

GREEN AND FUTURE CITIES PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

Bariş Street Tram Line LOT-2 Construction Project of Konya Metropolitan Municipality

August, 2026

Document History

Revision	Submitted to	Issue Date	Revision Details
v1	First Submission	June 11, 2026	Draft
v2	Second Submission	July 27, 2026	Draft
v3	Third Submission	August 06, 2026	Draft

This document has been prepared by ENCON.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1. INTRODUCTION	3
1.1. Background.....	3
1.2. Objective of the ESMP	4
1.3. Overview of E&S Requirements Applicable to the Subproject	4
1.4. Review and Update	5
1.5. Implementation Arrangements.....	5
2. SUBPROJECT DESCRIPTION	7
2.1. Subproject Information	7
2.2. Subproject Location.....	1
2.3. Site Access Route	3
2.4. Alternative Routes	3
2.5. Associated Facilities	3
2.6. Sub-project Impact Area.....	4
2.7. Environmental and Social Baseline	7
2.7.1. Physical Environment.....	7
2.7.2. Biodiversity	31
2.7.3. Socio-Economic Environment	40
2.8. Other Institutions' Infrastructure to be Displaced.....	53
3. SUBPROJECT ACTIVITIES	54
3.1. Construction Phase.....	54
3.1.1. Construction Activities.....	54
3.1.2. Construction Facilities	56
3.2. Operation Phase	56
3.2.1. Operation Activities	56
3.2.2. Operation Facilities	57
3.3. Labor Requirements.....	57
3.4. Land Use and Property.....	58
3.5. Permitting Status.....	61
4. ESMP MATRIX: RISK AND IMPACTS, MITIGATION AND MONITORING	62
4.1. E&S Risk and Impacts of the Subproject.....	62
4.1.1. Environmental Risks and Impacts.....	67
4.1.2. Biodiversity Risks and Impacts.....	77
4.1.3. Social Risks and Impacts	78
4.2. Construction ESMP Matrix.....	83
4.3. Operation ESMP Matrix	115
4.4. Monitoring and Reporting.....	129
4.5. List of Associated Plans and Procedures	140
4.6. Management of Change	141
5. CAPACITY DEVELOPMENT AND TRAINING	142
5.1. Organizational Capacity.....	142
5.2. Roles and Responsibilities	144
5.3. Capacity Building and Training.....	147
6. IMPLEMENTATION SCHEDULE AND COST ESTIMATES.....	149

6.1.	Implementation Schedule.....	149
6.2.	Cost Estimates.....	149
Annex A – List of the Individuals/Organizations that Prepared or Contributed to the ESMP		150
Annex B – Existing Permitting Documentation.....		151
Annex C – Title Deeds.....		155
Annex D – Site Photographs.....		158
Annex E – Baseline Measurements		160
Annex F – E&S Incident Notification Form Template		176
Annex G – E&S Incident Investigation Form Template.....		179
Annex H – Chance Finds Procedure.....		182
Annex I – Change Notification Form.....		189
Annex J – Legal Framework		190
Annex K – Official Correspondence		224

LIST OF TABLES

Table 1. Relevance of the WB ESSs to the Subproject	5
Table 2. Project Route Information (Lot-2).....	7
Table 3. List of Associated Facilities of the Subproject	3
Table 4. Summary of Baseline Field Studies.....	7
Table 5 Agricultural Potentials Represented by Different Land Use Capability Classes and Their Characteristics	17
Table 6 Long Term Meteorological Data of Konya Province (1929-2024)	19
Table 7 PM ₁₀ and PM _{2.5} Measurement Results (May 2026) with WBG EHS Guideline and Turkish Regulation Limit Values	20
Table 8 Environmental Noise Limits Values Provided in RENC.....	22
Table 9 Noise Level Guidelines of WBG EHS Guidelines	23
Table 10 Background Noise Level Measurement Results.....	23
Table 11 Dams and Ponds in Konya Province	26
Table 12. Flora Species in and around the Project Area.....	33
Table 13. Tree Species used in the Urban Roadside Landscape within the Project Area.....	36
Table 14. Reptile and Amphibian Species in and around the Project Area	37
Table 15 Bird Species in and around the Project Area.....	38
Table 16. Mammal Species in and around the Project Area.....	39
Table 17 Population of Selçuklu District by Years	41
Table 18 Population Distribution of Neighborhood	42
Table 19 The Commercial Establishments around the Subproject Area.....	47
Table 20 Sensitive Receptor around the Subproject Area	50
Table 21 List of Machinery and Equipment.....	54
Table 22. Construction Facilities.....	56
Table 23. Labor Requirements of the Subproject.....	57
Table 24. Status of Permits for the Construction Phase	61
Table 25 Impact Significance Matrix*	62
Table 26 ESS List Concerning the Subproject	63
Table 27 Matrix Table with Identification of Impact Level in Terms of Environmental and Social Attributes.....	64
Table 28 Dust Emission Factor	68
Table 29 Volumes of Activity	68
Table 30 Excavated Soil Dust Emission Calculation of Subproject.....	69
Table 31 Emission Factors for 1 L Diesel Consumption (considering density of diesel is 0.85 kg/L).....	70
Table 32 Total Water Usage during the Construction Phase.....	73
Table 33 Total Water Usage during Operation Phase of Barış Street Tram Line Component	73
Table 34 List of Possible Waste Types to be generated during Construction Phase of the Project.....	75

Table 35. Key Performance Indicators for Both Construction and Operation Phases of the Subproject.....	129
Table 36. Construction Environmental and Social Monitoring Table.....	132
Table 37. Operation Environmental and Social Monitoring Table.....	137
Table 38: Required Management Plans and Procedures for the Project.....	140
Table 39. Roles and E&S related Responsibilities of Key Parties associated with ESMP Implementation.....	144
Table 40. Training Components for Training of Contractor Staff.....	147
Table 41. Duration of Activities.....	149
Table 42 Cost Allocation for ESMP Mitigation and Monitoring Measures.....	149
Table 43 Roles and Responsibilities associated with Chance Finds Procedure Implementation	183
Table 44 Turkish EHS Legislation Related to the Project.....	190
Table 45 Project related Turkish Legislation on the Conservation of Nature and Wildlife.....	195
Table 46 Gap Analysis between Turkish Legislation and World Bank ESF.....	201
Table 47 Project Standards.....	214

LIST OF FIGURES

Figure 1 Stations Locations Map.....	1
Figure 2 Map of Subproject Location.....	2
Figure 3 Area of Influence of Subproject Map.....	5
Figure 4 Social Area of Influence of Subproject Map.....	6
Figure 5 Air Quality Measurement and Noise Level Sampling Locations.....	8
Figure 6 Geology Map of the Project Area and Its Vicinity.....	10
Figure 7 Active Fault Map of Konya.....	15
Figure 8 Earthquake Hazard Map of Türkiye.....	16
Figure 9 Great Soil Groups and Land Use Capability Classes for the Project Area.....	18
Figure 10 Photos taken at air quality measurement locations.....	22
Figure 11 Photos Taken at Noise Measurement Locations	24
Figure 12 Hydrology Map of the Project Area and Its Vicinity	28
Figure 13 Rock Fall Disaster Map.....	29
Figure 14 Flood Disaster Map.....	30
Figure 15 Other Disasters Map.....	30
Figure 16 Biological field studies in and around the Project Area (in 2021)	31
Figure 17 Bio-ecological Location of the Project Area.....	33
Figure 18. Geographic range map of <i>Turtle Dove (Streptopelia turtur)</i>	37
Figure 19 Population of Konya Province by Years (Source: TurkStat, 2025.....	41
Figure 20 Lot-2 Alignment in Relation to the Old Industrial Zone (Southwestern Section).....	43
Figure 21 Land Use Map According to Environmental Master Plan (Konya-Karaman Planning Area)	45
Figure 22 Sensitive Receptors around the Subproject Area	49
Figure 23 Land Use Map According to Provincial Land Use Database.....	60
Figure 24 Waste Management Hierarchy	74
Figure 25. Organization Structure	142
Figure 26 Project Implementation Unit and Contractor Structure.....	143

ABBREVIATIONS

ABPRS	Address Based Population Registration System
AFAD	Disaster and Emergency Management Presidency
CEKUL	Foundation for the Protection and Promotion of the Environment and Cultural Heritage
CCTV	Closed-circuit television
CIMER	Communication Centre of Presidency of Türkiye
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLRTAP	Convention on Long Range Transboundary Air Pollution
CoC	Code of Conduct
dBA	Decibels adjusted
DLP	Defects Liability Period
EA	Environmental Assessment
EEA	European Environment Agency
E&S	Environmental and Social
EHS	Environmental Health and Safety
EIA	Environmental Impact Assessment
EMEP	European Monitoring and Evaluation Programme
EMF	Electric and Magnetic Field
ENCON	ENCON Çevre Danışmanlık Ltd. Sti.
ESHS	Environmental, Social Health and Safety
ESIA	Environmental and Social Impact Assessment
ESMAP	Energy Sector Management Assistance Program
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMR	Environmental and Social Monitoring Report
ESMS	Environmental and Social Management System
EU	European Union
FI	Financial Intermediary
GBV	Gender based violence
GHG	Greenhouse Gas
GIS	Geographical Information System
GM	Grievance Mechanism
GP	Good Practices
IAPCR	Industrial Air Pollution Control Regulation
IBA	Important Bird Areas
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IEEE	Institute of Electrical and Electronics Engineers
IFC	International Finance Corporation
ILBANK	İller Bankası A.Ş.
ILO	International Labor Organization
IPA	Important Plant Areas
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Areas
KGM	General Directorate of Highways
KMM	Konya Metropolitan Municipality
KTO	Karadeniz Technical University
LC	Least Concern
MoEUCC	Ministry of Environment, Urbanization and Climate Change
MoLSS	Ministry of Labor and Social Security
MSIP	Municipal Services Improvement Project
NUTS	Nomenclature of Territorial Units for Statistics

NGOs	Non-Governmental Organizations
OHS	Occupational Health and Safety
PID	Project Identification Document
PIU	Project Implementation Unit
PM₁₀	Particulate matters with aerodynamic diameter smaller than 10µm
PM_{2.5}	Particulate matters with aerodynamic diameter smaller than 2.5µm
PMU	Project Management Unit
PIF	Project Introduction File
Project	Green and Future Cities Project
RAMSAR	Convention on Wetlands of International Importance, Especially as Waterfowl Habitat
RCA	Root Cause Analysis
RENC	Regulation on Environmental Noise Control
SCM	Stakeholder Consultation Meeting
SEA/SH	Sexual Exploitation and Abuse and Sexual Harassment
SEF	Stakeholder Engagement Framework
SEGE	Socio-Economic Development Ranking Studies
SEP	Stakeholder Engagement Plan
SEPA	Special Environmental Protection Areas
SHW	State Hydraulic Works
Subproject	Bariş Street Tramline Lot-2 Construction Project
TAP	Union of Transportable Battery Manufacturers
TEMA	Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats
TMP	Traffic Management Plan
TOKİ	Mass Housing Administration
ToR	Terms of Reference
TurkStat	Turkish Statistical Institute
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	UN Framework Convention on Climate Change
VU	Vulnerable
WB	World Bank
WBG	World Bank Group
WHO	World Health Organization
YIMER	Foreigners Communication Center

GLOSSARY OF TERMS

Associated facilities	Facilities or activities that are not funded as part of the Subproject and are: (a) directly and significantly related to the project; (b) carried out, or planned to be carried out, contemporaneously with the project; and (c) necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist. For facilities or activities to be Associated Facilities, they must meet all three criteria.
Contractor	A person or organization providing services to an employer at the client worksite in accordance with agreed specifications, terms and conditions.
Excavated material	Materials/soils that are generated as a result of excavation and other similar activities carried out prior to construction
Legally protected area	Designated terrestrial, aquatic or marine ecosystems managed under the related legislation to protect and sustain the biodiversity features, natural and associated cultural resources. 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.
Off-site accommodation	Accommodation of workers at hotels, rented housing, etc. available in the vicinity of Subproject area.
On-site accommodation	Accommodation of workers at temporary exploration camps, construction camps, dormitories, etc. established for the Subproject on site.
Risk	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.
Topsoil	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.

EXECUTIVE SUMMARY

The Green and Future Cities Project (“the Project”) aims to support sustainable, climate-resilient, and integrated urban development in Turkish cities through investments in sustainable transportation systems, environmental infrastructure, urban resilience, and climate adaptation measures. The Barış Street Tram Line Lot-2 Project (“the Sub-Project”) is one of the subprojects implemented under the GFC Project in Konya Province.

The Subproject aims to improve the accessibility, safety, and efficiency of public transportation services in Konya by expanding and strengthening the urban rail transportation network. The Subproject comprises the construction of approximately 5.5 km of new tramway line, seven stations, overhead catenary and traction power systems, signaling and communication systems, drainage works, utility relocations, and a depot and maintenance area. The Lot-2 alignment is located within Selçuklu District of Konya Metropolitan Municipality (KMM) and forms part of the wider Barış Street Tramline Project, which will provide an integrated connection with the Lot-1 alignment as an Associated Facility. Existing rail system lines in Konya Province are located on major urban corridors and currently serve important trip generation and attraction points within the city. The Subproject is planned to support the integration and expansion of public transportation services towards developing urban areas and to contribute to the establishment of a more integrated and sustainable urban transportation network.

The Subproject will be financed by the World Bank. İller Bankası A.Ş. (İLBANK) acts as the Financial Intermediary (FI). Konya Metropolitan Municipality (KMM), herein after referred to as “the Sub-borrower”, will be responsible for the implementation of the Subproject, including construction and operation activities at the local level. In accordance with the İLBANK Environmental and Social Management System (ESMS), the Subproject has been classified as a Moderate Risk Subproject considering its anticipated environmental and social risks and impacts.

The Environmental and Social Management Plan (ESMP) has been prepared in accordance with the applicable requirements of the World Bank Environmental and Social Framework (ESF), including the relevant Environmental and Social Standards (ESSs), İLBANK’s Environmental and Social Management System (ESMS), as well as the applicable national environmental and social legislation in Türkiye. The ESMP identifies the potential environmental and social risks and impacts associated with the Subproject and defines the mitigation, monitoring, and institutional measures to be implemented during the pre-construction, construction, and operation phases.

For the Lot-2 route, a Project Information File (PIF) was submitted to the Ministry of Environment, Urbanization and Climate Change in accordance with the Turkish Environmental Impact Assessment (EIA) Regulation. Following the review process, an “EIA Not Required” Decision was issued by the Ministry. Accordingly, the Subproject will be implemented in compliance with the applicable national environmental legislation and the relevant environmental approvals.

No land acquisition is anticipated within the scope of the Subproject, as the proposed tramline alignment will be constructed entirely within the existing cadastral road corridor. In addition, the land designated for the depot area has already been allocated by the Ministry of Environment, Urbanization and Climate Change relevant land allocation approval (see Annex C). Accordingly, no physical or economic displacement of people, businesses, or livelihoods is expected as a result of the Subproject. Relevant environmental and social risks associated with construction activities are expected to include temporary traffic disruption, noise, vibration, dust emissions, waste generation, occupational health and safety risks, and community health and safety impacts. These impacts are expected to be temporary, site-specific, and manageable through the implementation of the mitigation measures defined in this ESMP.

The Barış Street Tramline Project was initially developed under the Sustainable Cities Project II – Additional Financing (SCP-II AF). During subsequent design and implementation planning, the Project scope was revised and divided into two contract packages, namely Lot-1 and Lot-2, including certain modifications to the alignment and Project components. Accordingly, this ESMP has been prepared specifically for the World Bank-financed Lot-2 Subproject and reflects the current Project design. Where

relevant, the environmental and social studies undertaken under SCP-II AF have been taken into consideration during the preparation of this ESMP. In accordance with the World Bank ESF, Lot-1 has been considered an Associated Facility due to its functional linkage with, and necessity for, the operation of the Lot-2 Subproject.

During the construction phase, the workforce is expected to consist primarily of contractor personnel, including both skilled and unskilled workers, while a limited number of personnel will be employed during the operation phase for the operation, maintenance, and management of the tramway system. Priority will be given, where feasible, to the employment of local workforce in accordance with national legislation and the requirements of the World Bank ESF. The Subproject is expected to employ 500 people during the construction phase and 26 people during the operation phase.

The expected outcomes of the Subproject include improved accessibility of rail-based transportation systems, increased integration between transportation modes, reduced traffic congestion, and enhanced efficiency and sustainability of urban public transportation services within Konya Province.

1. INTRODUCTION

1.1. Background

The Green and Future Cities Project (GFC) Project (hereinafter referred to as “the Project”), which aims to support participating municipalities and utilities in Türkiye in planning and investing in climate resilience and greenhouse gas (GHG) reductions. The Project Development Objectives are to improve access to sustainable and resilient municipal infrastructure and services in participating cities.

The GFC Project is financed by the World Bank (WB). It includes five components as listed below. İller Bankası A.Ş. (ILBANK) will be the Financial Intermediary (FI) for Component 1, and the utilities of Project metropolitan municipalities will be sub-borrowers.

- **Component 1: Integrated, multi-sectoral investments in participating cities**

This component supports eligible municipalities and their affiliated utilities through sub-loans provided by ILBANK for investments in sustainable and climate-resilient municipal infrastructure. Eligible investments include urban transport systems (such as tramways and associated facilities), water supply, wastewater and stormwater infrastructure, as well as implementation support activities related to subproject management, engineering, procurement, construction supervision, environmental and social management, monitoring and citizen engagement. The Barış Street Tramline Lot-2 Construction Project falls under this component.

- **Component 2: Strengthening Capacity of ILBANK and Municipalities**

This component provides technical assistance, consulting services, training and institutional capacity building for ILBANK and participating municipalities. Activities include strengthening technical and financial capacity, preparing strategic planning documents, enhancing project preparation and implementation capacity, improving municipal finance and creditworthiness, and supporting sustainable and resilient urban management practices.

- **Component 3: Project Management**

This component finances project implementation and management activities carried out by ILBANK, including procurement, financial management, environmental and social management, monitoring and evaluation, reporting, stakeholder engagement, grievance management, communication and overall project coordination.

Konya Metropolitan Municipality (hereinafter referred to as “the **Sub-borrower**”) has applied to ILBANK for sub-financing of Barış Street Tramline Lot-2 Project (herein after referred to as “the **Subproject**”), which is located in Konya Province, Selçuklu District.

ILBANK has established an **Environmental and Social Management System (ESMS)** effective from **24th of Dec 2023**. The ESMS is designed to align with the 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&S¹) policies and standards of other International Financial Institutions (IFIs) with which ILBANK collaborates. The ESMS will apply to all ILBANK projects and subprojects financed through International Financial Institutions (IFIs), including the Barış Street Tramline Lot-2 Project.

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 ILBANK. This process will be implemented on an ongoing basis throughout the loan duration of respective ILBANK projects in line with the requirements of the national legislation, international agreements and conventions ratified by Türkiye

¹ The acronym E&S refers to all aspects of “sustainability” as encompassed by the International Finance Corporation (IFC) Performance Standards, i.e. environment, social, health and safety, human rights and labor aspects.

and E&S standards of lending IFIs, such as WB for the GFC Project. As a key element of the ESMS, ILBANK has adopted and published an **E&S Policy**² applicable to all IFI-financed ILBANK projects and subprojects.

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

ILBANK is considering financing the Subproject under the GFC Project. In line with the ESMS, ILBANK 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 Sub-borrower has retained a third-party consultancy company for the preparation of the E&S instruments required as per the E&S risk category assigned to the Subproject.

This **Environmental and Social Management Plan (ESMP)** has been prepared by Encon Çevre Danışmanlık Ltd. Şti. (ENCON) 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 developed for the Subproject.

1.2. Objective of the 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 Subproject 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.

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 legislation and international agreements and conventions to which Türkiye is a party of, and in accordance with the following international requirements:

- WB Environmental and Social Framework (ESF, 2018) and the Environmental and Social Standards (ESSs) forming part of the ESF,
- WB Group General Environmental, Health and Safety Guidelines (EHSGs) (2007)
- World Bank Group (WBGs) General Environmental, Health and Safety Guidelines (EHSGs) (2007)
- WBG's Sector-Specific Environmental, Health, and Safety Guidelines,
- ILBANK Environmental and Social (E&S) Policy for Projects Financed by International Financial Institutions, November 2023.
- Good International Industry Practices (GIIPs), including those established by other international financial institutions, such as:
 - International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability,

² <https://www.ilbank.gov.tr/sayfa/ilbank-environmental-and-social-policy>

<https://www.ilbank.gov.tr/sayfa/ilbank-cevresel-ve-sosyal-politika-dokumani>

- Equator Principles,
- International Labour Organization (ILO) Core Labour Standards,

Table 1 outlines the relevance of the WB 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
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 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 EHSGs, 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 B.

1.4. Review and Update

This ESMP will be reviewed and updated by the Sub-borrower as necessary during Subproject implementation to reflect changes in national legislative framework, ILBANK's policies, or other developments. Specific circumstances warranting updates may include changes in the organizational structure, significant incidents or accidents, or the incorporation of new tools, software or database into the ILBANK E&S Risk Management System.

The Sub-borrower will notify ILBANK of any updates made to the ESMP and will ensure that such updates do not result in deviation from the requirements set forth by the national legislation and the E&S requirements applicable to the Subproject.

These updates will be managed in a manner that maintains alignment with the Subproject's objectives while safeguarding environmental and social sustainability.

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, and 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.

Based on the outcomes of the ESMP, additional thematic management plans such as the Occupational Health and Safety Management Plan, and Emergency Preparedness and Response Plan, will be prepared by the contractor, in coordination with the Sub-borrower, prior to site mobilization. These plans are required to ensure compliance with the World Bank Environmental and Social Framework. They will be treated as living documents and may be updated during implementation in response to evolving conditions or new information.

Sub-management plans will be detailed according to the specific conditions of the Subproject. Specific measures and strategies will be presented in line with identified risks and needs. Each plan will be developed based on factors such as local conditions in the region where the Subproject is located, potential impacts, and interactions with relevant stakeholders, and will be finalized or revised as necessary prior to construction.

2. SUBPROJECT DESCRIPTION

2.1. Subproject Information

Existing rail system lines in Konya Province are located on the main arteries in the city and serve important journey production-attraction centers during the day. The Project aims to construct public transport lines with a collector feature to the inner parts of the city.

The expected results from the Project can be listed as follows:

- The accessibility of rail systems will increase, and an integrated public transport network will be created in Konya Province.
- The urban rail system lines and multimodal transportation (multimodal, intermodal, combined) systems will become widespread in Konya Province, integration between modes (road, railway, and airway) will develop, and the uneven distribution in public transportation will improve.
- The share of rail systems in transportation activities will further increase even more. With the implementation of the Project, faster and more economical transportation will be provided compared to the current situation.

The overall tramway network comprises a shared operational corridor of approximately 17.39 km with 21 stations. In addition to the shared corridor, the network includes an approximately 0.65 km extension towards the Oto Sanayi Area with one additional station and an approximately 1.63 km extension towards the HST Station with two additional stations. Within the scope of Lot-2, the Subproject comprises the HST Extension Line, the Fırat Street Extension Line, and the tram depot. The Lot-2 alignment includes a total of seven stations distributed along the HST and Fırat Street extensions, including the shared connection point between the two sections.

This ESMP has been prepared specifically for the Lot-2 section of the Subproject, and all assessments presented herein are limited to the activities and potential impacts associated with Lot-2. The Subproject is financed by the WB, with ILBANK acting as the Borrower and supervising the Konya Metropolitan Municipality, which is the Sub-borrower and implementing agency.

The Barış Street Tram Line Lot-2 Construction Project is being implemented in phases to improve public transport accessibility and strengthen the integrated urban transportation network within the Selçuklu District of Konya Province. Station information is shown in Table 2, and the map showing the locations of the stations is in Figure 1.

Table 2. Project Route Information (Lot-2)

Route Name	Route Length (km)	Number of Stations
HST Extension Area	1.5 km	2
Fırat Street Extension Area	4.0 km	5

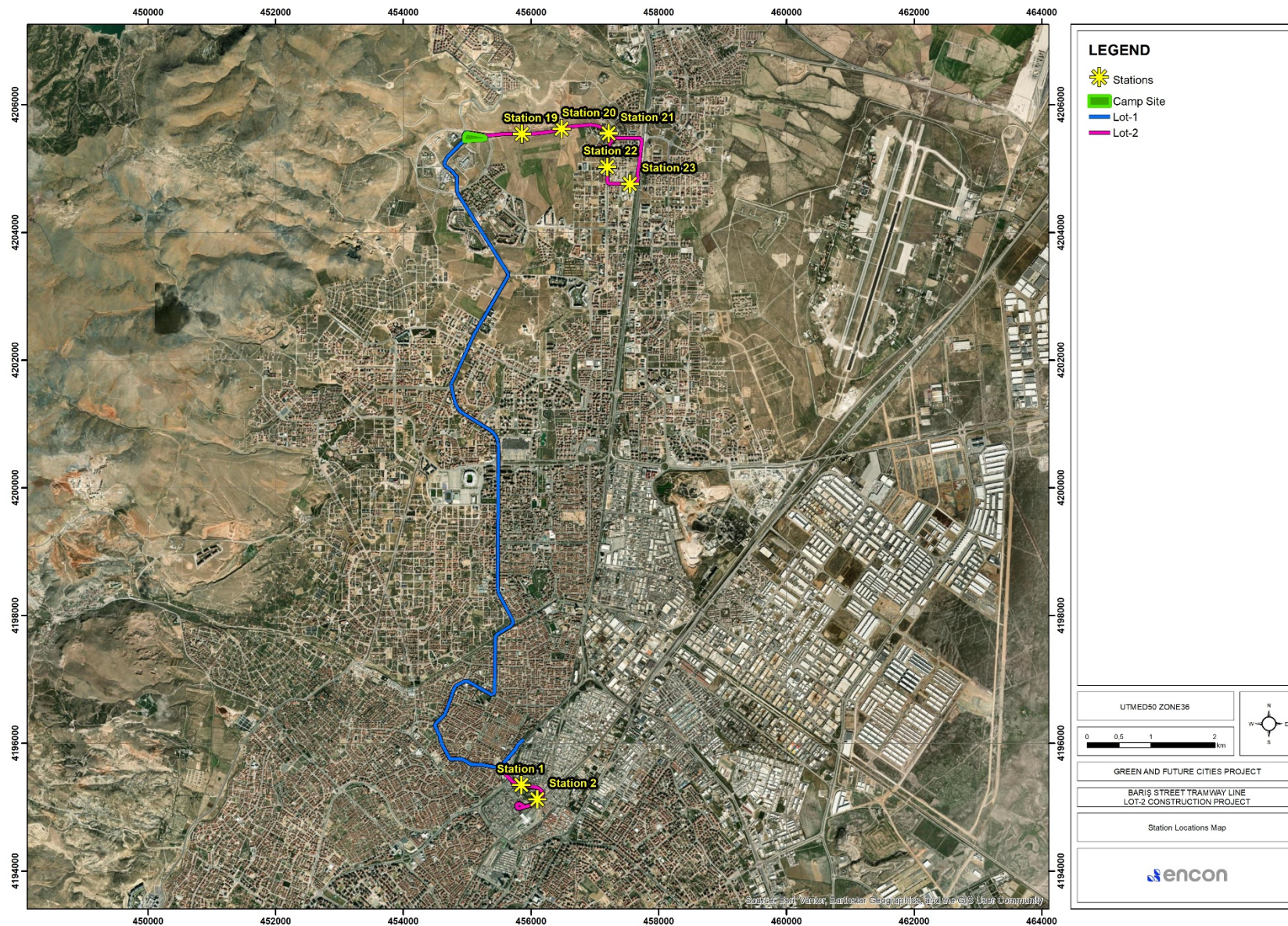


Figure 1 Stations Locations Map

2.2. Subproject Location

The Subproject is located in Konya province. The route crosses Selçuklu district. Barış Street Tram Line Lot-2 Construction Project component is located in the Selçuklu District in Konya Province. Selçuklu District is located between 38.0160° North latitude and 32.4920° East longitude. The distance of the district to the city center is 4 km.

The district is surrounded by Sarayönü and Kadınhanı districts in the north, Altınekin District in the northeast. The Sub-project location includes Bedir, Beyhekim, Fatih Neighborhoods. The designated route is planned in a strategic corridor that connects public service buildings, health facilities, and educational areas, taking into account the topography and existing settlement pattern of the Selçuklu district.

The Subproject is located within the Selçuklu District of Konya Province and extends along an urban corridor characterized predominantly by residential land use. The alignment is situated in proximity to industrial areas and Konya Airport and includes a depot area at the northern end of the route. The Lot-2 section constitutes an extension of the existing/planned Lot-1 alignment and is integrated with the wider tram network planned for the city.

To ensure the operational continuity of the Sub-project and meet vehicle maintenance needs, one depot area has been designed along the route, creating a fully integrated transportation backbone to the city's other rail system networks.

The total length of the Sub-project route is 5.5 km (including 7 stations).

A map of the Subproject location is presented in Figure 2.

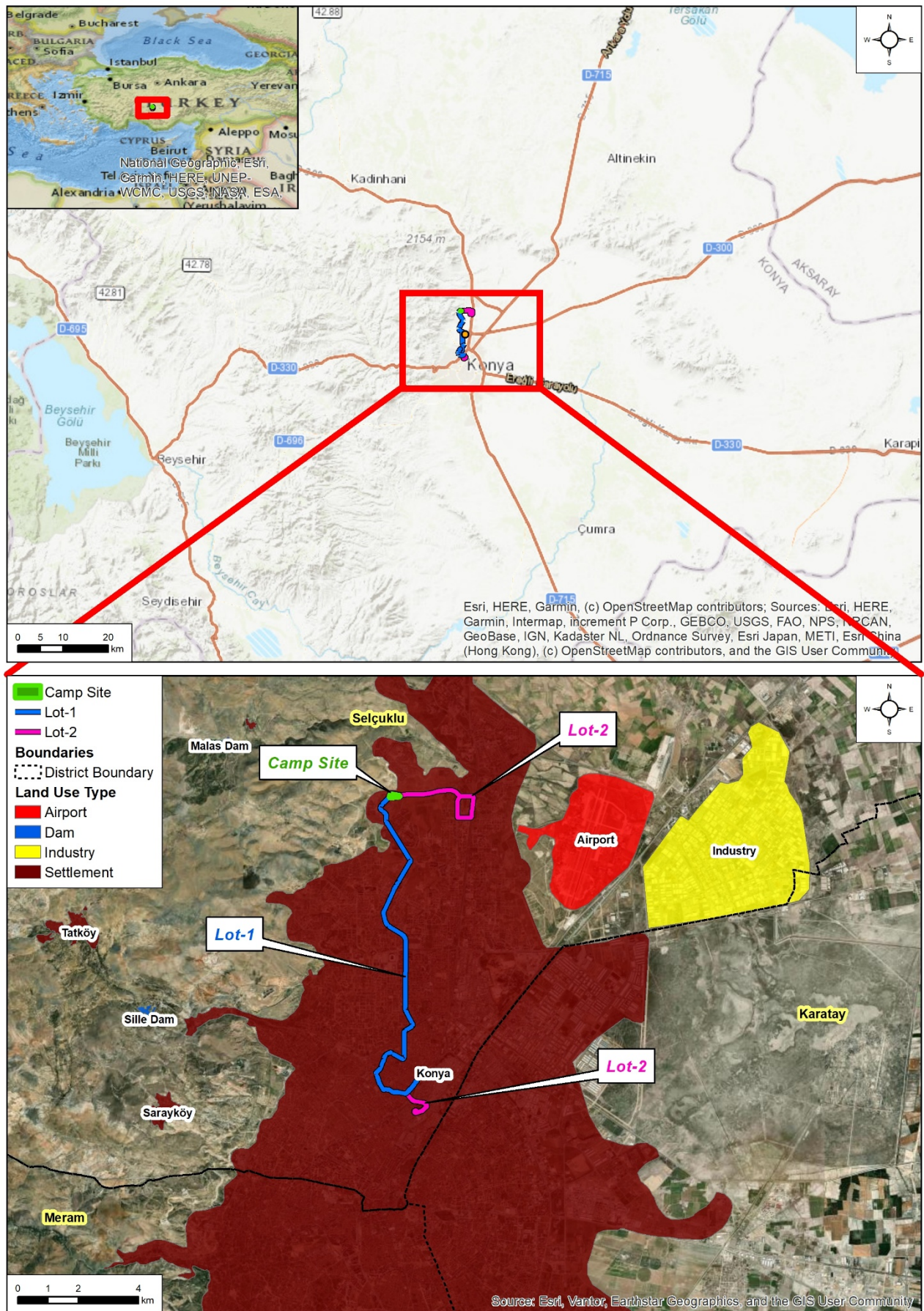


Figure 2 Map of Subproject Location

2.3. Site Access Route

The construction sites associated with Lot-2 will be accessed primarily through the existing urban road network within Selçuklu District. Construction vehicles, including trucks transporting construction materials, equipment, and machinery, will use the main arterial roads connected to the project alignment, such as Fırat Street and other designated municipal roads, to reach the work areas and the depot site. The existing road infrastructure is considered adequate to accommodate construction traffic without the need for the development of new access roads.

The final access routes and traffic circulation arrangements will be determined by the Contractor in coordination with the KMM and other relevant authorities prior to the commencement of construction. Appropriate traffic management measures, including traffic signs, warning barriers, and flaggers where necessary, will be implemented to minimize disruption to local traffic and ensure the safety of road users and pedestrians.

2.4. Alternative Routes

No alternative route assessment was undertaken as part of this ESMP. The alignment evaluated under Subproject was determined during the feasibility and design stages of the Subproject by Konya Metropolitan Municipality based on technical, operational, and urban planning considerations.

The selected alignment follows an existing urban transportation corridor and was designed to improve connectivity between residential areas and key public destinations while ensuring integration with the existing and planned rail transit network. Therefore, this ESMP assesses the environmental and social impacts associated with the selected Subproject alignment only.

2.5. Associated Facilities

Associated Facilities (AF) that are not funded as part of the Subproject are listed in Table 3.

Table 3. List of Associated Facilities of the Subproject

Associated Facility (AF)	Criteria			Notes/ Remarks
	(a) Is the AF directly and significantly related to the Subproject	(b) Is the AF carried out, or planned to be carried out, contemporaneously with the Subproject	(c) Is the AF necessary for the Subproject to be viable and would not have been constructed, expanded or conducted if the Subproject did not exist.	
Bariş Steet Tramline Lot-1 Component	Yes	Yes	Yes	Since Lot-1 of Bariş Street connects the Lot-2 components, it has been evaluated as an Associated Facility.

Although the present ESMP has been prepared for the Subproject (Lot-2 route), the Bariş Street alignment (Lot-1 route) has been identified as an Associated Facility in accordance with the World Bank ESF. Lot-1 is being implemented under a separate procurement package; however, it is functionally linked to the Subproject, as the Lot-2 tram line will connect directly to the Bariş Street alignment and operate as part of

the same urban rail network. The intended transportation function and operational continuity of the Subproject depend on this physical and operational connection. Therefore, Lot-1 has been considered an Associated Facility for the purposes of this ESMP. Relevant environmental and social interface issues associated with Lot-1 have been considered where proportionate to the scope of the Subproject.

2.6. Sub-project Impact Area

The main purpose of an ESMP is to identify and assess the potential positive and adverse impacts/risks that may be caused by the Subproject activities on the natural environment and on the socio-economic well-being and conditions of the population (community and workforce) at local and regional level. The following assessment is based on the Subproject characteristics and activities and the baseline conditions in the Subproject area.

In line with the World Bank's Environmental and Social Standard 1 (ESS1) and its Guidance Note, the Subproject Impact Area is defined as the area that may be affected by the Subproject's direct, indirect, and cumulative environmental and social impacts

While determining the impact area, the compliance of environmental impacts with Subproject standards has been checked. Considering the linear nature of the Sub-project and the characteristics of the surrounding urban environment, a 100 meters buffer zone extending from both sides of the Sub-project route was established as the primary Area of Influence for the baseline and impact assessment studies.

No specific planned developments (such as other road construction, maintenance works, or major events) within the immediate vicinity of the Subproject area have been identified during consultations and desktop reviews. Therefore, the likelihood of significant cumulative impacts occurring in combination with Subproject activities is considered low.

The Area of Influence (AoI) refers to the geographical area where the Subproject may cause direct and indirect environmental impacts (e.g., noise, vibration, air quality, water, biodiversity), while the Social Area of Influence (SAoI) covers the zones where social impacts may occur, including access restrictions, traffic disruptions, impacts on livelihoods, and cultural heritage.

For the purposes of this ESMP, the environmental and social assessment has been undertaken the Lot-2 component of the Barış Street Tramline Project, which constitutes the scope of the current World Bank-financed Subproject. As Lot-1 forms an integral and functionally linked component of the overall tramway system, it has been identified as an Associated Facility in accordance with the World Bank ESF. Accordingly, Lot-1 is presented in the figures and described in this ESMP to provide the necessary project context and to facilitate the assessment of potential environmental and social interfaces between the Subproject and the Associated Facility. However, the baseline studies, impact assessment, mitigation measures, monitoring requirements, and management actions presented in this ESMP have been developed specifically for the Lot-2 Subproject and its temporary facilities. Potential interactions and interface-related risks associated with Lot-1, where relevant to the Lot-2 Subproject, have been considered within the scope of this ESMP.

The AoI and SAoI of the Subproject are presented in Figure 3 and Figure 4, respectively.

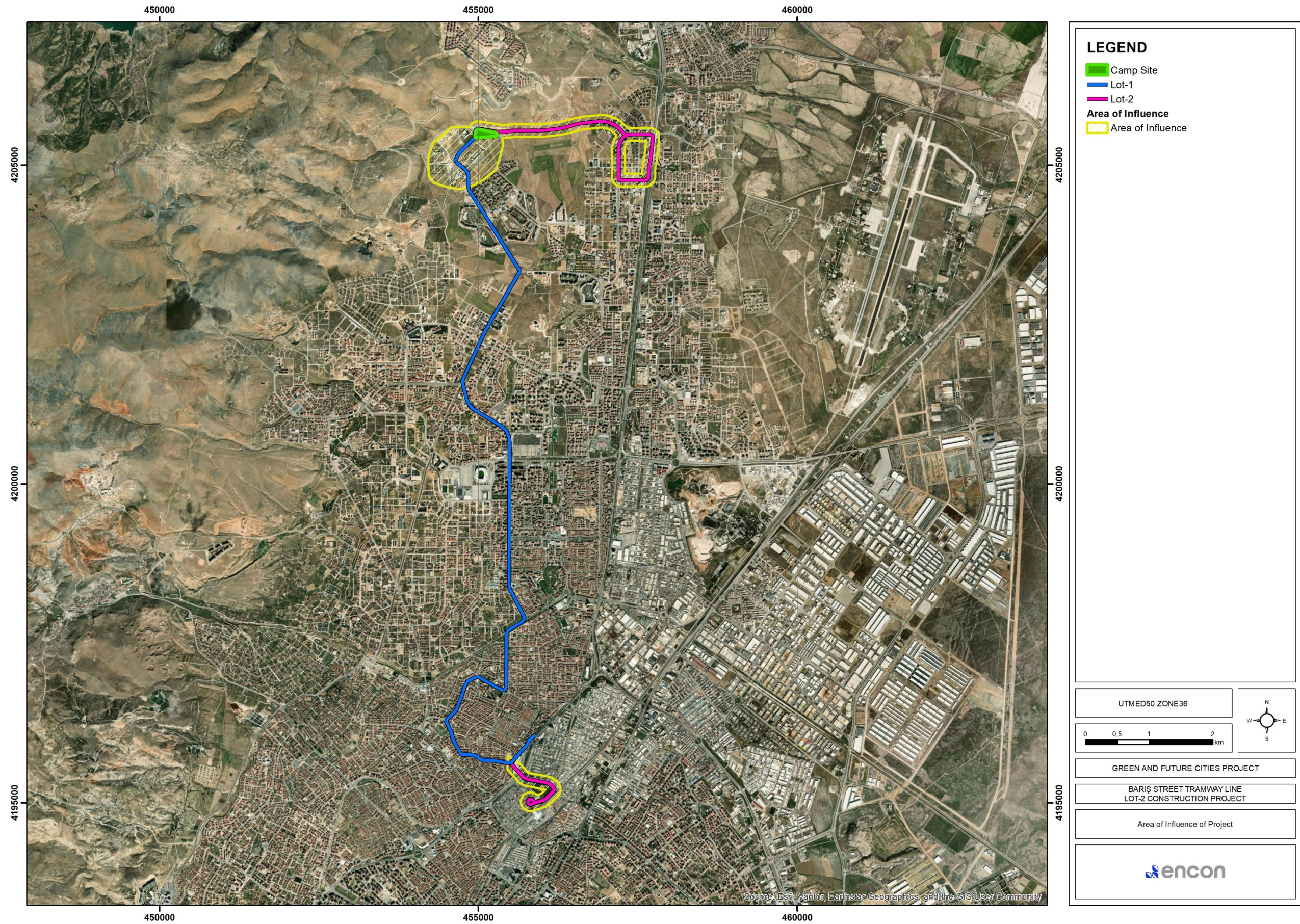


Figure 3 Area of Influence of Subproject Map

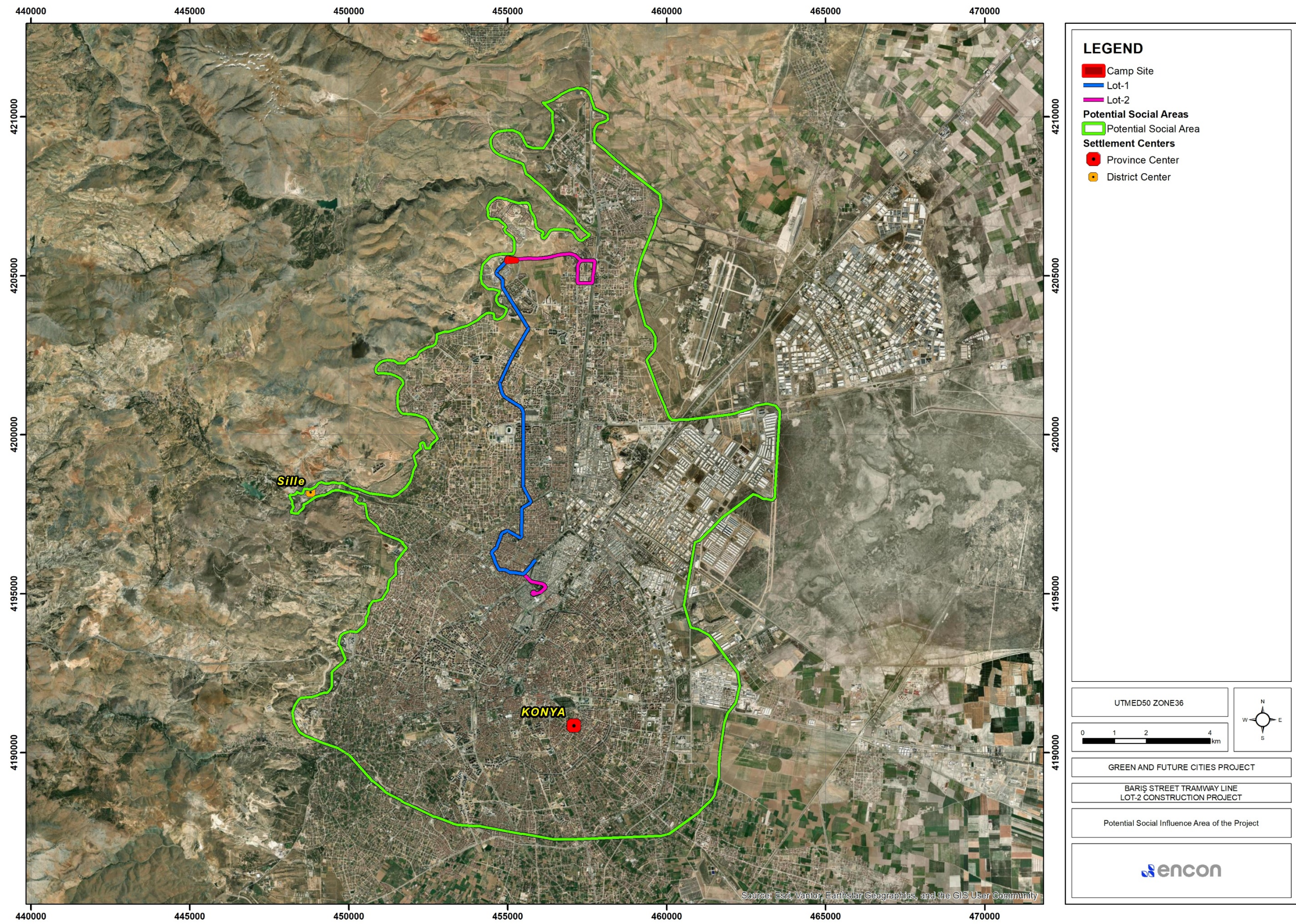


Figure 4 Social Area of Influence of Subproject Map

2.7. Environmental and Social Baseline

This section provides an overview of the existing environmental and social conditions within the Subproject area, including natural resources, land use, environmental receptors, infrastructure, and socio-economic characteristics. The baseline information establishes the existing conditions against which potential environmental and social impacts of the Subproject are assessed and helps identify any sensitive receptors, constraints, or vulnerabilities within the area of influence.

