ALDAŞ) includes the following personnel, who support the management and monitoring of Subproject E&S risks and impacts and ensure full compliance with the ESMP and other relevant E&S instruments:

- **Environmental Specialist(s):** responsible for managing and monitoring environmental risks and impacts associated with the Subproject, including air quality, noise, waste management, water resources, and biodiversity, in accordance with the ESMP and applicable environmental instruments.
- **Social Specialist / Grievance Mechanism (GM) Focal Point:** responsible for managing social risks and impacts, stakeholder engagement activities, labor and

### Environmental and Social Management Report (ESMP)

working conditions, third-party interactions along the transmission line corridor, and the operation of the Grievance Mechanism on behalf of ASAT.

- **Occupational Health and Safety (OHS) Specialist(s):** responsible for overseeing occupational health and safety risks and mitigation measures related to construction and rehabilitation activities under the Subproject, in line with national legislation and the World Bank Group Environmental, Health and Safety (EHS) Guidelines.

### Contractors

ASAT, through the PIU (ALDAŞ), will require all contractors engaged under the Subproject to establish and maintain, for the duration of their contracts, an organizational structure with qualified personnel and adequate resources to implement the ESMP requirements. Each contractor will assign, at a minimum, the following staff within its organizational structure:

- Environmental Specialist(s)
- Social Specialist(s), who will also act as the Grievance Mechanism Focal Point
- Occupational Health and Safety (OHS) Specialist(s)

Contractors will ensure that these personnel are available on site as required and have the authority to implement environmental, social, and OHS measures relevant to their scope of work. Where such capacity is not available internally, contractors will obtain third-party support or consultancy services, subject to the supervision and approval of the PIU (ALDAŞ).

This organizational arrangement ensures that ALDAŞ, acting as the PIU on behalf of ASAT, has full operational authority and capacity to effectively manage environmental and social risks and impacts associated with the Subproject and to ensure consistent implementation of the ESMP for the Subproject.

## 5.2. Roles and Responsibilities

The ASAT General Directorate, acting as the Sub-borrower, holds the ultimate responsibility for the implementation of this Environmental and Social Management Plan (ESMP). ALDAŞ A.Ş., acting on behalf of ASAT, is designated as the Project Implementation Unit (PIU) and is responsible for ensuring the effective implementation, monitoring, and reporting of environmental and social (E&S) requirements under the Subproject. Contractors are responsible for the on-site implementation of the ESMP provisions within the scope of their respective contracts.

The E&S roles and responsibilities of the Sub-borrower, the PIU, contractors, and other key stakeholders are summarized in **Table 15**.

**Table 15:** Roles and E&S related Responsibilities of Key Parties associated with ESMP Implementation

Party	Role	Key Responsibilities
Sub-borrower Antalya Water and Wastewater	Sub-borrower Management	<ul style="list-style-type: none"> <li>• Hold ultimate responsibility for the environmental and social (E&amp;S) performance of the Subproject to the satisfaction of İLBANK throughout the sub-financing</li> </ul>

Party	Role	Key Responsibilities
<b>Administration (ASAT) General Directorate</b>		<p>agreement lifecycle, including the performance of contractors.</p> <ul style="list-style-type: none"> <li>• Designate and mandate ALDAŞ A.Ş. as the Project Implementation Unit (PIU) to manage and oversee all technical, administrative, environmental, social and OHS aspects of the Subproject on behalf of ASAT.</li> <li>• Ensure that ESMP, SEP and other required E&amp;S instruments are prepared, updated and implemented within the timeframes agreed with İLBANK, and allocate adequate financial and human resources through own resources or Subproject financing.</li> <li>• Cooperate with İLBANK to agree on the Environmental and Social Action Plan (ESAP) and other E&amp;S covenants to be incorporated into the sub-financing agreement.</li> <li>• Ensure that İLBANK Environmental, Health, Safety and Social (EHSS) requirements are incorporated into contractor tender documents and contracts, in coordination with the supervision arrangements.</li> <li>• Exercise authority to suspend or stop Subproject activities posing imminent risk to health, safety or the environment.</li> <li>• Ensure E&amp;S performance monitoring and reporting to İLBANK in accordance with IFI standards.</li> <li>• Facilitate monitoring missions and audits by İLBANK and its consultants.</li> </ul>
<b>Sub-borrower E&amp;S Team (acting through PIU – ALDAŞ)</b>	<b>Environmental, Social and OHS Staff</b>	<ul style="list-style-type: none"> <li>• Participate in E&amp;S training activities organized under İLBANK ESMS Training Procedures.</li> <li>• Coordinate preparation of ESMP, SEP and other E&amp;S documentation by qualified internal or external specialists, as required for the Subproject risk category.</li> <li>• Provide İLBANK with necessary information for E&amp;S screening, due diligence and appraisal processes.</li> <li>• Support ASAT management in the review and implementation of ESAP and E&amp;S covenants.</li> <li>• Ensure compliance of Subproject activities (including contractor works) with national legislation, İLBANK ESMS and WB ESF requirements.</li> <li>• Monitor E&amp;S performance and prepare periodic E&amp;S monitoring reports in line with IFI standards.</li> <li>• Coordinate corrective actions for E&amp;S non-compliances in consultation with İLBANK.</li> <li>• Coordinate contractors and supervision staff for data collection and reporting.</li> <li>• Allow İLBANK access to Subproject sites, records and documentation.</li> </ul>