The Project corridor was previously assessed by ENCON under the İlbank Sustainable Cities Project Group-2. Since the current Lot-2 alignment overlaps with portions of the previously assessed corridor, relevant baseline information and findings from the earlier studies were reviewed and incorporated, where applicable, into the preparation of this ESMP.

In addition, a site visit was conducted on 14 April 2026 to observe the current conditions along the Subproject alignment, verify baseline information, identify sensitive environmental and social receptors, and engage with local neighbourhood representatives (muhtars) regarding the planned Subproject activities.

Table 4 presents a summary of the baseline field studies conducted as part of the ESMP study.

Table 4. Summary of Baseline Field Studies

Subject	Date of the Field Study	Experts who Participated in the Field Study
Biodiversity	30 September 2021 14 October 2021	Biodiversity Expert
Environmental Site Visit	30 September 2021	Environmental and Social Experts
Public Consultation Meeting	18 December 2023	Environmental and Social Experts
Site Visit and Muhtars Information Meetings	14 April 2026	Environmental and Social Experts

2.7.1. Physical Environment

This chapter includes information about geological, hydrogeological, and hydrological characteristics, natural hazards and seismicity, soil, erosion and land use characteristics, climate, environmental air quality and noise levels, landscape characteristics, biological environment and protected areas located in the project area and its vicinity.

Descriptions and information provided in this chapter, regarding current conditions of the project area and its vicinity, are based on data acquired from reports prepared by related public and private institutions (the Ministry of Agriculture and Forestry, the General Directorate of Meteorology, Turkish Statistical Institute, etc.), field studies conducted for identification of physical and biological environment, Geographical Information System (GIS) studies and satellite imagery.

As part of the project, air and noise measurements were taken in 2022 to define the existing conditions; however, due to changing routes and conditions, noise and air measurements were repeated in 2026 along the project route, taking into account sensitive receivers. A map showing the locations of these measurements is presented in Figure 5.

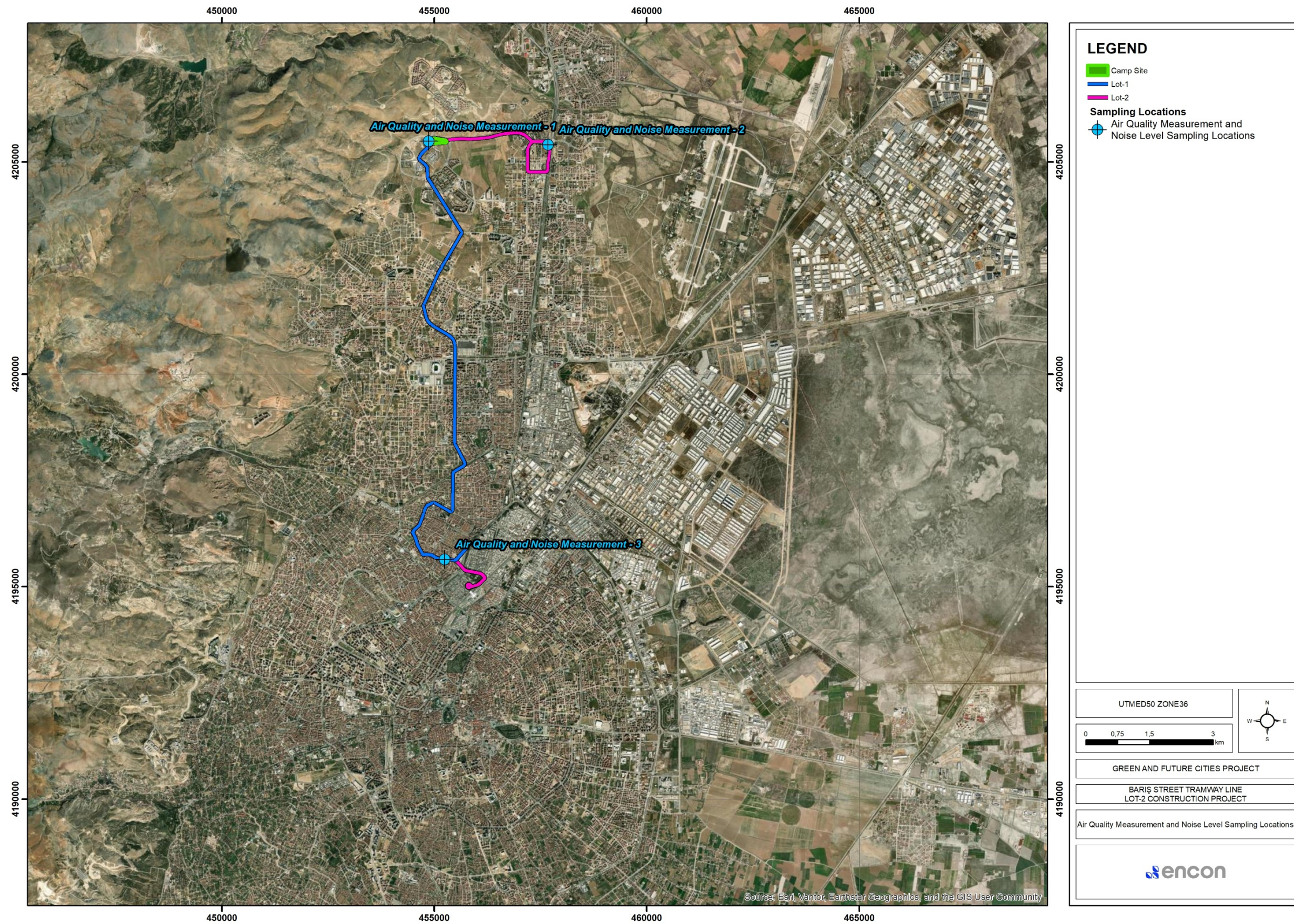


Figure 5 Air Quality Measurement and Noise Level Sampling Locations

2.7.1.1. Topography

The topography of the Konya Province begins to rise to the west, on the adjacent west of the city border, near Meram, at 1,250 m. The section of the inclined plane extending in the north-south direction with the plain is on a very definite line when viewed from the plain, and these slopes almost form a wall in the west of Konya Province. In the adjacent north of the city's contiguous area, there are hills that continue on the Ankara road in the east-west direction until the Karaömerler Village and turn north from there. There are slopes forming a lower wall in the east-west direction in the north of the city. This row is ended by the hill to the north of Karaömerler Village and turns north again (Çiftçi, Dursun, Levend, & Kunt, 2013).

The elevations in the northern part of the province generally extend in the east-west direction. The most important mountains are Bozdağlar, where the hills rise from place to place. The highest of these peaks is Karadag Hill (1,919 m) on the west of Bozdağlar. In addition, volcanic masses and lands have an important place in this area. Karacadağ is located in the south of the Karapınar Plain, Erenler Mountain is located in the southwest of Konya, and Takkeli Mountain is located in the west.

The average elevation of Selçuklu District above sea level is 1,016 m. The average elevation of Karatay District above sea level is 1,026 m. The land structure of Karatay and Selçuklu is generally flat plain.

2.7.1.2. Geology

In the study area (Neighborhoods and surrounding areas affected by the route of the tram line) located in the southwest of Konya Province, some rocks belonging to Kütahya- Bolcardağı belt are found. The study area is in the urban central area of Konya. Therefore, the generally geology of Konya Province are summarized below.

In Konya Province and its surroundings, there is the Late Triassic-Late Cretaceous Lorasdağı Formation deposited on a shallow and stable carbonate platform, and the Midostepe Formation consisting of Late Cretaceous radiolarite and chert interbedded limestones. These units can be mapped within the Hatip ophiolite complex consisting of Late Cretaceous aged cherty limestone, mudstone, serpentinite and ophiolitic rock fragments. The İkvritepe olistoliths are tectonically overlain. Overlying the Hatip ophiolite complex, Çayırbağı Ophiolites, which are composed of Late Cretaceous dark green, locally browned, serpentinitized peridotite, gabbro and pyroxenites, are overlain by tectonic contact. The Ulumuhsine Formation, which consist of Late Miocene-Early Pliocene aged, gray, dirty yellow, and cream-colored lacustrine limestones, covers the other units with an unconformity, while the Quaternary-recent alluviums overlie the older units with an angular unconformity.

The geology map of the Project area and its vicinity is provided in Figure 6.

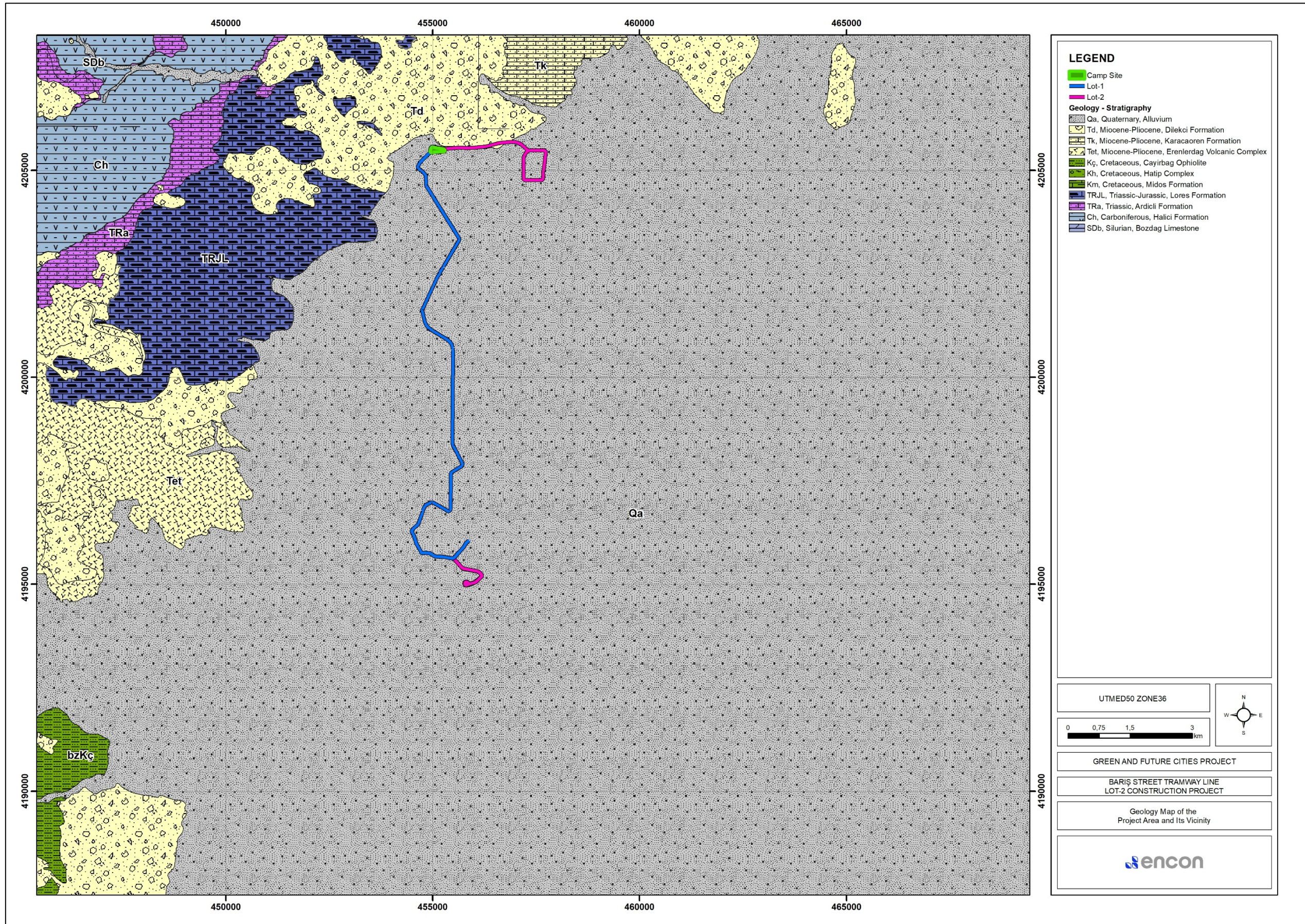


Figure 6 Geology Map of the Project Area and Its Vicinity

Lorasdağı Formation (Tr-KI)

Lorasdağı Formation is comprised of recrystallized limestone, dolomitic limestone and dolomites. (Göğür & Kırıl, Kızılören Dolayının Jeolojisi, 1969) and (Görmüş, 1984) use the name Lorasdağı Limestone, whereas (Özcan, et al., 1988) uses the name Lorasdağı Formation. This study adopts Lorasdağı Formation. The most typical outcrops are observed at Mountain Loras.

The unit starts with gray-beige colored, massif and indistinct bedding levels at the lower levels and continues with generally thick, occasionally medium-thin bedded and chert nodule levels towards the top.

The dominant mineral of rock is calcite. Recrystallized calcite and occasionally chert formations are observed in fractures. The unit also presents dolomitic features in some petrographic sections. It is identified that the primal texture of the unit was completely lost in the region with high recrystallization (Aydın, Eren, Aksoy, & Dinç, 2000).

The unit crops out around Mountain Loras in the northwest of the study area. In addition, there are many blocks in the Hatip ophiolite complex.

The Lorasdağı Formation, which forms the base of the study area, is overlain by the Midostepe Formation with conformity.

Midostepe Formation (Km)

Unit consists of radiolarite and pelagic limestones with red-pink colored chert interlayers. The unit presents typical outcrops around Midostepe.

Midostepe Formation is represented by greyish colored pelagic mudstone, reddish colored pelagic carbonates with radiolarian chert intermediate bands at the bottom. The proportion of chert is increasing towards to the top. The bottom part of the chert layer is grey, while the top part of the chert layer is reddish. Gray colored coarse grained (turbiditic) carbonates are observed between these chert layers.

The unit, which consists of pink-red colored pelagic limestone-chert alternation in its central parts, also includes greenish colored shale layers. The formation continues upwards with chert nodular and radiolarian chert intercalated, fine-medium bedded, coarse grained, gray colored limestones, and ends with yellow, burgundy colored pelagic limestone and mudstone with chert interlayers (Özcan, et al., 1988).

The unit is observed in the form of many blocks of various sizes in a mixed region, in Midostepe and its surroundings, in the north of the Konya-Seydişehir highway.

Hatip Ophiolite Mix (Kh)

The unit consists of a matrix mostly composed of serpentinite and ophiolite rock units and radiolarite, shale, gabbro and limestone blocks in them.

The matrix of this mélange unit is consisted of red-brown radiolarite, red-pink pelagic limestones, harzburgite, dunite, gabbro, diabase, pillow lavas, serpentinite, purple and gray colored shale and sandstones. In some parts, the serpentinites are highly fractured and distorted and contain very few magnesite veins. A schist structure, foliation and occasional folds are observed in flysch shale and sandstones due to deformations (Aydın, Eren, Aksoy, & Dinç, 2000). Also, red and green colored, weathered, quartz veined mudstones are observed in the unit. The mudstones show foliation with the effect of low-grade metamorphism in places. Due to the increase in the degree of metamorphism, the

mudstones, which transition to slate and phyllite, are observed in purple-green color in the topography. There are also occasional fine quartz veins in the slates and phyllites.

Limestone that can be shown in map, which is frequently observed in the Hatip ophiolite complex, was named as İkisivritepe olistoliths by (Eren, 1993). The limestones constituting the İkisivritepe olistoliths are gray in color, with chert intercalations in places, with a medium thick bedded and massive in places. The sizes of olistoliths vary from block size to mountain size and are observed in places so small that they cannot be shown in map. The limestone blocks were weathered from time to time and acquired a brecciated structure. The limestone blocks, which are described as olistoliths, were tectonically transported from their environment, and formed a part of the mélange by mixing with the trench in the subduction zone.

The unit was emplaced in the region due to compressions at the boundaries of the approaching plate, and it contains blocks belonging to the Triassic-Jurassic Lorasdagi and Midostepe formations, indicating that it was emplaced in the study area with the compressions that took place in the Late Cretaceous. Therefore, although the unit was formed before the Late Cretaceous, its mixing and emplacement took place in this period.

Cayirbagi Ophiolite (Kc)

Unit mainly composed of green-brown, serpentized peridotite, gabbro and dunites. It is typically observed around Çayırbağı Village in the study area.

The grey, green, and brown colored Çayırbağı ophiolite consists of mainly gabbro, diabase, serpentinite, peridotite and pyroxenite. The gabbro is macroscopically massif in appearance, gray-dark in color and heavily cracked. Although the rocks sometimes have a schist structure due the deformation effect, they generally have a heavily cracked and fractured structure, and a formation of talc is observed in these cracks from place to place.

Serpentinites that formed with disintegration of ophiolite rock are observed in some sections as blocks and have green-dark green color on young surfaces. There exists stock work vein shaped magnesite formation in some serpentinite blocks. The serpentinite takes on yellow and brown color in where magnesite is formed.

Ulumuhsine Formation (Nu)

Ulumuhsine Formation is composed of gray, dirty-yellow and cream-colored lacustrine limestone (Eren, 1993) named this unit formation of Ulumuhsine in reference to its outcrops around Ulumuhsine Village, and it was deemed appropriate to use this nomenclature in this study.

Dirty-white, grey, and beige colored limestone constitutes the dominant lithology of formation. It is generally observed as thin beds and medium-thick beds. Oncolite and stromatolite formation are identified. Conglomerates are observed in the lower layers of formation. The grain sizes of these conglomerates are between coarse pebbles and fine pebbles.

Ulumuhsine Formation is observed in the southwest of Dikmeli (Godene) Village. Ulumuhsine Formation overlies with unconformity the Hatip ophiolite complex and Cayirbagi ophiolites, which cover a large area. The age of the Ulumuhsine Formation was determined by (Göğer & Kırıl, Kızılören Dolayının Jeolojisi, 1969) as Pliocene according to detected freshwater fauna in the formation such as Unio sp., Radix sp., Ostracodes sp. and Char asp. Eren (1993) considered the age of the unit to be Late Miocene-Early Pliocene considering its relations with other units.

Topraklı Formation (TQt)

The scree-alluvial complex deposits composed of Plio-Quaternary coarse clastics and irregular-thick horizontal layers form the Topraklı Formation. These young sediments with low diagenesis are used as the Topraklı Formation by (Eren, 1993). This formation crops out in the west of Yenibahçe, around the Kayıhüyük and Kavak.

Topraklı Formation begins with thick and irregular bedded, poorly sorted, polygenic heterogeneous conglomerate. Poorly sorted, coarse grained, red colored sandstone and mudstone interlayers exist among these red, brown, and ochre-colored pebbles. Sometimes, beige and yellowish gray nodules and laminated caliche formations are observed between muddy levels. Topraklı Formation, which forms morphologically low relief, flattened morphologies, reaches 200 m in thickness.

Alluvium (Qa)

Alluviums outcropping in the stream beds and plains in and around Konya are composed of block-gravel-sand, silt-clay, and mud material. The alluvial unit, the thickness of which varies between 10 and 100 m, has been formed since the Quaternary and covers the underlying formations with angular unconformity.

2.7.1.3. Landscape

The Project corridor is predominantly located within existing urbanized areas characterized by transportation infrastructure, residential areas, commercial units, public facilities, and roadside landscaping elements. The existing landscape character along the route is largely shaped by wide boulevard structures, paved surfaces, signalized intersections, median strips, street lighting systems, and periodically distributed ornamental planting areas.

Limited green areas, urban recreational spaces, roadside trees, and landscaped medians are present along certain sections of the alignment. However, the Project area does not include protected landscapes, nationally designated scenic areas, or environmentally sensitive landscape features.

The visual character of the Project corridor is primarily urban and transportation-oriented due to the intensive traffic flow, existing road infrastructure, and surrounding urban development pattern. Therefore, the Project is generally compatible with the existing land use and urban landscape structure of the area.

2.7.1.4. Tectonics and Seismicity

Active Fault Map of Konya is given in Figure 7. According to that map, the geological map indicates that the Project alignment is located within a region influenced by several mapped fault structures. The closest features include a Quaternary fault at an approximate distance of 900 m and the Konya Fault at approximately 1.4 km from the alignment. Other regional fault systems (e.g., Altınekin Fault at approximately 37.8 km) are located at greater distances and represent broader regional seismicity rather than site-specific constraints.

The alignment does not directly intersect any mapped active fault trace. Therefore, no direct surface rupture impact is anticipated along the Project route. However, due to the regional tectonic setting, the Project area may be subject to general seismic ground shaking, which is typical for central Anatolian conditions.

Considering the nature of the Project, the potential impacts are expected to be limited, localized, and manageable within standard engineering practices.

According to the Earthquake Risk Map of Türkiye published in the Official Gazette numbered 30364 and dated 18.03.2018, ground accelerations of Karatay and Selçuklu District are classified as between 0.0-0.1 g, indicating low hazard. Türkiye Earthquake Risk Map is presented in Figure 8.

In all types of structures to be built, principles of “Regulation on Structures to be built in Natural Disaster Areas” of former Ministry of Public Works and Settlement shall be complied with.

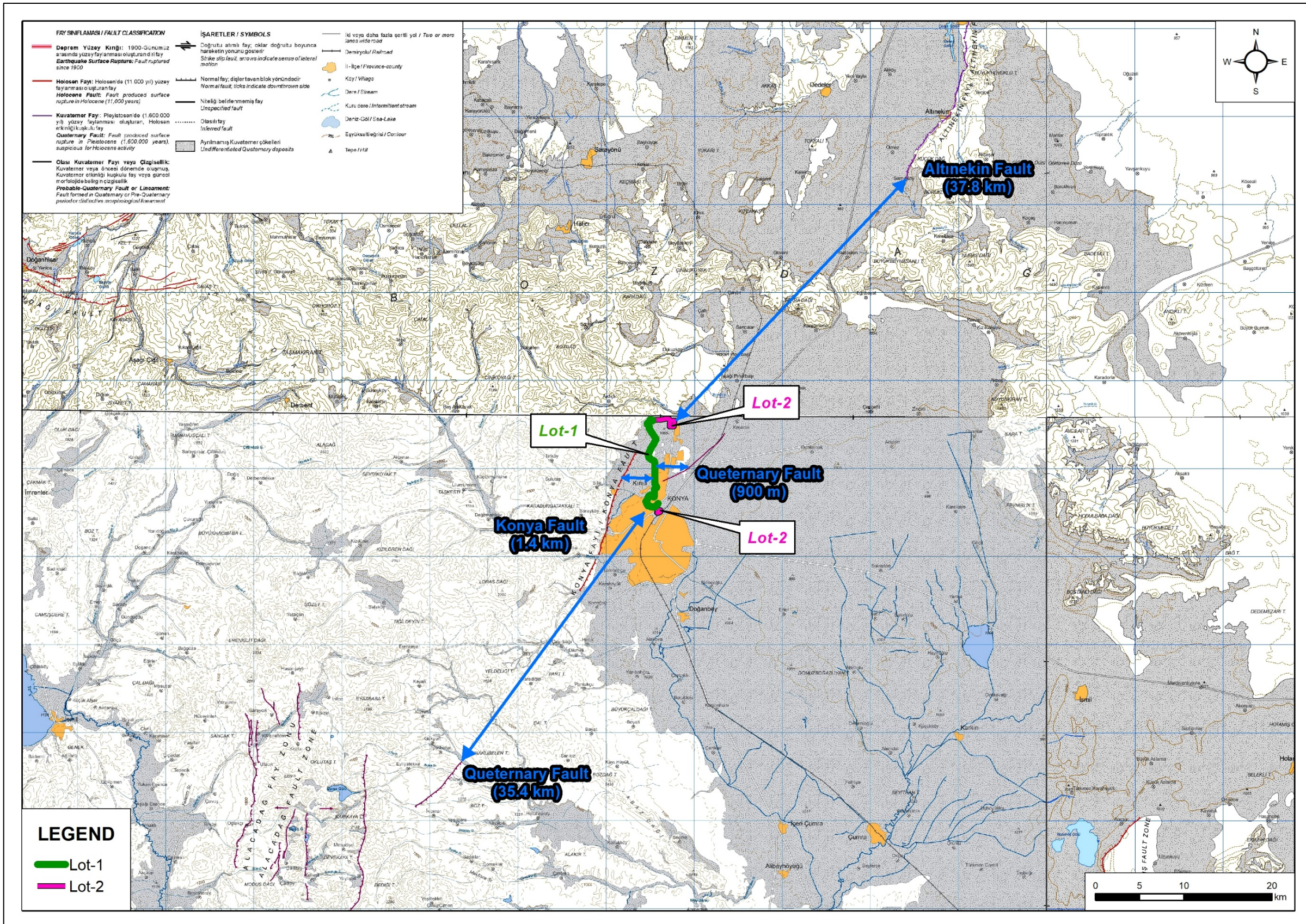


Figure 7 Active Fault Map of Konya

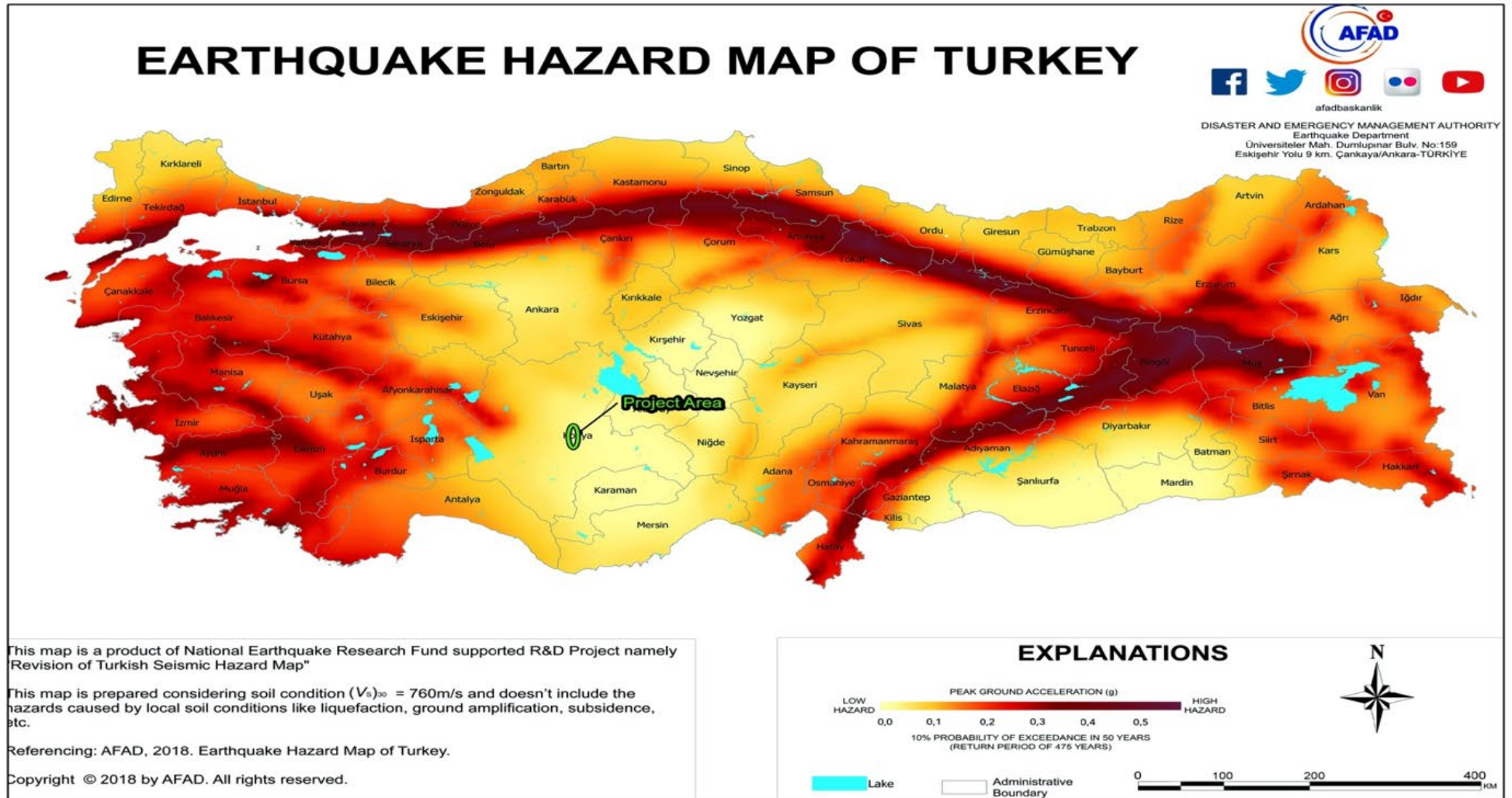


Figure 8 Earthquake Hazard Map of Türkiye

2.7.1.5. Soil and Land Composition

Turkish General Directorate for Rural Services database defines the land use capabilities in eight (8) different classes as summarized in Table 5. These classes represent the agricultural potential of the soils. In this classification system, soils are categorized between Class I, which represent the arable lands on which agricultural activities can be conducted in the most efficient, economic and simplest way without causing erosion, and Class VIII, which represent the lands that are not arable, cannot even be used as grassland or forest areas but support only wildlife development or can be used as resting area or national park by human. Characteristics of each class are summarized in Table 5 (Former Ministry of Agricultural and Rural Services, July 2008).

Table 5 Agricultural Potentials Represented by Different Land Use Capability Classes and Their Characteristics

Class	Agricultural Potential	Definition of Land Use Capability
Class I	Agricultural lands suitable for agricultural soil cultivation	Class I lands are; flat or near flat, deep, fertile and easily cultivated so that the conventional agricultural methods can be applied; potential for water and soil erosion are minimal; have good drainage; are not prone to flood damage exposure; suitable for hoe plants and other intensively grown crops; Class I irrigated lands with low precipitation rates have slope values less than 1% slope, loamy structure, good water holding capacity and medium level permeability.
Class II		Class II lands are decent lands that can only be processed after taking some special precautions. Their difference from Class I lands are one or more of the limiting factors such as slight slope, moderate exposure to erosion, moderately thick soil, exposure to occasional moderate floods and a moderate level of moisture that can easily be isolated.
Class III		Class III lands are moderately good lands for hoe plants which can generate solid income provided they are utilized with a good cropping system and proper agricultural methods. Moderate slope, increased erosion sensitivity, excessive moisture, exposed soil, presence of stones, having a lot of sand and/or gravel, low water holding capacity and low yield are properties of this type of land.
Class IV		Class IV lands can be constantly utilized as meadows. Field crops can also be occasionally grown. High levels of slope, bad soil characteristics, erosion and climate are the factors limiting agricultural activities on these lands. Soils with low slopes and poor drainage are also classified as Class IV lands. These soils are not subject to erosion, but they are unsuitable for growing many agricultural products as they have a low yield and a tendency to suddenly dry up in the spring. In semi-arid regions, cropping systems incorporating legumes are generally not possible due to climate.
Class V	Agricultural lands not suitable for soil cultivation	Class V lands are reserved for long-life plantations such as meadows and forests as they generally are unsuitable for cultivated plants. A few factors such as stony structure and sogginess hinder cultivation here. The land is flat or near-flat. It is not subject to an excessive amount of wind and water erosion. Grazing and tree logging activities can be carried out on condition that a good soil cover is constantly maintained.
Class VI		Class VI lands require moderate precautions even when they are used as forest or meadow since they have quite a bit of slope and are subject to severe erosion. Exposed, soggy or very dry conditions make this type of land unsuitable for cultivation.
Class VII		Class VII lands have high slope, are stony and have been subject to violent erosion. Exposed soils, dry and/or some unfavorable conditions and swamps can be classified as Class VII soil. These can be used as forest or meadow without showing due care. If the vegetation on these soils diminishes, erosion can get quite violent.
Class VIII	Non-arable lands	Class VIII lands exhibit features that prevent them from being used as forest, meadow or cultivated land. This type of land is habitat to wild life and can also be used for recreational purposes or as catchment basins for streams. These include lands containing marshes, swamps, deserts as well as areas of high mountainous regions, rocky lands or lands with very deep craters.

Source: Former Ministry of Agricultural and Rural Services, July 2008

Map of great soil groups and land use capability classes for the project area is represented in Figure 9. Barış Street Tram Line will be constructed on soil used by the settlement areas. That is, the Project route passes through the city center and is on the asphalt road. Therefore, there is no open soil. Therefore, soil samples were not taken because soil quality information was not needed.

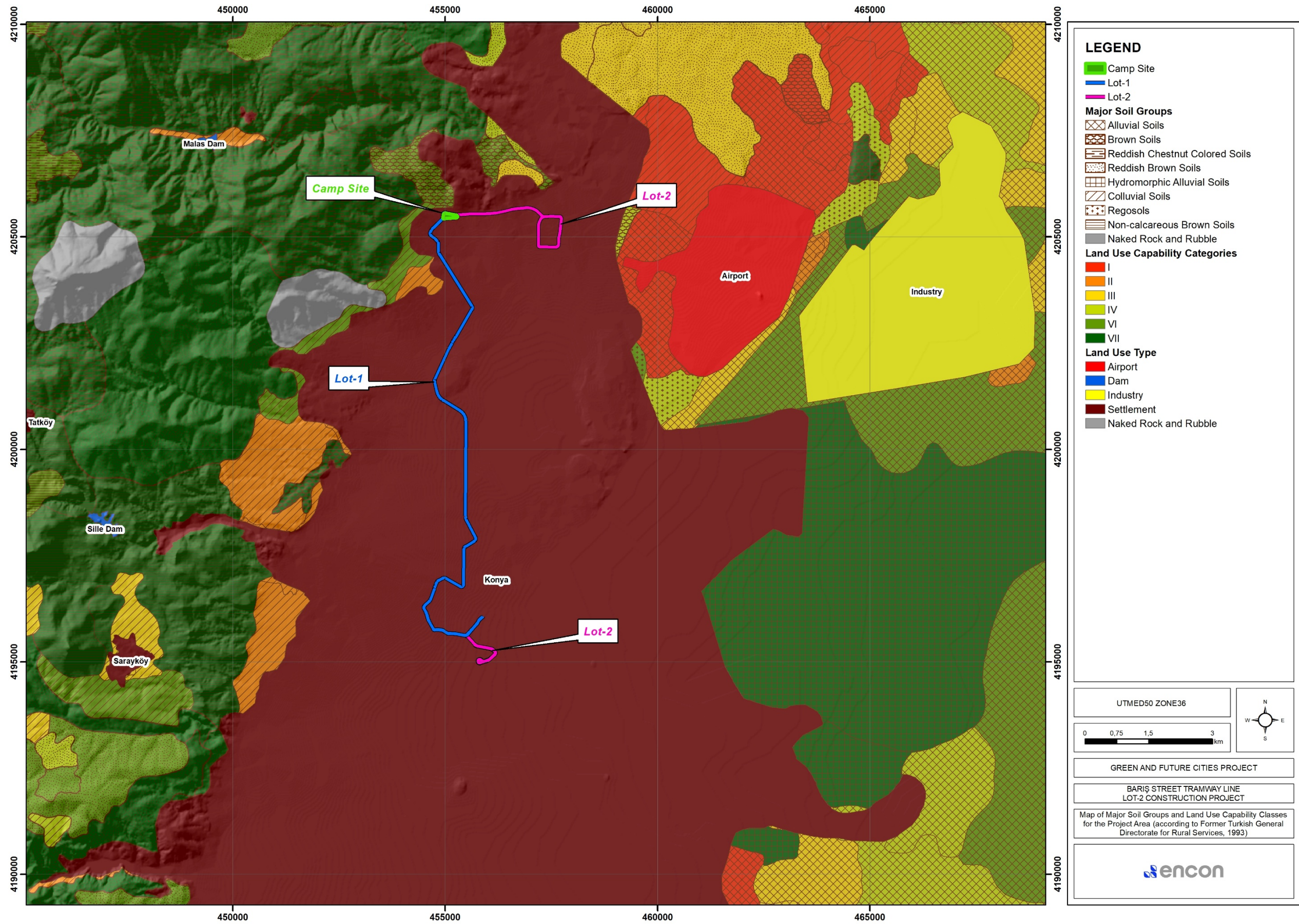


Figure 9 Great Soil Groups and Land Use Capability Classes for the Project Area

2.7.1.6. Meteorology and Climatic Characteristics

Konya Province has a continental climate. In general, summers are hot and dry, winters are cold and rainy, and precipitation is mostly in the form of snow.

The records were taken from the Turkish State Meteorological Service show that the annual average temperature is 11.7 °C. The highest temperature is recorded as 40.6 °C in July and the lowest temperature is recorded as –28.2 °C in January. The average monthly precipitation amount is measured as 392.2 mm. The rainiest months are December and May.

The tabular representation of the average, maximum and minimum meteorological records are given in Table 6.

Table 6 Long Term Meteorological Data of Konya Province (1929-2024)

Parameter	January	February	March	April	May	June	July	August	September	October	November	December	Annual
	Last Climate Period (1929-2024)												
Avg. Temperature (°C)	-0.2	1.5	5.6	11.1	15.9	20.2	23.6	23.4	18.8	12.9	6.5	1.8	11.8
Highest Avg. Temperature (°C)	4.7	7.0	11.8	17.6	22.4	26.7	30.2	30.2	26.0	20.1	13.1	6.7	18.0
Lowest Avg. Temperature (°C)	-4.2	-3.3	-0.2	4.4	8.6	12.7	15.9	15.7	11.1	6.0	0.9	-2.2	5.4
Average Number of Rainy Days	9.88	8.27	8.96	8.91	10.44	6.78	2.21	1.49	3.17	6.00	6.53	10.06	82.7
Average Monthly Amount of Rain (mm)	38.0	28.6	29.3	31.4	43.5	25.7	7.7	6.2	13.6	29.3	32.0	42.3	327.6
	Measurement Period (1929-2024)												
Highest Temperature (°C)	19.3	23.8	28.9	31.0	34.4	37.0	40.6	40.9	38.8	32.3	25.4	21.8	40.9
Lowest Temperature (°C)	-28.2	-26.5	-16.4	-8.6	-1.2	1.8	6.0	5.3	-3.0	-8.4	-20.0	-26.0	-28.2

Source: Turkish State Meteorological Service, 2026

According to the 95-year meteorological data obtained from the Turkish State Meteorological Service, the annual average temperature in Konya Province is 11.8 °C, and the annual average precipitation is 327.6 mm. The district is characterized by a continental climate, where summers are hot and dry, and winters are cold and snowy. The lowest temperatures are typically observed in January, while August is the hottest month of the year.

Precipitation in Konya is irregularly distributed throughout the year, with the highest rainfall occurring in spring and winter. Due to its arid climatic conditions and limited surface water resources, dry farming practices are predominant in the district.

The area is generally subject to northerly winds, which tend to intensify during the spring months. Konya and its surroundings are recognized as the most severely affected region by wind erosion in Türkiye. During the summer, wind erosion becomes more intense due to increased wind speeds and the high degree of soil dryness, which enhances sand movement and dune activity.

2.7.1.7. Air Quality

There is no active air quality monitoring stations in the local level. The closest air quality monitoring station is Selçuklu station. However, the monitoring results of these location do not provide significant results to compare for the project area. To analyse the existing ambient air quality conditions within the Project Area, ambient air quality measurements were conducted by ENCON Laboratory at various locations along the Project route on 4 May 2026. The ambient air quality monitoring results for particulate matter with an aerodynamic diameter of less than 10 micrometres (PM₁₀) and particulate matter with an aerodynamic diameter of less than 2.5 micrometres (PM_{2.5}) measured in May 2026 are presented in Table 7. The results are compared with the limit values specified in the World Bank Group Environmental, Health and Safety (WBG EHS) Guidelines and the applicable Turkish air quality legislation

The monitoring study was performed to characterize the current ambient air quality conditions along the Project corridor and support the environmental baseline assessment. The map indicating the locations of the air quality monitoring points is presented in Figure 5 and the analysis reports are presented in Annex E.

Table 7 PM₁₀ and PM_{2.5} Measurement Results (May 2026) with WBG EHS Guideline and Turkish Regulation Limit Values

Parameter	Averaging Period	WBG EHS Guideline Limit Value in µg/m ³	Regulation on the Assessment and Management of Air Quality Limit Value in µg/m ³	Measurement Results at Coordinates of AML*- 37.994245/4 32.485780 in µg/m ³	Measurement Results at Coordinates of AML*- 37.993672/4 32.517754 in µg/m ³	Measurement Results at Coordinates of AML*- 37.905586/4 32.490627 in µg/m ³
NO ₂	24-Hour	20	40	-	-	
	10-Minute	500				
PM ₁₀	1-Year	20	50	11.6	11.6	13.8
	24-Hour	50				
PM _{2.5}	1-Year	10	25**	6.52	6.89	6.53
	24-Hour	25				
O ₃	8-Hour daily maximum	100	120	-	-	

*Air Quality Monitoring Location

** Turkish Legislation has not described a limit value for PM_{2.5}. Therefore, in the assessment of the measurement result, the limit value set forth by the Ambient Air Quality and Cleaner Air for Europe (Directive 2008/50/EC) and WBG 24-hour limit values are used, which is 25 µg/m³ for both of them.

According to the Industrial Air Pollution Control Regulation, PM₁₀ values should not exceed 50 µg /Nm³ more than 35 times in a year. On the other hand, according to WBG General EHS Guidelines; Air Emissions and Ambient Air Quality, PM₁₀ and PM_{2.5} values should not exceed 50 µg/Nm³ and 25 µg/Nm³, respectively. Therefore, PM₁₀ and PM_{2.5} baseline measurement results satisfy both national and WBG General EHS Guidelines ambient air quality limit values.



Air and Noise Measurement Point-1
(PM_{2.5})



Air and Noise Measurement Point-1
(PM₁₀)



Air and Noise Measurement Point-2
(PM_{2.5})



Air and Noise Measurement Point-2
(PM₁₀)

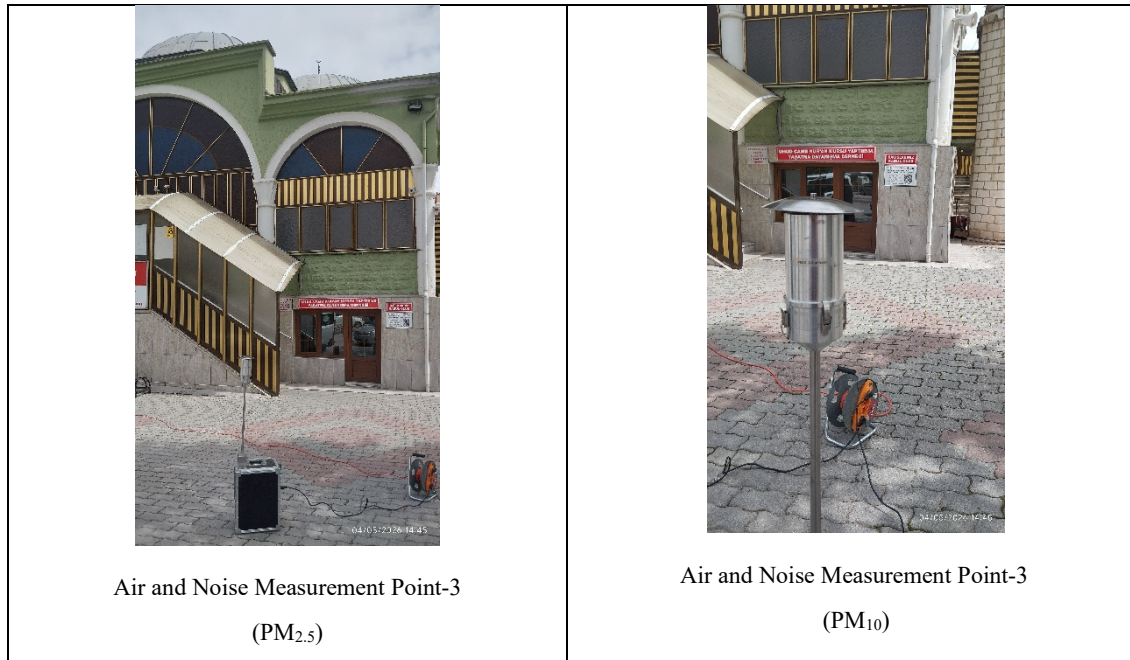


Figure 10 Photos taken at air quality measurement locations

2.7.1.8. Noise

Environmental noise in Türkiye is regulated by the Regulation on Environmental Noise Control (RENC) which is published in the Official Gazette dated 30.11.2022 and numbered 32029. This regulation is intended to ensure that precautions are taken to prevent disturbance to peace and tranquility, and to ensure the physical and mental health of persons potentially exposed to environmental noise. For this purpose, the regulation sets out requirements regarding noise mapping, acoustic reporting, environmental noise assessment for determination of noise exposure levels and preparation and application of action plans to prevent or mitigate negative impacts of noise exposure on human beings and environment.

For the construction phase activities, noise limit values are defined in Table 1 Appendix II of RENC, and are presented in Table 8.

Table 8 Environmental Noise Limits Values Provided in RENC

Areas	Measured Parameter	L _{day} (dBA) (07:00-19:00)	L _{evening} (dBA) (19:00-23:00)	L _{night} (dBA) (23:00-07:00)
Industrial plants, transportation resources	LA _{eq,Smin}	65	60	55
Workplaces	LA _{eq} 63-250 Hz	Background + 5 dB(A)		Background +3 dB(A)
In case of multiple workplaces	LA _{eq,Smin}	Background + 7 dB(A)		Background +3 dB(A)
All resources	LC _{max}	100 dB(C)		

WBG General EHS Guidelines

Noise limit levels are described under the WBG General EHS Guidelines: Environmental Noise Management. The noise limit values are based on World Health Organization (WHO) Guidelines for Community Noise. Noise levels defined by WBG General EHS Guidelines are presented in Table 9. WBG General EHS Guidelines require that noise levels should not exceed the levels presented in Table 9 or result in a maximum increase in background noise levels of 3 dB at the nearest receptor location off-site.