Party	Role	Key Responsibilities
		<ul style="list-style-type: none"> <li>Notify İLBANK of any significant E&amp;S incident or accident within 24 hours and submit detailed incident investigation and Root Cause Analysis (RCA) reports within the required timelines, and no later than 15 calendar days</li> </ul>
<b>Project Implementation Unit (PIU)ALDAŞ A.Ş. (on behalf of ASAT)</b>	<b>Project Management and E&amp;S Oversight</b>	<ul style="list-style-type: none"> <li>Manage and coordinate implementation of the ESMP for the Subproject on behalf of ASAT.</li> <li>Supervise contractors' compliance with E&amp;S and OHS requirements.</li> <li>Consolidate E&amp;S monitoring data and submit reports to İLBANK on behalf of ASAT.</li> <li>Manage stakeholder engagement and operation of the Grievance Mechanism.</li> <li>Coordinate with relevant authorities, contractors and İLBANK on E&amp;S matters.</li> </ul>
<b>Construction Supervision / Control Team (within PIU – ALDAŞ)</b>	<b>Management and E&amp;S Supervision Staff</b>	<ul style="list-style-type: none"> <li>Supervise contractors' construction activities on site, including implementation of ESMP, SEP and other E&amp;S requirements on a daily basis.</li> <li>Ensure adequate E&amp;S capacity is maintained for Subproject implementation.</li> <li>Review E&amp;S management plans and documents prepared by contractors.</li> <li>Review contractors' monthly E&amp;S and OHS monitoring reports and identify non-compliances.</li> <li>Enforce corrective actions within agreed timeframes.</li> <li>Support preparation of periodic E&amp;S monitoring reports to be submitted to İLBANK.</li> <li>Notify ASAT/PIU of significant E&amp;S incidents or accidents within 24 hours.</li> </ul>
<b>Construction Contractors</b>	<b>Contractor Management and E&amp;S Staff</b>	<ul style="list-style-type: none"> <li>Establish and maintain sufficient E&amp;S and OHS capacity to implement contractual E&amp;S requirements.</li> <li>Participate in E&amp;S training activities as required under İLBANK ESMS procedures.</li> <li>Prepare Subproject-specific E&amp;S management plans prior to construction works.</li> <li>Comply with national legislation, ESMP, ESAP and contractual E&amp;S obligations.</li> <li>Submit periodic E&amp;S self-monitoring and OHS reports through the supervision mechanism.</li> <li>Implement corrective actions for identified E&amp;S non-compliances.</li> <li>Notify ASAT/PIU of significant E&amp;S incidents or accidents within 24 hours.</li> </ul>

### 5.3. Capacity Building and Training

One of the fundamental requirements of the Environmental and Social Management Plan (ESMP) is to ensure that contractor companies involved in the implementation of the Sub-Project, as well as their personnel, possess adequate knowledge, awareness, and capacity in environmental, social, and occupational health and safety (OHS) matters.

Within this framework, the ASAT General Directorate has appointed ALDAŞ Altyapı Yönetimi Danışmanlık Sanayi ve Ticaret A.Ş. (ALDAŞ Infrastructure Management Consultancy Industry and Trade Inc.) as the Project Implementation Unit (PIU) for the relevant Sub-Project, in order to ensure the assignment of qualified personnel who will serve throughout the life cycle of the sub-financing agreement and to maintain continuity of duties.

Environmental and Social (E&S) trainings will be delivered to contractor companies by PIU personnel within ALDAŞ who have been trained by İLBANK.

The Sub-Borrower/PIU personnel (trained by İLBANK) will conduct E&S trainings for contractors in line with the modules presented in **Table 16**; project-specific training programs prepared in accordance with these modules will be submitted to İLBANK prior to the commencement of works.

In the event that contractors participate in the implementation of the Sub-Project, it will be ensured that these trainings provided by the Sub-Borrower/PIU are further disseminated and extended by the contractors to their own Workers.

**Table 16:** Training Components for Training of Contractor Staff

Module	Training Name	Training Duration	Key Training Content
Module 1	İLBANK E&S Requirements	1 hour	<ul style="list-style-type: none"> <li>- Overview of İLBANK Environmental and Social (E&amp;S) Requirements;               <ul style="list-style-type: none"> <li>• İLBANK Environmental and Social Policy (including, but not limited to, guiding principles on human rights, labor rights and working conditions, community health, safety and welfare, cultural heritage, gender equality, etc.);</li> <li>• Stakeholder Engagement and Grievance Management;</li> <li>• Monitoring, Review, and Reporting Processes;</li> <li>• Labor Management and Contractor Management;</li> </ul> </li> <li>- İLBANK Code of Conduct.</li> </ul>
Module 2	Subproject-level E&S Requirements for contractors as per sub-financing agreement	3 hours	<ul style="list-style-type: none"> <li>- Subproject-specific Environmental and Social (E&amp;S) obligations;               <ul style="list-style-type: none"> <li>• E&amp;S commitments incorporated into sub-loan agreements;</li> <li>• Subproject-level E&amp;S assessment and management documentation (such as the ESMP, SEP, and other relevant E&amp;S management plans)</li> </ul> </li> </ul>

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Module	Training Name	Training Duration	Key Training Content
	conditions		and procedures, as applicable); <ul style="list-style-type: none"> <li>• Emergency Preparedness and Response Plan, including training programs for emergency response teams with regular drills;</li> <li>• Implementation of the Labor Management Plan (LMP).</li> </ul>

One of the key requirements of ESMP implementation is the training of the senior management of the Project Owner and the Contractor, as well as all project personnel. Within this scope, the Contractor shall provide environmental, social, and occupational health and safety (OHS) trainings to its own staff. These trainings shall be mandatory during the onboarding process and shall be repeated periodically throughout the project duration.

The trainings shall cover workers' rights, contractual obligations, codes of conduct, the grievance redress mechanism, communication channels, and OHS issues. Compliance with codes of conduct related to the prevention of gender-based violence, sexual harassment, and sexual exploitation and abuse (GBV, SH, SEA) shall constitute an integral part of personnel contracts.

The ALDAŞ Supervision Consultant shall be responsible for monitoring the planning, implementation, and documentation of the Contractor's training activities. The Contractor shall ensure induction trainings for each newly employed worker, and refresher trainings shall be provided as deemed necessary.