Table 9 Noise Level Guidelines of WBG EHS Guidelines

Receptor	One Hour L_{Aeq} (dBA)	
	Daytime 07:00 – 22:00	Nighttime 22:00 – 07:00
Residential, institutional, educational	55	45
Industrial, commercial	70	70

Noise during the construction phase will be mainly generated due to the activities of construction machinery and equipment. To determine the impact significance, background noise levels should be known. Therefore, a noise level measurement study was conducted to determine background levels around the project area.

Three locations were selected as sensitive receptors, which are the same with the air quality measurement locations. The background noise measurements were carried out at those points on May, 2026 by ENCON Laboratory. Measurement results are presented in Table 10 and laboratory reports are presented in Annex-E of this report.

Table 10 Background Noise Level Measurement Results

Measurement Location, Coordinates and Date				N-1	N-1	N-2	N-2	N-3	N-3
				37.994245°/32.485780°	37.994245°/32.485780	37.993672°/32.517754°	37.993672°/32.517754°	37.905586°/32.490627°	37.905586°/32.490627°
Regulatory Limits				03.05.2026	04.05.2026	03.05.2026	04.05.2026	03.05.2026	04.05.2026
Turkish Regulation on Environmental Noise Control (RENC) (Table 1)	Equivalent Noise * L_{Eq} Day (07:00-19:00)	dB A	65.0	49.2	49.2	49.5	49.5	47.6	47.6
	Equivalent Noise * L_{Eq} Evening (19:00-23:00)	dB A	60.0	43.1	43.1	48.0	48.0	47.7	47.7
	Equivalent Noise * L_{Eq} Night	dB A	55.0	47.4	47.4	44.2	44.2	46.3	46.3

	(23:00-07:00)							
--	---------------	--	--	--	--	--	--	--

For the noise baseline study, the same three locations selected for the air quality measurements were also identified as noise monitoring points. According to the measurement results, all recorded noise levels were found to be below the limit values specified in the relevant national regulation.

In addition, photos taken at noise measurement locations are presented in Figure 11.



Figure 11 Photos Taken at Noise Measurement Locations

2.7.1.9. Waste Management

Pursuant to the Environmental Law No. 2872, it is prohibited to directly or indirectly collect, deliver, record, store, transport, dispose of all kinds of waste and residues to the receiving environment, in violation of the standards and methods determined in the relevant regulation.

The facility, completed within the scope of the "Konya Solid Waste Management Project" by Konya Metropolitan Municipality in coordination with the Ministry of Environment, Urbanization and Climate Change, is used for the regular storage and disposal of household solid waste collected by Selçuklu, Meram, Karatay and Çumra District Municipalities at the Konya Solid Waste Regular Storage Area located in Kaşınhanı. A total of 559,385 tons of solid waste was disposed of at the site in 2024, with an average of 1,528 tons per day.

The Konya Solid Waste Landfill, located in the Kaşınhanı area, stores waste from the Karatay, Selçuklu, Meram, and Çumra districts. A Methane Gas to Energy Production Facility with a production capacity of 12.48 megawatt/hour of electricity has been established on the site. The newly established Methane Gas to Energy Production Facility was put into operation as of October 2018. In 2024, a total of

69,100.067 MW of electricity was produced.³ Waste generated as part of the project will also be sent to the Kaşınhanı Solid Waste Regular Storage Area.

2.7.1.10. Water Resources

Konya Province is situated in the Central Anatolia Region. There are mostly seasonal and flood regime streams within the borders of the province and they are generally short rivers. Due to the wide areas and closed basins of Konya, the streams disappear in the swamps on the plains. Streams in the region are fed by snow and rainwater. Since the precipitation regime in Konya Province is irregular, the regime of these rivers is also irregular.

Most of the streams dry up during the summer months, but in spring and summer, short-term torrential rains can cause flooding. For this reason, efforts are being made to combat erosion in the region. These works are carried out by building dams on the most flooded streams. May and Apa dams are examples of this. In Konya Province, the catchment basins of the rivers flow in different directions.

Due to the drought in the region, the plains of Konya and Ereğli and the streams originating from the elevations here disappear in the plain before they reach the existing lakes.

The largest and most important stream in Konya is Çarsamba Water. It takes its source from the elevations in Bozkır District. It combines with the skirt of Beyşehir Lake and forms the Cumra Plain irrigation network. The Apa Dam, which was built on Çarsamba Stream, was established both to prevent floods and to irrigate a part of the Konya Plain.

Tuz Gölü was formed in the center of its closed basin. It is at the intersection of the borders of Ankara, Konya and Aksaray provinces, and some of it is located within the borders of Konya Province. Tuz Gölü is the second largest lake in Türkiye in terms of area. Its depth is around 12 m. In summer, its area is considerably smaller due to evaporation. Salt deposits occur in the dried sections. A part of Türkiye's salt need is supplied from this lake; however, it cannot be used for irrigation and aquaculture.

Beyşehir Lake is located in the west of Konya on the Konya-Isparta border. Beyşehir Lake is the 3rd largest lake in Türkiye and the largest freshwater lake. It was formed by tectonic-karstic events.

The dams and the ponds in Konya Province are given in Table 11.

³ Konya Provincial Environmental Status Report, 2024

Table 11 Dams and Ponds in Konya Province

Name of the Dam/Lake/Pond	Application Area	Irrigation Area (m ³)
Dams		
Altınapa Dam	Drinking Water	
Apa Dam	Irrigation	59,560
Bağbaşı Dam	Drinking Water, Irrigation, Energy	59,560
Çavuşçugöl	Irrigation	15,126
Damlapinar Dam	Irrigation	1,020
Derebucak Dam	Irrigation	3,007
Ivriz Dam	Irrigation, Flood Protection	36,108
May Dam	Irrigation, Flood Protection	921
Sille Dam	Irrigation, Flood Protection	340
Lake/Ponds		
Akören Pond	Irrigation	395
Akşahan Pond	Irrigation	770
Alanözü Pond	Irrigation	76
Aşağıçığıl Pond	Irrigation	288
Ayaslar Pond	Irrigation	273
Aydoğmuş Pond	Irrigation	450
Bahçesaray Pond	Irrigation	105
Balkı Pond	Irrigation	145
Başıyük Pond	Irrigation	53
Beyşehir Lake	Irrigation	81,711
Bostandere Pond	Irrigation	72
Cihanbeyli Pond	Irrigation	1,137
Çağlayan Pond	Irrigation	642
Çavuş Pond	Irrigation	130
Ciftliközü Pond	Irrigation	650
Çukurçimen Pond	Irrigation	215
Derbent Pond	Irrigation	373
Erenkaya Pond	Irrigation	130
Evliyatekke Pond	Irrigation	103
Güneydere Pond	Irrigation	13
Hadim Pond	Irrigation	30
Hadim İnönü Pond	Irrigation	195
Hadim Bolat Pond	Irrigation	113
İlyaslar Pond	Irrigation	355
İnlice Pond	Irrigation	118
Karaağa Pond	Irrigation	946
Karaali Pond	Irrigation	23
Kesecik Pond	Irrigation	49
Konakkale Pond	Irrigation	63
Ladik Pond	Irrigation	214
Malas Pond	Irrigation	115

Name of the Dam/Lake/Pond	Application Area	Irrigation Area (m ³)
May-Kayasu Pond	Irrigation	170
Mecidiye Pond	Irrigation	463
Mutlu Pond	Irrigation	81
Oğlakçı Pond	Irrigation	336
Ortakaraören Pond	Irrigation	61
Osmancık Pond	Irrigation	380
Pınarbaşı Pond	Irrigation	40
Suludere Pond	Irrigation	56
Tarasçı Pond	Irrigation	190
Yelmez Pond	Irrigation	39
Yeşiltekke Pond	Irrigation	117
Yukarıçiğil Pond	Irrigation	130

There are Sille Himmet Ölçmen Dam, Altınapa Dam and Malas Dam in Selçuklu District.

Hydrology map of the project area and its vicinity is presented in Figure 12. The nearest dam is Malas Dam and it is 5.42 km away from the Barış Street Tram Line. The other nearby dam is Sille Dam and it is 6.95 km away from the Barış Street Tram Line. Meram Creek is 6.82 km, Selbasan Creek is 6.80 km and Meramşah Creek is 0.96 km away from the Barış Street Tram Line.

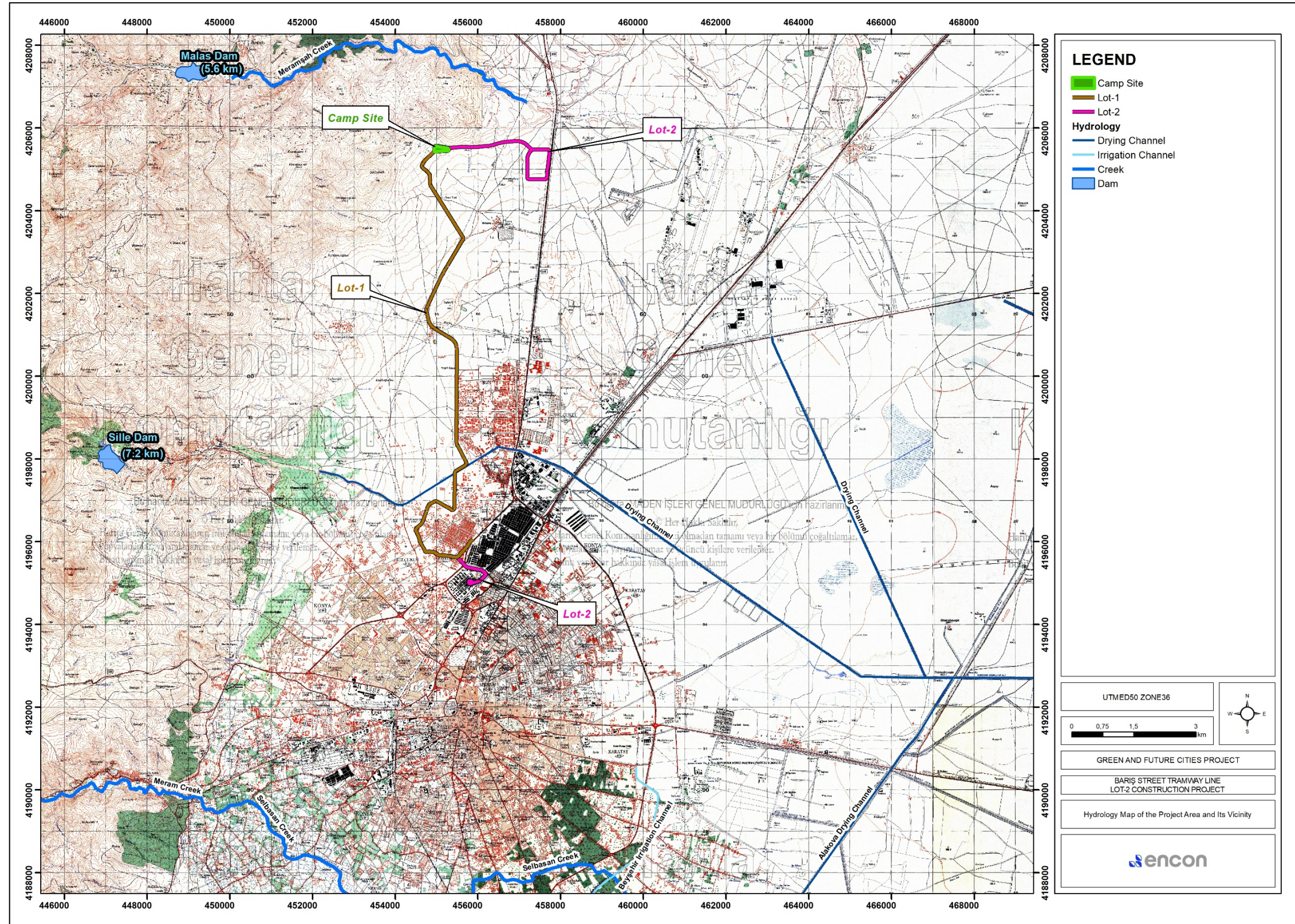


Figure 12 Hydrology Map of the Project Area and Its Vicinity

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

According to the report "Overview of 2019 within the scope of Disaster Management and Statistics of Nature-Related Events" prepared by Disaster and Emergency Management Presidency (AFAD) in 2020, the natural disasters that occurred in the province of Konya between 1950-2019 are landslide/rockfall (155 events), flood (91 events) and avalanche (1 event).

According to "Spatial and Statistical Distribution of Disasters in Türkiye Information Inventory" prepared by former Ministry of Public Works and Settlement in 2008, common natural disasters observed in Konya Province are; landslides, floods, and rock falls.

Considering the Distribution of Disaster Events maps prepared by former Ministry of Public Works and Settlement, records of rock falls and floods are observed in Selçuklu District. When Karatay District is examined, the maps showed that floods and other natural hazards (fire, heavy rainfall, sinkhole in karst landscapes) are observed in Karatay District. The disaster distribution maps of the aforementioned disasters are provided in Figure 13, Figure 14 and Figure 15.

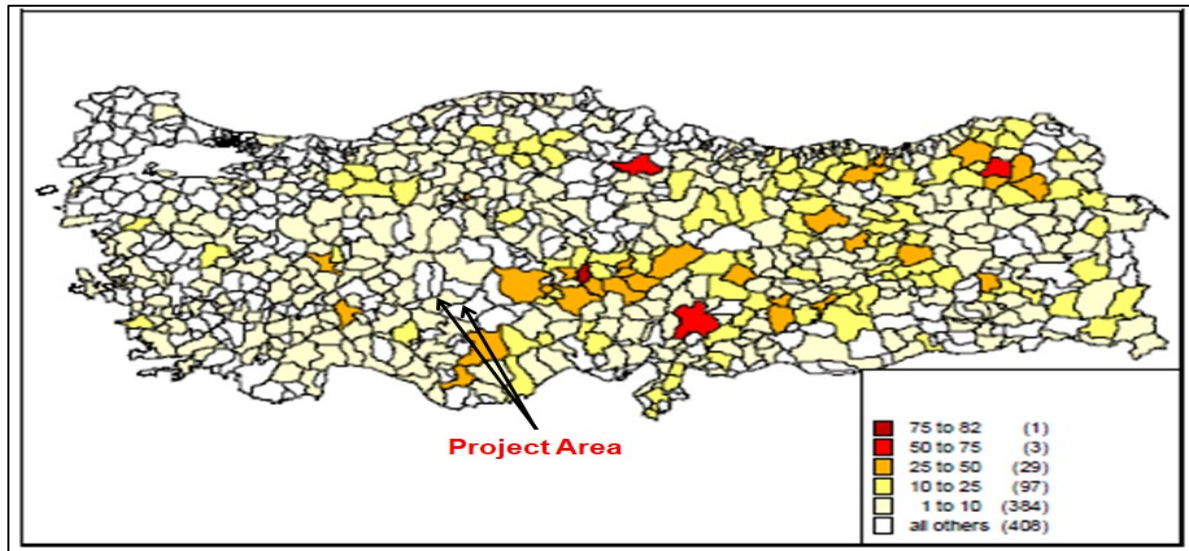


Figure 13 Rock Fall Disaster Map

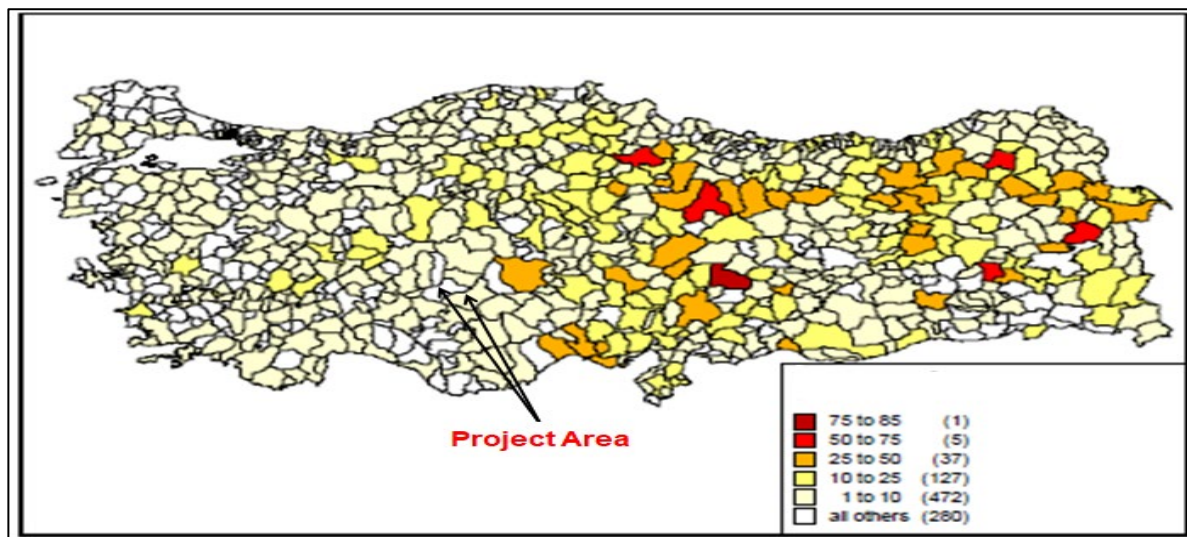


Figure 14 Flood Disaster Map

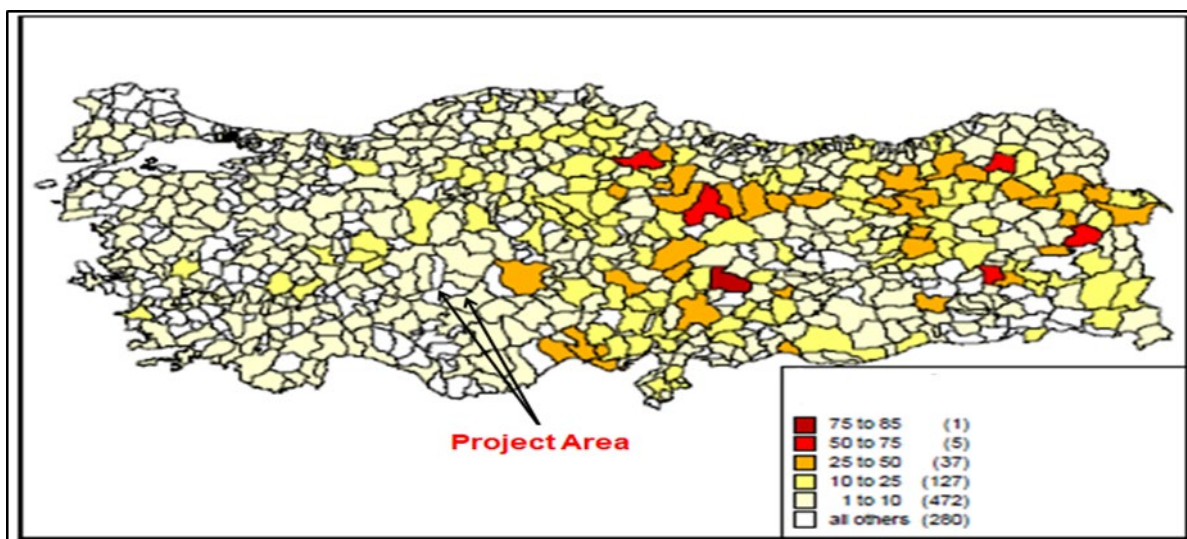


Figure 15 Other Disasters Map

2.7.2. Biodiversity

The biological environment assessment includes habitat characteristics of the Project area, protected areas, and Key Biodiversity Areas (KBAs). For this purpose, previous baseline studies, available literature, and relevant national and international biodiversity datasets were reviewed to evaluate the current environmental conditions and the revised Project alignment.

Field surveys previously conducted by the ENCON biologist 30 September 2021 and 14 October 2021 were used as the primary baseline reference for the Project area (see Figure 16) The revised alignment was additionally assessed in terms of potential interaction with sensitive habitats, protected areas, and other biodiversity-sensitive receptors. Based on the review conducted, no significant change in the biodiversity baseline conditions has been identified, and the revised alignment does not intersect with any additional protected or environmentally sensitive areas.



Figure 16 Biological field studies in and around the Project Area (in 2021)

All areas of the project were visited within the scope of biodiversity studies. After field observations, for the detection of flora species, Türkiye e-flora website (<https://www.turkiyeflorasi.org.tr>), for the detection of endemic plants, the “Red Book of Plants of Türkiye” that was prepared by Prof. Dr. Tuna Ekim et al. and the website (<https://www.bizimbitkiler.org.tr/list.html>), which contains up-to-date information, was used. Within the scope of desktop studies, previous thesis and article related to the region were researched.

Fauna studies have been carried out in and around the project area and in the habitats suitable for feeding, shelter, and breeding areas for fauna species. In determining the terrestrial fauna species, the existence of suitable habitats, traces, and signs of animals (nests, nest holes, excrement and footprints, feeding signs, etc.) were surveyed. In addition, fauna studies conducted in the region were researched, and interviews with the local people were used. No hunting-collecting-killing was performed while identifying the species in and around the area during the faunistic field studies. GPS was used to determine the elevations and geographical coordinates during the field studies.

Finally, literature data on biotopes, protected areas, endemic or threatened species, and wildlife habitats within and around the project area were collected and evaluated. The conservation and threat categories of the identified flora and fauna species were assessed and classified in strict accordance with national and international frameworks (e.g., IUCN, BERN, and CITES).

2.7.2.1. Legally Protected and Internationally Recognized Areas

The project area is located within grid C4 according to the Davis grid system. There are no legally protected or internationally recognized areas (e.g., National Parks, Nature Conservation Areas, Ramsar Sites, etc.) within the specified coordinates and their immediate surroundings (within a 5 km radius of impact).

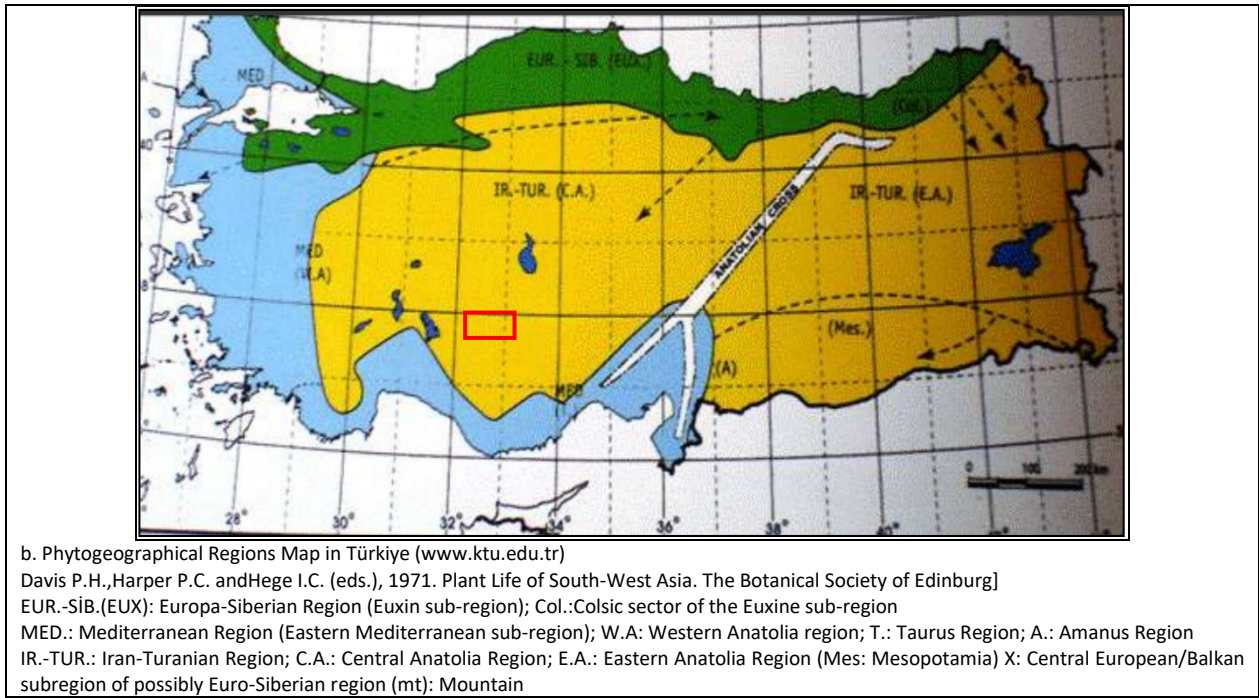


Figure 17 Bio-ecological Location of the Project Area

2.7.2.3. Species

2.7.2.3.1. Flora

The Project corridor is predominantly located within densely urbanized areas and does not contain natural or undisturbed vegetation communities. The existing vegetation pattern within and around the Project area mainly consists of urban landscape vegetation, roadside ornamental planting, anthropogenic steppe formations, and ruderal species commonly observed in disturbed urban environments.

The flora baseline assessment was based on previous field surveys conducted within the scope of the initial Project studies, supported by updated literature reviews and desktop evaluations performed during the ESMP revision process. According to the assessment results, no protected, rare, endemic, or critical habitat-dependent plant species were identified within the revised Project corridor.

The flora species identified within and around the Project area are presented in Table 12, while the tree species commonly used in the urban roadside landscape are provided in Table 13

No endemic or threatened flora species were identified/detected in and around the project area. In addition, there are no protected flora species as per the BERN and CITES conventions.

Table 12. Flora Species in and around the Project Area⁴

FAMILY	TAXON	ENDEMISM	IUCN	BERN	CITES		
				Annex 1	App1	App2	App3
ASTERACEAE	<i>Achillea arabica Kotschy</i>	-	-	-	-	-	-

⁴ IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. <https://www.iucnredlist.org>

Basturk, K. A. Y. A., and Caner ALADAG. "Precipitation, Temperature and Vegetation Relations in the Conditions of Konya." Journal of Selcuk University Institute of Social Sciences 22 (2009): 265-278.

Turkish Red Data Book of Turkish Plants (TRDB; Appim et al., 2000)

Turkish Plants Lists (www.bizimbitkiler.org.tr)

Türkiye-flora website (<https://www.turkiyeflorasi.org.tr>)

FAMILY	TAXON	ENDEMISM	IUCN	BERN	CITES		
				Annex 1	App1	App2	App3
	<i>Anthemis cotula</i> L.	-	-	-	-	-	-
	<i>Carduus nutans</i> L.	-	-	-	-	-	-
	<i>Centaurea iberica</i> Trev. ex Spreng.	-	-	-	-	-	-
	<i>Chondrilla juncea</i> L.	-	-	-	-	-	-
	<i>Cichorium intybus</i> L.	-	LC	-	-	-	-
	<i>Echinops ritro</i> L.	-	-	-	-	-	-
	<i>Senecio vernalis</i> Waldst. & Kit.	-	-	-	-	-	-
	<i>Lactuca serriola</i> L.	-	LC	-	-	-	-
	<i>Taraxacum bessarabicum</i> (Hornem.) Hand.-Mazz. subsp. <i>bessarabicum</i>	-	-	-	-	-	-
AMARANTHACEAE	<i>Amaranthus retroflexus</i> L.	-	-	-	-	-	-
	<i>Atriplex rosea</i> L.	-	-	-	-	-	-
	<i>Chenopodium album</i> subsp. <i>album</i> var. <i>album</i>	-	-	-	-	-	-
BRASSICACEAE	<i>Boreava orientalis</i> Jaub. & Spach	-	-	-	-	-	-
	<i>Capsella bursa-pastoris</i> (L.) Medik.	-	LC	-	-	-	-
	<i>Conringia clavata</i> Boiss.	-	-	-	-	-	-
	<i>Cyanus depressus</i> (M.Bieb.) Soják	-	-	-	-	-	-
	<i>Sisymbrium loeselii</i> L.	-	-	-	-	-	-
BORAGINACEAE	<i>Buglossoides arvensis</i> (L.) Johnston	-	-	-	-	-	-
	<i>Echium italicum</i> L.	-	-	-	-	-	-
	<i>Heliotropium dolosum</i> De Not.	-	-	-	-	-	-
CARYOPHYLLACEAE	<i>Dianthus zonatus</i> Fenzl	-	-	-	-	-	-
	<i>Gypsophila pilosa</i> Hudson	-	-	-	-	-	-
	<i>Vaccaria hispanica</i> (Mill.) Rauschert	-	-	-	-	-	-
EUPHORBIACEAE	<i>Euphorbia aleppica</i> L.	-	-	-	-	-	-
FABACEAE	<i>Astragalus hamosus</i> L.	-	-	-	-	-	-
	<i>Astragalus microcephalus</i> Willd.	-	-	-	-	-	-
	<i>Coronilla scorpioides</i> (L.) W.D.J.Koch	-	-	-	-	-	-
	<i>Medicago orbicularis</i> (L.) Bartal.	-	LC	-	-	-	-

FAMILY	TAXON	ENDEMISM	IUCN	BERN	CITES		
				Annex 1	App1	App2	App3
	<i>Medicago sativa</i> subsp. <i>sativa</i> L.	-	-	-	-	-	-
LAMIACEAE	<i>Ajuga chamaepitys</i> (L.) Schreber subsp. <i>chia</i> (Schreber) Arcangeli	-		-	-	-	-
	<i>Phlomis pungens</i> Willd. var. <i>hirta</i> Velen	-		-	-	-	-
	<i>Salvia frigida</i> Boiss.	-		-	-	-	-
	<i>Teucrium polium</i> L.	-		-	-	-	-
MALVACEAE	<i>Alcea biennis</i> Winterl	-		-	-	-	-
	<i>Malva neglecta</i> Wallr.	-	LC	-	-	-	-
	<i>Malva sylvestris</i> L.	-	LC	-	-	-	-
PAPAVERACEAE	<i>Fumaria vaillantii</i> Loisel.	-		-	-	-	-
	<i>Papaver rhoeas</i> L.	-	LC	-	-	-	-
PLUMBAGINACEAE	<i>Acantholimon acerosum</i> (WILLD.)	-		-	-	-	-
POACEAE	<i>Agrostis stolonifera</i> L.	-	LC	-	-	-	-
	<i>Bothriochloa ischaemum</i> (L.) Keng	-		-	-	-	-
	<i>Vulpia ciliata</i> Dumort.	-		-	-	-	-
	<i>Setaria viridis</i> (L.) P.Beauv.	-		-	-	-	-
POLYGONACEAE	<i>Polygonum patulum</i> Bieb.	-		-	-	-	-
	<i>Rumex acetosella</i> L.	-	LC	-	-	-	-
	<i>Rumex pulcher</i> L.	-	LC	-	-	-	-
ROSACEAE	<i>Potentilla recta</i> L.	-		-	-	-	-
	<i>Rosa canina</i> L.	-	LC	-	-	-	-
SOLANAECAE	<i>Datura stramonium</i> L.	-	-	-	-	-	-
	<i>Hyoscyamus reticulatus</i> L.	-	-	-	-	-	-
SCROPHULARIACEAE	<i>Verbascum glomeratum</i> BOISS.	-	-	-	-	-	-
	<i>Verbascum cheiranthifolium</i> BOISS. var. <i>cheiranthifolium</i> BOISS.	-	-	-	-	-	-

Table 13. Tree Species used in the Urban Roadside Landscape within the Project Area

FAMILY	TAXON	TURKISH NAME	ENGLISH NAME
ACERACEAE	<i>Acer negundo L.</i>	Disbudak Yapraklı Akcaagac	Boxelder maple
	<i>Acer platanoides L.</i>	Cinar Yapraklı Akcaagac	Norway maple
FABACEAE	<i>Robinia pseudoacacia L.</i>	Akasya	Acacia
OLEACEAE	<i>Fraxinus excelsior L.</i>	Disbudak	European ash
PINACEAE	<i>Pinus sp.</i>	Cam	Pine
PLATANACEAE	<i>Platanus orientalis L.</i>	Cinar	Plane
ULMACEAE	<i>Celtis australis L.</i>	Citlenbik	European Hackberry

2.7.2.3.2. Fauna

The Project area is located within an urbanized settlement zone characterized by dense residential areas, transportation infrastructure, and human activities. Therefore, the fauna composition within and around the Project corridor mainly consists of species adapted to urban and anthropogenic environments.

The fauna baseline assessment was conducted based on previous field surveys, desktop studies, available literature, and observations obtained from the Project area and its surroundings. In addition, information gathered through interviews with local residents and site observations was considered during the assessment process.

According to the assessment results, the Project corridor does not provide significant natural habitat characteristics for sensitive wildlife species, and no critical habitat features associated with fauna were identified within the revised alignment. The identified fauna species are presented below in phylogenetic order under the relevant headings.

Amphibians and Reptilians

The amphibian and reptile species observed in the project area during field studies and likely to be found by literature studies are shown in Table 14.

Among the detected species, only tortoise (*Testudo graeca*) is in the category "VU" (Vulnerable) according to IUCN. However, the tortoise is a widely spread reptile species found in every region except Türkiye's Eastern Black Sea region. Other reptile species are not in any threatened category; according to the IUCN categories, species are "LC: Least Concern" and widespread in Türkiye. There are no endemic or critical amphibian and reptile species.

Table 14.Reptile and Amphibian Species in and around the Project Area⁵

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
AMFIBIA							
Anura	Bufo	<i>Bufo bufo</i>	Sigilli kurbaga	European Toad	LC	Annex-III	-
REPTILIA							
Testudines	Testudinidae	<i>Testudo graeca</i>	Tosbaga	Spur-Thighed Tortoise	VU	Annex-II	APP -2
Squamata	Agamidae	<i>Trapelus lessonae</i>	Bozkir Keleri	-	LC	Annex-III	-
	Lacertidae	<i>Ophisops elegans</i>	Tarla Kertenkelesi	Wester Sanke-Eyed Lizard	LC	Annex-II	-
		<i>Parvilacerta parva</i>	Cuce Kertenkele	Dwarf Lizard	LC	Annex-II	-
	Colubridae	<i>Eirenis modestus</i>	Uysal Yılan	Ring-Headed Dwarf Snake	LC	Annex-III	-

Birds

The project area is in the residential area of Konya Province. Therefore, bird species adapted to city life have been identified. There is no wetland of national or international importance in and around the project area where migrating birds can stopover.

Bird species determined during site survey and literature research in the project area are presented in Table 15. Except for the Turtle Dove (*Streptopelia turtur*), other bird species detected are in the LC category according to IUCN. Although Turtle Dove is in the VU (Vulnerable) category, it is a species that breeds in all regions of Türkiye, as seen in the IUCN map in Figure 18 There are no endemic or critical bird species within the project area.



Source: <https://www.iucnredlist.org/>

Figure 18. Geographic range map of Turtle Dove (*Streptopelia turtur*)

⁵Konya Metropolitan Municipality Department of Parks and Gardens

The Amphibians and Reptiles Monitoring & Photography Society in Türkiye (AdaMerOs Herptil Türkiye (<http://www.turkherptil.org/>))

Olgun, Kurtulus Kumlutas, Yusuf and Baran İbrahim. Türkiye Amphibians and Reptiles. TUBITAK, 2012.

IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. <https://www.iucnredlist.org>

Table 15 Bird Species in and around the Project Area

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
AVES							
Ciconiiformes	Ciconiidae	<i>Ciconia ciconia</i>	Leylek	White Stork	LC	Annex-II	APP-II
Accipitriformes	Accipitridae	<i>Buteo buteo</i>	Sahin	Buzzard	LC	Annex-II	APP-II
		<i>Buteo rufinus</i>	Kizil Sahin	Long-Legged Buzzard	VU	Annex-II	APP-II
Galliformes	Phasianidae	<i>Perdix perdix</i>	Cilkeklik	Grey Partridge	LC	Annex-III	-
		<i>Coturnix coturnix</i>	Bildircin	Quail	LC	Annex-III	-
Columbiformes	Columbidae	<i>Columba livia</i>	Kaya Guvercini	Rock Dove	LC	Annex-III	-
		<i>Streptopelia decaocto</i>	Kumru	Dove	LC	Annex-III	—
		<i>Streptopelia turtur</i>	Uveyik	Turtle Dove	VU	Annex-III	-
Cuculiformes	Cuculidae	<i>Cuculus canorus</i>	Guguk	Cuckoo	LC	Annex-III	-
Bucerotiformes	Upupidae	<i>Upupa epops</i>	Ibibik	Eurasian Hoopoe	LC	Annex-II	-
Passeriformes	Alaudidae	<i>Galerida cristata</i>	Tepeli Toygar	Crested Lark	LC	Annex-III	-
		<i>Alauda arvensis</i>	Tarlakusu	Skylark	LC	Annex-III	-
	Hirundinidae	<i>Delichon urbicum</i>	Ev Kirlangici	Martin	LC	Annex-II	-
	Muscicapidae	<i>Luscinia megarhynchos</i>	Bulbul	Nightingale	LC	Annex-II	-
	Corvidae	<i>Garrulus glandarius</i>	Alakarga	Jay	LC	—	—
		<i>Pica pica</i>	Saksagan	Magpie	LC	-	-
		<i>Corvus monedula</i>	Kucuk Karga	Jackdaw	LC	-	-
		<i>Corvus cornix</i>	Les Kargasi	Hooded Crow	LC	-	-
		<i>Corvus corax</i>	Kuzgun	Raven	LC	Annex-III	—
	Sturnidae	<i>Sturnus vulgaris</i>	Sigircik	Starling	LC	-	-
	Passeridae	<i>Passer domesticus</i>	Serce	House Sparrow	LC	-	-
		<i>Passer montanus</i>	Agac Sercesi	Tree Sparrow	LC	Annex-III	-
	Fringillidae	<i>Carduelis carduelis</i>	Saka	Goldfinch	LC	Annex-II	-
	Emberizidae	<i>Emberiza hortulana</i>	Kirazkusu	Ortolan	LC	Annex-III	-

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
		<i>Emberiza calandra</i>	Tarla Kirazkusu	Corn Bunting	LC	Annex-III	-

Mammals

The mammalian species of the region, like other fauna groups, are widely distributed species with high adaptation to the urban environment. Mammal species expected to be seen in the project area are presented in Table 16. There are no endemic or critical mammal species.

Table 16. Mammal Species in and around the Project Area⁶

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
MAMMALIA							
Rodentia	Cricetidae	<i>Microtus anatolicus</i>	Anadolu Tarla Faresi	Anatolian Vole	DD	-	-
	Muridae	<i>Meriones tristrami</i>	Anadolu Col Sicani	Tristram's Jird	LC	-	-
		<i>Mus macedonicus</i>	Sari Ev Faresi	Macedonian Mouse	LC	-	-
	Sciuridae	<i>Spermophilus xanthoprymnus</i>	Gelengi	Anatolian Ground Squirrel	NT	-	-
Eulipotyphla	Erinaceidae	<i>Erinaceus concolor</i>	Kirpi	Southern White-Breasted Hedgehog	LC	Annex-II	-
Chiroptera	Rhinolophidae	<i>Rhinolophus hipposideros</i>	Kucuk Nalburunluyarasa	Lesser Horseshoe Bat	LC	Annex-II	-
Carnivora	Canidae	<i>Canis lupus</i>	Kurt	Grey Wolf	LC	Annex-II	-
		<i>Vulpes vulpes</i>	Tilki	Red Fox	LC	-	-

2.7.2.4. Invasive Alien Species

No invasive species are present in the project area, and precautionary measures have been implemented to prevent the establishment or introduction of invasive species in the future.

⁶Anonymous Mammalia of Türkiye: TRAMEM (<https://www.tramem.org/>)
IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. <https://www.iucnredlist.org>

2.7.2.5. Ecosystem Service

Based on the completed field surveys and land use assessments, it has been determined that the project area of influence is located within an existing transportation corridor (a green strip in the median/roadside). Accordingly, there are no provisioning services (such as agriculture, livestock grazing, or collection of non-timber forest products) utilized by local communities as a direct source of livelihood within the site.

On the other hand, this linear green space provides critical regulating services in terms of urban ecosystem dynamics. Within this scope, the area functions in filtering vehicle emissions and dust (air quality regulation), absorbing traffic noise, absorbing surface runoff (stormwater) originating from asphalt surfaces, and mitigating the urban heat island effect. Potential local losses that may occur in these regulating services during the construction and operation phases of the project will be compensated through landscape rehabilitation and afforestation strategies within the scope of the Environmental and Social Management Plan (ESMP).

2.7.3. Socio-Economic Environment

The social area of influence (SAoI) has been defined considering the areas that may be directly or indirectly affected by the construction and operation activities of the Subproject. The SAoI includes the Fatih, Bedir, and Beyhekim neighborhoods located within Selçuklu District of Konya Province, which are situated along or in close proximity to the Subproject alignment.

The SAoI is characterised by a predominantly urban environment comprising residential areas, commercial establishments, public institutions, transportation corridors, and social infrastructure. Land use along the alignment consists primarily of residential and commercial developments, supported by municipal infrastructure and public services. The southwestern section of the Subproject corridor passes through areas associated with the existing Old Industrial Zone in Bedir Neighborhood and the Karatay Industrial Zone in Fatih Neighborhood. Both industrial areas are currently undergoing relocation as part of an independent urban transformation programme implemented by KMM and the Housing Development Administration of the Republic of Türkiye (TOKİ).

The northeastern section of the alignment, located within Beyhekim Neighborhood, is characterised by residential areas and public facilities, including Beyhekim Hospital, educational institutions, and student dormitories. Across the SAoI, additional sensitive receptors include schools, parks, shopping centres, public transport corridors, major intersections, and other community facilities. These receptors were identified through desktop studies and field observations and were considered in the assessment of potential impacts related to noise, vibration, dust, traffic disruption, accessibility, and community health and safety.

Overall, the socio-economic environment within the SAoI reflects a well-developed urban setting with established residential communities, commercial activities, public services, and transportation infrastructure. Detailed information regarding stakeholder engagement activities, socio-economic baseline findings, vulnerable and disadvantaged groups, communication methods, grievance mechanisms, and mitigation measures is presented in the Stakeholder Engagement Plan (SEP) and the ESMP.

2.7.3.1. Demography and Population

Konya Province is the 6th largest city in Türkiye by population and in terms of surface area. Konya Province is divided into 31 districts. Population density (number of people per square kilometer) of the province is 59 people/km². It is lower than the average of Türkiye (112 people/km²). According to the 2025 census results obtained from the Address-Based Population Registration System (ABPRS), the population of Selçuklu district is 703,449, with 49% being male and 51% female.

Figure 19 shows the population of Konya Province between 2007 and 2025. The total population, which was 1,959,207 in 2007, increased to 2,343,409 in 2025. Table 17 shows the population of Selçuklu District and Table 19 shows the population of neighbourhoods in the Aol.

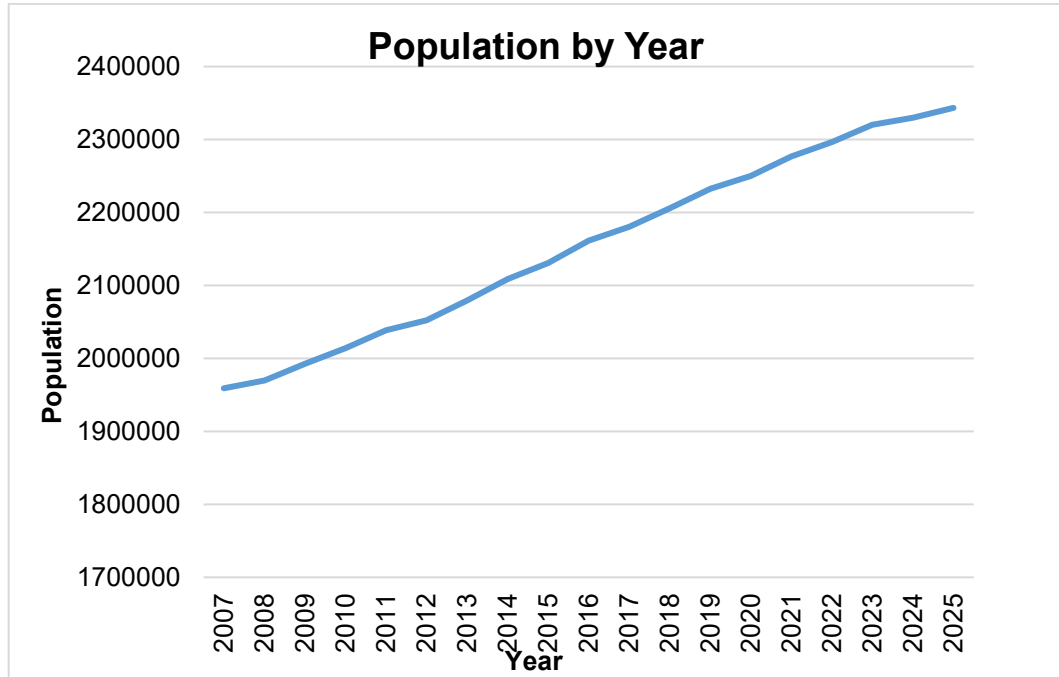


Figure 19 Population of Konya Province by Years (Source: TurkStat, 2025)

Table 17 Population of Selçuklu District by Years

Census Year	Population
2007	466,233
2008	472,436
2009	487,899
2010	508,102
2011	529,514
2012	552,110
2013	565,093
2014	584,644
2015	604,706
2016	622,846
2017	639,450
2018	648,850
2019	662,808
2020	663,280
2021	682,514
2022	690,667
2023	695,771
2024	700,358
2025	703,449

Source: TurkStat, 2025

Table 18 Population Distribution of Neighborhood

Neighborhood	Population
Fatih Neighborhood	8,946
Bedir Neighborhood	12,401
Beyhekim Neighborhood	29,519

Source: TurkStat, 2025

According to the population data in the Table 18, Beyhekim Neighborhood has the highest population within the Project AoI, followed by Bedir and Fatih neighborhoods. The Project AoI generally represents a densely populated and urbanized area characterized by residential developments, commercial activities, educational institutions, healthcare facilities, parks, and transportation infrastructure.