➤ **TRAINING TOPICS**

Trainings shall be delivered in accordance with the Regulation on the Procedures and Principles of Occupational Health and Safety Trainings for Workers published in the Official Gazette dated 15.05.2013 and numbered 28648, as well as in line with the World Bank and İLBANK Environmental and Social (E&S) requirements. The trainings shall cover the following topics:

**1) General Topics**

- Information on labor legislation
- Legal rights and responsibilities of Workers
- Workplace housekeeping and order
- Legal consequences arising from occupational accidents and occupational diseases
- Implementation of Environmental and Social instruments.

**1) Health-Related Topics**

- Causes of occupational diseases
- Principles of disease prevention and implementation of protective techniques
- Biological and psychosocial risk factors
- First aid
- Hazards of tobacco products and passive exposure.

**3) Technical Topics**

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- Working at height
- Chemical, physical, and ergonomic risk factors
- Manual handling and lifting
- Fire, explosion, ignition risks, and fire prevention
- Safe use of work equipment
- Work with display screen equipment
- Electrical hazards, risks, and preventive measures
- Causes of occupational accidents and implementation of prevention principles and techniques
- Safety and health signs
- Use of personal protective equipment (PPE)
- General occupational health and safety rules and safety culture
- Evacuation and rescue.

**4) Other Topics**

- Job-specific working at height
- Confined space work
- Work in environments with radiation risks
- Welding works
- Work with equipment involving special risks
- Potential health risks caused by carcinogenic substances and similar hazards
- Training on Waste Management
- Occupational Health and Safety (OHS) Induction Training
- Training for Employee Representatives
- Training for OHS Committee Members
- Emergency Response Team Trainings
- First Aid, Emergency Preparedness, and COVID-19 Measures
- OHS requirements for working in noisy environments
- OHS requirements for working in dusty environments
- Camp Site Management Plan
- OHS requirements for working with chemicals
- OHS requirements for excavation works
- Chance Finds Procedure
- Codes of Conduct, GBV & SEA/SH, Grievance Mechanism, and assignment of responsibilities related to E&S rules
- Traffic Management and Work Instruction Training
- Orientation Training

**Toolbox Talks / On-the-Job Trainings:**

Toolbox talks shall be provided during work execution to support basic trainings and to inform workers. Toolbox topics shall cover hand tools, machinery, and potential hazards and risks that

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may arise during the execution of works. Toolbox trainings shall be delivered on a daily or weekly basis.

Following the trainings, measurement and evaluation of training effectiveness shall be conducted. Training materials shall be continuously updated and kept dynamic by incorporating experiences and lessons learned. If retraining is required based on the evaluation results, refresher trainings shall be provided accordingly. Documents related to training evaluation shall be attached to training records.

Training participation records, attendance sheets, and training certificates shall be submitted in full to the supervision consultant and the OHS Unit personnel when required.

Furthermore, Articles 8 and 12 of the Occupational Health and Safety Risk Assessment Regulation refer to the recording of near-miss incidents. Accordingly, maintaining records of near-miss incidents constitutes a legal obligation. Near-miss incident forms shall be regularly recorded, and trainings shall be provided to Workers with the aim of preventing recurrence of similar incidents. All trainings delivered shall be duly recorded.

## 6. IMPLEMENTATION SCHEDULE AND COST ESTIMATES

### 6.1. Implementation Schedule

Within the scope of the Sub-Project, the construction period and the defects liability period are presented in **Table 17**, while the operation period is not separately defined in this table. Following the completion of the defect's liability period, the operation of the facilities will be carried out indefinitely under the responsibility of the ASAT General Directorate.

**Table 17:** Duration of Activities

Phase	Remarks/ Notes
<b>Construction Duration (from site mobilization until provisional acceptance)</b>	36 months for the Subproject
<b>Defect Liability Period</b>	12 months (1 year) for the Subproject
<b>Operation Duration (including DLP)</b>	Under the responsibility of ASAT General Directorate (indefinite)

## 6.2. Cost Estimates

Item	Responsibility	Estimated Cost (EURO)	Implementation Stage
Grievance Mechanism	General Directorate of ASAT Contractor	30.000 €/year	During the construction period (36 months)
ESMP Implementation Team Environmental Specialist Social Specialist OHS Specialists	Contractor	144.000 €/year	During the construction period (36 months)
Occupational Health and Safety	General Directorate of ASAT Contractor	36.000 €/year	During the construction period (36 months)
Public Exposure to Health Problems	General Directorate of ASAT Contractor	20.000 €/year	During the construction period (36 months)
Information meeting, information brochures, all kinds of information	General Directorate of ASAT Contractor	2.500 €/year	During the construction period (36 months)
Training and Capacity Development	Contractor	3.000 €/year	During the construction period (36 months)

## List of Annexes

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## Annex A – List of the Individuals/Organizations that Prepared or Contributed to the ESMP

**Table 18:** List of the Individuals/Organizations that Prepared or Contributed to the ESMP

Name of the Individual/ Organization	Company/ Institution	Profession/ Expertise
Derya ÜNVER	ALDAŞ	Environmental Specialist
Melda ÇAKIR YILDIZ	ALDAŞ	Environmental Specialist
Ümmühan Gizem ŞİMŞEK	ALDAŞ	Social Specialist
Fatma KESKİN	ALDAŞ	OHS Specialist