2.7.3.2. Land Ownership Status and Land Use by Affected People

The southwestern section of the Subproject corridor passes through an urban area characterized by a mix of residential, commercial, and industrial land uses. This section includes the Old Industrial Zone in Bedir Neighborhood and the Karatay Industrial Zone in Fatih Neighborhood. The spatial relationship between the Subproject alignment and the existing industrial areas is presented in Figure 20.



Figure 20 Lot-2 Alignment in Relation to the Old Industrial Zone (Southwestern Section)

The Subproject will be implemented predominantly within the existing road corridor and publicly owned transportation right-of-way. Therefore, no permanent land acquisition, physical displacement, or economic displacement is anticipated within the scope of the Subproject.

SAoI reflects the urban character of the Project area and comprises residential, commercial, institutional, recreational, and industrial land uses. The northeastern section of the Subproject corridor is predominantly characterised by residential, educational, healthcare, and public service land uses, while the southwestern section includes a mixture of residential, commercial, and industrial land uses.

The southwestern section of the Subproject corridor includes the Old Industrial Zone in Bedir Neighborhood and the Karatay Industrial Zone in Fatih Neighborhood. The surrounding land use pattern is shown in Figure 21.

According to information obtained through stakeholder consultations and publicly available information, both industrial areas are currently undergoing relocation under the Urban Transformation and Development Project, which is implemented by KMM and the TOKİ pursuant to Article 73 of Municipal Law No. 5393. The programme is implemented independently of the Subproject and is not associated with the Subproject.

The relocation programme covers all businesses operating within the Old Industrial Zone and Karatay Industrial Zone, regardless of sector or ownership status. The existing Old Industrial Zone currently accommodates approximately 1,600 businesses, around 70% of which are tenant-operated enterprises. According to information provided by KMM, construction of the New Motorized Small Industrial Site in Fevzi Çakmak Neighborhood has reached the final stage, and the handover of the new industrial units is planned during 2026, followed by the phased relocation of businesses from the existing industrial areas.

Although the HST Extension Line is located in close spatial proximity to the Eski Sanayi Industrial Area, the relocation of the Eski Sanayi and Karatay Sanayi Industrial Areas is not a consequence of the Project. According to the official correspondence of Konya Metropolitan Municipality (Directorate of Real Estate and Expropriation, Ref. No. E-55556560-115.05.99-474168, dated 03.08.2026), the relocation forms part of the Industrial Areas Urban Transformation Project, under which the Eski Sanayi and Karatay Sanayi Industrial Areas have been designated as an Urban Transformation and Development Area and a Reserve Area pursuant to the relevant legislation (see Annex K). Following the completion of the new industrial area in Fevziçakmak Neighborhood, the existing industrial activities will be relocated independently of the tramway investment. The same official correspondence further states that the Barış Street Tramway Project has no institutional or implementation linkage with the urban transformation project, and that any future coordination would only relate to the planning of transport infrastructure after the relocation process. Therefore, the relocation of the industrial areas is treated as an independent public-sector urban regeneration programme and is not attributable to, nor triggered by, the Project.

Since the relocation programme is being implemented independently of the Subproject and is planned to precede the relevant construction activities, no significant impacts related to land acquisition, loss of commercial premises, economic displacement, or livelihood restoration are anticipated within the scope of the Subproject. Nevertheless, temporary construction-related impacts associated with traffic circulation, accessibility, and access to surrounding commercial areas may occur and will be managed through the implementation of the TTMP and the mitigation measures defined in the ESMP.

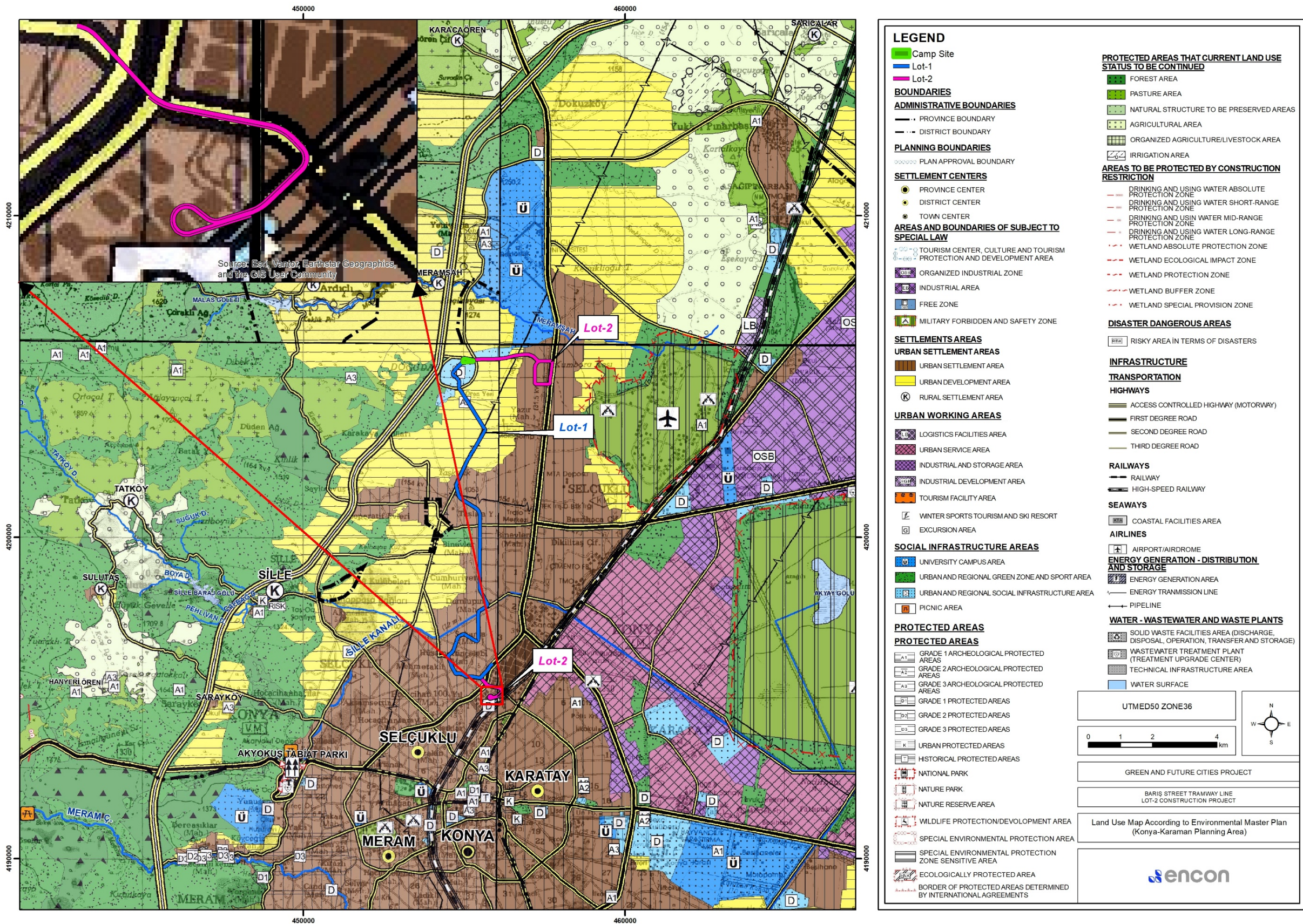


Figure 21 Land Use Map According to Environmental Master Plan (Konya-Karaman Planning Area)

2.7.3.3. Employment and Means of Livelihood

At the district level, Selçuklu exhibits a predominantly urban socio-economic structure, where employment is largely concentrated in public services, trade, construction, and service sectors. Unlike the provincial profile of Konya, agricultural activities in Selçuklu remain limited and secondary, both in terms of employment share and spatial presence. Available data indicate that economic activities in the district are primarily driven by civil servants, private sector employees, wage workers, and small business owners (esnaf), reflecting a service-oriented urban economy.

The socio-economic structure of the AoI further reinforces this pattern. Livelihoods within the AoI are predominantly based on public sector employment, private sector wage labour, and small-scale commercial and service activities, while agriculture does not constitute a significant source of income.

Commercial activities along the Subproject alignment consist mainly of cafés, restaurants, retail shops, shopping centres, photography studios, and other small businesses serving the local community. These businesses may be temporarily affected during the construction phase by dust, noise, temporary access restrictions, traffic congestion, and changes in pedestrian and vehicle circulation. The commercial establishments located in close proximity to the Subproject alignment is provided in Table 19.

Table 19 The Commercial Establishments around the Subproject Area

Business	Distance (metre)
Sushi Restaurant	21.21
Levent Börek	28.79
Loft Style	33.68
Esat Fotoğrafçılık	34.47
Aşk-ı Dem Caf� ve Bistro	39.86
Yılmaz Tantuni	52.96
St�dyo Vizyon	94.35

In Beyhekim Neighborhood, the predominant sources of livelihood include public sector employment, private sector employment, and small businesses. A number of commercial establishments are located in close proximity to the alignment and may experience temporary construction-related disturbances. However, access to commercial premises will be maintained as far as practicable through the implementation of appropriate traffic and access management measures.

In Bedir Neighborhood, livelihoods are mainly based on esnaf, wage labour, and public sector employment. The alignment passes in front of Kent Plaza Shopping Mall, one of the principal commercial destinations within the AoI. During the construction phase, temporary traffic congestion, modified traffic circulation, and short-term accessibility constraints may affect the shopping mall, its retail units, employees, customers, and nearby businesses. These impacts will be managed through the implementation of the Traffic Management Plan, maintenance of pedestrian and vehicle access, advance notification of construction activities, and appropriate directional signage.

The Subproject alignment passes through the existing Old Industrial Zone in Bedir Neighborhood, where commercial and industrial activities currently take place. In Fatih Neighborhood, the alignment passes in close proximity to the Karatay Industrial Zone. Livelihoods in Fatih Neighborhood are similarly based on small businesses, wage labour, and public sector employment. Both industrial areas are currently undergoing relocation to the New Motorized Small Industrial Site in Fevzi  akmak Neighborhood under an independent urban transformation programme implemented by KMM and the TOK . The relocation process has already commenced and has entered the phased allocation and handover stage. Therefore, it is anticipated that the majority of industrial businesses will have relocated before the commencement of the Subproject construction works. Accordingly, no significant livelihood impacts on industrial businesses associated with the existing industrial sites are anticipated within the scope of the Subproject.

2.7.3.4. Education and Health Services

Education and health facilities located within the SAoI were identified through desktop studies, field observations, and stakeholder consultations. The assessment focused on educational and healthcare facilities that may be temporarily affected by construction activities due to their proximity to the Lot-2 alignment. Sensitive educational and healthcare receptors are located at various points along the Subproject corridor and have been considered in the impact assessment. The locations of these sensitive receptors are presented in Figure 23, while detailed information, including their distance from the Lot-2 alignment, is provided in Table 20.

Due to their proximity to the alignment, these facilities may experience temporary construction-related impacts, including noise, dust, traffic congestion, temporary access restrictions, and changes in pedestrian circulation. Prior to the commencement of construction activities, the Contractor will establish communication and coordination mechanisms with the management of the affected educational and healthcare facilities to inform them of the construction schedule, planned traffic arrangements, and any activities that may temporarily affect access or the surrounding environment. Stakeholder engagement activities will be implemented in accordance with the SEP, while site-specific measures, including traffic management, maintenance of pedestrian and emergency access, advance notification of construction

activities, and scheduling of works, where practicable, outside peak school and hospital operating periods, will be implemented through the ESMP and the TTMP to minimise potential disruptions.

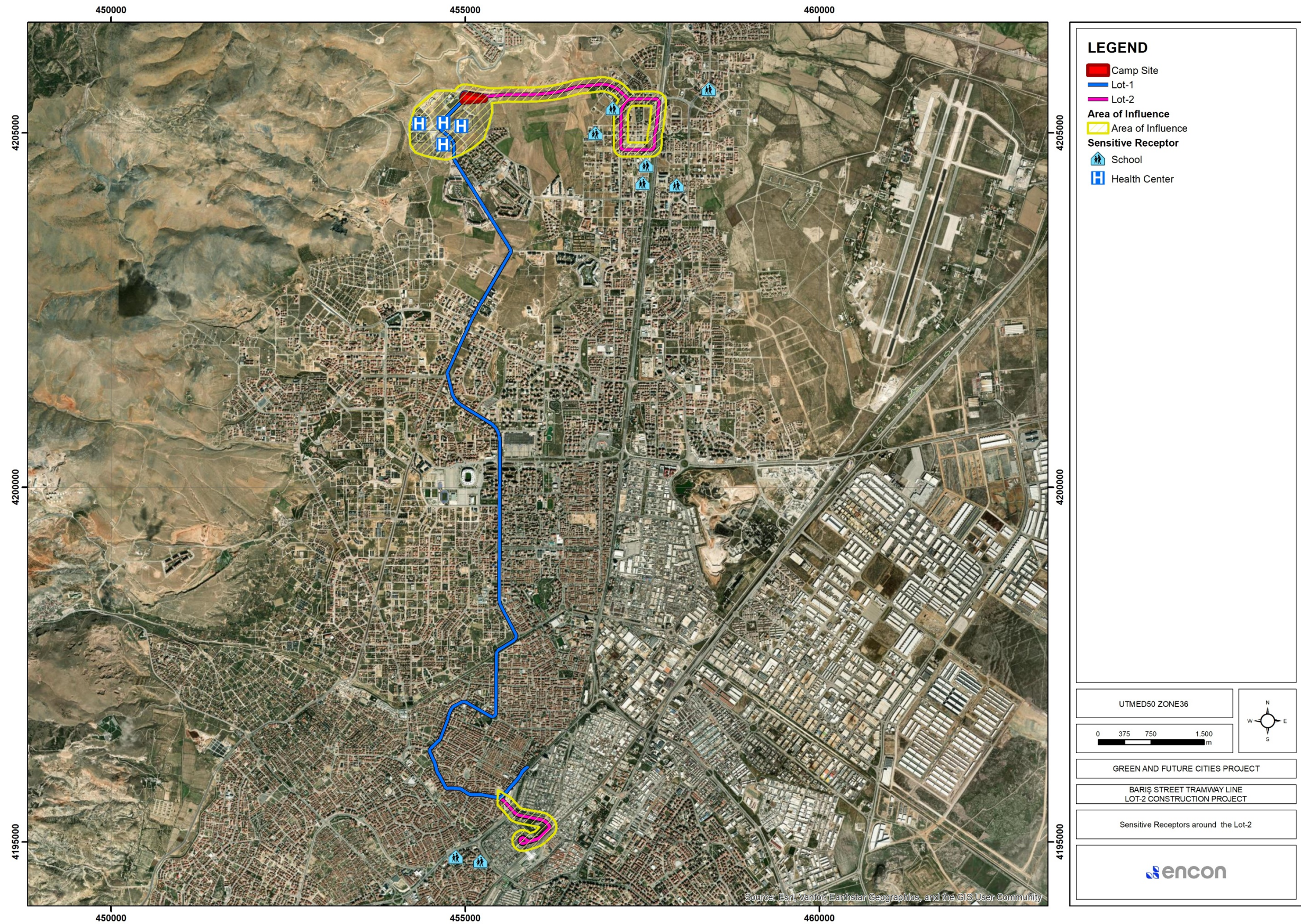


Figure 22 Sensitive Receptors around the Subproject Area

Table 20 Sensitive Receptor around the Subproject Area

Sıra No	Name	Distance (metre)
1	Beyhekim Hospital	51,84
2	Konya İsabet Schools	126,39
3	Şerife Akkanat Middle School	219,86
4	Beyhekim Hospital	263,91
5	Beyhekim Hospital	355,08
6	Beyhekim Hospital	355,24
7	Nesibe Aydın Schools	359,03
8	Mehmet Halil İbrahim Hekimoğlu Vocational and Technical Anatolian High School of Commerce	470,70
9	Vesile Sağ Ergun Kindergarten	611,76
10	İsmail Kaya Anatolian Imam Hatip High School	619,57
11	Ali Ulvi Kurucu KYK Dormitory	724,05
12	Fatih Vocational and Technical Anatolian High School of Commerce	927,47

2.7.3.5. Infrastructure Services

Selçuklu District benefits from a well-developed urban infrastructure network that supports its predominantly residential, commercial, educational, and service-oriented functions. The district is served by municipal water supply, wastewater collection, stormwater drainage, electricity distribution, natural gas, telecommunications, and solid waste management systems. Infrastructure services are generally provided by the relevant municipal authorities and utility providers and are considered sufficient to meet the needs of the existing population.

Within the Area of Influence (AoI), the neighborhoods along the proposed tramway alignment are located in an urbanized environment with established infrastructure services and transportation networks. The AoI is connected to the citywide road network and is supported by public transportation services, utility infrastructure, and social service facilities. Key infrastructure assets within the AoI include water and wastewater networks, electricity and telecommunications lines, natural gas distribution systems, healthcare facilities, educational institutions, commercial areas, and recreational spaces. As the Subproject will be implemented within an already developed urban setting, particular attention will be given to maintaining access to existing infrastructure and minimizing temporary disruptions to utility services and transportation during the construction phase.

2.7.3.6. Transportation and Traffic

Selçuklu District is served by a well-developed transportation network consisting of major arterial roads, collector roads, public bus routes, tramway lines, pedestrian infrastructure, and bicycle paths. As one of the most populated and rapidly developing districts of Konya, Selçuklu experiences relatively high traffic volumes, particularly along major commercial, residential, educational, and healthcare corridors. The district also serves as an important transportation hub connecting residential areas with the city center and surrounding districts.

Within the SAoI, transportation infrastructure is characterized by a dense urban road network supporting both private vehicle use and public transportation services. The Subproject alignment passes through predominantly residential and mixed-use neighborhoods that contain schools, healthcare facilities, commercial centers, public institutions, and recreational areas, generating regular pedestrian and vehicular movements throughout the day. Existing public transportation services are widely utilized by residents for access to employment, education, healthcare, and commercial facilities.

Information obtained through stakeholder consultations with the Muhtar of Fatih, Bedir, and Beyhekim neighborhoods indicates that traffic conditions are generally manageable under existing circumstances; however, localized congestion may occur at specific intersections and commercial centers during peak hours. In particular, concerns were raised regarding potential traffic congestion around the Yeni İstanbul Street intersection and the vicinity of Kent Plaza Shopping Mall in Bedir Neighborhood, where traffic density is already relatively high. Similarly, stakeholders noted that traffic volumes increase during morning peak hours, particularly between 07:00 and 10:00, due to commuting and school-related movements. Nevertheless, the existing road infrastructure in most sections of the AoI is considered adequate to accommodate current traffic demand.

Considering the urban nature of the Subproject area, maintaining safe and efficient access for residents, businesses, educational institutions, healthcare facilities, and emergency services will be an important consideration during the construction phase. Temporary traffic management measures, including changes to traffic circulation, lane closures, temporary road diversions, relocation of public transport stops, and modifications to pedestrian routes may be required during specific construction activities. These temporary arrangements will be planned and implemented in coordination with the relevant authorities to minimize disruption to road users and nearby communities.

All construction-related traffic impacts will be managed through the implementation of the TTMP. The TTMP will include measures for traffic diversions, temporary bus and tram stop arrangements (where required), pedestrian safety, emergency vehicle access, traffic signage, public information and advance notification of route changes, as well as coordination with relevant municipal authorities and public transport operators throughout the construction period.

2.7.3.7. Cultural Heritage (Tangible⁷ and Intangible⁸)

The SAoI is located within Selçuklu District of Konya Province, a region with a long history of settlement and significant cultural heritage assets associated with the Seljuk, Ottoman, and Republican periods. A desk-based review of available cultural heritage inventories, planning documents, and information obtained from relevant authorities was undertaken to identify known cultural heritage resources within and around the Project corridor.

The SAoI is predominantly situated within an urbanized environment characterized by residential, commercial, transportation, and public service land uses. No registered archaeological sites, conservation areas, or designated cultural heritage assets have been identified within the immediate Project footprint based on the available information at this stage. However, considering the historical significance of Konya and the potential for previously unidentified archaeological remains to be encountered during excavation works, the possibility of chance finds cannot be entirely excluded.

Therefore, any archaeological artifacts, structures, or cultural materials that may be discovered during construction activities will be managed in accordance with the applicable national legislation and the Project's Chance Find Procedure. Relevant authorities will be informed immediately, and construction activities in the affected area will be suspended until appropriate assessments are completed.

Intangible cultural heritage within the SAoI reflects the broader cultural characteristics of Konya Province, which is widely recognized for its historical, religious, and cultural significance. Cultural practices, social traditions, local customs, religious ceremonies, traditional handicrafts, and culinary heritage constitute important elements of the area's intangible cultural heritage.

⁷ According to WBG ESF (2018), tangible cultural heritage includes movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Tangible cultural heritage may be located in urban or rural settings, and may be above or below land or under the water.

⁸ According to WBG ESF (2018), intangible cultural heritage includes practices, representations, expressions, knowledge, skills—as well as the instruments, objects, artifacts and cultural spaces associated therewith—that communities and groups recognize as part of their cultural heritage, as transmitted from generation to generation and constantly recreated by them in response to their environment, their interaction with nature and their history.

The SAoI includes established residential neighborhoods where community identity is shaped by long-standing social networks, neighborhood relations, local traditions, and religious practices. Mosques, community gathering spaces, local markets, and neighborhood-based social interactions continue to play an important role in daily life.

Based on stakeholder consultations and available baseline information, no Project activities are expected to directly affect identified elements of intangible cultural heritage. Nevertheless, stakeholder engagement activities will continue throughout the Project lifecycle to identify and address any concerns related to community values, cultural practices, or local traditions that may arise during construction and operation phases.

2.7.3.8. Disadvantaged or Vulnerable Individuals or Groups

Vulnerable and disadvantaged groups within the SAoI were identified through baseline studies, stakeholder engagement activities, and key informant interviews conducted with neighborhood headmen during the social baseline assessment. The consultations provided valuable information regarding the demographic structure of the affected neighborhoods, the presence of vulnerable populations, and potential sensitivities that may require additional consideration during Project implementation.

The baseline findings indicate the presence of several vulnerable and disadvantaged groups within the AoI, including elderly individuals (particularly those over 70 years of age), persons with disabilities, female-headed households, households receiving social or charitable assistance, low-income households, illiterate individuals, migrant/refugee households, and persons requiring regular care and support. Migrant populations originating from Syria, Afghanistan, Azerbaijan, and Morocco were reported in some neighborhoods.

While the Sub-Project is not expected to result in disproportionate long-term adverse impacts on these groups, certain vulnerable populations may experience higher sensitivity to temporary construction-related impacts. In particular, elderly persons, children, persons with disabilities, pedestrians, and individuals with limited mobility may be more affected by temporary access restrictions, increased traffic movements, construction-related noise, dust generation, and changes in pedestrian circulation patterns. Similarly, vehicle owners and local road users may experience temporary inconveniences associated with traffic diversions and construction activities.

Stakeholder consultations also indicated that residents commonly utilize neighborhood mukhtar offices, telephone communication, WhatsApp groups, and social media platforms such as Facebook and Instagram as primary communication channels. These mechanisms will therefore be utilized, where appropriate, to support the dissemination of Project-related information and facilitate engagement with vulnerable stakeholders throughout the Project lifecycle.

Information obtained from key informant interviews with neighborhood headmen identified the following vulnerable groups within the newly affected neighborhoods:

- **Fatih Neighborhood:** Approximately 150 persons in need of care, 70 female-headed households, 150 households relying on charitable assistance, 10 households with physically and/or mentally disabled family members, approximately 100 refugee households, and around 50 illiterate individuals.
- **Bedir Neighborhood:** Approximately 100 elderly individuals aged 70 and above, at least 50 households with physically and/or mentally disabled family members, around 400 female-headed households, 150 people receiving social assistance, 30 households relying on charitable assistance, approximately 100 illiterate individuals, and around 100 refugee households from Syria, Afghanistan, Azerbaijan, and Morocco have been residing in the neighborhood since 2012.
- **Beyhekim Neighborhood:** Approximately 125 female-headed households, 50–60 people receiving social assistance, 50 people who need of care, 20 households with physically and/or mentally disabled family members, and around 10 refugee households.

Detailed stakeholder engagement measures, communication methods, and mitigation measures designed to ensure the effective participation and accessibility of vulnerable and disadvantaged groups are presented in the SEP. These measures include the use of multiple communication channels, accessible information disclosure methods, and targeted engagement activities where necessary to ensure that vulnerable stakeholders can effectively access Project information and grievance mechanisms.

2.8. Other Institutions' Infrastructure to be Displaced

Existing infrastructure systems belonging to public utility providers and other institutions that may overlap with the Subproject corridor have been identified through the preliminary design studies, utility surveys, and consultations conducted during the planning stage. Potential utility conflicts and required relocation works will be further verified during the detailed design and construction phases.

The infrastructure potentially affected by the Subproject may include water supply networks, wastewater and stormwater pipelines, electricity distribution lines, natural gas networks, telecommunication cables, and traffic management systems. Any required relocation, protection, or diversion works will be carried out by the Contractor in coordination with the relevant institutions and in accordance with applicable technical specifications and permit requirements.

Measures to minimize disruptions to local communities, businesses, and service users during utility relocation works are presented in Chapter 4. Stakeholder engagement and information disclosure activities related to such works are described in the Stakeholder Engagement Plan (SEP).

3. SUBPROJECT ACTIVITIES

3.1. Construction Phase

3.1.1. Construction Activities

Construction activities will be completed in 36 months. Detailed implementation schedule envisaged for the construction phase activities (including provisional acceptance) is presented in Chapter 6.

Construction phase activities are briefly described below:

- Pre-construction activities:

Pre-construction activities will include site mobilization, establishment of temporary construction facilities, utility surveys, relocation and protection of existing infrastructure where required, traffic management arrangements, site clearance, topsoil stripping (where applicable), excavation, grading, and preparation of the construction corridor. Required permits and approvals will be obtained prior to commencement of works.

- Construction activities:

Construction activities will include earthworks, excavation and backfilling, construction of tramway infrastructure, rail installation, station construction, construction of drainage systems, installation of overhead catenary systems, electrical and signalling works, utility relocation works, road reinstatement, landscaping, and construction of associated facilities, including the depot area. Construction will be carried out using conventional civil engineering methods and equipment.

- Construction machinery and equipment:

The main construction machinery and equipment are expected to include excavators, concrete mixer, dump trucks, concrete mixers, concrete pump and other auxiliary construction vehicles and machinery as required.

Table 21 List of Machinery and Equipment

Name of the Machinery/Equipment	Number
Excavator-Loader	5
Truck	9
Concrete Mixer	5
Concrete Pump	3
Sprinkler	2

- Water use and wastewater management:

Water will be used primarily for dust suppression, concrete preparation, equipment cleaning, and domestic use within temporary construction facilities. Water will be supplied through the municipal water network and/or licensed water suppliers where necessary. Domestic wastewater generated at construction facilities will be managed through connection to the municipal sewer system or by means of sealed septic tanks and licensed disposal services, as applicable.

- Waste and hazardous materials management:

Construction activities will generate excavated materials, packaging waste, scrap metal, concrete waste, domestic waste, and limited quantities of hazardous waste such as waste oils, lubricants, oily rags, paint residues, and contaminated packaging. Hazardous materials including fuels, oils, and chemicals required for construction activities will be stored in designated areas with appropriate secondary containment measures. Waste management will be carried out in accordance with applicable national legislation and project procedures.

- Supply and use of other resources and materials:

Construction materials will include aggregates, gravel, sand, concrete, asphalt, steel, rail components, electrical equipment, and other materials required for tramway infrastructure. Excavated materials suitable for reuse will be utilized where technically feasible, while surplus materials will be transported to authorized disposal or storage locations.

- Supply of materials and equipment:

Construction materials and equipment will be procured from licensed and authorized suppliers. Preference will be given to locally available materials where feasible and technically suitable. Aggregates, concrete, and other bulk construction materials will be obtained from approved commercial suppliers and licensed facilities.

- Decommissioning of temporary construction facilities

Upon completion of construction activities, temporary construction facilities, storage areas, and site offices will be dismantled and removed. The affected areas will be cleaned, restored, and reinstated to conditions agreed with the relevant authorities and landowners.

3.1.2. Construction Facilities

Construction facilities to be used during construction activities are listed in Table 22. Information on AFs is separately provided in Section 2.4.

Table 22. Construction Facilities

Type	On-site or Off-site	Temporary or Permanent	List of Facilities
Construction Camp Site	On-site	Temporary	• Site offices • Parking Area • Material Storage Area • Equipment and Machinery Yard • Worker Welfare Area • Waste storage Area

3.2. Operation Phase

3.2.1. Operation Activities

Following completion of construction and commissioning activities, the Subproject will enter the operational phase, during which tram services will be provided along the Lot-2 alignment. Operational activities will primarily consist of passenger transportation, operation of stations and associated facilities, management of tram movements, and routine operation of the depot and maintenance areas.

Routine maintenance activities will include inspection, cleaning, and maintenance of tracks, switches, stations, overhead catenary systems, electrical equipment, signalling and communication systems, drainage structures, lighting systems, and other ancillary infrastructure. Periodic maintenance and repair works may also be undertaken to ensure the safe and reliable operation of the tram system.

Non-routine maintenance activities may include replacement of rail components, repair of electrical and signalling equipment, rehabilitation of station facilities, emergency repairs following accidents or equipment failures, and maintenance of the depot area and associated operational facilities.

Vegetation management within the operational corridor will be undertaken as necessary to ensure visibility, operational safety, and protection of infrastructure. Drainage systems will be periodically inspected and maintained to prevent blockages and ensure adequate stormwater management. Traffic management and signalling systems at road crossings and intersections will be regularly monitored and maintained to support the safe integration of tram operations with other transport modes.

The operation phase will also generate limited quantities of municipal and maintenance-related wastes, including waste electrical and electronic equipment, used lubricants, cleaning materials, and other maintenance wastes, which will be managed in accordance with applicable national legislation and operator procedures.

The depot and heavy maintenance facility will support the long-term operation of the tram system by providing storage, inspection, maintenance, repair, and servicing functions for rolling stock. Storage areas within the facility will be used for spare parts, consumable materials, lubricants, greases, batteries, electrical and electronic components, maintenance equipment, cleaning materials, and other operational supplies under appropriate storage conditions.

Maintenance activities will include scheduled preventive maintenance, fault diagnosis and corrective repairs, inspection and servicing of bogies, braking systems, doors, pantographs, heating, ventilation

and air conditioning (HVAC) units, electrical and electronic systems, lubrication, replacement of worn or damaged components, vehicle cleaning, functional testing, and commissioning following maintenance activities.

Operation of the depot and maintenance facility will generate both hazardous and non-hazardous wastes. Potential waste streams include waste lubricating oils and greases, used oil filters, oil-contaminated absorbents, rags and packaging, scrap metal, plastic and rubber components, waste cables, waste electrical and electronic equipment (WEEE), spent batteries and accumulators, waste lighting equipment, chemical containers, packaging waste, and municipal solid waste generated by facility personnel.

All wastes will be segregated at source according to their characteristics. Hazardous and non-hazardous wastes will be collected separately, labelled appropriately, and temporarily stored in designated waste storage areas designed to prevent leakage, spills, and environmental contamination. Recyclable materials will be separated to maximize recovery in accordance with the Zero Waste principles. Waste oils, batteries, WEEE, contaminated materials, and other hazardous wastes will be transferred to licensed recovery or disposal facilities in accordance with the relevant national legislation. Records of waste generation and off-site transfer will be maintained, and appropriate spill prevention, fire protection, and emergency response measures will be implemented throughout the facility.

3.2.2. Operation Facilities

The operational facilities and components of the Subproject will include the following.

- Tramway alignment (track infrastructure)
- Tram stations and passenger platforms
- Overhead catenary system and power supply infrastructure
- Signalling, communication and traffic management systems
- Depot, maintenance and storage facilities
- Drainage infrastructure
- Lighting systems
- Operational control and monitoring systems
- Associated access roads, pedestrian crossings and ancillary infrastructure

Information on AFs is separately provided in Section 2.4.

3.3. Labor Requirements

Number of workers (at peak) that will work on site during the construction and operation phases of the Subproject are provided in Table 23.

Table 23. Labor Requirements of the Subproject

Phase	Number of Workers (including contractors and subcontractors)	Planned Accommodation Arrangement
Construction Workers (at peak)	500	The workers will stay at the camp site.
Operation Workers (at peak)	26	They will stay within the city.

3.4. Land Use and Property

The land use pattern within the Subproject Area of Influence is predominantly characterized by urban settlement areas, together with agricultural lands, pasture areas, and industrial zones. As presented in the land use map (see Figure 23), the planned tramway alignment generally follows existing urbanized corridors within Konya, where settlement areas constitute the dominant land use type along a substantial portion of the route. The depot area is planned on Block 45610, Parcel No. 1 in Ardıçlı Neighborhood, Selçuklu District. According to the official preliminary allocation decision, the Treasury-owned portion of the parcel has been granted to KMM for a two-year period for use as a transport transfer station, park, municipal service area and road. The preliminary allocation is subject to the preparation of the investment project and completion of the relevant statutory procedures prior to conversion to a permanent allocation.

Lot-1 mainly traverses densely developed settlement areas and existing transportation corridors. These areas are characterized by residential, commercial, and urban infrastructure uses, indicating that the Project is largely integrated into the current urban fabric. Due to the urban nature of the alignment, significant conversion of undeveloped land is not anticipated.

Lot-2 also follows predominantly existing urban corridors and transportation infrastructure within established settlement areas. Similar to Lot-1, the alignment has been designed to maximize the use of existing road corridors, thereby minimizing the need for conversion of undeveloped land and avoiding direct encroachment on agricultural or natural land cover.

The wider Subproject surroundings also include various agricultural and semi-natural land use types. Non-irrigated agricultural lands are located approximately 1.0–1.5 km west of the alignment, while irrigated agricultural lands occur at distances of approximately 2–3 km from the Subproject area. Pasture areas, grasslands and shrublands are primarily distributed approximately 1–4 km west and northwest of the alignment. Limited forest patches are located approximately 3–5 km from the Subproject area.

Based on the available baseline mapping, the Project alignment does not directly intersect with large forested areas or environmentally sensitive natural habitats. The route selection appears to prioritize existing urban and transportation corridors in order to minimize potential impacts on agricultural lands and natural land cover.

The southwestern section of the Subproject corridor traverses the Old Industrial Zone in Bedir Neighborhood and the Karatay Industrial Zone in Fatih Neighborhood. According to official information provided by the KMM Directorate of Real Estate and Expropriation, these areas have been designated as an “Urban Transformation and Development Project Area” under Municipal Law No. 5393 and “Reserve Area” under Law No.6306. Under the Industrial Zones Urban Transformation Project, a new industrial site is currently being developed in Fevzi Çakmak Neighborhood. Upon completion of the new industrial site, businesses located within the existing Old Industrial Zone and Karatay Industrial Zone will be relocated, after which planning and redevelopment activities for the existing industrial areas will commence. The official correspondence further confirms that the Barış Street Tramway Subproject is not associated with the Urban Transformation Project. In the event of any potential overlap, the urban transformation programme will be planned taking into account the existing and planned transport infrastructure. Consequently, land use within the southwestern section of the Subproject corridor is expected to gradually transition from traditional industrial uses to a redeveloped urban land use pattern under the separate urban transformation programme. This programme is independent of, and not associated with, the Subproject.

From a property and land acquisition perspective, the Subproject is expected to be implemented predominantly within existing road corridors, transportation easements, and publicly accessible urban areas. Accordingly, the Subproject is not expected to require the relocation or displacement of any

businesses, tenants, occupants or other land users. Therefore, physical displacement or land acquisition is not anticipated.

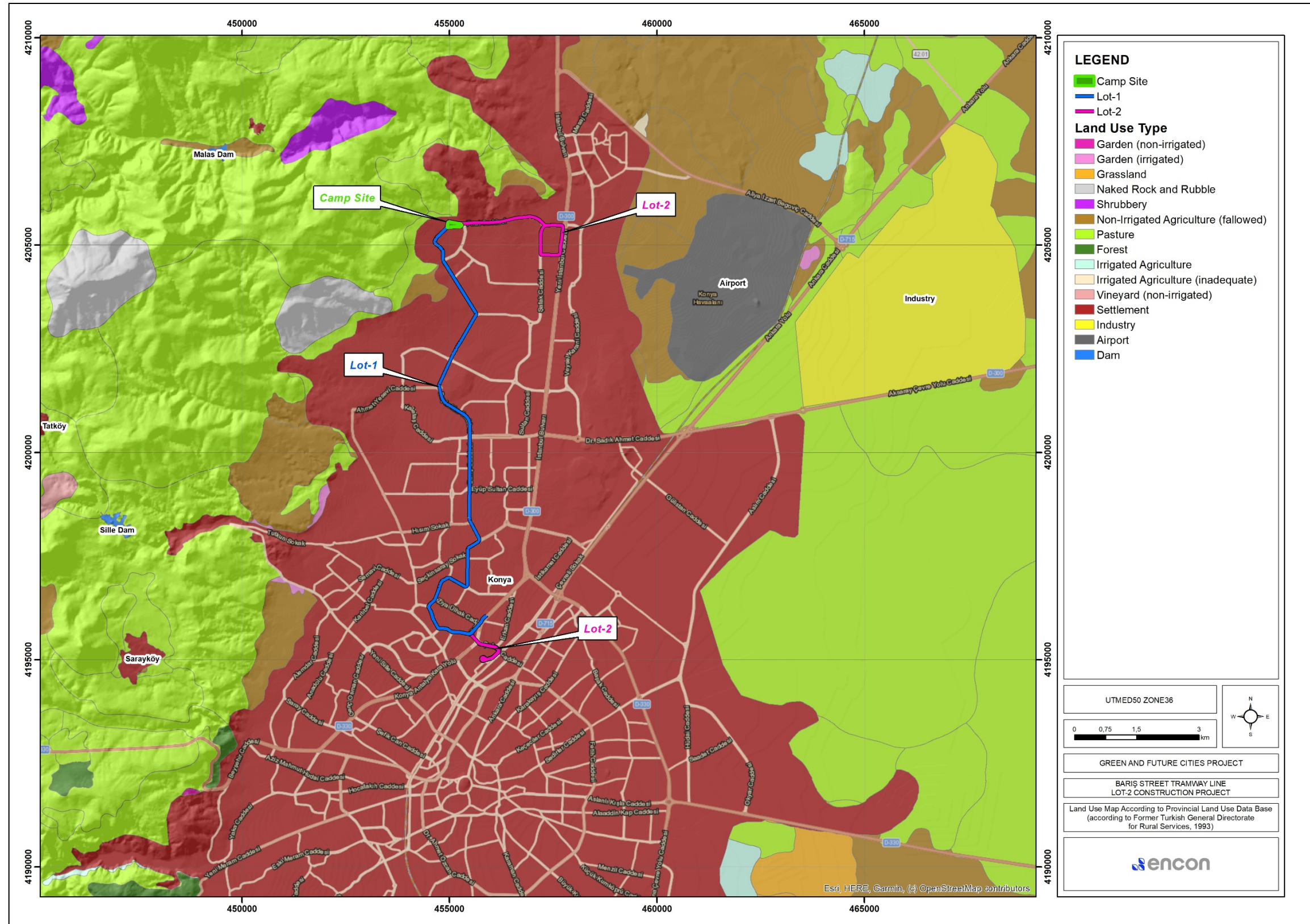


Figure 23 Land Use Map According to Provincial Land Use Database

3.5. Permitting Status

Status of permits, licenses, and approvals required to be in place before start construction is presented in Table 24.

Table 24. Status of Permits for the Construction Phase

Permit, License, Approval	Status (In place, Not in place)	Remarks/ Notes
EIA Decision	In Place	The Environmental Impact Assessment (EIA) is Not Required decision was issued by the Provincial Directorate of Environment, Urbanization and Climate Change on 27.03.2023 The relevant decision is provided in Annex B.
Land Use Permit	In Place	The preliminary allocation of the 37,553.46 m² portion of the 45,554.90 m² plot of land, located in Ardıçlı Neighborhood, Selçuklu District, parcel number 1 of block 45610, which belongs to the Treasury, to Konya Metropolitan Municipality for a period of 2 (two) years was deemed appropriate by the General Directorate of National Real Estate with its letter dated 14.03.2025 and numbered 11996548. (Letter dated 14.03.2025 and numbered E-66844966-401-11996548) The relevant decision is provided in Annex C.
Zoning Plan	Not in place	As part of the planning process, the required zoning plan amendment for the HST Extension Line has been initiated by Konya Metropolitan Municipality. At the time of preparation of this ESMP, the amendment process has not yet been finalised. The zoning plan amendment is expected to be submitted to the Konya Metropolitan Municipal Council for approval on 20 August 2026. Following the Council's approval, the amended zoning plan will be subject to the statutory public disclosure period, during which interested parties may submit objections in accordance with the applicable legislation. Any objections and subsequent administrative or judicial procedures, if initiated, will be monitored by the Municipality. During this period, stakeholder engagement activities, including the Public Consultation Meeting, will also be undertaken, during which the Project and the Project Grievance Mechanism will be presented to stakeholders. This ESMP and the relevant annexes will be updated, as appropriate, to reflect the progress and outcome of the statutory planning process. The official correspondence/application text is presented in Annex K.

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

4.1. E&S Risk and Impacts of the Subproject

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 5. 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 4.5.

One of the tasks under the scope of the Subproject is the preparation of an Environmental and Social Management Plan (ESMP) in accordance with the ILBANK ESMS and WB ESF. Also, although ESMP is not a requirement of national legislation, compliance with national legislation requirements is also considered while making the assessment in relevant parts of the plan. Accordingly, this ESMP has been prepared to assess and identify the adverse potential environmental and social impacts and risks arising from development of the Subproject and recommend mitigation measures for significant adverse environmental and social impacts/risks and describes the monitoring and institutional requirements necessary to implement this Plan.

The purpose of impact assessment and mitigation is to identify and evaluate the significance of potential impacts (positive or negative) and risks on identified receptors and resources according to defined assessment criteria; to develop and describe the measures that will be taken to avoid or minimize any potential adverse effects and enhance potential benefits; and to report the significance of the residual impacts that remain the following mitigation.

While making the impact assessment, collected data from desk study and outcomes of site visits were taken into consideration. The assessment of environmental and social impacts/risks has been done based on the criteria provided below using mainly expert judgement, relevant standards and guidelines:

- **Nature of the impact:** Positive (+), Negative (-)
- **Type of Impact:** Direct, Indirect, Cumulative
- **Extent/area of Impact:** On-site/project footprint, Local, Regional, National
- **Duration of Impact:** Short term, Mid-term, Long term, Permanent
- **Likelihood of Impact Occurrence:** Very likely/certain, Likely, Unlikely

The magnitude and severity of the adverse impacts have been assessed based on the criteria given above and significance of the impacts has been determined based on this assessment and sensitivity of the receiver/source exposed to the impact, as much as possible. The matrix given in Table 25 combines the sensitivity information with the magnitude of impacts. The significance of the impact is first designated without mitigation measures and then evaluated with proposed mitigation measures. This evaluation serves to determine the significance of the residual impacts (impact left after employing mitigation measures).

Table 25 Impact Significance Matrix*

Sensitivity of Receptor	Magnitude of Impact			
	High	Medium	Low	Negligible/None

High	High	High	Medium	Negligible/None
Medium	High	Medium	Low	Negligible/None
Low	Medium	Low	Low	Negligible/None

Source: Adapted from Scottish Natural Heritage – A handbook on environmental impact assessment, 2013.

Determining the significance of impacts is a crucial step in assessing the environmental and social aspects of a Subproject. The process typically involves a systematic evaluation of various factors to gauge the magnitude and importance of potential impacts. Populating the impact significance matrix is done by utilizing the collected data (baseline studies), assessments (determination of impact criteria, identification and categorization of potential impacts, quantitative and qualitative assessments), and stakeholder input (stakeholder consultations). Before populating the matrix, all impacts are evaluated by factors like severity, duration, reversibility to determine their significance.

The anticipated impacts for each phase of the Subproject are presented in this section. The Subproject has been prepared according to WB ESS requirements and the relevant ESSs are listed in the Table 26.