## Annex B - E&S Incident Notification Form Template

1) Incident Details			
Date of Incident: <i>[Please indicate]</i>		Time of Incident: <i>[Please indicate]</i>	
Location of the Incident:		<i>[Please indicate]</i>	
Full Name of Sub-borrower:		<i>[Please indicate]</i>	
Date Reported to ILBANK: <i>[Please indicate]</i>	Reported to ILBANK by: <i>[Please indicate]</i>	Notification Type: <i>[ Please indicate; e-mail/phone call/media notice/other ]</i>	
Date Reported to WB: <i>[Please indicate]</i>	Reported to WB by: <i>[Please indicate]</i>	Notification Type: <i>[ Please indicate; e-mail/phone call/media notice/other ]</i>	
Full Name of the Contractor of the Subproject:		<i>[Please indicate]</i>	
Full Name of the Sub-contractor involved in the incident:		<i>[Please indicate]</i>	
2) Type of incident (please check all that apply) <sup>2</sup>			
<input type="checkbox"/> Fatality <input type="checkbox"/> Lost time injury <input type="checkbox"/> Displacement without due process <input type="checkbox"/> Child labor <input type="checkbox"/> Forced labor <input type="checkbox"/> Disease outbreaks		<input type="checkbox"/> Acts of violence/protest <input type="checkbox"/> Unexpected impacts on heritage resources <input type="checkbox"/> Unexpected impacts on biodiversity resources <input type="checkbox"/> Environmental pollution incident <input type="checkbox"/> Dam failure <input type="checkbox"/> Other	
3) Description/Narrative of Incident			
<p><i>For example:</i></p> <p>I. <i>What is the incident? [Please briefly describe]</i></p> <p>II. <i>What were the conditions or circumstances under which the incident occurred (if known)? [Please briefly describe]</i></p> <p>III. <i>Are the basic facts of the incident clear and uncontested, or are there conflicting versions? What are those versions? [Please briefly describe]</i></p> <p>IV. <i>Is the incident still ongoing or is it contained? [Please briefly describe]</i></p> <p>V. <i>Have any relevant authorities been informed? [Please briefly describe]</i></p>			
4) Actions taken to contain the incident			
Short Description of Action	Responsible Party	Expected Date	Status

**For incidents involving a Contractor:**

**Name of Contractor:**

**Have the works been suspended? Yes  No**

**Note: Please attach a copy of the instruction suspending the works**

**5) What support has been provided to affected people**

*[Please briefly describe]*

**APPENDICES**

**Appendix 1: Supporting documents**

**[Note: Please mark the relevant documents available at this stage and submit them attached to the report]:**

- Copy of the social security registration records of the victims and involved persons
- Copy of the instruction suspending the works
- Statement of victims
- Statement of witnesses
- Copies of notifications done to the relevant authorities
- Copies of legal investigation reports of relevant authorities
- Copies of E&S training records of the affected and involved persons
- Copies of OHS training records of the affected and involved persons
- Photographs related to the incident
- Others

## Appendix 2: Incident Types

The following are incident types to be reported using the environmental and social (E&S) incident response process:

**Fatality:** Death of a person(s) that occurs within one year of an accident/incident, including from occupational disease/illness (e.g., from exposure to chemicals/toxins).

**Lost Time Injury:** Injury or occupational disease/illness (e.g., from exposure to chemicals/toxins) that results in a worker requiring 3 or more days off work, or an injury or release of substance (e.g., chemicals/toxins) that results in a member of the community needing medical treatment.

**Acts of Violence/Protest:** Any intentional use of physical force, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, deprivation to workers or project beneficiaries, or negatively affects the safe operation of a project worksite.

**Disease Outbreaks:** The occurrence of a disease in excess of normal expectancy of number of cases. Disease may be communicable or may be the result of unknown etiology.

**Displacement Without Due Process:** The permanent or temporary displacement against the will of individuals, families, and/or communities from the homes and/or land which they occupy without the provision of, and access to, appropriate forms of legal and other protection and/or in a manner that does not comply with an approved resettlement action plan.

**Child Labor:** An incident of child labor occurs: (i) when a child under the age of 14 (or a higher age for employment specified by national law) is employed or engaged in connection with a project, and/or (ii) when a child over the minimum age specified in (i) and under the age of 18 is employed or engaged in connection with a project in a manner that is likely to be hazardous or interfere with the child's education or be harmful to the child's health or physical, mental, spiritual, moral or social development.

**Forced Labor:** An incident of forced labor occurs when any work or service not voluntarily performed is exacted from an individual under threat of force or penalty in connection with a project, including any kind of involuntary or compulsory labor, such as indentured labor, bonded labor, or similar labor-contracting arrangements. This also includes incidents when trafficked persons are employed in connection with a project.

**Unexpected Impacts on heritage resources:** An impact that occurs to a legally protected and/or internationally recognized area of cultural heritage or archaeological value, including world heritage sites or nationally protected areas not foreseen or predicted as part of project design or the environmental or social assessment.

**Unexpected impacts on biodiversity resources:** An impact that occurs to a legally protected and/or internationally recognized area of high biodiversity value, to a Critical Habitat, or to a Critically Endangered or Endangered species (as listed in IUCN Red List of threatened species or equivalent national approaches) that was not foreseen or predicted as part of the project design or the environmental and social assessment. This includes poaching or trafficking of Critically Endangered or Endangered species.

**Environmental pollution incident:** Exceedances of emission standards to land, water, or air (e.g., from chemicals/toxins) that have persisted for more than 24 hours or have resulted in harm to the environment.

**Dam failure:** A sudden, rapid, and uncontrolled release of impounded water or material through overtopping or breakthrough of dam structures.

**Other:** Any other incident or accident that may have a significant adverse effect on the environment, the affected communities, the public, or the workers, irrespective of whether harm had occurred on that occasion. Any repeated non-compliance or recurrent minor incidents which suggest systematic failures that the task team deems needing the attention of Bank management.