Table 26 ESS List Concerning the Subproject

Environmental Risk and Impacts	Relevant ESS
Land Use	ESS1, ESS3
Geology	ESS1, ESS3
Hydrogeology	ESS1, ESS3
Climate Change	ESS1, ESS3, ESS4, ESS6
Soil Quality	ESS1, ESS3
Air Quality	ESS1, ESS3
Noise and Vibration	ESS1, ESS3
Water Resources and Use	ESS1, ESS3
Wastewater Management	ESS1, ESS3
Waste Management	ESS1, ESS3
Natural Disaster Potential	ESS 1
Biodiversity and Protected Areas	ESS1, ESS6
Social Risk and Impacts	Relevant ESS
Community Health and Safety	ESS1, ESS3, ESS4, ESS10
Traffic Safety	ESS4
Access restrictions and temporary economic impacts	ESS5
Disadvantaged and Vulnerable Individuals or Groups	ESS4, ESS10
Sensitive Receptors	ESS1, ESS4
Labor and Working Conditions	ESS1, ESS2
Occupational Health and Safety	ESS1, ESS2, ESS3, ESS4

Table 27 Matrix Table with Identification of Impact Level in Terms of Environmental and Social Attributes

No	Environmental and Social Attributes	Impact																			
		Nature		Type			Extent/area				Duration				Likelihood of Occurrence			Sensitivit y of the Receptor	Magnitu de of the Impact	Impact Significanc e without ESMP	Impact Significanc e with ESMP
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/project	Local	Regional	National	Short term	Mid-term	Long term	Permanent	Very likely/ certain	Likely	Unlikely	High	High	High	High
																		Medium	Medium	Medium	Medium
																		Low	Low	Low	Low
Negligibl e/ None	Negligibl e/ None																	Negligible/ None	Negligible/ None		
A. CONSTRUCTION PHASE																					
1. Air Quality																					
1	Increase in dust concentration		✓	✓			✓				✓				✓			Medium	Low	Low	Negligible/ None
2	Increase in exhaust emissions		✓	✓			✓				✓				✓			Medium	Low	Low	Negligible/ None
3	Impact on human health		✓		✓			✓			✓					✓		Medium	Low	Low	Negligible/ None
2. Soils and Contaminated Land																					
1	Contamination of soil		✓	✓			✓						✓			✓		Low	Medium	Low	Low
2	Loss of topsoil and compaction of soil		✓	✓			✓						✓			✓		Low	Medium	Low	Low
3	Liquefaction and ground stability related risks		✓	✓			✓					✓					✓	Medium	Medium	Medium	Low
4	Erosion Potential		✓		✓				✓				✓					Low	Low	Low	Negligible/ None
3. Water Resources																					
1	Change in surface water quality		✓		✓		✓					✓					✓	Medium	Low	Low	Negligible/ None
2	Change in groundwater quality		✓			✓						✓			✓			Medium	Low	Low	Low
4. Noise and Vibration																					
1	Increase in Noise Level		✓	✓				✓			✓				✓			Medium	Low	Low	Low
2	Increase in Vibration Level		✓	✓			✓				✓				✓			Medium	Low	Low	Negligible/ None
5. Biological Environment																					
1	Decrease in the number of the tree species used in the urban roadside landscape due to transplantation of them to the hobby gardens before starting the construction		✓	✓			✓				✓				✓			Low	Low	Low	Negligible/ None
6. Landscape and Visual (Aesthetics)																					
1	Impairment of quality of life due to the overall presence of annoying construction works and activities and altered landscape		✓	✓				✓			✓				✓			Medium	Medium	Medium	Low
7. Resources and Wastes																					
1	Improper waste management		✓	✓				✓			✓					✓		Medium	Low	Low	Low
2	Resources used during works		✓			✓			✓			✓						Medium	Low	Low	Low
8.Climate Change																					
1	Contribution to climate change through Green House Gas (GHG) emissions		✓	✓					✓		✓				✓			Medium	Low	Low	Low
9.Socioeconomic Environment																					
1	Job creation and local procurement	✓		✓				✓					✓		✓			Positive			
2	Infrastructure damage		✓		✓			✓						✓				Low	Medium	Low	Low
10.Occupational Health and Safety																					
1	Workers’ exposure to work-related occupational health and safety risks		✓		✓				✓			✓						High	High	High	Medium

No	Environmental and Social Attributes	Impact																			
		Nature		Type			Extent/area				Duration				Likelihood of Occurrence			Sensitivit y of the Receptor	Magnitu de of the Impact	Impact Significanc e without ESMP	Impact Significanc e with ESMP
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/project	Local	Regional	National	Short term	Mid-term	Long term	Permanent	Very likely/ certain	Likely	Unlikely	High	High	High	High
																		Medium	Medium	Medium	Medium
																		Low	Low	Low	Low
Negligibl e/ None	Negligibl e/ None																	Negligible/ None	Negligible/ None		
11.Community Health and Safety																					
1	Traffic and construction activities related risks of Project		✓			✓		✓			✓							Medium	Medium	Medium	Low
2	Community trespassing		✓			✓			✓			✓						Medium	Medium	Medium	Low
3	Train collision and derailment		✓			✓					✓				✓			High	High	High	Medium
4	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)		✓	✓				✓				✓			✓			High	Medium	Medium	Low
12. Archaeological and Cultural Heritage																					
1	Chance finds		✓		✓			✓				✓						Low	Low	Low	Negligible/ None
13. Labor Force and Working Conditions																					
1	Protecting the workforce		✓	✓			✓					✓		✓				Medium	Low	Low	Low
2	Workers Engaged by Third Parties and the Supply Chain		✓	✓			✓				✓			✓				Medium	Low	Low	Low
3	Working Conditions		✓	✓			✓					✓		✓				Medium	Low	Low	Low
B. OPERATION PHASE																					
1. Air Quality																					
1	Emission from above ground power line		✓	✓			✓					✓				✓		Low	Low	Low	Negligible/ None
2	Emission from wear of brake pads		✓	✓			✓					✓				✓		Low	Low	Low	Negligible/ None
3	Increase in dust and NO _x concentration		✓	✓			✓					✓				✓		Low	Low	Low	Negligible/ None
2. Soils and Contaminated Land																					
1	Soil contamination		✓	✓			✓					✓				✓		Low	Low	Low	Negligible/ None
3. Water Resources																					
1	Change in surface water quality		✓		✓			✓				✓				✓		Low	Low	Low	Negligible/ None
2	Change in groundwater quality		✓				✓			✓				✓				Medium	Low	Low	Negligible/ None
4. Noise and Vibration																					
1	Increase in noise level		✓	✓				✓				✓		✓				Medium	Low	Low	Low
2	Increase in vibration		✓		✓					✓	✓							Low	Low	Low	Low
5. Biological Environment																					
1	Vegetation Maintenance	✓		✓				✓			✓			✓				Low	Low	Low	Low
7. Waste management and Pollution Prevention																					
1	Solid waste and wastewater generation		✓	✓				✓				✓		✓				Low	Low	Low	Low
2	Hazardous waste generated from maintenance activities		✓	✓				✓				✓		✓				Medium	Low	Low	Low
8. Climate Change																					
1	GHG emissions		✓	✓					✓			✓				✓		Low	Low	Low	Low

No	Environmental and Social Attributes	Impact																			
		Nature		Type			Extent/area				Duration				Likelihood of Occurrence		Sensitivit y of the Receptor	Magnitu de of the Impact	Impact Significanc e without ESMP	Impact Significanc e with ESMP	
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/project	Local	Regional	National	Short term	Mid-term	Long term	Permanent	Very likely/ certain	Likely	Unlikely	High	High	High	High
																		Medium	Medium	Medium	Medium
																		Low	Low	Low	Low
Negligibl e/ None	Negligibl e/ None																	Negligible/ None	Negligible/ None		
9.Socioeconomic Environment																					
1	Local procurement	✓		✓				✓			✓	✓						Positive			
2	Infrastructure damage		✓			✓			✓					✓				Low	Negligibl e/None	Negligible/ None	Negligible/ None
10.Community Health and Safety																					
1	Increased traffic due to maintenance activities		✓	✓				✓			✓						✓	Low	Low	Low	Negligible/ None
2	Trespassing		✓	✓				✓						✓		✓		Low	Low	Low	Negligible/ None
3	Injury of community		✓	✓				✓			✓						✓	Low	Low	Low	Negligible/ None
11.Labor Force and Working Conditions																					
1	Protecting the workforce		✓	✓			✓						✓		✓			Medium	Low	Low	Low
2	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)		✓	✓				✓					✓			✓		High	Medium	Medium	Low
3	Working Conditions		✓	✓			✓						✓		✓			High	Medium	Medium	Low

4.1.1. Environmental Risks and Impacts

4.1.1.1. Soil Erosion, Loss and Contamination

Construction Phase

The construction activities of tramway will have impacts on the soil environment. The stripping of the topsoil will be performed with the start of the construction phase. After stripping, excavation and filling works will be carried out. However, the impacts of these activities are localized and restricted to the construction site.

The potential impacts will consist of:

- Disturbance of the natural soil and land structure as a result of soil stripping, levelling, excavation and filling activities, work of construction machinery;
- Mixing of soil layers as a result of excavation and filling activities;
- Soil contamination risk due to leakage and spill of fuels, paints and oils that will be used for the construction machinery and equipment;
- Soil pollution, which may occur in case of uncontrolled storage or disposal of solid and/or liquid wastes to be generated within the scope of the Project;
- Improper replacement of soil in its original position; and,
- Piling of soil along public access routes.

These impacts can be easily managed and mitigated to low in significance with the implementation of the mitigation measures given in Section 4.2.

Operation Phase

During the operation phase, the Project will have limited physical interaction with the surrounding environment. No significant direct impacts on topography, soil quality, or land use are anticipated under normal operating conditions.

Potential impacts during the operation phase are mainly associated with repair and maintenance activities, including accidental spillage or leakage of oils, lubricants, and chemicals onto soil surfaces. Such impacts are expected to be localized and limited to the Project footprint.

Without the implementation of mitigation measures, the significance of these impacts would be low. With the implementation of the mitigation measures presented in

4.1.1.2. Dust and Exhaust Gases Emission

Construction Phase

During the construction phase of the Subproject, significant amounts of dust may be generated during excavation work, material transportation, excavation dumping, storage and transportation of materials such as aggregate and sand.

Gases such as carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), volatile organic compounds (VOC) and carbon dioxide (CO₂) are emitted from construction machinery (excavators, cranes, trucks, etc.) and transport vehicles. VOC emissions occur during hot asphalt applications. Volatile organic compounds may be emitted during the use of substances such as paint, coating and insulation materials.

Table 28 Dust Emission Factor

Sources	Emission Factors		Unit
	Uncontrolled	Controlled	
Dismantling/Excavation	0.025	0.0125	kg/ton
Loading	0.010	0.0050	
Unloading	0.010	0.0050	
Storage	5.800	2.9000	
Transportation (total distance of round trip)	0.700	0.3500	kg/km- vehicle

Source: Industrial Air Pollution Control Regulation, Appendix 12.

Construction waste is assumed to be an average of 1 tons/m³ based on general estimates provided in the European Commission's Construction and Demolition Waste Management Protocol (2016) and Turkish national guidelines on construction waste management.

Construction waste generated during the Subproject will primarily consist of non-hazardous materials, such as concrete, asphalt, steel, wood, and packaging. However, some contaminated or hazardous components (e.g., oily rags, fuel residues, paint containers, or old joint sealants) may also be generated, particularly during the removal of old structural elements and mechanical parts. All waste materials will be classified and managed in accordance with the Turkish Regulation on Waste Management (Official Gazette No. 29314, dated 02.04.2015), and if applicable, the Regulation on Control of Hazardous Wastes. Waste will be separated at source, temporarily stored at designated secure areas, and sent to licensed disposal or recycling facilities.

The Subproject activities are defined in detail in Chapter 3. Activities that will have an impact on air quality during the construction phase are summarized in Table 29. Within the scope of the project emissions will have an impact on air quality.

Table 29 Volumes of Activity

Component	Excavation Width (m)	Excavation Depth (m)	Length (m)	Area (m ²)	Volume (m ³)
Associated Facility (Lot-1)	8.40	0.80	13,800.00	115,920	92,736
Subproject (Lot-2)	8.40	0.80	5,500.00	46,200	36,960

Table 30 Excavated Soil Dust Emission Calculation of Subproject

Total Excavation Volume	36,960 m ³
Density of Excavation Material	1.8 ton/m ³
Total Amount of Excavation	66,528 ton
Excavation Duration	1095 days
Working Hours Per Day	8
Hourly Excavated Material Amount	7.59 ton/hour

Uncontrolled Dust Emissions:

Emission from excavation:

Excavation emission factor (uncontrolled): 0.025 kg/ton

Amount of PM₁₀ emissions: 7.59 ton/hour * 0.025 kg/ton = 0.189 kg/hour

Loading emission factor (uncontrolled): 0.010 kg/ton

Amount of PM₁₀ emissions: 19.05 ton/hour * 0.010 kg/ton = 0.0759 kg/hour

Total uncontrolled PM₁₀ emissions

Total: 0.189 + 0.0759 = 0.2649 kg/hour

Controlled Dust Emissions:

Emission from excavation:

Excavation emission factor (controlled): 0.0125 kg/ton

Amount of PM₁₀ emissions: 7.59 ton/hour * 0.0125 kg/ton = 0.189 kg/hour

Loading emission factor (controlled): 0.005 kg/ton

Amount of PM₁₀ emissions: 7.59 ton/hour * 0.005 kg/ton = 0.0379 kg/hour

Total controlled PM₁₀ emissions

Total: 0.189 + 0.0379 = 0.2269 kg/hour

Exhaust Emissions

As in the construction phase of the Project, there will be exhaust emissions of heavy construction machinery, in addition to the dust emissions. Primary emissions from exhaust gases of vehicles are NO_x, CO, SO_x, TOC and PM. The emission factors used to calculate these emissions are presented in the table below.

Table 31 Emission Factors for 1 L Diesel Consumption (considering density of diesel is 0.85 kg/L)

Pollutant	Emission Factor (kg/ton)	Emission Factor (g/L)
CO	0.017.	0.01445
NOx	0.081	0.06885
PM	0.006	0.0051
SOx	0.005	0.00425
TOC	0.006	0.0051

Source: <https://www.epa.gov/sites/default/files/2020-10/documents/c03s03.pdf> (Table 3.3-1) European

The diesel consumption by each construction vehicle is assumed as 25 L/hour.
Total diesel consumption by 24 construction vehicles: 600 L/hour

The results of calculation by using emission factors and diesel consumption of construction vehicles are as:

- For CO: $600 \text{ L/h} \times 0.01445 \text{ g/L} = 8.67 \text{ g/h}$
- For NOx: $600 \text{ L/h} \times 0.06885 \text{ g/L} = 41.31 \text{ g/h}$
- For PM: $600 \text{ L/h} \times 0.0051 \text{ g/L} = 3.06 \text{ g/h}$
- For SOx: $600 \text{ L/h} \times 0.00425 \text{ g/L} = 2.55 \text{ g/h}$
- For TOC: $600 \text{ L/h} \times 0.0051 \text{ g/L} = 3.06 \text{ g/h}$

Operation Phase

No significant dust emissions are anticipated during the operation phase of the Project. Potential air emissions associated with the operation of the light rail system are expected to be limited and mainly related to particulate matter generated from brake and rail wear, as well as minor emissions associated with the maintenance activities and corrosion of electrical transmission components.

Considering the electric-powered operation of the railway system, direct exhaust gas emissions during operation will be minimal compared to conventional road transportation systems. In the long term, the Project is expected to contribute positively to urban air quality by supporting public transportation and reducing road traffic-related vehicle emissions.

4.1.1.3. Climate Change and Greenhouse Gas (GHG) Emissions

Construction Phase

Construction activities may contribute to greenhouse gas (GHG) emissions through fuel consumption by construction machinery, transportation vehicles and generators. Additional emissions may result from the production and transportation of construction materials such as concrete, steel and asphalt.

The construction phase may also be affected by climate change-related extreme weather events, including increased temperatures, heat waves, intense precipitation events and storms. Such events may cause temporary disruptions to construction activities, affect worker health and safety, increase erosion risks and damage temporary facilities.

To reduce climate-related risks, contractors will implement appropriate site drainage measures, erosion and sediment control practices, dust suppression measures and occupational health and safety procedures for hot weather conditions.

Operation Phase

The Subproject is expected to provide positive long-term climate benefits by promoting sustainable urban mobility and encouraging a modal shift from private vehicles to public transportation. Increased use of the tram system may contribute to reductions in traffic congestion, fuel consumption and associated greenhouse gas emissions within the urban transport network.

Climate change may affect the operation of the tram line through increased frequency and intensity of extreme weather events, including heavy rainfall, flooding and extreme heat. Elevated temperatures may affect rail infrastructure, electrical systems and passenger comfort, while intense precipitation may impact drainage systems and operational reliability.

The tram system will incorporate appropriate engineering design measures, including stormwater drainage infrastructure, climate-resilient materials and routine maintenance programs to enhance resilience against future climate-related hazards.

4.1.1.4. Environmental Noise

Construction Phase

The project activities within the construction phase are associated with a range of activities that generate noise. The noise would be potentially generated by transportation vehicles, machinery and outdoor equipment to be used for the preparation of the site and the construction activities.

Construction of the tram line will affect the inhabitants living along the tram line route and patients which are in hospitals near the project route, yet this impact will be short term and low in magnitude.

Construction activities in and around the residential areas will be carried out during the daytime. The noise level of the equipment and machinery will be kept at minimum with proper mitigation measures such as use of silencers and with regular maintenance.

Vibration that will affect humans or structures in the vicinity is not expected to occur as there will be no blasting activity within the project. The impact is assessed as direct and negative with short term duration, local and low in significance.

Operation Phase

During the operation phase, noise emissions will mainly arise from the movement of light rail vehicles along the rail corridor. The primary noise sources will include wheel–rail interaction, braking and acceleration of vehicles, warning signals, and station-related passenger activities.

Considering that the Project will operate as an electric light rail system, no engine-related noise emissions are expected. The operational noise impacts are anticipated to be localized along the alignment and can be managed through regular maintenance of rails and vehicles, speed control where necessary, and implementation of good operational practices.

4.1.1.5. Impacts Associated with Water, Energy and Raw Materials Use

Construction activities will require the use of water, energy and various raw materials. Water consumption will mainly be associated with dust suppression, concrete production, equipment cleaning and domestic use at construction facilities. Although water demand is expected to be temporary and localized, inefficient use of water resources may place additional pressure on municipal water supplies.

Energy consumption during construction will primarily result from the operation of construction machinery, vehicles, equipment and temporary site facilities. The use of fossil fuel-powered equipment may contribute to indirect greenhouse gas emissions and depletion of non-renewable energy resources.

The construction phase will also require substantial quantities of raw materials, including concrete, steel, aggregates, asphalt and other construction materials. Extraction, processing and transportation of these materials may lead to the consumption of natural resources and associated environmental impacts.

The significance of these impacts is expected to be low to moderate, temporary and reversible, provided that good construction practices are implemented. Measures such as efficient water use, regular maintenance of machinery, optimization of material consumption, prevention of material wastage and sourcing materials from licensed suppliers will be applied to minimize resource consumption and associated environmental impacts.

4.1.1.6. Water Resources

Construction Phase

Potential impacts on water resources may arise during both the construction and operation phases of the Project. These impacts are mainly associated with excavation activities, surface runoff, accidental spills and leakages, wastewater generation, and maintenance-related activities. The assessment of water resources impacts has been carried out considering the characteristics of the Project corridor and the existing urban drainage infrastructure. In addition, water consumption will occur due to the domestic water needs of the construction personnel.

The water will be needed for:

- Personnel to work during construction activities,
- Avoiding dusting during construction,
- Concrete wetting,
- Washing the wheels.

Amount of water to be used for the personnel to work during the construction:

All the drinking water of the personnel will be provided by ready-made plastic bottles and carboys.

The total amount of daily water requirement is calculated based on the multiplication of the number of employees that will be working at the peak time of the phase and the daily water requirement for a person, which is 0.20 m³. The required number of personnel is 500.

Daily Water Requirement = 500 employee x 0.20 m³/day = 100 m³/day

Amount of water to be used to avoid dusting during construction:

The amount of water to be used during excavation operations is variable and an average value has been taken by evaluating similar projects. In this context, an average of 20 m³/day water usage is foreseen. On the other hand, an average of 10 m³/day water will be used in watering operations with the sprinkler. The water used for dust suppression and utility water will be supplied from the municipal network and/or by tankers.

Water usage during concrete wetting:

It is planned that 15 m³ of water will be used daily for concrete wetting during the construction.

Amount of water to be used for cleaning of vehicles and stations:

During the construction phase of the project, 4 m³/day of water will be used to wash the wheels of the trucks that will work in the excavation and excavation operations from the construction site to the asphalt road.

The total water usage during construction phase is shown in Table 32.

Table 32 Total Water Usage during the Construction Phase

Purpose of Usage	Amount (m ³ /day)
Personnel Usage	100
Wetting Concrete	15
Dust suppression	30
Washing the Wheels	4
Total	139

Operation Phase

A total of 26 personnels are planned to be employed during the operation phase of the new line, and the drinking water needs of the employees will be met through purchasing. The utility water need will be met from the city network.

According to the “Regulation on Water Intended for Human Consumption”, the daily water usage amount per person for social purposes of the working personnel is taken as 200 L/person/day and the calculations are made over 500 personnel, the following results are obtained.

Daily Water Requirement= 26 employee x 0.20 m³/day = 5.2 m³/day

The total water usage during construction phase is shown in Table 33.

Table 33 Total Water Usage during Operation Phase of Barış Street Tram Line Component

Purpose of Usage	Amount (m ³ /day)
Drinking and Potable Water	5.2
Cleaning of vehicles and stations	15
Total	20.2

4.1.1.7. Waste

As a result of the use of resources, construction, and operation/maintenance activities as well as domestic requirements of the personnel, different types of wastes will be generated throughout the lifetime of the Project.

All the wastes to be generated during the land preparation and construction and operation phases of the Project are required to be properly managed in line with the requirements of national waste management legislation and international good practice to avoid impacts on soils, nearby water resources and flora and fauna elements. This section identifies the wastes to be generated in this context and assesses the impacts associated with waste generation.

The possible sources that will generate various types of waste are listed below:

- Municipal solid waste
- Packaging waste such as wood, paper, cardboard, and plastic etc.
- Hazardous and special wastes that may be generated within the scope of the land preparation and construction and operation phases of the Project can be listed as contaminated vessels, cloths and overheads, waste batteries and accumulators, waste oils etc.
- Excavation and construction wastes
- Sanitary wastewater primarily from passenger terminals and from passenger rail service.

Wastes to be generated in the scope of the project activities will be managed in accordance with the waste management hierarchy as given in Figure 24. In this respect, waste generation will be avoided/ prevented at the source. In cases where prevention is not possible at the source, respectively; minimization of waste generation, selection of materials that will not cause generation of hazardous waste as much as possible, separate collection of wastes according to their type (hazardous, non-hazardous, recyclable, etc.), reuse of generated wastes at the site as much as possible, assessment of alternatives such as recycling and energy recovery for wastes (where reuse is not possible) will be considered. The final step in the hierarchy of waste management involves the final disposal of wastes in accordance with relevant regulations, where reuse, recycling and energy recovery options are not possible.

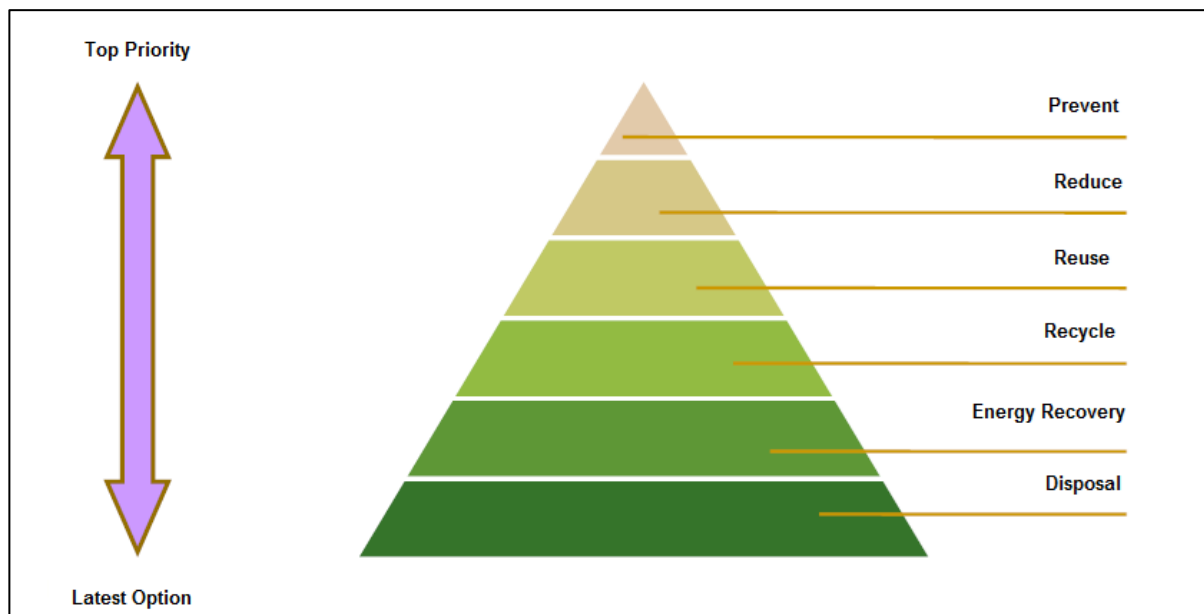


Figure 24 Waste Management Hierarchy

Construction Phase

Domestic Solid Waste:

The types of solid waste that will be generated during the construction phase of the activity are given below.

- Domestic solid wastes (glass, paper, plastic, etc.)
- Organic-based solid wastes from the food service of the personnel
- Cement bags, sheet and metal parts, packaging and lumber etc. solid waste from construction

Table 34 lists the types of wastes that can be generated during the construction and operation phase of the Project and their waste codes according to the waste lists given in the annexes of the Waste Management Regulation.

Table 34 List of Possible Waste Types to be generated during Construction Phase of the Project

Waste Code	Definition of Waste Code
08	Wastes from Primers (Paints, Varnishes and Vitrified Enamels), Adhesives, Manufacture of Sealants and Printing Inks), Formulation Supply and Use
08 01	Wastes from the Manufacturing of Paint and Varnish, Formulation, Supply and Use and Dismantling
12	Wastes from Physical and Mechanical Surface Treatment and Shaping of Metals and Plastics
12 01	Wastes from Physical and Mechanical Surface Treatment and Forming of Metals and Plastics
13	Oil Wastes and Liquid Fuel Wastes (Excluding Edible Oils, 05 and 12)
13 02	Waste Engine, Transmission and Lubrication Oils
15	Waste Packages, Unspecified Absorbents, Wipes, Filter Materials and Protective Clothing
15 01	Packaging Wastes (Including Packaging Wastes Separately Collected by the Municipality)
15 02	Absorbents, Filter Materials, Cleaning Cloths and Protective Clothing
16	Wastes Not Specified Otherwise in the List
16 02	Electrical and Electronic Equipment Waste
16 06	Batteries and Accumulators
17	Construction and Demolition Wastes (Including Excavations from Contaminated Sites)
17 01	Concrete, Brick, Tile and Ceramic
17 02	Wood, Glass and Plastic
17 04	Metals (Including Alloys)
17 05	Soil (Including Excavations from Contaminated Sites), Stones and Dredging Sludge
17 09	Other Construction and Demolition Wastes
20	Municipal Wastes Including Separately Collected Fractions (Domestic and Similar Commercial, Industrial and Institutional Wastes)
20 01	Separately Collected Fractions (Except 15 01)
20 03	Other Municipal Wastes

500 personnel will work in the project area during the construction phase, and possible solid wastes will be caused by the needs of the personnel. The amount of domestic solid waste per person per day has been calculated by taking into account the TurkStat-2020 Konya data (1.13 kg/person-day). The daily solid waste amount likely to be generated during the construction phase of the facility is as following:

$$500 \text{ employee} \times 1.13 \text{ kg/employee/day} = 565 \text{ kg/day}$$

Packaging Waste:

While the food and beverage requirements of the personnel to be employed are met, it is expected that some packaging waste (paper, cardboard, nylon, plastic, metal, glass, etc.) will be generated. Assuming that 12% of the domestic waste (according to the data of the State Institute of Statistics) consists of recyclable waste, the amount of packaging waste to be generated is:

$$565 \text{ kg/day} \times 0.12 = 67.8 \text{ kg/day}$$

Operation Phase

Domestic Solid Waste:

26 personnel will work in the project area during the operation phase, and possible solid wastes will be caused by the needs of the personnel. The amount of domestic solid waste per person per day has been

calculated by taking into account the TurkStat-2020 Konya data (1.13 kg/person-day). The daily solid waste amount likely to be generated during the construction phase of the facility is as following:

$$26 \text{ employee} \times 1.13 \text{ kg/employee/day} = 29.38 \text{ kg/day}$$

Packaging Waste:

While the food and beverage requirement of the personnel to be employed are met, it is expected that some packaging waste (paper, cardboard, nylon, plastic, metal, glass, etc.) will be generated. Assuming that 12% of the domestic waste (according to the data of the State Institute of Statistics) consists of recyclable waste, the amount of packaging waste to be generated is:

$$6.1 \text{ kg/day} \times 0.12 = 3.52 \text{ kg/day}$$

Municipal waste within the scope of the Waste Management Regulation are referred to as domestic waste or commercial, industrial and institutional waste similar to domestic waste in terms of its content or structure, which are defined with waste code of 20, in the Waste List given in Annex-4 of the Regulation and of whose management responsibility belongs to the Municipality. Therefore, these types of waste will be stored separately from hazardous waste and recyclable waste and will be collected regularly by KMM.

During the maintenance of the trams during the operation phase, there will be machine-based waste oil formation. Periodic maintenance of the trams will be carried out in the tram depot area. It will be collected in sealed, sealed barrels and given to companies licensed by the Ministry of Environment, Urbanization and Climate Change, for recycling/disposal.

Municipal wastes will be transferred to Konya Solid Waste Landfill Facility of Konya Metropolitan Municipality that is located in the Central District. The infrastructure of the facility is sufficient for managing the waste produced on the project site and the facility has environmental permit. The wastes will be disposed of by the landfilling method.

During routine and periodic maintenance of the tram vehicles at the depot and heavy maintenance facility, both hazardous and non-hazardous maintenance wastes will be generated. Hazardous wastes may include waste lubricating oils and greases, used oil filters, oil-contaminated absorbents, rags and wiping cloths, contaminated packaging, spent batteries and accumulators, waste electrical and electronic equipment (WEEE), waste lighting equipment, chemical containers, and other hazardous maintenance wastes. These wastes will be segregated at source, collected in appropriate labelled containers, and temporarily stored in designated hazardous waste storage areas with impermeable flooring and secondary containment to prevent leakage and environmental contamination. Hazardous wastes will not be mixed with non-hazardous wastes and will be transferred to licensed recovery or disposal facilities in accordance with the Waste Management Regulation and other applicable national legislation.

4.1.2. Biodiversity Risks and Impacts

Construction Phase

Internationally and National Recognized Areas

There is no national or international protected area within the project area. The Akyay Plain KBA/IBA/IPA is located approximately 2 km from the tram line.

There is no sensitive area within the project area. As a result, the impact on internationally recognized areas is assessed as negligible.

Flora

The significant impacts of the construction phase on the terrestrial environment would be habitat and vegetation loss or damage. The project area is characterized by highly modified urban habitat, devoid of natural vegetation cover, supporting only ruderal and anthropogenically disturbed flora. In addition to the flora species used in the urban landscape, the project area has anthropogenic steppe and ruderal vegetation. Since no sensitive habitat or flora species are found in the area, no significant impact is expected. The Project will be realized in an already modified area.

According to information provided by KMM, the tree species listed in Table 12 will be transplanted to designated hobby gardens prior to the commencement of construction activities. Impacts of the construction activities on the terrestrial environment will include dust, but this will be a short-term impact. When necessary, measures are taken mentioned in Section 4.2 and Section 4.3, and after the construction activity is over, it is expected that the composition of the flora species will return to its original state in time.

The impacts on the biological environment during construction phase will be limited. Therefore, it is considered that all the impacts will be minimized or eliminated; if necessary, precautions are taken. The impact on the flora species is assessed as negligible.

Fauna

It is stated that the tree species in Table 13 will be transplanted to the hobby gardens before starting the construction. Due to the anthropogenic effects in and around the project area, it is determined that large mammal species do not use the project area for nesting. Some minor impacts resulting from the construction activities on fauna species can be seen. These effects will mainly consist of the secondary effects. Due to the construction activities, mortalities may be observed due to potential disturbance on the fauna species and increase in traffic. At the same time, dust and noise formation due to construction activities may also have a negative impact on fauna species. All these effects can be eliminated by taking appropriate measures. These impacts on populations of fauna species already adapted to the modified habitat and identified in and around the project area are considered negligible.

According to the tables provided, there are no sensitive flora and fauna species in and around the project area.

Operation Phase

The negative impact of the Project's operational activities on flora and fauna is not expected. When necessary, preventive measures are taken, and biodiversity elements adapted to city life will continue in their former state after construction.

As for the impacts of the biological environment on the Project, the vegetation within railroad rights-of-way can interfere with train operations and track maintenance. Unchecked growth of trees and plants can cover signals, fall onto the tracks and prevent workers from getting to places of safety when trains are passing.

These impacts are assessed as direct and negative; however, low considering significance since they can be easily eliminated by taking appropriate measures.

4.1.3. Social Risks and Impacts

4.1.3.1. Labor and Working Conditions

Construction Phase

Construction activities will require a temporary workforce of approximately 500 workers, including skilled and unskilled labor, subcontractors, technical personnel, and supervisory staff. Workforce mobilization at this scale may create labor and working condition risks associated with occupational accidents, excessive working hours, unequal treatment, discrimination, worker grievances, labor influx, and the management of subcontracted workers. Additional risks may arise from the provision of worker accommodation facilities, including issues related to worker welfare, sanitation, waste management, worker behavior, and interactions with nearby communities.

A worker accommodation facility is planned in the vicinity of the storage areas and will be managed through subcontractor arrangements. To manage these risks, the Contractor will implement Labor Management Procedures (LMP), establish a worker grievance mechanism, and ensure compliance with national labor legislation and the requirements of World Bank ESS2. Appropriate measures will include transparent recruitment practices, fair terms and conditions of employment, regular training and supervision, monitoring of subcontractor performance, implementation of a workers' Code of Conduct, and provision of adequate accommodation and welfare facilities consistent with applicable good international industry practice.

Operation Phase

During operation, approximately 26 personnel will be employed for tramway operations, maintenance, station management, and administrative functions. Labor-related risks are expected to be limited due to the relatively small workforce and routine nature of activities. These risks will be managed through established employment policies, occupational health and safety procedures, training programs, and grievance mechanisms. The operation phase is also expected to generate positive socio-economic benefits through the creation of stable long-term employment opportunities.

4.1.3.2. Occupational Health and Safety (OHS)

Construction Phase

Construction activities may expose workers to a range of occupational health and safety risks associated with excavation works, operation of heavy machinery, vehicle movements, electrical systems, working at height, manual handling activities, and exposure to dust and noise. The presence of a workforce of approximately 500 workers, together with worker accommodation facilities located near storage areas, may further increase occupational health and safety risks due to the movement of workers between accommodation and work sites, increased workforce density, and potential fatigue associated with shift work and long working hours. Risk levels may also increase as construction activities are expected to take place simultaneously along busy urban corridors with continuous vehicle and pedestrian movements.

To manage these risks, the Contractor will implement a comprehensive Occupational Health and Safety Management System in accordance with national legislation and relevant international good practice. Mitigation measures will include site-specific risk assessments, induction and refresher training, provision and enforcement of personal protective equipment requirements, permit-to-work systems, traffic management measures, emergency preparedness and response procedures, regular workplace inspections, incident reporting mechanisms, and continuous supervision of contractors and subcontractors. Particular attention will be given to fatigue management, worker transportation arrangements, and safe access between accommodation facilities and construction work areas.

Operation Phase

During operation, occupational health and safety risks are expected to be limited and primarily associated with tram operations, electrical systems, maintenance activities, station management, and emergency response situations. Potential risks may include electrical hazards, slips and falls, maintenance-related incidents, and accidents occurring during routine operational activities.

These risks will be managed through the implementation of operational health and safety procedures, preventive maintenance programs, routine inspections, emergency response planning, and regular workforce training. Continuous monitoring and periodic review of safety performance will be undertaken to ensure that occupational risks remain at acceptable levels throughout the operational life of the Project.

4.1.3.3. Community Health and Safety

Construction Phase

Construction activities may temporarily affect community health and safety through increased noise and dust levels, construction traffic, restricted access, and safety risks associated with active work zones. Temporary disruptions may occur along the alignment, particularly in areas with high pedestrian and vehicle activity. Sensitive receptors identified during stakeholder engagement activities include Beyhekim Training and Research Hospital, schools, student dormitories located on Şafak Street, and educational facilities in Fatih Neighborhood. Concerns regarding traffic congestion around İstanbul Street, Kent Plaza junction, and sections of Bedir Neighborhood were also raised during consultations. Construction-related disturbances may disproportionately affect students, patients, visitors, hospital staff, elderly persons, persons with disabilities, and other vulnerable community members if access and safety arrangements are not adequately maintained.

To minimize community health and safety risks, the Contractor will implement community health and safety measures as part of the Traffic and Transportation Management Plan (TTMP) during construction. These measures will include traffic management and access plans, installation of warning signs and protective barriers around work areas, dust and noise control measures, safe pedestrian routes, and maintenance of access to hospitals, schools, businesses, residences, and other sensitive receptors. Regular stakeholder engagement activities and timely public disclosure of construction schedules, temporary access restrictions, traffic diversions, and public transport changes will be undertaken in accordance with the Stakeholder Engagement Plan. A project grievance mechanism will also be available to receive and address community concerns throughout the construction period.

Operation Phase

The tramway system is expected to generate positive community health and safety outcomes by improving public transport accessibility, reducing travel times, decreasing dependence on private vehicles, and potentially contributing to reduced traffic congestion and vehicle-related emissions. Nevertheless, residual safety risks may remain due to interactions between pedestrians, cyclists, road users, and tram operations, particularly at stations, crossings, and intersections.

These risks will be managed through appropriate infrastructure design and operational controls, including signaling systems, traffic management measures, pedestrian crossings, lighting, safety barriers, routine maintenance, and public awareness activities, under the TTMP. Emergency preparedness and response procedures will also be implemented to support safe operation of the tramway system throughout its operational life.

4.1.3.4. Traffic Safety

Construction Phase

Construction activities may result in temporary traffic disruptions due to lane closures, temporary diversions, material deliveries, and movement of construction vehicles. Increased congestion may occur at major intersections and commercial areas along the alignment. Stakeholder consultations identified existing traffic sensitivity particularly around İstanbul Street, Kent Plaza Shopping Mall, and sections of the Fatih Neighborhood during peak morning hours. Construction vehicle movements may increase the risk of vehicle-to-vehicle collisions and traffic delays if not appropriately managed.

In addition, construction activities may temporarily affect existing public transport routes and bus stops located along the alignment. Temporary relocation or modification of public transport stops may be required to maintain traffic flow and ensure safe construction operations. If not properly managed, such changes may create confusion for public transport users, increase pedestrian movement across roadways, and affect accessibility for vulnerable groups, including elderly persons, persons with disabilities, students, and hospital users.

Under the TTMP, to mitigate these impacts, any temporary relocation of public transport stops will be planned in coordination with the relevant municipal transportation authorities. Replacement stops will be established in safe and accessible locations as close as practicable to their original positions. Advance notification and clear public information measures, including signage, wayfinding information, and public announcements, will be implemented to ensure that passengers are informed of temporary route and stop changes, in line with the SEP.

Operation Phase

The tramway is expected to contribute positively to urban mobility and public transportation capacity. However, traffic safety risks may remain at road crossings, signalized intersections, and station access points where interactions between road vehicles and tram operations occur.

4.1.3.5. Pedestrian Safety

Construction Phase

Construction activities may create temporary pedestrian safety risks due to restricted pedestrian access, temporary walkway closures, excavation works, construction vehicle movements, and reduced visibility around active work areas. These impacts may be particularly significant in locations with high pedestrian activity and near sensitive receptors identified during stakeholder consultations, including schools, student dormitories, healthcare facilities, and residential areas. Elderly persons, children, persons with disabilities, and hospital users may be more vulnerable to temporary access disruptions and construction-related hazards.

Under the TTMP to minimize pedestrian safety risks, the Contractor will maintain safe and accessible pedestrian routes throughout the construction period and implement appropriate traffic and access management measures. Temporary walkways, warning signs, protective barriers, adequate lighting, and public information measures will be provided where necessary. Particular attention will be given to maintaining safe access to schools, healthcare facilities, public transport stops, and other frequently used community facilities.

Operation Phase

During operation, pedestrian safety risks may arise at station entrances, pedestrian crossings, intersections, and other locations where tram operations interact with vehicle and pedestrian traffic. These risks may be particularly relevant in areas with high pedestrian volumes and around station access points.

Pedestrian safety will be supported through appropriate station and infrastructure design, including designated pedestrian crossings, signaling systems, lighting, barriers, wayfinding measures, and routine maintenance activities. Public awareness and safety information programs will also be implemented to promote the safe use of the tramway system.

4.1.3.6. Loss of Land and Livelihoods

Construction Phase

The Subproject will be implemented predominantly within existing transportation corridors and publicly accessible urban areas. Accordingly, no permanent land acquisition, physical displacement, or economic displacement is anticipated as part of the Subproject.

The southwestern section of the Subproject alignment passes through the Old Industrial Zone and in close proximity to the Karatay Industrial Zone. Both industrial areas are currently subject to an independent Urban Transformation and Development Project implemented by KMM and the TOKİ. The relocation programme, initiated independently of the Barış Street Tramline Project, covers all businesses operating within the two industrial areas regardless of sector or ownership status. According to information provided by KMM, the New Motorized Small Industrial Site is expected to be handed over during 2026, after which the phased relocation of businesses from the existing industrial areas will commence.

Based on the current implementation schedule, the relocation programme is expected to progress independently of the Subproject construction activities. Therefore, no significant impacts related to land acquisition, economic displacement, loss of commercial premises, or livelihood restoration are anticipated within the scope of the Subproject. Nevertheless, the implementation schedule of the relocation programme will continue to be monitored throughout the Project to identify any potential interface with the Subproject construction programme.

Although permanent livelihood impacts are not anticipated, temporary construction-related impacts may occur, particularly with respect to traffic circulation, access to businesses, customer accessibility, loading and unloading activities, and pedestrian movement along commercial sections of the alignment, including areas surrounding Kent Plaza Shopping Mall and other commercial establishments. These impacts may result in temporary reductions in business accessibility but are not expected to result in permanent loss of income or livelihoods.

To minimise these temporary impacts, the Contractor will implement the TTMP, maintain pedestrian and vehicle access to businesses wherever practicable, provide advance notification of construction activities, coordinate with affected businesses and local authorities through the SEP, and implement site-specific traffic management and directional signage. Any unforeseen impacts on businesses or livelihoods identified during construction will be addressed through the Project Grievance Mechanism and managed in accordance with the requirements of ESS5, where applicable.

Operation Phase

No significant impacts on land ownership, livelihoods, or commercial activities are anticipated during the operational phase of the Subproject. On the contrary, improved public transport accessibility is expected to enhance connectivity to employment areas, commercial centres, educational institutions, healthcare facilities, and other public services. The operational phase is therefore expected to generate positive socio-economic benefits for local communities through improved accessibility and mobility.

4.1.3.7. Disadvantaged and Vulnerable Individuals or Groups

Construction Phase

Baseline studies identified vulnerable groups in the AoI, including elderly persons, persons with disabilities, low-income households, households receiving social assistance, female-headed households, illiterate individuals, persons requiring care, and migrant/refugee households. These groups may be disproportionately affected by temporary construction impacts such as restricted access, increased traffic, noise and dust, and limited access to project information. Pedestrian safety risks may also increase for children, elderly persons, and persons with reduced mobility in areas where construction intersects with walking routes.

Mitigation measures will include maintaining safe and clearly marked alternative pedestrian routes, minimizing access disruptions, and planning works to avoid prolonged impacts in sensitive locations such as schools, healthcare facilities, and residential areas. Dust and noise will be controlled through standard measures including suppression, speed control, and time restrictions for high-noise activities. Vulnerable groups will be informed through accessible communication channels, and the grievance mechanism will be designed to be accessible and responsive to their needs. Stakeholder engagement measures targeting vulnerable groups are described in the SEP.

Operation Phase

The tramway is expected to improve access to services and opportunities for vulnerable groups, particularly low-income households, elderly persons, and persons with disabilities. However, unequal access may occur if service reliability, affordability, or usability is insufficient.

Mitigation and enhancement measures will focus on maintaining universal accessibility standards, ensuring regular maintenance of infrastructure and vehicles, and monitoring usability for vulnerable users. Information systems will remain clear and accessible. Fare policies may be reviewed to support equitable access for low-income groups, and user feedback will be used to identify and address any emerging barriers.

4.1.3.8. Cultural Heritage

Tangible Cultural Heritage

No direct impacts on known cultural heritage assets are anticipated within the current Project footprint. However, as the Sub-Project involves excavation and earthworks within an urban environment, there remains a possibility of encountering previously unidentified archaeological remains during construction activities. A Chance Find Procedure will be implemented in accordance with national legislation and ESS8 requirements. Construction activities will be temporarily suspended in the event of archaeological discoveries until assessment by the relevant authorities is completed.

Intangible Cultural Heritage

No significant impacts on intangible cultural heritage are anticipated. Construction activities may temporarily affect access to community gathering areas, local social spaces, or locations used for cultural and religious activities. These impacts are expected to be temporary and localized. Stakeholder engagement activities will continue throughout the Project lifecycle to identify and address any concerns related to local cultural practices, traditions, or community events.