### 3b) Financial Support/Compensation Types (to be fully described in Corrective Action Plan template – template is given in Appendix 3)

- No Compensation Required
  Contractor Insurance  
 Workman's Compensation/National Insurance
  Other  
 Contractor Direct
  Court Determined Judicial Process

Name	Compensation Type	Compensation Amount (TRY)	Responsible Party

### 4) Supplementary Narrative

#### Appendix 1: Definition of fatality/injury immediate causes

1. **Caught in or between objects:** caught in an object; caught between a stationary object and moving object; caught between moving objects (except flying or falling objects).
2. **Struck by falling objects:** slides and cave-ins (earth, rocks, stones, snow, etc.); collapse (buildings, walls, scaffolds, ladders, etc.); struck by falling objects during handling; struck by falling objects.
3. **Stepping on, striking against, or struck by objects:** stepping on objects; striking against stationary objects (except impacts due to a previous fall); Striking against moving objects; Struck by moving objects (including flying fragments and particles) excluding falling objects.
4. **Drowning:** respiratory impairment from submersion/emersion in liquid.
5. **Chemical, biochemical, material exposure:** exposure to or contact with harmful substances or radiations.
6. **Falls, trips, slips:** falls of persons from heights (e.g., trees, buildings, scaffolds, ladders, etc.) and into depths (e.g., wells, ditches, excavations, holes, etc.) or falls of persons on the same level.
7. **Fire & explosion:** exposure to or contact with fires or explosions.
8. **Electrocution:** exposure to or contact with electric current.
9. **Homicide:** a killing of one human being by another.
10. **Medical Issue:** a bodily disorder or chronic disease.
11. **Suicide:** the act or an instance of taking, or attempting to take, one's own life voluntarily and intentionally.
12. **Others:** any other cause that resulted in a fatality or injury to workers or members of the public.

#### Vehicle Traffic

13. **Project Vehicle Work Travel:** traffic accidents in which project workers, using project vehicles, are involved during working hours and which occur in the course of paid work.

**14. Non-project Vehicle Work Travel:** traffic accidents in which project workers, using non-project vehicles, are involved during working hours and which occur in the course of paid work.

**15. Project Vehicle Commuting:** traffic accidents in which project workers, using project vehicles, are involved while travelling to (i) the worker's principal or secondary residence; (ii) the place where the worker usually takes his or her meals; or (iii) the place where he or she usually receives his or her remuneration.

**16. Non-project Vehicle Commuting:** traffic accidents in which project workers, using non-project vehicles, are involved while travelling to (i) the worker's principal or secondary residence; (ii) the place where the worker usually takes his or her meals; or (iii) the place where he or she usually receives his or her remuneration.

**17. Vehicle Traffic Accident (Members of Public Only):** traffic accidents in which non-project workers/members of the public are involved in an accident while travelling for any purpose.

#### Appendix 2: Supporting documents

[Note: Please mark the relevant documents available and submit them attached to the report]:

- Copy of the social security registration records of the victims and involved persons
- Copy of the instruction suspending the works
- Statement of victims
- Statement of witnesses
- Copies of notifications done to the relevant authorities
- Copies of legal investigation reports of relevant authorities
- Copies of E&S training records of the affected and involved persons
- Copies of OHS training records of the affected and involved persons (such as basic OHS training, induction training, visitors training, job-specific training, refreshment training, etc.)
- Photographs related to the incident
- Health examination records of the affected and involved Workers
- Copies of Personal Protective Equipment delivery forms (signed copies)
- Root Cause Analysis completed for the incident
- Information/documentation related to any judicial process
- Others

#### Appendix 3: Corrective Action Plan template

Action No:	Brief Description of E&S non-compliance	Corrective Action	Financial and Human Resources Required	Responsible Party	Due Date for Completion of Corrective Action	Indicators for Successful Completion of Corrective Action	Status of Corrective Action

## Annex D – Chance Finds Procedure

### 1. INTRODUCTION

This Chance Finds Procedure is a Subproject-specific procedure which will be followed in the Subproject under the Döşemealtı District Wastewater Network Construction Project if previously unknown cultural heritage is encountered during Subproject activities.

It will be included in all contracts relating to construction of the Subproject, including excavations, demolition, movement of earth, flooding or other changes in the physical environment.

#### 1.1. SCOPE

This Procedure sets out how chance finds associated with the Subproject will be managed during construction activities carried out under Döşemealtı District Wastewater Network Construction Project.

The procedure includes a requirement to notify relevant authorities of found objects or sites by cultural heritage experts to fence-off the area of finds or sites to avoid further disturbance to conduct an assessment of found objects or sites by cultural heritage experts to identify and implement actions consistent with the requirements of national legislation and WB ESS8 and to train Subproject personnel and Subproject workers on chance find procedures.

#### 1.2. DEFINITIONS

Chance Find	According to WB ESS8, a chance find is archaeological material encountered unexpectedly during the Subproject construction or operation. Most often, chance finds occur during the construction phase of a Project/Subproject. Such finds include, for example, the discovery of a single artifact, an artifact indicating the presence of a buried archaeological site, human remains, fossilized plant or animal remains or animal tracks, or a natural object or soil feature that appears to indicate the presence of archaeological material.
Museum(s)	Antalya Museum Directorate, which is the competent authority responsible for archaeological and cultural heritage matters within the project area, including the Döşemealtı District. <u>Contact Details:</u> Address: Bahçelievler Mah. Konyaaltı Cd. No:88 Muratpaşa/ANTALYA Tel: +90 242 238 56 88 E-mail: <a href="mailto:antalyamuzesi@kultur.gov.tr">antalyamuzesi@kultur.gov.tr</a> Website: <a href="https://kvmgm.ktb.gov.tr/TR-281274/antalya-muze-mudurlugu.html">https://kvmgm.ktb.gov.tr/TR-281274/antalya-muze-mudurlugu.html</a>
Regional Board(s) for the Conservation of Cultural Heritage	Antalya Regional Board for the Conservation of Cultural Assets (Antalya Kültür Varlıklarını Koruma Bölge Kurulu), which is the authorized Regional Board responsible for the protection, assessment, and decision-making related to cultural heritage within the Subproject area. <u>Contact Details:</u>