4.2. Construction ESMP Matrix

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
ESS2 - Labor and Working Conditions					
1	Risks associated with labor and working conditions	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel - Other Subproject-related personnel on-site	<u>General Measures</u> - Develop and implement a Subproject-specific Labor Management Plan. - Ensure that the Subproject workers are provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. The information and documentation will set out their rights under national labor and employment law (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation and benefits, as well as those arising from the requirements of ESS2. - Ensure that information and documentation regarding employees' terms and conditions of employment is provided at the beginning of the working relationship and when any material changes to the terms or conditions of employment occur. - Ensure that the Subproject workers are paid on a regular basis as required by national legislation and the Subproject-specific LMP. - Ensure that the Subproject workers are provided with adequate periods of rest per week, annual holiday and sick, maternity and family leave, as required by national legislation and the Subproject-specific LMP. - Ensure that the decisions relating to the employment or treatment of Subproject workers are not made on the basis of personal characteristics unrelated to inherent job requirements. - Ensure that the employment of Subproject workers is based on the principle of equal opportunity and fair treatment, and there will be no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, or disciplinary practices. - Measures will be taken to prevent employment or engagement of children under the minimum age established in GFCP Project's LMP⁹.	- Contractors - Sub-contractors	LMP

⁹ According to the Project LMP, workers under the age of 18 will not be engaged by the Project.

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			- Measures will be taken in accordance with the Subproject specific Labor Management Procedure to prevent use of forced labor¹⁰ in connection with the Subproject. - Where on-site or off-site accommodation services¹¹ are provided to Subproject workers, ensure that the relevant requirements of “Workers’ Accommodation: Processes and Standards: A guidance Note by IFC and the EBRD (August 2009)” are in place and implemented on the management and quality of accommodation to protect and promote the health, safety, and well-being of the Subproject workers, and to provide access to or provision of services that accommodate their physical, social and cultural needs. <u>Site-specific Measures</u> - Onsite accommodation will be provided. Workers transportation to the site from the camp site will be provided by the contractor. - Facilities on-site will ensure gender-sensitive arrangements, such as separate sanitation units and private rest areas for women. - Periodic toolbox trainings will include key topics such as OHS, workers’ rights, grievance mechanisms, and codes of conduct. - GBVH and SEA/SH awareness modules will be integrated into mandatory induction trainings for all workers and subcontractors. - Daily OHS inspections by the Site HSE Officer.		
2	Risks associated with management of employee grievances	- Contractors and sub-contractors’ personnel - Construction supervision consultants’ personnel Other Subproject-related personnel on-	<u>Site-specific Measures</u> - Develop and implement a Subproject-specific Labor Management Plan, including grievance mechanism for Subproject employees (covering all direct and contracted workers) to raise workplace concerns during the construction phase. - Ensure that all direct and contracted workers are informed of the grievance mechanisms at the time of recruitment and the measures put in place to protect them against any reprisal for its use. - Ensure that measures are put in place to make the grievance mechanism easily accessible to all Subproject employees. - Designate on-site grievance focal points (e.g., safety officer or HR representative) who can receive and escalate complaints confidentially and in a timely manner.	- Contractor, - Sub-borrower	- LMP - CMP, - SEP - GM Procedures

¹⁰ Forced labor consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. Work is on a voluntary basis when it is done with the free and informed consent of a worker. Such consent must exist throughout the employment relationship and the worker must have the possibility to revoke freely given consent. In particular, there can be no “voluntary offer” under threat or other circumstances of restriction or deceit. To assess the authenticity of a free and informed consent, it is necessary to ensure that no external constraint or indirect coercion has been carried out, either by an act of the authorities or by an employer’s practice.

¹¹ Those services might be provided either directly by the Sub-borrower, contractors or by third parties.

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
		site	- Display grievance procedure information at prominent locations in the worksite, such as rest areas, site entrances, and PPE stations -using clear visuals and multiple languages where needed. - Include grievance awareness in induction training, particularly for subcontractor staff and workers with low literacy or limited language skills. - Implement grievance data tracking and reporting, with regular updates shared anonymously to workers to improve transparency and trust in the mechanism. - Ensure gender-sensitive access to grievance channels, such as having female focal points or optional anonymous submission methods for sensitive topics (e.g. harassment).		
3	OHS - Physical Hazards: Electrical Hazards	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel - Other Subproject-related personnel on-site	<u>General Measures</u> - Ensure that all energized electrical devices and lines are marked with warning signs - Ensure that the devices are locked (de-charging and leaving open with a controlled locking device) and labeled (warning sign placed on the lock) during service or maintenance. - Ensure that all electrical cords, cables, and hand power tools are checked for frayed or exposed cords. Also, ensure that the manufacturer's recommendations for the maximum permitted operating voltage of portable hand tools are followed - Ensure that all electrical equipment used in environments that are or may be wet is double insulated/grounded; use equipment with ground fault interrupter (GFI) protected circuits. - Ensure that power cords and extension cords are protected against damage from traffic by shielding or suspending above traffic areas - Ensure that high-voltage equipment ('electrical hazard') and service rooms where access is controlled or prohibited are properly labeled. - Ensure that "No Approach" zones are established around or under high voltage lines. - Ensure that construction vehicles or other vehicles with rubber tires that come into direct contact with or arc across high-voltage cables are taken out of service for 48 hours. - Ensure that all buried electrical cables are thoroughly identified and marked prior to any excavation work. <u>Site-specific Measures</u> - Coordinate with utility companies before electrical works. - Apply Lock-Out/Tag-Out (LOTO) procedures. - Temporary electrical installations will be inspected weekly.	- Contractors - Sub-contractors	OHS Management Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• Provide suitable fire extinguishers (appropriate for electrical fires) adjacent to temporary electrical panels and electrical work areas. Ensure that fire extinguishers are regularly inspected, clearly marked, readily accessible, and that workers are trained in their proper use. • Maintain minimum approach distances from overhead power lines.		
4	OHS - Physical Hazards: Rotating and Moving Equipment	• Contractors and sub-contractors' personnel • Construction supervision consultants' personnel • Other Subproject-related personnel on-site	<u>General Measures</u> • Design machines to eliminate trap hazards and ensure that extremities are kept out of harm's way under normal operating conditions; i.e. availability of emergency stops dedicated to the machine and placed in strategic locations. • If a machine or equipment has an exposed moving part or an exposed pinch point that could endanger the safety of any worker, ensure that the machine or equipment is equipped with and protected by a guard or other device that prevents access to the moving part or pinch point. Guards should be designed and installed in conformance with appropriate machine safety standards. • Ensure that machinery with exposed or protected moving parts or in which energy can be stored (e.g. compressed air, electrical components) is turned-off, disconnected, isolated and de-energized (Locked Out and Tagged Out) during service or maintenance. • Where possible, ensure that equipment is designed and installed to enable routine servicing, such as lubrication, to be carried out without removing guarding devices or mechanisms • Ensure that construction machinery, lifting equipment, mobile equipment, and other equipment requiring specific training, certification, or authorization are operated only by competent and duly authorized personnel holding valid licenses or certificates, as required by national legislation. <u>Site-specific Measures</u> • Install spotters during reversing operations. • Use proximity alarms and cameras on heavy equipment. • Separate pedestrian walkways from equipment routes.	• Contractors • Sub-contractors	• OHS Management Plan
5	OHS - Physical Hazards: Welding and Hot Works	• Contractors and sub-contractors' personnel • Construction supervision	<u>General Measures</u> • Ensure that appropriate eye protection, such as welder's goggles and/or a full-face eye shield, is provided for all personnel involved in or assisting with welding operations. • If welding or hot cutting is performed outside of established welding work stations, ensure that special hot work and fire prevention precautions and Standard Operating Procedures	• Contractors • Sub-contractors	• OHS Management Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure			Responsible Parties	Relevant Plans/Procedures
		consultants' personnel Other Subproject-related personnel on-site	(SOPs) are in place, including "Hot Work Permits, stand-by fire extinguishers, stand-by fire watch and maintaining fire watch for up to one hour after welding or hot cutting is finished". - Develop specific procedures for hot work on tanks or vessels containing flammable materials. Ensure that welding, cutting, and other hot work activities are performed only by trained, competent, and authorized personnel holding the required qualifications or certifications in accordance with national legislation. <u>Site-specific Measures</u> - Implement Hot Work Permit System - Fire watch for at least 60 minutes after completion of hot works - Gas cylinders stored upright and secured.				
6	OHS - Physical Hazards: Fire and Explosion Hazards	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel - Other Subproject-related personnel on-site	<u>General Measures</u> - Ensure fire prevention measures are implemented. - Ensure flammable materials are stored appropriately. - Ensure firefighting equipment is readily available. - Ensure emergency response procedures are established. <u>Site-specific Measures</u> - Prepare a Fire Prevention and Emergency Response Procedure. - Store fuels and flammable materials in designated bunded areas. - Maintain fire extinguishers at welding and fuel storage locations. - Conduct regular fire drills. - Prohibit smoking outside designated smoking areas.	- Contractors - Sub-contractors	OHS Management Plan		
7	OHS - Physical Hazards: Industrial Vehicle	Contractors and sub-contractors' personnel	<u>General Measures</u> Ensure that industrial vehicle operators are trained in the safe use of specialized vehicles such as forklifts, including safe loading/unloading, load limits	- Contractors - Sub-contractors	OHS Management Plan		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure			Responsible Parties	Relevant Plans/Procedures
	Driving and Site Traffic	- Construction supervision consultants' personnel - Other Subproject-related personnel on-site	- Make sure drivers undergo medical supervision - Ensure that moving equipment with restricted rear visibility is equipped with audible back-up alarms - Ensure that rights of way, site speed limits, vehicle inspection requirements, operating rules and procedures (e.g. prohibiting operation of forklifts with forks down), and control of traffic patterns or direction are established - Ensure that deliveries and movement of private vehicles are restricted to defined routes and areas, with 'one-way' movement preferred where appropriate <u>Site-specific Measures</u> - Implement the TTMP throughout the construction period. - Separate construction work areas from public pedestrian routes using temporary barriers, fencing, and warning signage. - Provide safe and accessible temporary pedestrian crossings and alternative pedestrian routes where existing walkways are affected. - Deploy trained traffic marshals at locations with high traffic volumes and during activities requiring temporary traffic control. - Coordinate temporary lane closures, road diversions, and public transport route or stop relocations with the Konya Metropolitan Municipality and relevant authorities. - Maintain uninterrupted access to residences, businesses, schools, healthcare facilities, and emergency services throughout the construction period, wherever practicable.				

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure			Responsible Parties	Relevant Plans/Procedures
			- Schedule material deliveries and heavy vehicle movements outside peak traffic hours where feasible. - Provide advance notification to the public regarding planned traffic diversions, road closures, and changes to public transport services in accordance with the SEP.				
8	OHS - Physical Hazards: Ergonomics, Repetitive Motion, Manual Handling Lifting	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel - Other Subproject-related personnel on-site	<u>General Measures</u> - Ensure that mechanical assists are used to eliminate or reduce the effort required to lift materials, hold tools and work objects, and that more than one person is lifting if weights exceed thresholds - Ensure that tools are selected and designed that reduce force requirements and holding times and improve postures - Ensure that user-adjustable workstations are provided - Ensure that rest and stretch breaks are incorporated into work processes and job rotation is in place - Ensure quality control and maintenance programs are in place that reduce unnecessary forces and effort - Ensure that additional special circumstances, such as left-handed people, are considered <u>Site-specific Measures</u> - Rotate workers engaged in repetitive manual tasks. - Use mechanical lifting devices for rail and precast elements. - Stretching exercises before shifts.			- Contractors - Sub-contractors	OHS Management Plan
9	OHS - Physical Hazards: Excavation and Trenching Works	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel	General Measures - Ensure excavation works are planned and carried out in accordance with applicable national legislation and the IFC General EHS Guidelines. - Ensure underground utilities are identified prior to excavation.	- Contractors - Sub-contractors	OHS Management Plan		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure			Responsible Parties	Relevant Plans/Procedures
		Other Subproject-related personnel on-site	- Ensure excavation stability is maintained through shoring, shielding or sloping, as appropriate. - Ensure safe access and egress is provided for all excavation works. - Ensure excavations are inspected by a competent person before work begins and after events that may affect stability. Site-specific Measures - Prepare and implement an Excavation Safety Procedure before excavation works. - Identify and mark all underground utilities (electricity, gas, water, sewerage, telecommunication) prior to excavation. - Implement Permit-to-Dig procedures. - Install trench shoring, shielding or benching where required. - Fence excavation areas and install warning signs and night-time lighting. - Conduct daily inspections of excavations, particularly after rainfall. - Ensure safe access and egress (ladders, ramps) for workers.				
10	OHS - Underground Utilities	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel	<u>Site-specific Measures</u> <u>Verify utility drawings before construction.</u> <u>Conduct utility detection surveys.</u> <u>Coordinate with utility owners.</u> <u>Maintain minimum safety distances.</u> <u>Stop work immediately if unidentified utilities are encountered.</u>	- Contractors - Sub-contractors	OHS Management Plan		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure			Responsible Parties	Relevant Plans/Procedures
		Other Subproject-related personnel on-site					
11	OHS - Physical Hazards: Working at Height	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel - Other Subproject-related personnel on-site	<u>General Measures</u> - Ensure work at height is avoided where reasonably practicable. - Ensure fall prevention measures are implemented. - Ensure appropriate fall protection PPE is provided. - Ensure ladders, scaffolds and working platforms are inspected regularly. <u>Site-specific Measures</u> - Prepare Work at Height Procedures and Permit-to-Work. - Use certified scaffolding or Mobile Elevating Work Platforms (MEWPs). - Provide full-body harnesses and certified anchorage systems. - Install edge protection and fall prevention systems. - Suspend work during adverse weather conditions.	- Contractors - Sub-contractors	OHS Management Plan		
12	OHS - Physical Hazards: Falling Objects	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel - Other Subproject-related personnel on-site	<u>General Measures</u> - Ensure measures are implemented to prevent falling objects. - Ensure workers in exposed areas wear appropriate PPE. - Ensure lifting and overhead work areas are controlled. <u>Site-specific Measures</u> - Establish exclusion zones beneath overhead works. - Secure tools and materials while working at height. - Install toe boards, debris nets and protective canopies where necessary.	- Contractors - Sub-contractors	OHS Management Plan		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure			Responsible Parties	Relevant Plans/Procedures
			- Require mandatory hard hat use. - Restrict public access beneath overhead construction activities.				
13	OHS - Physical Hazards: Confined Space Entry	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel - Other Subproject-related personnel on-site	<u>General Measures</u> - Ensure confined spaces are identified and controlled. - Ensure atmospheric testing is undertaken before entry. - Ensure emergency rescue procedures are established. - Ensure only trained personnel enter confined spaces. <u>Site-specific Measures</u> - Develop a Confined Space Entry Procedure. - Apply Permit-to-Work before entry. - Conduct gas monitoring before and during entry. - Provide forced ventilation where required. - Ensure standby personnel and rescue equipment are available. - Train workers on confined space rescue.	- Contractors - Sub-contractors	OHS Management Plan		
14	OHS - Chemical Hazards	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel - Other Subproject-related personnel on-site	<u>General Measures</u> - Ensure that the hazardous substance is replaced with a less hazardous substitute - Ensure that engineering and administrative control measures are in place to prevent or minimize the release of hazardous substances into the working environment, keeping the exposure level below internationally established or recognized limits - Ensure that the number of workers exposed or likely to be exposed is minimal. - Ensure that chemical hazards are communicated to workers through labeling and marking according to nationally and internationally recognized requirements and standards, including International Chemical Safety Cards (ICSC), Material Safety Data Sheets (SDSs) or	- Contractors - Sub-contractors	OHS Management Plan		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			equivalent. Any means of written communication will be in an easily understood language and be readily available to exposed workers and first-aid personnel • Ensure that workers are provided with hazard communication and training to prepare them to recognize and respond to chemical hazards in the workplace. Programs should include aspects of hazard identification, safe operating and materials handling procedures, safe work practices, basic emergency procedures, and special hazards unique to their jobs. • Ensure that permitted maintenance activities such as hot work or confined space entries are defined and implemented • Ensure that appropriate PPE (footwear, masks, protective clothing and goggles in appropriate areas), emergency eyewash and shower stations, ventilation systems and sanitary facilities are provided • Ensure that employees are trained in the use of available information (such as SDSs), safe working practices and proper use of PPE • Ensure that monitoring and record-keeping activities and accident and incident investigation reports, including audit procedures designed to verify and record the effectiveness of the prevention and control of exposure to occupational hazards, are kept on file for at least five years. <u>Site-specific Measures</u> • Soil sampling at the spill location and surrounding areas to check for hydrocarbon or chemical contamination, • Air quality measurements, if volatile compounds are involved (e.g., paint thinners, solvents),		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure			Responsible Parties	Relevant Plans/Procedures
			Visual inspection and pH/EC screening, particularly in case of spills on unpaved ground				
15	Risks associated with management of employee grievances	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel - Other Subproject-related personnel on-site	- Develop and implement a Subproject-specific Labor Management Plan, including grievance mechanism for Subproject employees (covering all direct and contracted workers) to raise workplace concerns during the construction phase. - Ensure that all direct and contracted workers are informed of the grievance mechanisms at the time of recruitment and the measures put in place to protect them against any reprisal for its use. - Ensure that measures are put in place to make the grievance mechanism easily accessible to all Subproject employees. <u>Site-specific Measures</u> - Display information on the worker grievance mechanism at prominent locations on site, including site offices, rest areas, welfare facilities, and notice boards. - Ensure that all Subproject workers receive induction training on the worker grievance mechanism prior to commencing work. - Ensure that all Subproject workers read, understand, and sign the Project Code of Conduct before starting work. - Provide mandatory training to all Subproject workers on Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), including prohibited behaviours, reporting procedures, and available support mechanisms. Refresher training shall be provided periodically and whenever considered necessary during the construction period. - Provide mandatory induction training to all Subproject workers on appropriate interaction with local communities, cultural awareness, and expected standards of behaviour prior to commencing work. - Maintain records of Code of Conduct acknowledgements and all induction and refresher training sessions.			- Contractors - Sub-contractors]	- OHSMP - SEP - LMP
ESS3 - Resource Efficiency and Pollution Prevention and Management							
Resource Efficiency (Energy Use, Water Use and Raw Material Use)							
1	Energy Use, Water Use and Raw Material Use	Natural Resources and Ecosystems, Local Communities	<u>General Measures</u> Ensure implementation of technically and financially feasible measures for improving efficient consumption of energy, water and raw materials, as well as other resources in the Subproject.			- Sub-borrower, - Contractor, - Construction Supervision	ESMP,

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
		and Utility Infrastructure	- Where possible, ensure maximization of the reuse of excess excavated, non-contaminated soil material, either as aggregate (e.g. reclaimed asphalt pavement or reclaimed concrete material) or as a base. <u>Site-specific Measures</u> - Sub-borrower will ensure that the Contractor will continue to comply with the Water Resources Management Plan which will be prepared by the Contractor in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) before the commencement of the works. The Contractor will ensure that all employees involved in mobilization, site preparation, excavation, foundation works, material handling, and other water-related construction activities are trained on the Water Resources Management Plan prior to commencing such works. Refresher trainings will be conducted periodically or when there are changes in site conditions, workforce, or plan updates. This requirement will be explicitly included in the Contractor's contract and monitored as part of environmental compliance. - Activities should not affect the availability of water for drinking and hygienic purposes. - To minimize localized impacts during temporary in-water works, the Contractor will ensure that appropriate mitigation measures are in place, such as: - Maintaining the natural flow of water during pier demolition and reconstruction using cofferdams or phased construction methods; - Avoiding blockage of water channels with construction materials or equipment; - Implementing site drainage management plans to prevent surface runoff and sediment from entering the waterbody. - These measures will be part of the Contractor's Water Resources Management Plan, and compliance will be monitored throughout the construction phase.	Consultant	
Management of Soil Resources					
2	Soil disturbance and erosion	Topsoil and Underlying Soil Layers, Nearby Water Bodies,	<u>General Measures</u> - Minimizing disturbance to vegetation and soils. - Reducing or preventing erosion by scheduling to avoid heavy rainfall periods (i.e., during the dry season) to the extent practical; contouring and minimizing length and steepness of slopes; mulching to stabilize exposed areas; re-vegetating areas promptly; designing channels and ditches for post-construction flows; and/or lining steep channel and slopes.	- Sub-borrower, - Contractor, - Construction Supervision Consultant	ESMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			- Modifying or suspending activities during extreme rainfall and high winds to the extent practical. - Segregating or diverting clean water runoff to prevent it mixing with water from construction sites containing a high solids content. - Limiting access road gradients to reduce runoff-induced erosion. - Providing adequate road drainage based on road width, surface material, compaction, and maintenance. - Providing effective short term measures for slope stabilization, sediment control and subsidence control until long term measures for the operational phase can be implemented. - Providing adequate drainage systems to minimize and control infiltration. <u>Site-specific Measures</u> - The contractor will take additional mitigation measures, such as soil sampling, in case of a requirement revealed by the monitoring and/or any complaint. - The disturbed areas and soil stock piles will be kept moist to avoid wind erosion of soil and the pile height will not be higher than 2 m. - Topography will be restored to provide stabilization immediately after the completion of construction at each location. - Construction activities (especially excavation works) will be undertaken in the dry weather condition as much as possible to avoid surface runoff effects on excavated soil. - Wellpoint or deep well dewatering systems will be used depending on the soil permeability and groundwater table conditions.		
3	Impacts on soil contamination	Topsoil and Subsoil Layers, Surface Water Bodies,	<u>Site-specific Measures</u> - Sub-borrower will ensure that the Contractor will continue to comply with the Soil Management Plan which will be prepared by the Contractor in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) before the commencement of the works. - In order to minimize the impacts on soil environment, the amount of soil that could be subject to compaction and contamination/pollution will be minimized by ensuring the use of only the designated work sites and routes for the construction machinery and equipment and field personnel; - The fuel required for the construction equipment and vehicles to be used within the site during construction phase will be supplied primarily from the nearest station; if deemed	- Sub-borrower, - Contractor, - Construction Supervision Consultant	ESMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			necessary, fuels that may possibly be stored at site will be stored in the areas where necessary impermeability precautions (including secondary containment) are taken; • Machinery and equipment will be checked regularly for leaking oil and fuel; • The provisions of the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes shall be complied with during construction phase of the Project; • Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources shall be complied with within the scope of the Project; • Wastes and wastewater to be generated during the construction phase of the Project will be stored and disposed in a controlled manner in accordance with the Waste Management Regulation and Regulation on the Control of Excavation, Construction and Demolition Wastes, WB ESS1, WBG General EHS Guidelines and in line with the management practices described in this report; • According to requirements specified in the Regulation on the Control Soil Pollution and Sites Contaminated by the Point Source, in terms of a possible soil contamination in the area, KMM is obliged to notify the MoEUCC on possible soil pollution in the Project Area according to the procedure defined in the regulation. Based on the inspections that will be carried out by the MoEUCC, if the site will be defined as a contaminated site that needs to be cleaned up, the site will be cleaned up by firms authorized by the MoEUCC and KMM will be the responsible entity to ensure clean up. Within the scope of cleanup activities, the following measures will be taken for the contaminated areas during the construction phase: ○ Vehicles containing any excavated soil will be suitably covered to limit potential dust emissions and truck bodies and tailgates will be sealed to prevent any discharge during transport; ○ Only licensed waste haulers will be used to collect and transport contaminated soil to an appropriate treatment/disposal site and illegal disposal of the soil will be prohibited;		
Management of Air Pollution					
4	Emissions to air during construction	Fatih, Bedir, Beyhekim Neighbourhoods	<u>General Measures</u> • Use of dust control methods, such as covers, water suppression, or increased moisture content for open storage piles. • Use of water suppression for control of loose materials on paved or unpaved road surfaces. • Selectively removing potential hazardous air pollutants, such as asbestos, from existing infrastructure prior to demolition <u>Site-specific Measures</u> • Sub-borrower will ensure that the contractor will prepare and implement an Air Quality and Emissions Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific). The Air Quality and Emissions Management Plan will be prepared by the Contractor 30 days prior to commencement of	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • Air Quality and Emissions Management Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			the works to ensure; The employees will be trained on the Air Quality and Emissions Management Plan; - Dust will be minimized from open area sources, including storage piles, by using control measures such as installing enclosures and covers and increasing the moisture content; - Speed limitations will be defined and obeyed for construction vehicles; - The drop height of potentially dust generating materials will be kept as low as possible; - Dust suppression methods will be applied at construction sites to mitigate Project-related dust emissions. In this respect, the upper layers of the work sites/materials will be kept at a humidity level of about 10%. Watering will be applied at any time necessary including night time, weekends or off-days by using pressurized distribution or spraying systems that would ensure even distribution of water; - If there is traffic flow on the existing roads near the work sites, dust suppression measures will be continuously applied to ensure traffic safety. If there is no traffic existing in the local roads, dust suppression measures will be applied only at local residential areas; - All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic. Vehicle speeds are proposed to be limited to 30 km/h on unpaved surfaces; - When there will be windy weather conditions (wind speed is above 30 km/hour) in the Subproject Area, excavation will not be carried out or additional measures such as placement of wind shields/barriers will be taken to prevent dust dispersion; - Loading and unloading operations will be performed without throwing/scattering; - Wind shields/barriers will be placed at work sites such as material storage areas to prevent dust dispersion where necessary; - Solid screens or barriers that are at least as high as any stockpiles on site will be erected at the boundaries of the construction site adjacent to the crops and/or field; - Any damage caused by insufficient or lack of dust suppression (transportation of dust to a residential area, wind borne dust deposits etc.) measures will be compensated by the contractor. - The asphalt roads will be used as much as possible, - Compliance with the air emission limit values stipulated in national legislation and WBG General EHS Guidelines will be ensured. - Dust measurements will be conducted if any grievance regarding dust generation is received and mitigation measures will be enhanced in this respect such as increasing wet suppression/watering activities, further reducing speed/traffic if deemed necessary, considering both national and WBG EHS Guidelines limit values. - Compliance with the air emission limit values stipulated in national legislation and WB Compliance with the air emission limit values stipulated in national legislation and WB.		
Management of Wastes					
5	Generation of non-hazardous	- Soil and Land, - Local	<u>General Measures</u>	- Sub-borrower, - Contractor,	- ESMP, - Waste

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
	and hazardous waste during construction	Communities, Waste Disposal Sites	- Establish waste management priorities at the outset of activities based on an understanding of potential Environmental, Health, and Safety (EHS) risks and impacts and considering waste generation and its consequences - Ensure that a waste management hierarchy is established that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of waste - Ensure that waste segregation and storage in temporary waste storage areas is managed according to the standards set out in the GIIP and relevant legislation - Ensure that waste is classified and labeled according to waste codes. - Ensure that data and information is collected on waste streams generated under the Subproject, including characterization of waste streams by type, quantity and potential use/disposal. - Ensure that raw materials or inputs are substituted with less hazardous or toxic materials or with materials for which processing produces lower waste volumes. - Ensure that good housekeeping and operational practices, including inventory control, are established to reduce the amount of waste from materials that are outdated, out-of-specification, contaminated, damaged or in excess of facility needs - Ensure that the generation of hazardous waste is minimized by implementing strict waste segregation to avoid mixing of non-hazardous and hazardous waste to be managed. - Ensure that contractors handling, treating, and disposing of hazardous waste are reputable and legitimate enterprises, licensed by the relevant regulatory agencies and following GIIP for the waste being handled. - Ensure that waste is stored in a manner that prevents the commingling or contact between incompatible wastes, and allows for inspection between containers to monitor leaks or spills (Examples include sufficient space between incompatibles or physical separation such as walls or containment curbs). - Ensure storage in closed containers/area away from direct sunlight, wind and rain. - Ensure construction of secondary containment systems with materials appropriate for the wastes being contained and adequate to prevent loss to the environment. - Ensure that secondary containment is included wherever liquid wastes are stored in volumes greater than 220 liters. The available volume of secondary containment will be	Construction Supervision Consultant	Management Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			at least 110 percent of the largest storage container, or 25 percent of the total storage capacity (whichever is greater), in that specific location. • Ensure that adequate ventilation is provided where volatile wastes are stored. • Access to hazardous waste storage areas will be limited to employees who have received proper training • The area will be clearly identified (labeled) and demarcated including documentation of its location on a facility map or site plan. • Periodic inspections of waste storage areas will be conducted and the findings will be documented. <u>Site-specific Measures</u> • Sub-borrower will ensure that the Contractor will continue to comply with the Waste Management Plan which will be prepared by the Contractor in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific). The Contractor will ensure all the employees are trained on the Waste Management Plan and renew the training if necessary. • Waste batteries from construction site and accumulators from vehicles will be disposed of in compliance with the consumer responsibilities specified in Article 13 of the "Regulation on Control of Waste Batteries and Accumulators". Accordingly, used batteries will be collected separately (from municipal wastes) and transferred to the TAP battery collection center • All other hazardous materials will be disposed of in accordance with the Waste Management Regulation; Spill kits will be available at the Temporary Storage Area and necessary precautions will be taken against possible fires such as provision of appropriate firefighting equipment.		
Management of Wastewater					
6	Wastewater generation (such domestic wastewater, wastewater from construction sites, etc.)	• Waste Disposal Sites, • Soil Contamination,, • Local Communities, • Wastewater Treatment	<u>General Measures</u> • Ensure water is used efficiently to reduce the amount of wastewater generation • Ensure that waste minimization and process modification, including reduction of the use of hazardous substances, is carried out to reduce the load of pollutants requiring treatment. • If non-leaking septic systems are to be used for wastewater disposal and treatment, ensure that the following requirements are met:	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP • Water Resources Management Plan, • Pollution Prevention Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
		Infrastructre	○ Properly designed and installed in accordance with national legislation and guidance to prevent any hazard to public health or contamination of land, surface or groundwater. ○ Well maintained to allow effective operation. <u>Site-specific Measures</u> • Sub-borrower will ensure that the Contractor will continue to comply with the Water Resources Management Plan which will be prepared in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) before the commencement of the works. This condition will be included in Contractor's Contract. The Contractor will ensure all the employees are trained on the Water Resources Management Plan and renew the training if necessary; • Sub-borrower will ensure that the contractor is complying with the Pollution Prevention Plan that is prepared in line with WB ESS1 and WBG EHS Guidelines (both general and sectorial) before the commencement of the works. The Contractor will ensure all the employees are trained on the Pollution Prevention Plan and renew the training if necessary. • Surface runoff resulted from rain/storm water or wastewater generation due to dust suppression activities will be prevented; • The water to be used for dust suppression will be monitored and recorded in m³; • The units of the Project that are in touch with water, wastewater and chemicals will be constructed using concrete with appropriate cement ratio and durability in order to provide basement impermeability. Thus, no leakages to soil and groundwater will occur during the operation phase of the Project; •		
Management of Chemicals and Hazardous Materials					
7	Release of hazardous materials in the event of accidents during construction	• Waste Management and Disposal Site	<u>General Measures</u> • Where practicable, avoiding or minimizing the use of hazardous materials. • Preventing uncontrolled releases of hazardous materials to the environment or uncontrolled reactions that might result in fire or explosion. • Identify the types and the quantities of hazardous substances present in the Subproject. This information will be recorded and will include a summary table with the following information: ○ Name and description (e.g. composition of a mixture) of the hazardous materials ○ Classification (e.g. code, class or division) of the hazardous materials	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			○ Internationally accepted regulatory reporting threshold quantity or national equivalent of the hazardous materials ○ Quantity of hazardous materials used per month ○ Characteristic(s) that make(s) the materials hazardous (e.g. flammability, toxicity) • Ensure that the potential for uncontrolled reactions such as fire and explosion is analyzed. • Ensure that operators are trained on release prevention, including drills specific to hazardous materials as part of emergency preparedness response training • Ensure a description of response activities in the event of a spill, release or other chemical emergency, including: ○ Internal and external notification procedures ○ Specific responsibilities of individuals or groups ○ Decision process for assessing severity of the release, and determining appropriate actions ○ Facility evacuation routes ○ Post-event activities such as clean-up and disposal, incident investigation, employee re-entry, and restoration of spill response equipment. <u>Site-specific Measures</u> • Soil sampling at the spill location and surrounding areas to check for hydrocarbon or chemical contamination, • Visual inspection and pH/EC screening, particularly in case of spills on unpaved ground		
Management of Environmental Noise and Vibration					
8	Noise and vibration generation during construction	• Local Communities • Workers on Site	<u>General Measures</u> • Manage the potential impact of noise, selecting equipment with lower sound power levels • Plan activities in consultation with communities so that noisiest activities are undertaken during periods that will result in least disturbance. • Use when needed and feasible noise-control methods such as fences, barriers or deflectors. • Minimize Subproject-related transportation through community areas. • Ensure implementation of Subproject-specific SEP in order to address any noise-related grievance and plan/take corrective actions, where necessary.	• Sub-borrower, • Contractor, • Construction Supervision Consultant	• ESMP, • SEP, • Noise and Vibration Management Plan

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			- Ensure consultation with PAPs prior to the start of and during the construction activities to be conducted at this location in order to inform stakeholders about the scope and duration of the activities and mitigate the potential impacts for the period of construction <u>Site-specific Measures</u> - Sub-borrower will ensure that the contractor will prepare and implement a Noise and Vibration Management Plan that is in line with the WB ESS1 and WBG EHS Guidelines (both general and sector specific) prior to the construction works and the employees will be trained on the Plan. The Plan will include: - Assessment of impact levels based on equipment type, construction activities - Mitigation measures such as use of low-noise equipment, scheduling of high-noise activities outside sensitive hours, and physical noise barriers, - Monitoring strategy consistent with national regulations and IFC/WBG guidance, - Training of workers involved in noise and vibration-generating activities		
ESS4 - Community Health and Safety					
Infrastructure design and safety					
1	Risks posed to the public while accessing Subproject facilities (such as physical trauma associated with failure of structures, burns and smoke inhalation from fire,	Aol	<u>General Measures</u> - Design and construct the structural elements of the Subproject in accordance with national legal requirements, the EHSGs and other GIIP, taking into consideration safety risks to third parties and affected communities. - Ensure that the structural elements of the Subproject are designed and constructed by competent professionals, and certified or approved by competent authorities or professionals. - Ensure that the structural design takes into account climate change considerations, as appropriate. - Ensure incorporation of siting and safety engineering criteria to prevent failures due to natural risks posed by earthquakes, tsunamis, wind, flooding, landslides and fire. - Ensure design the Subproject structures in accordance with engineering and design criteria mandated by site-specific risks, including but not limited to seismic activity, slope stability, wind loading, and other dynamic loads.	- Contractors - Sub-contractors	ESMP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
	injuries suffered as a consequence of falls or contact with heavy equipment, etc.)		- Ensure application of nationally regulated or internationally recognized buildings codes to ensure structures are designed and constructed in accordance with sound architectural and engineering practice, including aspects of fire prevention and response. - Ensure that the engineers and architects responsible for designing and constructing facilities, building, plants and other structures certify the applicability and appropriateness of structure criteria employed. <u>Site-specific Measures</u> - Temporary work platforms, excavation support systems, and construction equipment used along the tramway alignment will be inspected regularly and maintained in safe operating condition to prevent collapse, instability, or accidents affecting workers and the public. - Fire prevention measures (e.g., fire extinguishers, emergency signage, and evacuation procedures) will be implemented at construction compounds, site offices, workshops, and material storage areas. - During works adjacent to public roads, pedestrian routes, or operational infrastructure, appropriate protective measures (e.g., barriers, covered walkways, debris containment systems) will be installed to prevent falling materials and ensure public safety. - Safety inspections will be conducted before reopening any road sections, pedestrian crossings, or public access areas affected by temporary traffic diversions or construction activities to ensure that no residual hazards remain. - Emergency situations (e.g., excavation collapse, fire, traffic accidents, utility damage, worker injury, or hazardous material incidents) will be managed in accordance with the Emergency Preparedness and Response Plan (EPRP), including coordination with relevant authorities, emergency services, and public safety stakeholders.		
Traffic and Road Safety					
2	Traffic and road safety risks during construction (such as traffic related injuries and fatalities due to traffic accidents,	- Beyhekim Training and Research Hospital - Student dormitories located on Şafak Street	<u>General Measures</u> - Manage the potential impact of increase in traffic, coordination with emergency responders to ensure that appropriate first aid is provided in the event of accidents - Ensure use of locally sourced materials, whenever possible, to minimize transport distances. Locating associated facilities such as worker camps close to project sites and arranging worker bus transport to minimizing external traffic - Ensure employing safe traffic control measures, including road signs and flag persons to warn of dangerous conditions	- Contractors - Sub-contractors	- TMP - SEP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
	collisions, etc.)	- Educational facilities in Fatih Neighborhood. - İstanbul Street Kent Plaza junction - Sections of Bedir Neighborhood	- Develop sub-Project-specific SEP will be implemented to address any construction transport/traffic related grievance and plan/take corrective actions in line with the Grievance Mechanisms, where necessary. As part of SEP, local communities will be informed about the construction sites, traffic restrictions to be applied for health and safety purposes and duration of such restrictions. - Emphasizing safety aspects among drivers - Improving driving skills and requiring licensing of drivers - Adopting limits for trip duration and arranging driver rosters to avoid overtiredness - Avoiding dangerous routes and times of day to reduce the risk of accidents - Ensure use of speed control devices (governors) on trucks, and remote monitoring of driver actions - Roads passing through settlements will be avoided whenever alternative routes are available. If Project traffic routing through the settlements is not avoidable, all necessary traffic management measures will be taken. The local communities and if necessary local authorities will be informed about the transportation routes and schedule - Scheduling of traffic will be undertaken to avoid the peak hours on the local road network wherever practicable (e.g. early in the morning with the daylight). Scheduling information and planned traffic disruptions will be communicated well in advance to all related parties including authorities, local communities and nearby businesses <u>Site-specific Measures</u> - Develop and implement an Emergency Preparedness and Response Plan (EPRP), including procedures for traffic accidents and other transport-related emergencies during construction. - Prepare and implement a Traffic and Transportation Management Plan (TTMP) covering construction phasing, traffic diversions, temporary road and pedestrian access arrangements, traffic control measures, emergency response procedures, and roles and responsibilities of relevant personnel. - Coordinate temporary traffic management measures with relevant municipal authorities and emergency services to minimize disruption to road users, public transport services, businesses, and local communities. - Install appropriate signage, barriers, lighting, and warning systems at construction areas and traffic diversion points to ensure the safety of pedestrians, cyclists, and vehicle users.		

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			Maintain safe and accessible pedestrian routes and access to residential areas, businesses, public services, and public transport facilities throughout the construction period, where feasible.		
3	Pedestrian safety risks during operation (e.g. serious injury from collisions with moving vehicles, etc.)	- Beyhekim Training and Research Hospital - Student dormitories located on Şafak Street - Educational facilities in Fatih Neighborhood. - İstanbul Street Kent Plaza junction - Sections of Bedir Neighborhood	<u>General Measures</u> - Development of a Traffic Management Plan, which also addresses pedestrian safety risks during construction. - Minimize pedestrian interaction with construction vehicles and routes. - Provision of safe corridors along the road alignment and construction areas for pedestrians and bicyclists during construction. - Installation and maintenance of speed control and traffic calming devices at pedestrian crossing areas during construction. - Ensure collaboration with local communities and responsible authorities to improve signage, visibility and overall safety of roads, particularly along stretches located near schools or other locations where children may be present. Collaborating with local communities on education about traffic and pedestrian safety (e.g. school education campaigns). - Installation and maintenance of all signs, signals, markings, and other devices used to regulate traffic, specifically those related to pedestrian facilities or bikeways during construction. <u>Site-specific Measures</u> - Develop and implement a Subproject-specific Traffic and Transportation Management Plan (TTMP) addressing pedestrian safety relevant to the construction phase of the Subproject. - Establish and maintain safe pedestrian access routes within and around construction areas throughout the construction period. - Ensure construction site entry and exit points are clearly visible, adequately lit, and managed to minimize pedestrian–vehicle interactions. - Separate pedestrian movements from construction activities through the use of barriers, fencing, protected walkways, and designated crossing points where necessary. - Provide clearly marked pedestrian crossings and appropriate traffic control measures in areas with high pedestrian activity. - Maintain safe pedestrian access to key receptors, including Beyhekim Training and Research Hospital, student dormitories located on Şafak Street, educational facilities in Fatih	- Contractors - Sub-contractors	- TTMP - SEP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			Neighborhood, the İstanbul Street–Kent Plaza junction, and affected sections of Bedir Neighborhood. • Install appropriate signage, wayfinding information, and warning systems to guide pedestrians safely around construction zones. • Inform affected communities and facility users about construction activities, temporary access changes, and pedestrian safety measures through the Stakeholder Engagement Plan (SEP). • Give particular consideration to the needs of vulnerable road users, including children, elderly persons, persons with disabilities, and hospital visitors, when designing temporary pedestrian arrangements. • Train all site personnel and vehicle operators on pedestrian safety requirements, right-of-way rules, and safe driving practices in areas with public access. • Provide additional lighting and safety measures in locations with elevated pedestrian activity, including areas near schools, dormitories, healthcare facilities, public transport stops, and major intersections		
Emergency Preparedness and Response					
4	Risks and impacts on communities due to potential emergency events during construction (unanticipated incidents, arising from both natural and man-made hazards, typically in the form of fire, explosions, leaks or spills, which may	• Contractors and sub-contractors' personnel • Construction supervision consultants' personnel • Other Subproject-related personnel on-site • Aol	<u>General Measures</u> • Develop and implement a Subproject-specific Emergency Preparedness and Response Plan addressing emergency events relevant to the construction phase of the Subproject. <u>Site-specific Measures</u> • Develop and implement a Subproject-specific Emergency Preparedness and Response Plan (EPRP) addressing emergency events relevant to the construction phase of the Subproject. • A detailed risk assessment will be conducted to identify potential emergencies (e.g., fires, explosions, natural disasters). According to this assessment, EPRP will be tailored, implemented and updated as necessary.	• Contractors • Sub-contractors	• EPRP • OHSMP • LMP • SEP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
	occur for a variety of different reasons, including failure to implement operating procedures that are designed to prevent their occurrence, extreme weather or lack of early warning, traffic accidents, structural failures, etc.).				
Security Personnel					
5	Risks posed by these security arrangements to those within and outside the Subproject site during construction	- Contractors and sub-contractors' personnel - Construction supervision consultants' personnel - Other Subproject-related personnel on-site	<u>General Measures</u> - Ensure that the risks posed by the security arrangements to those within and outside the Subproject site are assessed when direct or contracted workers are retained to provide security to safeguard Subproject-related personnel and properties. - Ensure that security arrangements of the Subproject are guided by the principles of proportionality and GHIP, and by applicable national legislation, in relation to hiring, rules of conduct, training, equipping, and monitoring of such security workers. - Ensure that the use of force by direct or contracted workers is not sanctioned in providing security except when used for preventive and defensive purposes in proportion to the nature and extent of the threat.	- Contractors - Sub-contractors	- ESMP - SEP - ESCP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			- Ensure that (i) reasonable inquiries are made to verify that the direct or contracted workers retained within the scope of the Subproject to provide security are not implicated in past abuses; (ii) security personnel are trained adequately (or determine that they are properly trained) in the use of force (and where applicable, firearms), and appropriate conduct toward workers and affected communities; and (iii) security personnel are required to act within the applicable national legislation and any requirements set out in Project's ESCP and Subproject's ESAP. - Ensure that all allegations of unlawful or abusive acts of security personnel are reviewed, necessary actions are taken by appropriate parties to prevent recurrence and, where necessary, unlawful and abusive acts are reported to the relevant authorities. <u>Site-specific Measures</u> - Security personnel assigned to the Project will act in accordance with a Security Code of Conduct and receive training on appropriate interaction with workers, local communities, and vulnerable groups. - All security personnel will be clearly identifiable through uniforms and/or identification badges while on duty.		
ESS5 - Land Acquisition, Restrictions on Land Use and Involuntary Resettlement					
1	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	- Local communities - Business owners - Tenants - Road users - Project Affected Persons in the SEP	General Measures - Avoid or minimize land acquisition and restrictions on land use through detailed design optimization wherever feasible. - Ensure that no physical or economic displacement occurs unless managed in accordance with ESS5 and the applicable Land Acquisition and Livelihood Restoration Framework. - Inform affected stakeholders in advance of construction activities that may temporarily affect access to properties or businesses. - Maintain an accessible grievance mechanism for Project Affected Persons through the SEP. Site-specific Measures - Maintain pedestrian and vehicle access to residences, businesses and public facilities wherever practicable throughout construction. - Implement the TTMP to minimize temporary access restrictions.	- Contractor - Construction Supervision Consultant - Sub-borrower	- ESMP - SEP

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			- Coordinate construction activities with affected businesses and local authorities prior to temporary road closures or access changes. - Provide advance notification of construction schedules, temporary diversions and access arrangements in accordance with the SEP. - Monitor any temporary impacts on businesses and implement corrective measures where required. The relocation of the Old Industrial Zone and Karatay Industrial Zone is implemented under an independent Urban Transformation and Development Project and is not associated with the Subproject. Therefore, no physical or economic displacement is anticipated within the scope of this Subproject.		
ESS6 - Biodiversity Conservation and Sustainable Management of Living Natural Resources					
1	Impacts on habitats	J4.2 (Road networks): Due to existing asphalt roads and associated transport infrastructure. J6 (Waste deposits / Artificial areas): Due to the lack of natural vegetation, high levels of human disturbance, and lack of ecological value.	<u>General Measures</u> - Siting roads and support facilities to avoid natural and critical habitats utilizing existing transport corridors whenever possible. - In case of habitat fragmentation, design and construction of wildlife access to avoid or minimize the impact, taking into account motorist safety and the behavior and prevalence of existing species¹². - Minimizing removal of native plant species, and replanting of native plant species in disturbed areas. <u>Site-specific Measures</u> - Construction activities shall be limited to the designated construction footprint, access roads and approved work areas to avoid unnecessary disturbance of adjacent habitats and urban green spaces. - Prior to the land preparation phase, definite working areas will be set up where activities (e.g. vegetation clearing, vegetation removal, leveling and construction) and permanent structures (units and roads) will be established; - Vegetation clearing within the site boundary will be avoided unless it is absolutely necessary; - Clearing mature trees will be avoided;	- Sub-borrower, - Contractor, - Construction Supervision Consultant	ESMP,

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			- Existing trees, landscaped areas and ornamental vegetation located outside the approved construction corridor shall be protected from accidental damage by fencing, marking or other suitable protection measures. - Tree pruning or removal shall be minimized and conducted only upon obtaining the necessary permits from the relevant authorities. - Construction materials, excavated soil and waste shall not be stored in parks, green areas or vegetated areas unless specifically designated for such use. - Workers shall be prohibited from harming, capturing, feeding or disturbing wildlife encountered within the Project area.		
2	Impacts on flora species	Affected flora species may include ornamental trees, shrubs, grassed areas and roadside vegetation located along the tram alignment, station areas and temporary construction sites.	<u>Site-specific Measures</u> - Prior to construction, trees and landscaped areas that are planned to be retained shall be clearly marked and protected against accidental damage. - Tree cutting and pruning activities shall be minimized and undertaken only after obtaining the necessary permits from relevant authorities. - Excavated materials, construction waste and equipment shall not be stored within landscaped or vegetated areas unless specifically designated. - Root zones of retained trees shall be protected from excavation works, heavy machinery movement and material storage. - Where tree removal is unavoidable, compensatory planting shall be implemented in coordination with Konya Metropolitan Municipality. - Temporarily disturbed green areas shall be reinstated and re-vegetated following completion of construction activities. - Invasive plant species, if encountered during landscaping or rehabilitation works, shall not be used in revegetation activities. - Existing irrigation systems serving landscaped areas shall be protected or reinstated where damaged during construction.	- Sub-borrower, - Contractor, - Construction Supervision Consultant	ESMP,
3	Impacts on fauna species	Potential impacts may occur on common urban fauna species inhabiting parks, landscaped areas,	<u>Site-specific Measures</u> - Construction activities shall be restricted to designated work areas to minimize disturbance to surrounding habitats. - Vegetation clearance shall be limited to the minimum area required for construction activities.	- Sub-borrower, - Contractor, - Construction Supervision Consultant	ESMP,

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
		roadside vegetation and open spaces along the tram corridor.	- Construction personnel shall be prohibited from harming, hunting, capturing, feeding or disturbing wildlife. - Waste shall be properly managed to avoid attracting birds, rodents or other animals to construction areas. - Noise and dust control measures shall be implemented to reduce temporary disturbance to fauna species.		
ESS8 - Cultural Heritage					
1	Chance finds	Chance Finds to be encountered	<u>General Measures</u> - Implement the Subproject-specific Chance Finds Procedure (presented in Annex H) if previously unknown cultural heritage is encountered during Subproject activities. - Include the Subproject-specific Chance Finds Procedure in all contracts relating to construction of the Subproject, including excavations, demolition, movement of earth, or other changes in the physical environment. - Ensure that the Subproject personnel are trained on the Subproject-specific Chance Finds Procedure. <u>Site-specific Measures</u> - Please see the Subproject-specific Chance Finds Procedure (presented in Annex H) - Prior to commencement of excavation works, construction personnel shall be informed about the potential presence of archaeological or cultural heritage remains and the reporting requirements under the Chance Finds Procedure. - Excavation activities in areas identified by relevant authorities as having archaeological potential shall be conducted with increased attention and in coordination with the competent authorities where required. - In the event that archaeological remains, artifacts, human remains, foundations, structures, pottery fragments or other cultural heritage materials are encountered, all works in the immediate vicinity shall cease immediately and the area shall be secured until further instructions are provided by the relevant authority. - Any discovered cultural heritage items shall not be removed, damaged, handled or relocated by construction personnel. - Access to the find location shall be restricted to prevent theft, vandalism or accidental damage.	- Sub-borrower, - Contractor, - Construction Supervision Consultant	- ESMP, - Chance Finds Procedure]

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			Construction activities may resume only after written clearance is received from the relevant cultural heritage authority.		
ESS10 - Stakeholder Engagement and Information Disclosure					
1	Risks associated with stakeholder engagement	The list of Subproject stakeholders in the SEP	<u>Site-specific Measures</u> - Implement the Subproject-specific Stakeholder Engagement Plan (SEP) during the construction phase. - Disclose Subproject information in line with the SEP to allow stakeholders to understand the risks and impacts of the Subproject and potential opportunities. - Install multilingual and pictogram-based signage near pedestrian areas, business entrances, mosque gates, and metro access points to ensure clear communication regardless of literacy level or language. - Organize targeted stakeholder meetings with sensitive groups before major construction phases to gather feedback and adjust plans where needed. - Distribute physical brochures or bulletins through headmen offices, mosques, and cafes detailing project updates, especially where digital access is limited. - Maintain a visible community notice board near the project site to display up-to-date information, maps of detours, safety measures, and contact details of the community liaison. Document and respond to feedback received during stakeholder engagement activities and public information sessions through an engagement log, feeding into adaptive project management.	- Contractors - Sub-contractors	SEP
2	Risks associated with grievance management	The list of Subproject stakeholders in the SEP	<u>Site-specific Measures</u> - Implement the Subproject-specific Grievance Mechanism developed as part of the SEP. - Establish a functional, accessible grievance mechanism in the pre-construction phase and make it available to all stakeholder groups, including vulnerable individuals. - Ensure multiple channels for grievance submission, including anonymous options - Email and phone hotline - Appoint a grievance focal point who will monitor, document, and coordinate the resolution of complaints, and introduce them to the community through signs and public communication.	- Contractors - Sub-contractors	- SEP - GM Procedure

No	Risk and Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Relevant Plans/Procedures
			• Ensure that all grievances are logged, categorized, and responded to within pre-defined timeframes (e.g., 7 days for acknowledgement, 30 days for resolution). • Provide feedback to complainants, including explanation of action taken or justification if no action is required. • Conduct regular audits of grievance handling, and adjust procedures based on recurring complaints or stakeholder feedback. Raise awareness among all project-affected people, workers, and community members about the grievance mechanism, their rights, and how to access the system.		