Address: Kılıçaslan Mah. Zafer Sok. No:8 07100 Kaleiçi/ANTALYA Telephone: +90 242 247 87 61 – +90 242 243 21 60 Fax: +90 242 248 35 33 E-mail: antalyakurul@ktb.gov.tr Website: <a href="http://www.korumakurullari.gov.tr/TR-88426/antalya-kultur-varliklarini-koruma-bolge-kurulu-mudurlu-.html">http://www.korumakurullari.gov.tr/TR-88426/antalya-kultur-varliklarini-koruma-bolge-kurulu-mudurlu-.html</a>
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### 1.3. REFERENCES

- Law on the Conservation of Cultural and Natural Assets (Law No: 2863, 1983)
- Principal Decision No. 658 on Archaeological Sites, Conservation and Utilization Conditions
- World Bank Environmental and Social Framework (ESF) – Environmental and Social Standard 8 (ESS8): Cultural Heritage

## 2. ROLES AND RESPONSIBILITIES

The roles and responsibilities of the parties involved in the implementation of this Chance Finds Procedure are described below and summarized in **Table 19**.

The Antalya Water and Wastewater Administration (ASAT) General Directorate, acting as the Sub-borrower, holds the ultimate responsibility for ensuring compliance with national legislation and World Bank ESS8 requirements related to cultural heritage protection under the Döşemealtı District Wastewater Network Construction Project.

ALDAŞ A.Ş. as the Project Implementation Unit (PIU), is responsible for the coordination, supervision, monitoring and reporting of the implementation of this Chance Finds Procedure.

ALDAŞ A.Ş. as the Construction Supervision Consultant is responsible for day-to-day supervision of contractor compliance with this Procedure on site.

Contractor(s) for the Subproject is responsible for immediate on-site implementation of the Chance Finds Procedure and for ensuring that all site personnel are aware of and comply with its requirements.

All project personnel, including direct and contracted workers, shall be trained on this project-specific Chance Finds Procedure prior to commencement of construction activities and periodically thereafter, as required.

**Table 19:** Roles and Responsibilities associated with Chance Finds Procedure Implementation

Party	Role	Responsibilities
Sub-borrower Antalya Water and Wastewater Administration (ASAT) General Directorate	Sub-borrower Management	<ul style="list-style-type: none"> <li>• Hold ultimate responsibility for compliance with national legislation (Law No. 2863) and World Bank ESS8 requirements related to cultural heritage for the Subproject.</li> <li>• Ensure that the Chance Finds Procedure is incorporated into all relevant construction contracts.</li> </ul>

Party	Role	Responsibilities
		<ul style="list-style-type: none"> <li>Exercise authority to suspend or stop construction activities in the event of non-compliance or significant risk to cultural heritage.</li> <li>Ensure coordination with İLBANK and relevant authorities, as required.</li> </ul>
<b>Project Implementation Unit (PIU)</b>	Project Management and E&S Oversight	<ul style="list-style-type: none"> <li>Coordinate and oversee the implementation of this Chance Finds Procedure for the Subproject.</li> <li>Ensure that contractors and supervision teams are aware of and comply with the Procedure.</li> <li>Coordinate notifications to relevant Museum Directorates, Regional Boards for the Conservation of Cultural Heritage and İLBANK, as required.</li> <li>Maintain records related to chance finds and associated decisions and approvals.</li> </ul>
<b>Construction Supervision / Control Team</b>	Site Supervision	<p>Carry out the following tasks on behalf of ASAT General Directorate:</p> <ul style="list-style-type: none"> <li>Supervise contractors' compliance with the Chance Finds Procedure on a daily basis.</li> <li>Verify that work is immediately stopped and areas are secured in the event of a chance find.</li> <li>Ensure that required notifications are made without delay.</li> <li>Report any chance find incidents to ASAT/PIU.</li> </ul>
<b>Construction Contractors</b>	Contractor Management and Site Personnel	<ul style="list-style-type: none"> <li>Immediately stop all works in the affected area upon discovery of a chance find.</li> <li>Secure and fence off the find location to prevent damage, disturbance or unauthorized access.</li> <li>Inform the Construction Supervision Consultant and PIU without delay.</li> <li>Ensure no works resume until written clearance is obtained from the relevant authorities.</li> <li>Ensure all workers receive training on the Chance Finds Procedure prior to and during construction.</li> </ul>
<b>Subproject Workers</b> (Direct and Contracted)	Site Workforce	<ul style="list-style-type: none"> <li>Immediately report any suspected chance find to site supervisors.</li> <li>Refrain from disturbing, removing or handling any suspected cultural heritage material.</li> <li>Comply fully with instructions provided under this Procedure.</li> </ul>

### 3. CHANCE FINDS PROCEDURE

The following step-by-step procedure will be followed if previously unknown cultural heritage is encountered during Subproject activities.

#### Step 1 – Immediate actions following the discovery of a Chance Find

- 1) All works in the survey area shall cease.
- 2) Transitional buffer zones shall be established around the chance find area.
- 3) Site management and the Museum Archaeologist shall be contacted immediately.
- 4) The chance find site shall be adequately secured by markings, signposts, and banners, etc.