4.3. Operation ESMP Matrix

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
ESS2 - Labor and Working Conditions					
1	Risks associated with labor and working conditions	All personnel working on the Subproject	<u>General Measures</u> • Develop and implement a Subproject-specific Labor Management Plan for the operation phase. • Ensure that the Subproject workers are provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. The information and documentation will set out their rights under national labor and employment law (which will include any applicable collective agreements), including their rights related to hours of work, wages, overtime, compensation and benefits, as well as those arising from the requirements of ESS2. • Ensure that information and documentation regarding employees' terms and conditions of employment is provided at the beginning of the working relationship and when any material changes to the terms or conditions of employment occur. • Ensure that the Subproject workers are paid on a regular basis as required by national legislation and the Subproject-specific LMP. • Ensure that the Subproject workers are provided with adequate periods of rest per week, annual holiday and sick, maternity and family leave, as required by national legislation and the Subproject-specific LMP. • Ensure that the decisions relating to the employment or treatment of Subproject workers are not made on the basis of personal characteristics unrelated to inherent job requirements. • Ensure that the employment of Subproject workers is based on the principle of equal opportunity and fair treatment, and there will be no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, or disciplinary practices.	• Sub-borrower	• LMP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			- Measures will be taken to prevent employment or engagement of children under the minimum age established in GFCEP Project's LMP¹³. - Measures will be taken in accordance with the Subproject specific Labor Management Plan to prevent use of forced labor¹⁴ in connection with the Subproject. - Where on-site or off-site accommodation services¹⁵ are provided to Subproject workers, ensure that the relevant requirements of "Workers' Accommodation: Processes and Standards: A guidance Note by IFC and the EBRD (August 2009)" are in place and implemented on the management and quality of accommodation to protect and promote the health, safety, and well-being of the Subproject workers, and to provide access to or provision of services that accommodate their physical, social and cultural needs. <u>Site-specific Measures</u> - All routine and non-routine maintenance work will be carried out by KMM personnel trained in OHS procedures and equipped with necessary PPE. - Workers will use fall arrest systems (e.g. full-body harness, anchor points) during tasks such as lighting maintenance or railing inspection. - Temporary traffic control measures (e.g. warning signs, lane closures) will be implemented during maintenance to protect workers. - All personnel will wear high-visibility clothing and receive training in traffic-aware safe behavior.		

¹³ According to the Project LMP, workers under the age of 18 will not be engaged by the Project.

¹⁴ Forced labor consists of any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty. Work is on a voluntary basis when it is done with the free and informed consent of a worker. Such consent must exist throughout the employment relationship and the worker must have the possibility to revoke freely given consent. In particular, there can be no "voluntary offer" under threat or other circumstances of restriction or deceit. To assess the authenticity of a free and informed consent, it is necessary to ensure that no external constraint or indirect coercion has been carried out, either by an act of the authorities or by an employer's practice.

¹⁵ Those services might be provided either directly by the Sub-borrower, contractors or by third parties.

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			- Working hours will be managed to avoid excessive overtime. Rest periods and adequate breaks will be ensured to reduce fatigue and stress among workers. Psychological support or counseling will be made available if needed. - Workers exposed to high noise levels will be provided with hearing protection (e.g. earplugs, earmuffs), and noisy equipment will be operated within designated timeframes to minimize exposure. - Mechanical aids (e.g. trolleys, lifts) will be provided for material handling. Job rotation will be applied for tasks involving repetitive motions to minimize ergonomic strain. - Work areas will be kept free of debris, and walking paths will be clearly marked. Anti-slip surfaces and proper lighting will be provided in high-risk zones.		
2	OHS – Moving Equipment and Traffic Safety	All personnel working on the Subproject	<u>General Measures</u> - Development of a Traffic Management Plan for road repairs that includes measures to ensure work zone safety for maintenance workers and the traveling public. - Establishment of work zones to separate workers on foot from traffic and equipment by: - Routing of traffic to alternative roads when possible. - Closure of lanes and diversion of traffic to the remaining lanes if the road is wide enough (e.g. rerouting of all traffic to one side of a multi-lane roads). - Where worker exposure to traffic cannot be completely eliminated, use of protective barriers to shield workers from traffic vehicles, or installation of channeling devices (e.g. traffic cones and barrels) to delineate the work zone - Regulation of traffic flow by warning lights, avoiding the use of flaggers if possible - Design of the work space to eliminate or decrease blind spots - Reduction of maximum vehicle speeds in work zones.	Sub-borrower	LMP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			• Training of workers in safety issues related to their activities, such as the hazards of working on foot around equipment and vehicles. • Safe practices for work at night and in other low-visibility conditions, including use of high-visibility safety apparel and proper illumination for the work space (while controlling glare so as not to blind workers and passing motorists).		
3	OHS - Physical Hazards: Elevated and Overhead Work	• All personnel working on the Subproject	<u>General Measures</u> • Barricade the area around which elevated work is taking place to prevent unauthorized access. • Avoid working under personnel on elevated structures. • Rate and properly maintain hoisting and lifting equipment, and train the operators in their use. • Maintain the elevating platforms and operate them according to established safety procedures including use of fall protection measures (e.g. railings). • Ensure implementation of equipment movement protocols (e.g. movement only when the lift is in a retracted position), repair by qualified individuals, and installation of locks to avoid unauthorized use by untrained individuals. • Use the ladders according to pre-established safety procedures for proper placement, climbing, standing, as well as the use of extensions.	• Sub-borrower	• OHS Management Plan • TTMP
4	OHS - Physical Hazards: Fall Protection	All personnel working on the Subproject	<u>General Measures</u> • Implementation of a fall protection program that includes training in climbing techniques and use of fall protection measures; inspection, maintenance, and replacement of fall protection equipment; and rescue of fall-arrested workers, among others. • Establishment of criteria for use of 100 percent fall protection (typically when working over 2 meters above the working surface, but sometimes extended to 7 meters, depending on the activity). The	Sub-borrower	• OHS Management Plan

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			fall protection system will be appropriate for the structure and necessary movements, including ascent, descent, and moving from point to point. • Use of safety belts not less than 16 millimeters (mm) (5/8 inch) two-in-one nylon or material of equivalent strength. Rope safety belts will be replaced before signs of aging or fraying of fibers become evident. • When operating power tools at height, use of a second (backup) safety strap by workers. •		
5	OHS - Chemical Hazards	All personnel working on the Subproject	<u>General Measures</u> • Use of millers and pavers with exhaust ventilation systems and proper maintenance of such systems to maintain worker exposure to crystalline silica (millers and grinders) and asphalt fumes (pavers) below applicable occupational exposure levels. • Use of the correct asphalt product for each specific application, and ensuring application at the correct temperature to reduce the fuming of bitumen during normal handling. • Maintenance of work vehicles and machinery to minimize air emissions. • Use of extenders or other means to direct diesel exhaust away from the operator. • Provision of adequate ventilation in tunnels or other areas with limited natural air circulation. • Use of protective clothing when working with cutbacks (a mixture of asphalt and solvents for the repair of pavement), diesel fuel, or other solvents. • Use of dustless sanding and blasting equipment and special containment measures for paint removal activities. • Avoiding the use of lead-containing paint and using appropriate respiratory protection when removing paints (including those containing lead in older installations) or when cutting galvanized steel.	Sub-borrower	• OHS Management Plan

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			<u>Site-specific Measures</u> • Install appropriate drainage and pollution control measures (e.g., sediment traps, oil–water separators where required) at tramway construction sites, track alignment sections with runoff risk, depot/maintenance facilities, substations, and material storage areas where potential contamination may occur. • Identify locations with elevated spill, leakage, or accident risk along the tramway corridor, including road intersections and crossings, curve sections, station construction areas, depot operations, and fuel/lubricant handling zones, and implement additional containment and emergency response measures (e.g., spill kits, bunded storage, emergency shut-off procedures) as necessary. • Ensure that high-risk areas along the tramway alignment and associated facilities are clearly marked, adequately illuminated (especially at crossings, stations, and depot zones), and subject to routine inspection and maintenance to reduce the likelihood of accidents, service disruptions, and pollutant releases.		
6	OHS-Noise	• All personnel working on the Subproject	<u>General Measures</u> • Ensure use of personal hearing protection by personnel exposed to noise from vehicular traffic and maintenance vehicles • Implement work rotation programs to reduce cumulative exposure to noise <u>Site-specific Measures</u> • Installation of vibration control measures (e.g., resilient rail fastenings, floating slab track, or isolation pads) in tramway sections located near sensitive receptors such as residential buildings, schools, hospitals, or aging buildings. • Periodic structural health monitoring of adjacent buildings and sensitive structures along the tramway alignment, particularly in areas exposed to repeated tram-induced vibration and dynamic loading. • Implementation of “quiet zone” signage and operational speed restrictions in residential or sensitive sections of the tramway corridor to minimize noise and vibration impacts during operation.	• Sub-borrower	• ESMP • OHSMP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
	Risks associated with management of employee grievances	All personnel working on the Subproject	- Develop and implement a Subproject-specific Labor Management Plan, including grievance mechanism for Subproject employees (covering all direct and contracted workers) to raise workplace concerns during the operation phase. - Ensure that all direct and contracted workers are informed of the grievance mechanisms at the time of recruitment and the measures put in place to protect them against any reprisal for its use. - Ensure that measures are put in place to make the grievance mechanism easily accessible to all Subproject employees.	Sub-borrower	- OHSMP - LMP - SEP
ESS3 - Resource Efficiency and Pollution Prevention and Management					
Management of Air Pollution					
1	Emissions to air during operation	- Urban flora and fauna, - Surrounding residential areas - Local air quality	- General Measures - All vehicles to be used in transportation activities will be issued an emission control stamp; - Operation phase vehicles will not be permitted to keep engines running while waiting or standing by for duty. - Relevant provisions of the Regulation on Air Pollution Control Sourced from Industry, the Regulation on Exhaust Gas Emission Control and Regulation on the Assessment and Management of Air Quality will be complied with to minimize air emissions sourced from machinery, equipment, and vehicles that are used in operation phase; - Speed restrictions will be adopted by operation phase vehicles and optimal use of operation phase equipment to optimize fuel efficiency; - Regular maintenance of operation phase vehicles and equipment will be applied; - Energy uses associated with operation phase vehicles and equipment will be monitored; - Training will be performed for project personnel regarding energy efficiency.	Sub-borrower	ESMP
Management of Wastes					

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
2	Generation of non-hazardous and hazardous waste during operation	Municipality / Waste management system,	<u>General Measures</u> - Maximizing the rate of recycling of road resurfacing waste either in the aggregate (e.g. reclaimed asphalt pavement or reclaimed concrete material) or as a base. - Incorporating recyclable materials (e.g. glass, scrap tires, certain types of slag and ashes) to reduce the volume and cost of new asphalt and concrete mixes. - Collecting road litter or illegally dumped waste and managing it according to the national Waste Management Regulation and GIIPs. - Manage chemicals inventories (e.g. paint, etc.) to avoid having to dispose of large quantities of unused product; manage any obsolete products as hazardous waste in accordance with the national Waste Management Regulation and GIIPs. - Collecting animal carcasses in a timely manner and disposing through prompt burial or other environmentally safe methods. - Composting of vegetation waste for reuse as a landscaping fertilizer. - Managing sediment and sludge removed from storm drainage systems maintenance activities as a hazardous or non-hazardous waste in accordance with the national Waste Management Regulation and GIIPs based on an assessment of its characteristics. - Management of all removed paint materials suspected or confirmed of containing lead as a hazardous waste. - Use of a system to collect paint waste when removing old paint containing lead. - Grinding of removed, old road surface material and re-use in paving, or stockpiling the reclaim for road bed or other uses. Old, removed asphalt may contain tar and polycyclic aromatic hydrocarbons and may require management as a hazardous waste. <u>Site-specific Measures</u> - Waste Management Plan will be prepared by Contractor to reflect the operation phase conditions before commencement of the operation phase. Relevant measures defined for the construction phase also apply also to the operation phase.	Sub-borrower	ESMP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			• Segregate hazardous and non-hazardous wastes at the source and prevent their mixing. • Store wastes in designated, labelled containers compatible with the waste type. • Temporarily store hazardous wastes in a designated hazardous waste storage area with impermeable flooring, secondary containment, weather protection and spill prevention measures. • Collect waste oils, used filters, contaminated absorbents, oily rags, contaminated packaging, spent batteries, WEEE, waste lighting equipment, scrap metal, plastics, rubber parts and other maintenance wastes separately according to their characteristics. • Transfer hazardous wastes only to licensed recovery or disposal facilities, and recyclable non-hazardous wastes to licensed recycling facilities in accordance with national legislation. • Maintain waste transfer records and documentation throughout the waste management process. • Provide appropriate training to maintenance personnel on waste segregation, handling and emergency response procedures. • Maintain spill kits in maintenance and storage areas and immediately clean up accidental spills in accordance with the Spill Response Procedure. • Regularly inspect waste storage areas and containers to prevent leakage, deterioration or environmental contamination.		
Management of Stormwater					
3	Stormwater runoff, contaminated with oil and grease, metals, particulate matter, deicing salts, and other pollutants released by vehicles on road, leading to pollution of water resources	• Soil, • Watercourses, • Municipal drainage system	<u>General Measures</u> • Use of stormwater management practices that slow peak runoff flow, reduce sediment load, and increase infiltration • Regular inspection and maintenance of permanent erosion and runoff control features. • Paving in dry weather to prevent runoff of asphalt or cement materials. • Use of proper staging techniques to reduce the spillage of paving materials during the repair of potholes and worn pavement. This	• Sub-borrower	• ESMP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			may include covering storm drain inlets and manholes during paving operations; using erosion and sediment control measures to decrease runoff from repair sites; and utilizing pollution prevention materials (e.g. drip pans and absorbent material on paving machines) to limit leaks and spills of paving materials and fluids. - Reducing the amount of water used to control dust, and using sweeping practices rather than washing. Collecting and returning swept material to aggregate base or disposing as solid waste. - Avoiding the generation of contaminated runoff from cleaning of asphalt equipment by substituting diesel with vegetable oil as a release and cleaning agent; containing cleaning products and contaminated asphalt residues; scraping before cleaning; and conducting cleaning activities away from surface water features or drainage structures. <u>Site-specific Measures</u> - Installation of oil-water separators near drainage outfalls. - Additional sediment traps in areas with steep gradients. - Use of pervious pavement in pedestrian walkways where applicable.		
Management of Chemicals and Hazardous Materials					
4	Release of hazardous materials in the event of accidents during operation	- Surface water bodies, - Soil, - Stormwater drainage, - Air quality,	<u>General Measures</u> - Develop and implement an Emergency Response Plan (ERP) specific to hazardous material spills. - Equip the site with spill containment kits and train maintenance personnel on spill response procedures. - Conduct regular drills and coordination with emergency services. - Design drainage systems with isolation mechanisms to contain accidental spills before reaching surface waters. - Implement traffic safety measures (e.g., signage, speed limits, barriers) to reduce accident risk. - Localized contamination of sensitive receptors	Sub-borrower	- ESMP, - ERP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			<u>Site-specific Measures</u> - Identify high-risk zones (e.g., sharp turns, steep slopes) and provide additional containment systems (e.g., absorbent booms, emergency shut-off valves). - Ensure accident prone areas are clearly marked and illuminated.		
Management of Environmental Noise and Vibration					
5	Noise and vibration generation during operation	Nearby infrastructure, utilities,	<u>Site-specific Measures</u> - Installation of noise barriers where feasible. - Maintain tram vehicles, tracks and wheel systems regularly to minimize operational noise and vibration. - Ensure proper maintenance of rail joints, switches, crossings and track infrastructure. - Implement speed management measures in sensitive areas where necessary. - Investigate and respond to community complaints related to noise and vibration through the Project Grievance Mechanism.	Sub-borrower	ESMP,
ESS4 - Community Health and Safety					
Structural Safety of Subproject Infrastructure					
1	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.)	Aol	<u>General Measures</u> - Operate and decommission the structural elements of the Subproject in accordance with national legal requirements, the EHSGs and other GIIP, taking into consideration safety risks to third parties and affected communities. <u>Site-specific Measures</u> - Establish a routine inspection and preventive maintenance program, with biannual inspections aligned with international standards. - Immediately address any identified defects to avoid escalation. - Maintain emergency energy, lighting and communication systems.	Sub-borrower	ESMP,

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			Ensure that all safety signage, CCTV, and monitoring systems are operational. Coordinate with local emergency response services to review and update the emergency response plan annually.		
Pedestrian Safety					
2	Pedestrian safety risks during operation (e.g. serious injury from collisions with moving vehicles, etc.)	Pedestrian in the Aol	<u>General Measures</u> - Development of a Traffic Management Plan, which also addresses pedestrian safety risks during operation. - Installation and maintenance of speed control and traffic calming devices at pedestrian crossing areas. - Installation and maintenance of all signs, signals, markings, and other devices used to regulate traffic, specifically those related to pedestrian facilities or bikeways.	Sub-borrower	- TTMP - SEP
Traffic and Safety					
3	Traffic and road safety risks during operation (such as traffic related injuries and fatalities due to traffic accidents, collisions, etc.)	Aol	<u>Site-specific Measures</u> - Maintenance activities should be planned during off-peak hours (night-time or weekends). - A Maintenance TTMP should be prepared and publicly disclosed. - All maintenance works shall be announced at least 48 hours in advance via the Konya Metropolitan Municipality's (KMM) official website, local media, and on-site digital signage. - Notifications shall include: type of work, start/end times, affected lanes, alternative routes, and changes to public transport if any. - A phased implementation approach should be used where feasible (e.g., one-lane closure instead of full closure) to maintain flow. - Temporary signage, cones, and barriers (e.g., New Jersey barriers) will be used to safely reroute traffic and protect work zones. - Alternative routes must be identified and signposted clearly prior to work commencement.	Sub-borrower	- TTMP - EPRP - SEP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			- Safe and clearly marked temporary pedestrian routes will be maintained with adequate lighting and tactile indicators where necessary. - Crossing points and sidewalks will be physically separated from active work areas to prevent accidents. - KMM shall coordinate with emergency responders (ambulance, fire brigade, police) to ensure uninterrupted access routes are maintained during works. - An EPRP shall be activated during critical works to enable rapid response if needed. - On-site safety officers will conduct regular inspections during works to assess traffic flow and public safety.		
Emergency Preparedness and Response Plan					
4	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 implement operating procedures that are designed to prevent their occurrence, extreme weather or lack of early warning, traffic accidents, structural failures, etc.).	All personnel working on the Subproject	<u>General Measures</u> - Preparation of an emergency preparedness and response plan in coordination with the local community and local emergency responders to provide timely first aid response in the event of accidents and hazardous materials response in the event of spills, taking into account all relevant risks including earthquakes <u>Site-specific Measures</u> - A system for reporting, documenting and investigating emergency incidents will be developed and implemented to prevent recurrence. Corrective actions from previous emergencies will be incorporated into the EPRP. - Emergency response procedures, evacuation routes and safety guidelines will be prominently displayed at the workplace. Roles and responsibilities will be assigned to specific workers as emergency coordinators or responders. - Workers and relevant personnel will be trained on emergency response procedures, including evacuation, first aid, and fire control. Regular emergency drills, including fire and evacuation drills, will be conducted to ensure preparedness and identify gaps in response protocols. Emergency systems (alarms, extinguishers, detectors, kits) will be regularly inspected and tested to ensure functionality. The EPRP will be	Sub-borrower	EPRP

No	Impact Description	Receptor	Proposed Mitigation Measure	Responsible Parties	Implementation Plans
			periodically reviewed and updated based on changes in site activities, hazards or lessons learned from past incidents.		
ESS10 - Stakeholder Engagement and Information Disclosure					
1	Risks associated with stakeholder engagement	The list of Subproject stakeholders in the SEP	<u>Site-specific Measures</u> - Implement the Subproject-specific Stakeholder Engagement Plan (SEP) during the operation phase. - Disclose Subproject information in line with the SEP to allow stakeholders to understand the risks and impacts of the Subproject and potential opportunities. - The KMM will continue to update and disclose relevant operational information through official digital platforms such as the KMM website. These updates will include details such as pedestrian access routes, any ongoing maintenance-related restrictions, and safety advisories. Community information boards located at key entry points in the tramway stops will be maintained and updated with operation-related announcements.	Sub-borrower	SEP
2	Risks associated with grievance management	The list of Subproject stakeholders in the SEP	<u>Site-specific Measures</u> Implement the Subproject-specific Grievance Mechanism developed as part of the SEP. A permanent communication channel (e.g. hotline or feedback email) will be made available for local stakeholders to submit inquiries or concerns regarding the use of tramway.	Sub-borrower	SEP

4.4. Monitoring and Reporting

The Sub-borrower will internally monitor the E&S performance of the Subproject and submit Periodic Monitoring Reports to ILBANK, in accordance with the requirements outlined in the sub-financing agreement. The reports for each monitoring period will include the following information:

- Up-to-date information on the Subproject and progress with Subproject implementation (e.g. status of construction, Subproject timeline, etc.),
- Status of compliance with legal requirements (e.g. Subproject permitting status, status and outcomes of audits conducted by national authorities, fines imposed by national authorities if any, etc.)
- Details of how the requirements of the IFI standards (e.g. WB ESSs) are being met based on compliance with Subproject-level Environmental and Social Action Plans (ESAPs),
- Incident and accident reports and statistics,
- Current Subproject-level E&S organization and capacity (including information on capacity building and training),
- Progress with Subproject level stakeholder engagement activities and management of grievances, and
- Records on E&S non-conformities identified and the general status of Corrective Action Plan implementation at Subproject level (in case of non-conformities).

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 35.

Table 35. Key Performance Indicators for Both Construction and Operation Phases of the Subproject

Monitoring Focus	KPI
Documentation	
Following ESMP Project specific plans will be developed and be in place.	Full compliance with Subproject's ESMP
Air Quality	
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
Noise	
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
Water / Wastewater	
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
Groundwater levels of the community/private wells	No significant adverse impact
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
Waste	
Waste Generation	Minimization of total waste generated Decrease in the ratio of hazardous waste generated to total waste (by contamination + by generation)

Monitoring Focus	KPI
Waste Disposal	Increase in the ratio of recovered/reused/recycled waste to total waste generated
Soil Quality	
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
Traffic	
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
Health, Safety and Environment	
% of scheduled HSE Inspection	>90
% of attendance at HSE meetings	>90
% 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
Labor and Working Conditions	
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
Community Health and Safety	
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

Monitoring Focus	KPI
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
Trainings	
Training records	Trainings on ESMP and SEP documents. Providing all trainings (including GM, GBV, SEA/SH) to all employees. 100% of scheduled training sessions conducted 80% or higher participant satisfaction rate Zero participants without completion certificates if applicable
Disclosure	
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
Vulnerable groups	
Incidents, Grievances, Toolbox talks and trainings, Information/ disclosure	All grievances closed-out within the target timeframe Sufficient information provided to the VGs
Grievance mechanism	
Grievance Records, GM disclosure	All grievances closed-out within the target timeframe GM disclosure to the PAPs, stakeholders GM disclosure at Subproject web site
Cultural Heritage	
Existence of a Chance Find	Zero Grievance Records

Table 36. Construction Environmental and Social Monitoring Table

Subject	Monitoring Location	Monitoring Frequency	Parameters Monitored	Monitoring Method	Reference / Threshold Level (if applicable)	Legal Requirements for monitoring	Key Performance Indicators	Cost	Responsible Party
Physical Environment									
Water resources	At related water resources (wells, fountains, etc.)	In case of a major spill	Surface water / groundwater quality analysis and measurements that include spill-related pollutants (temperature, pH, dissolved oxygen, ammonium, nitrate, nitrite, TP, TDS; COD, BOD, TSS, TKN, turbidity, salinity, conductivity)	Sampling and in situ / laboratory measurements and analysis by an authorized environmental laboratory Spill notices/correspondences to authorities in case of major spills	Prevention of water quality deterioration compared to current surface water and groundwater quality	Water Pollution Control Regulation Regulation on Surface Water Quality Regulation on the Protection of Groundwater Against Pollution and Degradation	- Visual observations - ESMR Findings	Included in construction cost	Contractor KMM/PIU Supervision Consultant
		In case of a leak/spill reaches to water bodies	Groundwater table level	Visual observation of the trenches to monitor the rise of groundwater table level and filling of the trenches with water					
Damage to existing underground public utility cables and pipes	Work sites (excavated areas)	Upon grievance	Complaints to Utility Service Providers	Grievance Registration	No detection of damages in existing underground utility cables and pipes	Electric Indoor Facilities Regulation	- Water leakage near the area - Electrical current near the project area	Included in construction cost	Contractor KMM/PIU Supervision Consultant
		During excavation	Number of damages	Visual Observation		Draft Regulation on the Coordination of Infrastructure Facilities			
Soil contamination	Work sites and storage areas	Upon an incident / accident	Amount of excavated soil Storage time	Sampling and in-situ measurements by an authorized environmental laboratory	No soil contamination resulting from Project Activities	Regulation on the Control Soil Pollution and Sites Contaminated by the Point Source	- Number of spill response - Soil analysis results - Contaminated soil amount - Contaminated soil treatment/disposal methodology - Stripped/stored/reused topsoil amount - Environmental spill/leak incident records/report - Excavation amount - Reused excavation amount - Amount of excavated material that is sent to final disposal - ESMR findings	Included in construction cost	Contractor KMM/PIU Supervision Consultant
		Once a week starting from the initialization of land preparation and construction phase		Visual observation					
		Upon grievance	Soil quality, including, pH, heavy metals, phosphorus, nitrogen, Na, Ca, salts, PAHs hydrocarbons Number of leakages/spills of oil and fuels Contractor's Compliance	Grievance registration					

Subject	Monitoring Location	Monitoring Frequency	Parameters Monitored	Monitoring Method	Reference / Threshold Level (if applicable)	Legal Requirements for monitoring	Key Performance Indicators	Cost	Responsible Party
Air quality	Nearest sensitive receptors	Quarterly starting from the initialization of land preparation and construction phase	Suspended Particulates (TSP, PM ₁₀ , or smaller), SO ₂ , NO _x , CO, THC Vehicle exhaust measurements	Sampling/ In-situ Measurement by an authorized environmental laboratory	Below the regulatory limit values defined in Regulation on the Assessment and Management of Air Quality and Ambient Air Quality and Cleaner Air for Europe Directive No air quality related grievance received	Regulation on the Assessment and Management of Air Quality Industrial Air Pollution Control Regulation Dust Management Regulation	- Visual observations - ESMR Findings - Air quality grievance records - Air quality (PM₁₀/PM_{2.5}) measurement results - Exhaust emission decal follow-up	Included in construction cost	Contractor KMM/PIU Supervision Consultant
		Once in a week starting from the initialization of land preparation and construction phase	Speed Control Control of watering process of material which will produce dust in windy weather	Records of maintenance for all machineries and equipment					
	Work sites	Daily	Control of the top cover of the trucks Records of maintenance for all machineries and equipment	Visually, on the basis of irritation of the respiratory system					
		Visually on the basis on irritation of breathing system, complaints of the population in the vicinity Upon grievance	Number of complaints	Grievance Registration					
	Administration office for the follow-up of records	Annually during construction phase	Maintenance and exhaust decal records of all machinery and equipment	Maintenance records					

Subject	Monitoring Location	Monitoring Frequency	Parameters Monitored	Monitoring Method	Reference / Threshold Level (if applicable)	Legal Requirements for monitoring	Key Performance Indicators	Cost	Responsible Party
Waste generation	Work sites, storage areas, and administration office	Daily	Amount of waste generated	Visual observation	Minimizing the amount of wastes to be sent for disposal and implement waste management hierarchy	Waste Management Regulation Zero Waste Regulation	- Waste segregation practices (amount of waste per type) - Temporary waste storage records - Waste Disposal Agreements and Records - Waste Grievance Records - ESMR Findings	Included in construction cost	Contractor KMM/PIU Supervision Consultant
		Waste records							
		Site inspection							
		Controlling the number and fullness ratio of temporary collection tanks for excavated material							
	Administration office	Annually starting from the initialization of construction phase	Annual GHG emission contribution of the Project	GHG emission estimation calculations	Use of recycled materials whenever possible	WB ESF ESS3 General EHS Guidelines	- Types and amounts of materials used - Annual GHG emission contribution of the Project		
		Quarterly during the construction phase	Types and amounts of materials/resources used	Material/resource procurement / consumption records	Not exceeding 1,000 t CO2 eq.				
Storage and usage of excavation waste	Construction site and storage areas	Once in a week starting from the initialization of land preparation and construction phase	Amount of refilled, stored, and disposed excavation materials Amount of stripped and reused topsoil by indicating reuse locations Storage conditions of topsoil (humidity and pile height)	Visual observation Records	Minimizing the amount of wastes to be sent for disposal and implement waste management hierarchy No loss of topsoil	Regulation on the Control of Excavation Soil, Construction and Demolition Wastes	- Amount of excavated soil - Amount of reused excavated soil - Amount of stored excavated soil	Included in construction cost	Contractor KMM
Environmental hygiene	Within and around the work sites	Once in a week starting from the initialization of land preparation and construction phase	Quantity and conditions of cleaning tools First aid box	Visual observation	No occurrence of environmental hygiene problems	General Sanitation Law No: 1593	- ESMR Findings - Grievance Records	Included in construction cost	Contractor
		Upon grievance	Number of infectious and contamination cases	Grievance registration					
Noise and vibration	Nearest sensitive receptors Work sites	Quarterly starting from the initialization of land preparation and construction phase	Noise Levels (Not to exceed 60 dB(A))	At least 24-hr Noise measurement by an authorized environmental laboratory	Not exceeding the limit values defined in Regulation on the Environmental Noise Control	Regulation on the Environmental Noise Control	- Noise level measurement results - Construction machinery and equipment maintenance log - Noise grievance records - ESMR Findings	Included in construction cost	Contractor KMM/PIU Supervision Consultant
		Upon grievance	Number of complaints	Grievance registration	No noise related grievance received				
Biological Environment									
Biological Environment	Project site	Monthly starting from the initialization of construction phase	Number of incidents with fauna mortality	Incident records	No incidents involving fauna species	WB ESF, ESS6	- Site Inspections - ESMR Findings	Included in the construction cost	Contractor KMM/PIU Supervision Consultant

Subject	Monitoring Location	Monitoring Frequency	Parameters Monitored	Monitoring Method	Reference / Threshold Level (if applicable)	Legal Requirements for monitoring	Key Performance Indicators	Cost	Responsible Party
Socio-Economic Environment									
Infrastructure damage	Administration office	Monthly during construction phase	Number of cases and amount of compensation paid	Incident records Receipts of compensation payments	No infrastructure cases	Criminal Law	- Grievance Records - Official correspondences - ESMR Findings	Included in the construction cost	Contractor KMM/PIU Supervision Consultant
Access restriction, disruption of business activities	Administration office	Once in a month starting from the initialization of land preparation and construction phase	Number of affected business owner	Visual observation	No access restriction and loss of income	WB ESF	Grievance Records	Included in the construction cost	Contractor KMM/PIU Supervision Consultant
		Upon grievance	Loss of income from access restrictions	Grievance Registration					
External Grievances	Administration office	Upon grievance starting from the initialization of the Project	Number and nature of received grievances Number of open and closed grievances Average grievance response and closure time Identification of grievance channels	Grievance records (grievance log, received grievance forms, etc.)	Limited number of grievances resolved in an adequate and timely manner to the satisfaction of the complainant	WB ESS10	- Grievance Records - Presence of mukhtar as representative - ESMR Findings	Included in the construction cost	Contractor KMM/PIU Supervision Consultant
Traffic and transportation	Administration office	Daily during works especially at dense traffic hours	Number of and nature complaints	Visual observation	No traffic observation	Highway Traffic Law	- Number of reported traffic accidents - Vehicle maintenance log - Condition of traffic signs - Training records - Grievance records	Included in construction cost	KMM/PIU
		Upon grievances and incidents/accidents starting from the initialization of the Project	Number of Road Traffic Accidents	Accident records	No accident occurred				
			Number of drivers trained	Grievance Records	No grievance received				
Cultural heritage	On the work sites	Daily basis starting from the initialization of land preparation and construction phase	Number of chance finds	Visual observation Records about chance fiends	No adverse impact on cultural heritage	Law on the Conservation of Cultural and Natural Properties Chance Finds Procedure	- Visual observation - Official notification to authorities - Number of chance finds - ESMR Findings	Included in construction cost	Contractor KMM/PIU Supervision Consultant
Employment and local procurement	Konya and its vicinity	Prior to construction and quarterly during construction	Number of employed persons from the local community Business growth/increase in income for local communities	Employment records	Meeting 100% of the unskilled workforce need from the local population	Labor Law	- Information disclosure records - Stakeholder engagement records - Employee records - Local employment/ procurement ratio	Included in construction cost	Contractor KMM/PIU Supervision Consultant
Community health and safety	Project Area	Daily basis Upon grievance	Health and safety signs and traffic signs placed in appropriate locations	Visual observation Site inspection	Avoid any cases that results with health and safety problems	Regulation on Traffic Signs	- Incident records - Condition of traffic signs - Grievance records	Included in construction cost	Contractor KMM/PIU Supervision Consultant

Subject	Monitoring Location	Monitoring Frequency	Parameters Monitored	Monitoring Method	Reference / Threshold Level (if applicable)	Legal Requirements for monitoring	Key Performance Indicators	Cost	Responsible Party
Community encroachment/trespassing	Administration office	Weekly during the construction phase	Community encroachment/trespassing cases	Security reports Visitor logs	No community encroachment	Law on Private Security Services	- Active Closed-circuit television (CCTV) system - Security reports - Visitor logs	Included in construction cost	Contractor KMM/PIU Supervision Consultant
		Daily during the construction phase	Condition of CCTV system	System checks					
Community conflicts	Administration office	Upon grievances and events starting from the initialization of the Project	Number of conflicts	Grievance registration Conflicts with security personnel and workers of the Project	No community encroachment	Law on Private Security Services	- Security reports - Grievance records - CCTV system	Included in construction cost	Contractor KMM/PIU Supervision Consultant
Labor and Working Conditions									
Working conditions	Administration office	Weekly during construction phase	Number and nature of Workers' grievances	Grievance records	Managing provisions given in ESMP properly.	WB ESF ESS2	- Workers' Grievance Records - Presence of union or workers' representative - ESMR Findings - Labor/social security records	Included in construction cost	Contractor KMM/PIU
Occupational health and safety	Construction sites	Daily basis starting from the initialization of land preparation and construction phase	Number of accidents/Injuries	Incident records	No OHS incidents occurred	Occupational Health and Safety Law	- Incident Records - Number of nonconformities - Training records - Work Permits - ESMR Findings - H&S reports - H&S meetings - Emergency drills	Included in construction cost	Contractor KMM/PIU Supervision Consultant
			Incident investigation records	Incident investigation records					
			Period of disease occurrence	Disease follow-up register	No infectious disease is recorded				
		Monthly during the construction phase	Number of personnel who are infected with an infectious disease	No infectious disease is occurred	No infectious disease is occurred				
		Annually during the construction phase	Training requirements	Annual ESHS training plan	Every training defined in the Annual ESHS is completed				
		Quarterly during the construction phase	Number and subject of emergency drills	Drill records	Drills are conducted quarterly				
		Quarterly during the construction phase	Adequate OHS organizational structure. OHS practices onsite (use of PPE, etc.), Risk assessment	Site implementation Site inspection	There will always be an adequate OHS organizational structure on site.				KMM/PIU
Protecting the workforce	Administration office	Before each recruitment	Age of candidate employee	Age verification with National ID	Prevent child labor	Labor Law	No child and forced labor	Included in construction cost	Contractor KMM/PIU Supervision Consultant
Workers Engaged by Third Parties and the Supply Chain	Administration office	Before each agreement made	Contractor and sub-contractor agreements	Contract reviews by ESHS expert(s)	No nonconformity is observed with the ESMP	WB ESS2	- Contractor / Sub-contractor Agreements - Grievance Records - ESMR Findings	Included in construction cost	Contractor KMM/PIU Supervision Consultant

Table 37. Operation Environmental and Social Monitoring Table

Subject	Monitoring Location	Monitoring Frequency	Parameters Monitored	Monitoring Method	Reference / Threshold Level (if applicable)	Legal Requirements for monitoring	Key Performance Indicators	Cost	Responsible Party
Physical Environment									
Soil quality	Storage area Maintenance Facility	Monthly during operation phase Upon events starting from the initialization of the Project Upon grievance	Storage time	Visual observations	No soil contamination resulting from Project Activities	Regulation on the Control Soil Pollution and Sites Contaminated by the Point Source	- Number of spill response - Contaminated soil amount - Contaminated soil treatment/disposal methodology - Environmental spill/leak incident records/report - Excavation amount - Amount of excavated material that is sent to final disposal - ESMR findings	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Consultant)
				Evidence of leakage of fuel and oil					
			Soil quality, including, PH, heavy metals, phosphorus, nitrogen, Na, Ca, salts, PAHs hydrocarbons	Grievance registration					
			Number of leakages/spills of oil and fuels Contractor's compliance						
Air quality	Nearest Receptor	Annually during operation phase	Settled dust, PM ₁₀ and PM _{2.5}	Sampling/analysis by an authorized environmental laboratory	Below the regulatory limit values defined in Regulation on the Assessment and Management of Air Quality and Ambient Air Quality and Cleaner Air for Europe Directive No air quality related grievance received	Regulation on the Assessment and Management of Air Quality Industrial Air Pollution Control Regulation	Air quality (PM₁₀,PM_{2.5}) measurement results	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Team)
Waste generation	Tram line stations, maintenance facility and storage area	Daily	Type and amount of waste generated (solid waste, wastewater)	Visual observation	Minimizing the amount of wastes and implement waste management hierarchy	Waste Management Regulation Zero Waste Regulation	- Waste segregation practices (amount of waste per type) - Temporary waste storage records - Waste Disposal Agreements and Records - Waste Grievance Records - ESMR Findings	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Team)
	Administration office	Once in a week starting from the initialization of the operation phase of the Project		Waste records					
		Once in a week starting from the initialization of the operation phase of the Project		Site inspections					
Noise and vibration	Nearest sensitive receptor	Regular (proposed to be 1 in a month)	Noise level	Noise measurement by an authorized environmental laboratory	Not exceeding the limit values defined in Regulation on the Environmental Noise Control	Regulation on the Environmental Noise Control	- Noise level measurement results - Noise grievance records - ESMR Findings	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Team)
	At maintenance facilities	Upon grievance		Grievance registration	No noise related grievance received				
Wastewater quality discharged in to the municipal system	Administration Office and Stations	Monthly starting from the initialization of the operation phase of the Project	Oil/water separator performance	Site inspections	Prevention of water quality deterioration compared to current surface water and groundwater quality	Regulation on the Protection of Groundwater Against Pollution and Degradation	- Visual observations - ESMR Findings	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Team)
		Once in a week starting from the initialization of the operation phase of the Project		Oil-grease contents at the first and final pools of the separator		Water Pollution Control Regulation			
		Regulation on Surface Water Quality							
Socio-Economic Environment									

Employment and local procurement	Administration office	Quarterly during construction phase	Number of employed persons from the local community	Employment records	Meeting 100% of the unskilled workforce need from the local population	Labor Law	- Information disclosure records - Stakeholder engagement records - Employee records - Local employment/procurement ratio	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Team)
Community health and safety	Project area	Daily basis Upon grievance	Training records of the Machinists Number of accidents involving pedestrians Health and safety signs and traffic signs placed in appropriate locations	Incident Records Training Records	Avoid any cases that results with health and safety problems	Regulation on Traffic Signs	- Incident records - Condition of traffic signs - Grievance records	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Team)
Community Encroachment/trespassing	Administration office	Weekly during the operation phase	Community encroachment/trespassing cases	Security checks Visitor logs	No community encroachment/trespassing	Law on Private Security Services	- Active CCTV system - Security reports - Visitor logs	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Team)
			Condition of CCTV system	System check					
External Grievances	Administration office	Upon grievance and/or conflict	Number and nature of conflicts	Grievance records Security reports	No community conflicts	Law on Private Security Services	- Security reports - Grievance records - CCTV system	Included in operation cost	KMM/PIU
	Administration office	Monthly during operation phase	Number and nature of received grievances Number of open and closed grievances Average grievance response and closure time Identification of grievance channels	Grievance records (grievance log, received grievance forms, etc.)	Limited number of grievances resolved in an adequate and timely manner to the satisfaction of the complainant	WB ESS10	- Grievance Records - Presence of mukhtar as representative - ESMR Findings - Social security records	Included in operation cost	KMM/PIU
Labor and Working Conditions									
Working conditions	Administration office	Weekly during operation phase		Grievance records	Managing provisions given in ESMP properly.	WB ESS2	- Workers' Grievance Records - Presence of union or workers' representative - ESMR Findings - Labor/social security records	Included in operation cost	KMM/PIU
Occupational health and safety	Administration office	Daily basis starting from the initialization of operation phase	Number and nature of incidents	Incident records	No OHS incidents occurred	Occupational Health and Safety Law	- Incident Records - Number of nonconformities - Training records - Work Permits	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Team)
			Incident investigation	Incident investigation records					
			Period of disease occurrence	Disease follow-up register	No infectious disease is recorded				

			Potential or confirmed exposure levels for EMF	Measurements of magnetic fields Incident field levels at the location of persons Dose monitoring based on comprehensive computer simulations	Reference occupational exposure levels developed by international organizations such as ICNIRP and IEEE		- ESMR Findings - H&S reports - H&S meetings - Emergency drills - Records of EMF measurements		
		Monthly during the operation phase	Number of personnel who are infected with an infectious disease	Training records	No infectious disease is occurred				
		Annually during the operation phase	Training requirements	Annual Environmental, Social Health, and Safety (ESHS) training plan	Every training defined in the Annual ESHS is completed				
		Quarterly during the operation phase	Number and subject of emergency drills	Drill records	Drills are conducted quarterly				
Protecting the workforce	Administration office	Before each recruitment	Age of candidate employee	Age verification with National ID	Prevent child labor	Labor Law	No child and forced labor	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Team)
Workers Engaged by Third Parties and the Supply Chain	Administration office	Before each agreement made	Contractor and sub-contractor agreements	Contract reviews by ESHS expert(s)	No nonconformity is observed with the ESMP	WB ESS2	- Sub-contractor Agreements - Grievance Records - ESMR Findings	Included in operation cost	KMM/PIU (First Year Contractor & Supervision Team)

4.5. List of Associated Plans and Procedures

As a part of the mitigation measures, this site-specific Environmental and Social Management Plan has been developed. The ESMP includes management plans and procedures for both construction and operation phases of the Project, which are given in Table 38 along with guidelines for preparation of the sub-management plans to be prepared by the contractor.