- No further action is required. Construction activities may resume.
- b) Sites/chance finds of moderate significance:
  - The Museum officials declare the site or find as of moderate significance and determine the actions to be implemented.
  - The relevant Subproject representative notifies the Contractor's management.
  - The Contractor's management notify the Sub-borrower.
  - The actions determined by the Museum Directorate are implemented by the Subproject:
    - Subproject management shall provide an archaeological task force under the leadership of the Museum officials. The task force shall be composed of qualified archaeologists as well as other specialists and workers.
    - The actions required by the Museum Directorate such as the test pit, salvage excavation or remote sensory surveys, shall be completed under the instructions and supervision of the Museum officials.
    - Upon completion of the required actions, the team shall report to the Museum Directorate.
    - Museum Directorate forwards the findings of the survey to the relevant Regional Board.
    - The Regional Board shall officially verify the completion actions and notifies the Subproject management accordingly.
  - Records are maintained by the relevant Subproject representative and chance finds procedure is closed.
  - No further action is required. Construction activities may resume.
- c) Sites/chance finds of high significance:
  - The Museum officials declare the site or find as of high significance and determine the actions to be implemented.
  - The relevant Subproject representative notifies the Contractor's management.
  - The Contractor's management notify the Sub-borrower.
  - The actions determined by the Museum Directorate are implemented by the Subproject:
    - Subproject management shall provide an archaeological task force under the leadership of the Museum officials. The task force shall be composed of qualified archaeologists as well as other specialists and workers.
    - The actions required by the Museum Directorate such as the test pit, salvage excavation or remote sensory surveys, shall be completed under the instructions and supervision of the Museum officials.
    - Upon completion of the required actions, the team shall report to the Museum Directorate.
    - Museum Directorate forwards the findings of the survey to the relevant Regional Board.
    - The Regional Board shall officially verify the completion actions and notifies the Subproject management accordingly.

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- As required, the site shall be registered and placed under protection as per Turkish legislation in accordance with the Law on the Conservation of Cultural and Natural Assets (Law No: 2863, 1983).

If human remains are discovered, the entire Subproject team shall be immediately notified by the Subproject management.

The Subproject management shall also immediately notify the Sub-borrower.

All activities in the area shall cease, and the site shall be secured until further instructions are provided by relevant authorities.

#### 4. MONITORING AND REPORTING

The Contractor's and construction supervision consultant's E&S staff shall conduct advance pre-construction surveys and monitoring of all ground disturbing activities, especially in the locations with a high likelihood of cultural heritage.

Detailed information on chance finds discovered during the Subproject implementation, if any, shall be included by the Sub-borrower in the Periodic Monitoring Reports to be submitted to İLBANK, in accordance with the requirements outlined in the sub-financing agreement.

The Subproject representative shall retain copies of all documentation related to the chance find.

All actions and decisions taken by the cultural heritage authorities shall be clearly recorded and stored in the Subproject's E&S database.

#### 5. REPORTING TEMPLATES

##### 5.1. CHANCE FINDS NOTIFICATION FORM

<b>PART A</b>		
<i>BÖLÜM A</i>		
<b>Date:</b>		<b>Form No:</b>
<i>Tarih</i>		<i>Form No</i>
<b>Sub-borrower:</b>		<b>Subproject:</b>
<i>Alt borçlu</i>		<i>Alt Proje</i>
<b>Construction Supervision Consultant:</b>		<b>Contractor:</b>
<i>Müşavir Firma</i>		<i>Yüklenici</i>
<b>Subproject Location</b>	<b>District:</b>	<b>Neighborhood/Village:</b>
<i>Alt Proje Sahası</i>	<i>İlçe</i>	<i>Mahalle/Köy</i>
Name of person reporting chance find:		
<i>Rastlantısal bulguyu rapor eden kişinin ismi</i>		
<b>IMMEDIATE ACTIONS</b>		
<i>ACİL ÖNLEMLER</i>		

<b>Was work stopped in the immediate vicinity of the chance find?</b> <i>Rastlantısal bulgusunun tam çevresinde iş durduruldu mu?</i>		<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>
<b>Was a buffer zone created to protect the chance find?</b> <i>Rastlantısal bulguyu korumak için tampon bölge oluşturuldu mu?</i>		<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>
<b>Contractor's management representatives (e.g. Project/Site Manager) contacted?</b> <i>Yüklenici yönetim temsilcileri (ör. Proje/Saha Müdürü) ile irtibata geçildi mi?</i>		<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>
<b>Supervision Consultant's E&amp;S team contacted?</b> <i>Müşavir firma Ç&amp;S ekibi ile irtibata geçildi mi?</i>		<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>
<b>Sub-borrower contacted?</b> <i>Alt borçlu ile irtibata geçildi mi?</i>		<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>
<b>CHANCE FIND DETAILS</b> <i>RASTLANTISAL BULUNTU AYRINTILARI</i>			
<b>GPS coordinates</b> <i>GPS koordinatları</i>	<b>Photo record</b> <i>Fotoğraf kaydı</i> <input type="checkbox"/> Yes <input type="checkbox"/> No <i>Evet Hayır</i>  <b>Other records</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <i>Diğer kayıtlar Evet Hayır</i>  <b>Specify (drawings, HD quality videos, etc.):</b> <i>Belirtin (çizimler, HD kalite videolar, vb.)</i>		
<b>Description of chance find:</b> <i>Rastlantısal buluntunun tanımı</i>			
<b>Description of site/finding and other specifications of site/finding: (e.g. surface sediment type, ground surface visibility, distance to closest watercourse, etc.)</b> <i>Sahanın / bulgunun ve saha/bulgunun diğer özelliklerinin tanımı: (örn. Yüzey sediman türü, yüzey zemin görünürlüğü, en yakın suyoluna olan mesafe, vb.)</i>			

**PART B****BÖLÜM B****NOTIFICATION OF MUSEUM DIRECTORATE OFFICIALS****MÜZE MÜDÜRLÜĞÜ YETKİLİLERİNE BİLDİRİM**

**Subproject representative contacted relevant Museum Directorate?**  Yes  No  
 Evet Hayır

*Alt proje temsilcisi müze müdürlüğü ile irtibata geçti mi?*

**Date of notification:**

*Bildirim tarihi*

**Name of Museum Directorate:**

*Müze müdürlüğünün adı*

**Name of the relevant Museum official:**

*Müze Müdürlüğü yetkilisinin adı*

**Contact number of the official:**

*Yetkilinin iletişim numarası*

**DECISION OF MUSEUM DIRECTORATE ARCHAEOLOGIST****MÜZE MÜDÜRLÜĞÜ ARKELOĞUNUN KARARI****Date of site visit:**

*Saha ziyaret tarihi:*

 **Site/Finding of no significance –**

Construction to proceed with no further action – End of chance find procedure

*Önemsiz Saha – Bulgu - daha fazla araştırma yapılmadan inşaat devam edilebilir – Rastlantısal buluntu prosedürünün sonu.*

**Date of notice to resume work:**

*İşe devam etme tarihinin bildirisi*

 **Site/Finding of significance –**

Further actions required

*Önemli Saha – Bulgu - Ek araştırma gerekmektedir  
Please Fill out Part C  
Lütfen Bölüm C'yi doldurun.*

**Name of Museum directorate official:**

*Müze müdürlüğü yetkilisinin ismi*

**Contact information:**

*İletişim numarası*

**Contractor's management representatives (e.g. Project/Site Manager) contacted?**  Yes  No  
 Evet Hayır

*Yüklenici yönetim temsilcileri (ör. Proje/Saha Müdürü) ile irtibata geçildi mi?*

<b>Supervision Consultant's E&amp;S team contacted?</b> <i>Müşavir firma Ç&amp;S ekibi ile irtibata geçildi mi?</i>	<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>
<b>Sub-borrower contacted?</b> <i>Alt borçlu ile irtibata geçildi mi?</i>	<input type="checkbox"/> Yes <i>Evet</i>	<input type="checkbox"/> No <i>Hayır</i>
<b>PART C – FURTHER FIELD INVESTIGATION</b>		
<i>BÖLÜM C – İLAVE SAHA ARAŞTIRMALARI</i>		
<input type="checkbox"/> Site/Finding of <b>minor</b> significance <i>Az önem taşıyan saha/bulgu</i>	<input type="checkbox"/> Site/Finding of <b>moderate</b> significance <i>Orta derecede önemli saha/bulgu</i>	<input type="checkbox"/> Site/Finding of <b>high</b> significance <i>Çok önemli saha/bulgu</i>
<b>Describe additional actions required to be implemented:</b> <i>İlave aksiyonların tanımı</i>		
<b>PART D – IMPLEMENTATION OF ACTIONS AND RESUMPTION OF WORKS</b>		
<i>BÖLÜM D – AKSİYONLARIN TAMAMLANMASI VE İŞE DEVAM</i>		
<b>Date of actions started:</b> <i>Aksiyonların başlangıç tarihi:</i>	<b>Date of notice from the cultural heritage authorities to resume work:</b> <i>Otoritelerden alınan işe devam izni tarihi:</i>	
<b>Date of actions completed:</b> <i>Aksiyonların tamamlanma tarihi:</i>		

**5.2. CHANCE FINDS LOG**

Date of Chance Find Discovery	Brief Description of the Chance Find	Notification of Subproject Parties/ Representatives	Notification of Relevant Authorities	Actions Required by the Authorities	Status of Actions (open or closed)	Other Remarks

## Annex E – Chance Notification Form

Change Notification Form	
Subproject Name	
Subproject Location	
Subproject Phase	<input type="checkbox"/> Pre-construction
	<input type="checkbox"/> Construction
	<input type="checkbox"/> Operation
Name of the Institution Notifying the Change	
Date	
Category of the Change (please select all that apply)	<input type="checkbox"/> Legislative Change
	<input type="checkbox"/> Design Change
	<input type="checkbox"/> Schedule Change due to E&S factors
	<input type="checkbox"/> Project Schedule Changes due to technical, financial, legal or administrative factors
	<input type="checkbox"/> Changes due to E&S issues encountered at Subproject implementation
	<input type="checkbox"/> Contractor or Construction Supervision Consultant Change
	<input type="checkbox"/> Other (please specify below)
Detailed Description of the Change(s)	
Documents Submitted with Change Notification Form	
Name of the Staff Notifying the Change	
Position of the Staff Notifying the Change	
Signature	



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

- k) Regulation on Air Quality Assessment and Management (Official Gazette No. 26898 dated 06.06.2008)
- l) Regulation on Control of Environmental Noise (Official Gazette No. 32029 dated 30.11.2022)
- m) Regulation on the Control of Soil Pollution and Point Source Pollution (Official Gazette No. 27605 dated 08.06.2010)
- n) Regulation on Environmental Impact Assessment (Official Gazette No.31907 dated 29.07.2022)
- o) Regulation on Environment Permit and License (Official Gazette No. 29115 dated 10.09.2014)

**International Labour Organization (ILO) :**

List of ILO Conventions Approved by Türkiye:

- C-100 Equal Remuneration Convention, 1951 (No. 100), (Approval Date: 19 Jul 1967)
- C-138 Minimum Age Convention, 1973 (No. 138), (Approval Date: 30 Oct 1998)
- C-155 Occupational Safety and Health Convention, 1981 (No. 155), (Approval Date: 22 Apr 2005)
- C-187 Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187), (Approval Date: 16 Jan 2014)
- C-042 Workmen's Compensation (Occupational Diseases) Convention (Revised), 1934 (No. 42), (Approval Date: 27 Dec 1946)
- C-161 Occupational Health Services Convention, 1985 (No. 161), Approval Date: (22 Apr 2005)
- C-167 Safety and Health in Construction Convention, 1988 (No. 167), (Approval Date: 23 Mar 2015)

**Other International Conventions:**

- Kyoto Protocol regarding to the United Nations Framework Convention on Climate Change.
- Montreal Protocol on Substances that Deplete the Ozone Layer.
- Barcelona Convention for the Protection of Marine Environment and the Coastal Region of the Mediterranean.
- Vienna Convention for the Protection of the Ozone Layer.



- Paris Agreement