Table 38: Required Management Plans and Procedures for the Project

Management Plans/Procedure	Stage to be Prepared	Responsible Party	Monitoring & Reporting Party	Approving Party
Construction Phase				
Chance Find Procedure (CFP)	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Pollution Prevention Plan (PPP)	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Labour Management Plan (LMP)	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Stakeholder Engagement Plan (SEP)	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Community Health, Safety, and Security Management Plan (CHSMP)	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Traffic and Transportation Management Plan (TMMP)	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Occupational Health and Safety Management Plan (OHSMP)	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Contractor Management Plan (CMP)	Prior to construction	Konya Metropolitan Municipality	Construction Contractor	ILBANK
Code of Conduct (to be included in LMP)	Prior to construction	Konya Metropolitan Municipality	Construction Contractor	ILBANK
Waste Management Plan including hazardous and non-hazardous waste (WMP)	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Emergency Preparedness and Response Plan (EPRP)	Prior to construction	Construction Contractor	Construction Contractor	ILBANK
Operation Phase				
Stakeholder Engagement Plan (SEP)	Prior operation	Konya Metropolitan Municipality	Konya Metropolitan Municipality	ILBANK

Management Plans/Procedure	Stage to be Prepared	Responsible Party	Monitoring & Reporting Party	Approving Party
Occupational Health and Safety Management Plan (OHSMP)	Prior to operation	Konya Metropolitan Municipality	Konya Metropolitan Municipality	ILBANK
Labour Management Plan (LMP)	Prior to operation	Konya Metropolitan Municipality	Konya Metropolitan Municipality	ILBANK
Code of Conduct	Prior to operation	Konya Metropolitan Municipality	Konya Metropolitan Municipality	ILBANK
Waste Management Plan including hazardous and non-hazardous waste (WMP)	Prior to operation	Konya Metropolitan Municipality	Konya Metropolitan Municipality	ILBANK

The plans/procedures will be reviewed and revised in the event of any major change and/or at least every 6 months.

4.6. Management of Change

The Sub-borrower shall notify ILBANK of any material changes to the Subproject (including those resulting from the activities of the Sub-borrower and/or contractor) using ILBANK's Change Notification Form template (see Annex I).

Such changes may include, *inter alia*, the following:

- Administrative/ organizational structure changes at the decision-making level
- Changes in assigned environmental, social and/or OHS staff
- Legislative changes impacting Subproject implementation (e.g. new permitting processes).
- Design changes (e.g. any changes in the Subproject description, footprint such as new temporary or permanent sites/facilities – on-site or off-site, changes in number of workforce involved, changes in on-site/off-site worker accommodation arrangements).
- Schedule changes
- Changes related to E&S issues (e.g. new biodiversity features or cultural heritage assets identified, additional resettlement need, etc.)
- Changes in the contractor or construction supervision consultants at any phase of the Subproject that require: (i) clarification of E&S commitments and roles and responsibilities with the new contractor or supervision consulting firm, and (ii) reorganization and redelivery of E&S training to the staff of the new contractor or supervision consulting firm

5. CAPACITY DEVELOPMENT AND TRAINING

5.1. Organizational Capacity

The organizational structure of the PIU to be established by the Sub-borrower, is presented in

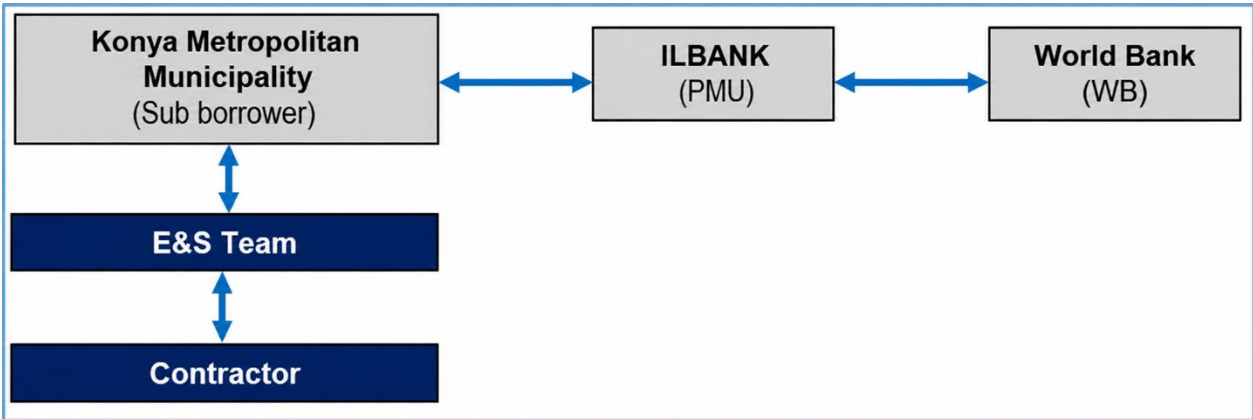


Figure 25. The PIU will include qualified staff and resources to the satisfaction of ILBANK.

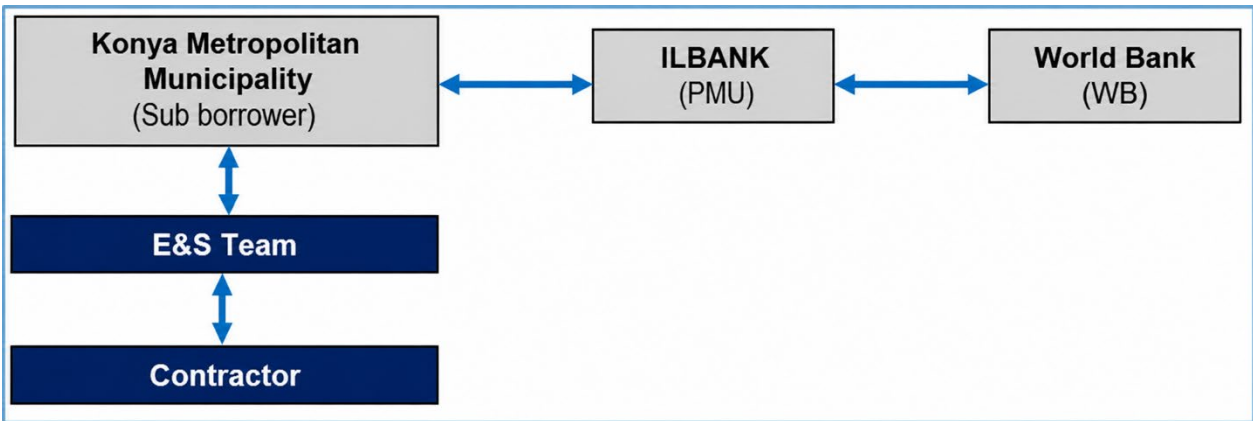


Figure 25. Organization Structure

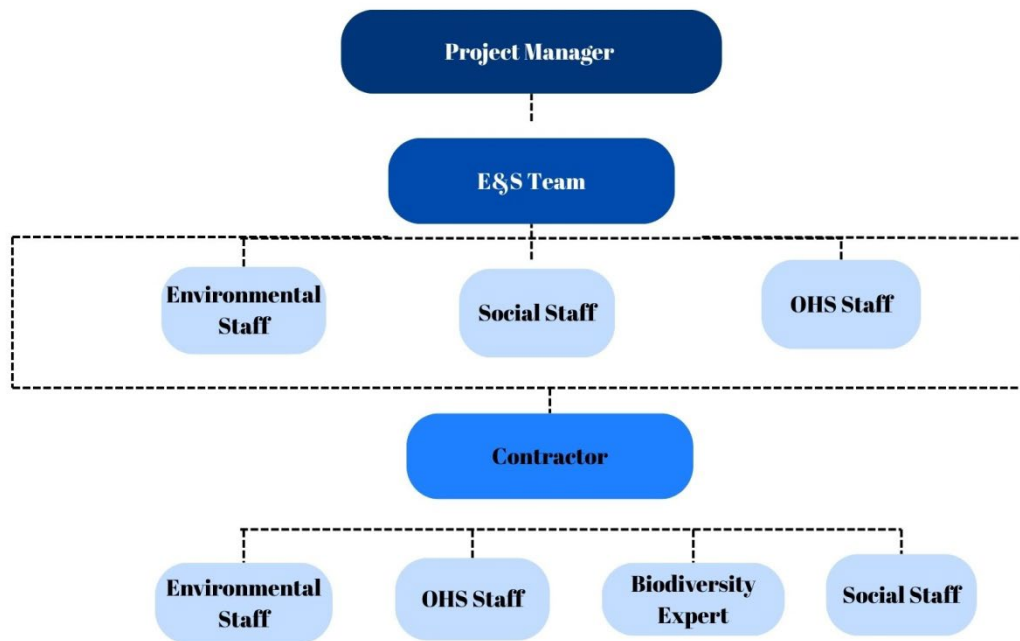


Figure 26 Project Implementation Unit and Contractor Structure

The Sub-borrower will maintain the PIU by ensuring that there is qualified staff assigned and serving on the duty throughout the sub-financing agreement lifecycle. Sub-borrower will meet these requirements with in-house capacity.

At minimum, the E&S team at the Sub-borrower PIU will include the following personnel, who shall 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):** to address environmental risks and impacts identified under the Environmental and Social Assessment (ESA) reports, such as Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plan (ESMP), etc.
- **Social Expert/ Grievance Mechanism (GM) Focal Point:** to address social risks and impacts identified under the ESA reports, land acquisition, and labor issues, including stakeholder engagement and grievance redress; and
- **Occupational Health and Safety (OHS) Specialist(s)** to address OHS risks and impacts identified under the ESA reports.

If the necessary staff is not available within their own organizational structure, the Sub-borrower shall obtain support/consultancy services from outside.

Contractors

The Sub-borrower will require the awarded contractors to establish and maintain throughout the contract duration an organizational structure with qualified staff and resources.

This will be achieved through assigning the following personnel within the contractor's organization:

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

If the necessary staff is not available within their own organizational structure, contractors shall obtain third-party support/ consultancy services.

5.2. Roles and Responsibilities

The entire Subproject will be financed by the WB. Sub borrower will be responsible for the implementation of the Subproject at the local level.

The final ESMP will be made available to the public in Sub borrower web site prior to any activity on site. ILBANK Project Management Unit (PMU) will include an environmental specialist, a social expert and an OHS specialist to supervise the implementation of the ESMP. The specialist will supervise the implementation of the ESMP by Sub borrower and document performance, recommendations and any further actions required. He/she will provide guidance to KMM officials on WB procedures, consultation and disclosure requirements. In addition, the Sub-borrower will inform ILBANK of any project changes or unforeseen circumstances in the approved project documents. ILBANK, as the responsible party, will communicate such updates to the World Bank.

Sub borrower will be responsible for providing technical and data support during the supervision of contractors and the preparation of technical and financial feasibility reports regarding projects. Moreover, Sub borrower holds ultimate responsibility for the environmental and social performance of the overall Project, including the performance of its contractors and any other contractors.

The parties responsible for the monitoring progress are contractor, supervision consultant and Sub borrower during the construction phase, while only Sub borrower is responsible for monitoring progress during the operation phase of the Project. Depending on the monitoring plan, the Contractor will prepare monthly Environmental and Social Monitoring Reports (ESMRs) to be submitted to Sub borrower; whereas Sub borrower will review and submit EMSRs to ILBANK monthly. Environmental engineer/expert will appoint a representative on site to lead the development of this ESMP and its onsite implementation.

Regarding implementation of the ESMP, a team (project implementation unit) to be established by the Sub borrower management will be specified to include team members detailed as follows and indicated in the below chart.

The roles and E&S related responsibilities of the Sub-borrower and other key parties are described in Table 39.

Table 39. Roles and E&S related Responsibilities of Key Parties associated with ESMP Implementation

Party	Role	Key Responsibilities
Sub-borrower		
Konya Metropolitan Municipality	Sub-borrower Management	• Hold ultimate responsibility for the E&S performance of the Subproject to the satisfaction of the ILBANK, including the performance of Subproject contractors throughout the sub-financing agreement lifecycle. • Establish Project Implementation Unit (PIU) following the execution of sub-financing agreements to carry out operational and administrative tasks to oversee the implementation of the E&S instruments and monitoring progress; allocate resources for the recruitment of in-house environmental, social and OHS staff under the PIU • Ensure that ESMP, SEP and other E&S management plans and procedures required by ILBANK is prepared within the timeframes agreed with ILBANK and allocate adequate financial and human resources – either from the Sub-borrower's own resources or from the Subproject loan and implement. • Cooperate with the ILBANK representatives to discuss and agree on the ESAP and other E&S covenants for incorporation into sub-financing agreements to be executed between the ILBANK and the sub-borrower (with support from RD E&S team as necessary) • Ensure that EHSS requirements of ILBANK are incorporated into relevant contractor tender and agreement documents to be prepared in collaboration with the construction supervision consultant

Party	Role	Key Responsibilities
		• Hold and use the authority and responsibility to stop any Subproject related work activity if it poses an imminent danger to health, safety, or the environment. • Allocate resource to ensure monitoring of Subproject E&S performance and reporting to ILBANK at IFI standards in line with the sub-financing agreement conditions • Facilitate monitoring visits and audits by ILBANK and their consultants • Notify the ILBANK DG of any significant E&S incident or accident within maximum 24 hours of the accident/incident; contractually require the supervision consultants and/or contractors to promptly report such incident and accidents (timeframe to be defined by ILBANK) • Prepare and submit a detailed E&S Incident Investigation Form, supplemented by an RCA to be conducted pursuant to GIIPs, to ILBANK within 15 days of the accident/incident date for significant accidents or incidents (in line with the template presented in the E&S Supervision, Monitoring and Reporting Procedure). The investigation will be supplemented by a Root Cause Analysis (RCA).
	E&S Team - Environmental staff - Social staff - OHS staff	• Participate in the training to be organized by ILBANK as part of ILBANK ESMS Training Procedure implementation • Ensure that satisfactory ESMP, SEP and as required other E&S assessment documentation required by ILBANK is prepared by qualified independent specialists and submitted to ILBANK for appraisal and credit decision-making for High and Substantial risk Subproject, as well as for Moderate risk Subproject where the sub-borrower has limited E&S capabilities, coordinate commissioning independent third-party specialists (such as external E&S consultancy companies, individual consultants) to carry out the E&S assessment and prepare the E&S documentation required for ILBANK's appraisal and credit decision-making processes • Provide ILBANK with relevant adequate information to undertake the E&S due diligence in accordance with the ESMS (e.g. duly completed sub-borrower questionnaire and supporting documentation to be requested by ILBANK in accordance with the E&S Screening and Risk Classification and ESDD procedures) • Support the sub-borrower management as required in the review and evaluation of ESAP and other E&S covenants for incorporation into sub-financing agreements to be executed between the ILBANK and the sub-borrower • Ensure compliance of Subproject operations (including contractor activities on site) with national legislation and E&S requirements of the lending IFIs as included in the sub-financing agreements, ESAP and Subproject-specific E&S documentation (such as ESMP, SEP and other E&S management plans and procedures required by ILBANK) • Undertake monitoring of Subproject E&S performance and reporting to ILBANK at IFI standards in line with the sub-financing agreement conditions • Ensure implementation of corrective actions in case of E&S non-compliances in coordination and agreement with ILBANK DG and RD E&S teams over reasonable timeframes • Coordinate the construction supervision consultants, contractors and/or external E&S consultants for collection of the monitoring data and compilation of or providing input to periodic monitoring reports as necessary and appropriate • Allow ILBANK representatives (including individual consultants) to access Subproject facilities and records.
Construction Supervision Consultants ("Müşavir")	Management and E&S staff	Carry out the following tasks on behalf of the sub-borrowers: • Participate in the training sessions to be organized by sub-borrowers in line with the requirements of ILBANK ESMS Training Procedure • Supervise the construction works of contractors on-site, including implementation of Subproject-specific E&S requirements (requirements stemming from ESMP, SEP and other E&S management plans and procedures required by ILBANK as applicable) by contractors on a daily basis • Ensure sufficient E&S capacity for implementation of E&S requirements as set out in the sub-financing agreements between the sub-borrower and ILBANK • Support the sub-borrowers for the supervision and review of E&S management documentation prepared by construction contractors and submit them to sub-borrowers upon finalization

Party	Role	Key Responsibilities
		• Review monthly self-monitoring reports prepared by the construction contractors for early identification of E&S issues and/or non-compliances and submit them to municipalities/municipal utilities upon finalization • Identify E&S non-compliances on site and enforce construction contractors to undertake corrective actions within defined and agreed timeframes • Support the sub-borrowers (as requested) in the preparation of periodic E&S monitoring reports to be submitted to ILBANK in line with the ILBANK E&S Supervision, Monitoring and Reporting Procedure • Notify the sub-borrower of any significant E&S incident or accident that have taken place in Subproject related operations within 24 hours.
Construction Contractor	Management and E&S staff	• Ensure sufficient E&S capacity for implementation of E&S requirements as set out in the construction contracts • Participate in the training sessions to be organized by sub-borrowers in line with the requirements of ILBANK ESMS Training Procedure • Prepare Subproject-specific E&S management plans and procedures prior to start of construction works as required by the construction contracts • Comply with the requirements of national legislation and implement the E&S requirements as set out in the sub-financing agreements (executed between ILBANK and the sub-borrowers) and construction contracts • Submit periodic (in frequencies to be set by ESAP) E&S self-monitoring reports to the municipalities/municipal utilities through construction supervision consultants (“müşavir”) – in line with the format provided by ILBANK. • Fill in monthly occupational health and safety (OHS) forms – reviewed by construction supervision consultants. • Implement corrective actions in case of E&S non-compliances under the supervision of sub-borrower’s construction supervision consultant • Promptly notify the sub-borrower of any significant E&S incident or accident that have taken place in Subproject related operations within 24 hours.

5.3. Capacity Building and Training

One of the main necessities of the ESMP is training for the Sub-borrower's and contractor's top-level management and employees.

Necessary training will be given to the personnel immediately after the recruitment, and training will also be refreshed during the work period and will be conducted at a number of levels. Some short-term training is required for the Environment Expert, other staff members of the PIU and the contractor staff to raise their levels of environmental awareness. The training can be conducted by either some external experts or with the help of in-house expertise of the PIU and the consultants and help of ILBANK and WB. In the long-term training, special environmental and social issues will be investigated, and likely solutions provided to the PIU.

The mentioned training will take place within maximum two (2) days. This period will be determined by considering the responsible trainer's opinion on how many days it takes to explain the relevant subject the evaluation of the trainees' prior knowledge and capacities on the relevant subjects and the detailed scope of the syllabus that has been prepared. The Sub borrower is also responsible for the monitoring of the Contractor's actions on training. The training will be given after signing the works contracts and refresher trainings will be held as needed depending on work progress and construction activities. Measurement and evaluation will be performed at the end of the training given to the personnel. This is to measure the effectiveness of the training and to measure the trainees' level of knowledge and competence. According to the review results, the training program can be modified, or trainers can be replaced, or training can be repeated, if needed, upon determining whether the training is effective.

The basic training that are planned to be given are as follows, but not limited to:

- Waste Management,
- Energy Efficiency,
- Safe Driving,
- Occupational Health and Safety,
- Chance Find Procedure,
- Induction training including Code of Conduct, GBV & SEA/SH, GM, EHS and ESMP Requirements, and
- First-Aid and Emergency Preparedness Measures

All training contents will be developed in line with the environmental and social requirements set forth by (i) relevant national legislation (including EIA, OHS, waste and pollution control), (ii) the World Bank Environmental and Social Framework (ESF, 2018), particularly ESS1, ESS2, ESS3, ESS4, and ESS10, and (iii) ILBANK's Environmental and Social Management System (ESMS), which includes procedures on E&S risk categorization, grievance redress, labor and contractor management, and stakeholder engagement. These frameworks will guide both the scope and implementation of training modules.

Sub-borrower staff (trained by ILBANK) will deliver E&S training to contractors. The training contents are summarized in Table 40. The Sub-borrower will identify specific training programs to be conducted in line with these modules and submit this to ILBANK prior to commencement of works.

The Sub-borrower will ensure that E&S training programs are extended to subcontractors by contractors in the event of their involvement in Subproject implementation.

Table 40. Training Components for Training of Contractor Staff

Module	Training Name	Training Duration	Key Training Content
Module 1	ILBANK E&S Requirements	1 hour	- Overview of ILBANK E&S requirements: o ILBANK E&S Policy (including but not limited to the guiding principles on human rights, labor rights and working conditions, community health,

Module	Training Name	Training Duration	Key Training Content
			safety and well-being, cultural heritage, gender equality, etc.) o External Communications (including stakeholder engagement, grievance management, etc.) o Monitoring, Review and Reporting o Labor Management, Contractor Management - ILBANK Code of Conduct
Module 2	Subproject-level E&S Requirements for contractors as per sub-financing agreement conditions	3 hours	- Subproject specific requirements: o E&S covenants included in sub-loan agreements o Subproject ESAP requirements o Subproject-level E&S assessment and management documentation (such as ESMP, SEP and other E&S management plans and procedures as applicable); o Emergency Preparedness and Response Plan including a training program for emergency responders including drills at regular intervals; o Specific training (such as driver training in case of involvement of vehicles or fleets of vehicles in Subproject-operations, training of security forces in the use of force (and where applicable, firearms), and appropriate conduct toward workers and affected communities, etc.). - Preparation and implementation of Labor Management Plans.

In addition, the training program/modules shall address a range of issues, including but not limited to:

- o Purpose of ESMP regarding the Project activities,
- o Requirements in management plans and monitoring activities to be performed within the scope of this plan,
- o Understanding of the sensitive environmental and social receptors within the project area and its vicinity, and
- o Awareness-raising about the potential risk and impacts from the project activities,
- o Grievance mechanism developed within the scope of the project, grievance mechanism officer and employee rights,
- o Community health and safety risks and measures,
- o OHS, first aid, emergency preparedness,
- o Code of conduct and clothing,
- o Communication with the local community,
- o Code of conduct training, including gender-based violence, sexual harassment, sexual exploitation and abuse,
- o Traffic and road safety principles, and
- o Training aiming at the sorting, storage and environmental planning of waste.

6. IMPLEMENTATION SCHEDULE AND COST ESTIMATES

6.1. Implementation Schedule

The construction phase of the Subproject is planned to be completed within approximately 36 months, followed by a 12-month Defect Liability Period (DLP). During the DLP, the Contractor will remain responsible for rectifying any defects identified in the completed works.

In the absence of a project-specific operational lifetime in the available project documentation, the operational phase has been assumed to be approximately 30 years, which is consistent with the typical service life of modern urban tramway systems. The actual operational lifetime may be extended through periodic maintenance, rehabilitation, and renewal of system components.

Duration of the construction and operation phase activities are listed in Table 41.

Table 41. Duration of Activities

Phase	Remarks/ Notes
Construction Duration (from site mobilization until provisional acceptance)	36 months
Defect Liability Period	12 months
Operation Duration (including DLP)	An average of 30 years

6.2. Cost Estimates

The implementation costs associated with the mitigation and monitoring measures presented in this ESMP will be incorporated into the Contractor's Bill of Quantities (BoQ), contract price and the Supervision Consultant's budget, as applicable. Since the Subproject is currently at the pre-tender stage, detailed cost estimates for individual mitigation measures have not been prepared. The Contractor will be responsible for allocating sufficient resources to ensure the effective implementation of all applicable environmental, social, occupational health and safety measures during construction.

Table 42 Cost Allocation for ESMP Mitigation and Monitoring Measures

ESMP Requirement	Cost Allocation
Provision of PPE	Included in Contractor's H&S budget
Dust suppression (water spraying)	Included in Contractor's construction cost
Tree transplantation	Included in landscaping / site preparation cost
Environmental Specialist	Included in Contractor's personnel cost
OHS Specialist	Included in Contractor's personnel cost
Waste management	Included in Contractor's construction cost
Traffic management	Included in temporary traffic management cost

At the current stage, the Subproject remains at the pre-tender phase and no detailed contractor-specific cost estimates have been prepared. Accordingly, numerical cost estimates for individual ESMP mitigation measures cannot be established with sufficient accuracy. Nevertheless, all mitigation and monitoring measures identified in this ESMP will be incorporated into the technical specifications, contractual requirements and Bill of Quantities during the tender preparation stage. The Contractor will be required to allocate adequate financial resources for the implementation of these measures as part of the construction contract.

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

Name of the Individual/ Organization	Profession/ Expertise
Dr. Okan BİLKAY	Mechanical Engineer, Ph.D.
Dr. İ.Haluk ÇERİBAŞI	Environmental Engineer, Ph.D.
Bora ERDEM	Landscape Architect
Ebru GÜLER	Environmental Engineer
Kübra ÇİBUK	Environmental Engineer
Nefin KAYA	Environmental Engineer
Ceren ÖNAL	Landscape Architect
Nazan Duygu YIGITER	Urban Planner, M.Sc
Barış Uslu	Hydrogeology Engineer
İsmail KAYA	Sociologist
Çağla ÇATAKLI	Sociologist
Beyza KAYGUSUZ	Biologist

Annex B – Existing Permitting Documentation



T.C.
KONYA VALİLİĞİ
Çevre ve Şehircilik İl Müdürlüğü

Sayı : 47342952-220.02-E.474

06.01.2020

Konu : ÇED Gerekli Değildir Kararı.

DAĞITIM YERLERİNE

İlgi : Ak-Ko Medikal Müh. ve Patent Dan. San. Tic. ve Ltd. Şti. 'nin 17/10/2019 tarihli e-ÇED başvurusu.

İlimiz Karatay İlçesi Çayır Mahallesi ve Akabe Mahallesi sınırları içinde kalan Yeniceler Caddesi-Kaside Sokak-Adana Çevre Yolu-Şehir Hastanesi güneyi istikametinde Konya Büyükşehir Belediye Başkanlığı (Ulaşım Planlama ve Trafik Dairesi Başkanlığı) tarafından gerçekleştirilmesi planlanan "tramvay hattı uzatma" projesi için, proje sahibi tarafından 25/11/2014 tarihli ve 29186 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren Çevresel Etki Değerlendirmesi (ÇED) Yönetmeliği'nin 16. maddesi uyarınca, Ak-Ko Medikal Müh. ve Patent Dan. San. Tic. ve Ltd. Şti.'ne hazırlanan proje tanıtım dosyası ilgi e-ÇED başvurusu ile Valiliğimize (Çevre ve Şehircilik İl Müdürlüğü) gönderilmiştir.

ÇED Yönetmeliği'nin 17. maddesi gereğince, Konya Büyükşehir Belediye Başkanlığı (Ulaşım Planlama ve Trafik Dairesi Başkanlığı) tarafından gerçekleştirilecek "tramvay hattı uzatma" projesine Valiliğimizce 03/01/2020 karar tarihli ve E-20207 karar numaralı belge ile "Çevresel Etki Değerlendirmesi Gerekli Değildir" kararı verilmiştir.

Söz konusu projeye ilişkin proje tanıtım dosyası ve eklerinde belirtilen hususlar ile 2872 sayılı Çevre Kanunu ile bu Kanuna istinaden çıkarılan Yönetmeliklerin ilgili hükümlerine uyulması ve diğer mer'î mevzuat uyarınca ilgili kurum/kuruluşlardan gerekli izinlerin alınması, kurumlar tarafından gerekli takibin yapılması, Çevresel Etki Değerlendirmesi Yönetmeliği'nin 18. maddesi gereğince projede yapılacak yönetmeliğe tabi değişikliklerin Valiliğimize (Çevre ve Şehircilik İl Müdürlüğü) iletilmesi hususunda;

Bilgilerinizi ve gereğini rica ederim.

e-imzalıdır

Hülya ŞEVİK

Vali a.

Çevre ve Şehircilik İl Müdürü

Ek : ÇED Belgesi (1 sayfa).

Dağıtım:

KONYA BÜYÜKŞEHİR BELEDİYE
BAŞKANLIĞINA
KARATAY KAYMAKAMLIĞINA
(Karatay Belediye Başkanlığı)(Ek konulmadı)
KONYA KÜLTÜR VARLIKLARINI
KORUMA BÖLGE KURULU
MÜDÜRLÜĞÜNE(Ek konulmadı)
KARAYOLLARI 3. BÖLGE
MÜDÜRLÜĞÜNE(Ek konulmadı)

Not: 5070 sayılı Elektronik İmza Kanunu gereği bu belge elektronik imza ile imzalanmıştır.

Horozluhan Mh. Abdolbasri Sk.No:2 Selçuklu/KONYA
Tel : (332) 224 5600 Faks: (332) 224 5899 e-Posta: konya@csb.gov.tr
<https://konya.csb.gov.tr> KEP: konyacevrevesehircilik@hs01.kep.tr

Bilgi için: Necati GÜR
Mühendis
Telefon No: (332) 224 57 72



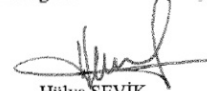
T.C.
ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
Çevresel Etki Değerlendirmesi, İzin ve Denetim Genel Müdürlüğü

T.C.
KONYA VALİLİĞİ
ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ İL MÜDÜRLÜĞÜ

Karar Tarihi : 09-06-2022
Karar No : 47342952 220-02 E-2022505

ÇEVRESEL ETKİ DEĞERLENDİRME BELGESİ

25.11.2014 tarih ve 29186 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren Çevresel Etki Değerlendirmesi Yönetmeliği'nin Ek-II listesinde yer alan 'BARIŞ CADDESİ TRAMVAYHATTI' projesi ile ilgili olarak inceleme-değerlendirme yapılmış ve Proje Tanıtım Dosyasında çevresel etkilere karşı alınması öngörülen önlemler yeterli görülmüştür. Ayrıca ÇED Raporu hazırlanmasına gerek bulunmadığı tespit edilmiş olup, söz konusu projeye ÇED Yönetmeliğinin 17. Maddesi gereğince Valiliğimizce "Çevresel Etki Değerlendirmesi Gerekli Değildir" kararı verilmiştir.


Hülya ŞEVİK
Vali a.
İl Müdürü

Proje Sahibi : KONYA BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI (ULAŞIM DAİRESİ BAŞKANLIĞI)
Proje Yeri : Konya İli, Selçuklu İlçesi, Hadımı Caddesi-Fatı Caddesi güzergahı (18,25 Km), Işık Mah-Ardıçlı Mah Arası.
Kapasite : Güzergah uzunluğu 18,25 km



T.C.
KONYA VALİLİĞİ
Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü

Sayı : E-47342952-220.02-6055784

27.03.2023

Konu : ÇED Gerekli Değildir Belgesi (Konya
Büyükşehir Belediyesi Stadyum-Şehir
Hastanesi Tramvay Hattı)

DAĞITIM YERLERİNE

İlimiz Selçuklu İlçesi, Silile ve Dikilitaş Mahalleleri ile Karatay İlçesi, Fevzi Çakmak, Hacı Yusuf Mescit, Mezbaha (Fetih) ve Çayır Mahallelerinde Konya Büyükşehir Belediye Başkanlığı tarafından gerçekleştirilmesi planlanan "Stadyum-Şehir Hastanesi Tramvay Hattı" projesi ile ilgili olarak çevrimiçi ÇED süreci yönetim sistemi üzerinden sunulan proje tanıtım dosyası incelenmiş ve değerlendirilmiştir.

"Stadyum-Şehir Hastanesi Tramvay Hattı" projesi hakkında ÇED Yönetmeliği'nin 17. maddesi gereğince 22/03/2023 tarih ve E-2023263 numaralı "**Çevresel Etki Değerlendirmesi Gerekli Değildir**" kararı verilmiş olup kararın Selçuklu Kaymakamlığı ve Karatay Kaymakamlığı tarafından 30 gün askıda ilan edilerek, Bilgi Teknolojileri ve Destek Hizmetleri Şube Müdürlüğüne internet aracılığı ile sürekli olarak halka duyurulması gerekmektedir.

Söz konusu projeye ilişkin nihai proje tanıtım dosyası ve eklerinde belirtilen hususlar ile 2872 sayılı Çevre Kanunu ile bu Kanuna istinaden çıkarılan yönetmeliklerin ilgili hükümlerine uyulması ve mer' mevzuat uyarınca ilgili kurum/kuruluşlardan gerekli izinlerin alınması, projede yapılacak yönetmeliğe tabi değişikliklerin de Bakanlığımıza veya İl Müdürlüğümüze iletilmesi hususunda;

Bilgilerinizi ve gereğini rica ederim.

Hülya ŞEVİK
Vali a.
İl Müdürü

Ek: ÇED Gerekli Değildir Belgesi (2 Sayfa)

Dağıtım:

Gereği:

Konya Büyükşehir Belediye Başkanlığına
Karatay Kaymakamlığına(Ek konulmadı)
Selçuklu Kaymakamlığına(Ek konulmadı)
Bilgi Teknolojileri ve Destek Hizmetleri Şube
Müdürlüğüne(Ek konulmadı)

Bilgi:

Karayolları 3. Bölge Müdürlüğüne(Ek konulmadı)
Konya Kültür Varlıklarını Koruma Bölge Kurulu
Müdürlüğüne(Ek konulmadı)
Karatay Belediye Başkanlığına(Ek konulmadı)
Selçuklu Belediye Başkanlığına(Ek konulmadı)
MORA ÇEVRE VE ORMAN MÜHENDİSLİK
SAN. TİC. LTD. ŞTİ.İNE

Bu belge, güvenli elektronik imza ile imzalanmıştır.

Doğrulama Kodu: 86F52C1E-5D65-4C46-80F0-9952A7D1B1F2

Doğrulama Adresi: <https://www.turkiye.gov.tr>

Horozluhan Mh. Abdulbasri Sk.No:2 Selçuklu/KONYA
Tel : (332)2245600 Faks:(332)2245899 e-Posta:konya@csb.gov.tr
<https://konya.csb.gov.tr> KEP: konyacevreseshircilik@hs01.kep.tr
KEP Adresi : konyacevreseshircilik@hs01.kep.tr

Bilgi için: İ.Mete TEMİZ
Mühendis





T.C.
ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
Çevresel Etki Değerlendirmesi, İzin ve Denetim Genel Müdürlüğü

T.C.
KONYA VALİLİĞİ
ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ İL MÜDÜRLÜĞÜ

Karar Tarihi : 22-03-2023
Karar No : 47342952 220-02 E-2023263

ÇEVRESEL ETKİ DEĞERLENDİRME BELGESİ

29.07.2022 tarih ve 31907 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren Çevresel Etki Değerlendirmesi Yönetmeliği'nin Ek-II listesinde yer alan **'KONYA STADYUM-ŞEHİR HASTANESİ TRAMVAY HATTI'** projesi ile ilgili olarak inceleme-değerlendirme yapılmış ve Proje Tanıtım Dosyasında çevresel etkilere karşı alınması öngörülen önlemler yeterli görülmüştür. Ayrıca ÇED Raporu hazırlanmasına gerek bulunmadığı tespit edilmiş olup, söz konusu projeye ÇED Yönetmeliğinin 17. Maddesi gereğince Valiliğimizce **"Çevresel Etki Değerlendirmesi Gerekli Değildir"** kararı verilmiştir.


Hülya ŞEVİK
İl Müdürü

Proje Sahibi : KONYA BÜYÜKŞEHİR BELEDİYE BŞKANLIĞI (ULAŞIM DAİRESİ BAŞKANLIĞI)
Proje Yeri : Konya İli, Selçuklu İlçesi, Selçuklu İlçesi, Sille Mahallesi, Dikilitaş Mahallesi, Karatay İlçesi, Fevzi Çakmak Mahallesi, Hacı Yusuf Mescit Mahallesi, Mezbaha(Fetih) ve Çayır Mahallesi, Dr. Halil ÜRÜN Caddesi-Aslım Caddesi, Hat Uzunluğu: 19,8 km
Kapasite : 21 Adet İstasyon ve 1 Adet Tramvay Deposu

Annex C – Title Deeds



T.C.
KONYA BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Emlak Yönetimi Dairesi Başkanlığı



Sayı : E-75763494-756.01-345724
Konu : Ön Tahsis Bildirimi (Selçuklu Ardıçlı 45610
Ada 1 Parsel)

DAĞITIM YERLERİNE

İlgi : 14.03.2025 tarihli ve E-66844966-401-11996548 sayılı yazımız.

İlgi yazı ile tahsis yenileme işlemi talep edilen mülkiyetinde hissedar olduğumuz Selçuklu İlçesi, Ardıçlı Mahallesi, 45610 ada 1 parsel sayılı 45.554,90 m² yüzölçümlü taşınmazın Maliye Hazine hissesine isabet eden 37.553,46 m²lik kısmının Milli Emlak Genel Müdürlüğü'nün 14.03.2025 tarih ve 11996548 sayılı yazıları ile 2022/15 ve 2024/7 sayılı Cumhurbaşkanlığı Genelgeleri kapsamında tahsis amacına yönelik yatırımın yapılabilmesine ilişkin olarak alınması gereken tüm izinlerin Konya Büyükşehir Belediye Başkanlığına alınması, ticari amaçla kullanılmaması, üçüncü kişilere ticari amaçla kullanılmaması/ devredilmemesi, tahsisli idarenin ilgili mevzuatları ile belirlenen ve alınması zorunlu olan gelirler dışında her ne ad altında olursa olsun herhangi bir ücret alınmaması, bu hususlar dışında ticari amaca yönelik ünitelerin söz konusu ve zorunlu olması durumunda ise Hazine Taşınmazlarının İdaresi Hakkında 1 Numaralı Yönetmeliğin 67, 70 ve 73/A maddesine göre işlem yapılması kaydıyla, Cumhurbaşkanlığı Kararnamesinin 101 inci maddesinin birinci fıkrasının (ç) bendi ile 5018 sayılı Kanunun 47 nci maddesi gereğince, "ulaşım transfer istasyonu, park ve belediye hizmet alanı yapılmak ve yol olarak kullanılmak üzere" Konya Büyükşehir Belediye Başkanlığı adına 2 (iki) yıl süreyle ön tahsisi uygun görülmüştür.

Tahsisi alınan taşınmazın yazımız ekinde sunulan tahsis kararına uyularak 2 (iki) yıl süre içerisinde yatırım projesinin hazırlanması, yatırım programına alınması ve tesis/bina inşaatına başlanılması halinde tahsisin hizmet süresince devamı için kesin tahsise dönüştürülmesi yönünde talepte bulunulacak olup, tahsis süresi içerisinde yatırımların tamamlanamaması halinde tahsis süre uzatımı taleplerinin Emlak Yönetimi Dairesi Başkanlığına tahsis süresi bitiminden 60 gün önceden bildirilmesi, taşınmazın işgallere karşı korunması ve muhafazası hususunda;

Gereğini arz ederim.

Cüneyd GEDİK
Emlak Yönetimi Dairesi Başkanı

Dağıtım:

Gereği:

Bilgi:

Bu belge, güvenli elektronik imza ile imzalanmıştır.

Doğrulama Kodu: b60746a3-2544-4d3a-a241-e52908a12c30

Doğrulama Linki: <https://www.turkiye.gov.tr/scidleri-beladiye-ohys>

Adres: Konevi Mahallesi Millet Cad. No:14 Menem / Konya
Telefon No: 4445542 Faks No: (332)211 15 76
e-Posta: emlakyonetim@konya.bel.tr İnternet Adresi: <https://www.konya.bel.tr>
Kep Adresi: konyabuyuksehirbeladiyesi@fu03.kep.tr

Bilgi için: Bayram CERAN
Tekniyen
Telefon No: 0332 205 46 83





T.C.
ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
MİLLİ EMLAK GENEL MÜDÜRLÜĞÜ



Sayı : E-66844966-401-11996548
Konu : Tahsis (Konya-Selçuklu-45610 Ada 1 Parsel)
(3121-137219)

DAĞITIM YERLERİNE

- İlgi : a) 07.02.2020 tarihli ve 33903 sayılı yazımız.
b) 13.10.2022 tarihli ve 4691798 sayılı yazımız.
c) Konya Valiliğinin (Çevre, Şehircilik ve İklim Değişikliği İl Müdürlüğü) 10.03.2025 tarihli ve 11985052 sayılı yazısı.
ç) Bakanlığımızca (Bakan Müşavirliği) yayımlanan 2018/11 Sayılı İç Genelge.

Konya İli, Selçuklu İlçesi, Ardıçlı Mahallesinde bulunan mülkiyeti Hazineye ait 1186 parsel numaralı ve 92.446,73 m² yüzölçümlü taşınmazın "ulaşım transfer istasyonu, park ve belediye hizmet alanı yapılmak ve yol olarak kullanılmak üzere" Konya Büyükşehir Belediye Başkanlığı adına 2 (iki) yıl süreyle ön tahsisi ilgi (a) ve (b) yazılarımızla uygun görülmüştü.

Bu kez, ilgi (c) yazıda özetle; bahse konu 1186 parsel numaralı taşınmazın muhtelif taşınmazlarla tevhid ve ifraz işlemlerine tabi tutulduğu, ifrazden oluşan parsellerden 45610 ada 1 parsel numaralı ve 45.554,90 m² yüzölçümlü taşınmazın 37.553,46 m²'lik kısmının Hazine adına tescil edildiği ve "ulaşım transfer istasyonu ve triyaj alanı olarak kullanılmak üzere" Konya Büyükşehir Belediye Başkanlığına 2 (iki) yıl süreyle ön tahsisinin İl Müdürlüklerinin (Milli Emlak Dairesi Başkanlığı) 03.01.2023 tarihli ve 5429114 sayılı Olurları ile uygun görüldüğü, Konya Büyükşehir Belediye Başkanlığının 14.11.2024 tarihli ve 315527 sayılı yazısında, söz konusu taşınmaz üzerinde yapılacak olan yatırımlara ait proje ve detay çalışmalarının tamamlandığından, işlemlerin ihale sürecine geldiğinden ve yapım sürecine Mart 2025 tarihinde başlanılmasının planlandığından bahisle "ulaşım transfer istasyonu, park ve belediye hizmet alanı yapılmak ve yol olarak kullanılmak üzere" tahsis işleminin yenilenmesinin talep edildiği belirtilerek, gereğinin yapılması istenilmektedir.

Buna göre; ilgi (ç) İç Genelge ile tahsis işlemlerinin 2018/8 sayılı Cumhurbaşkanlığı Genelgesi uyarınca teşkil ettirilen Komisyondan alınacak izinden muaf tutulduğu dikkate alınarak, ilgi (c) yazı ile tahsisi talep edilen ve yazı eklerinde tahsisinde sakınca bulunmadığı bildirilen, Konya İli, Selçuklu İlçesi, Ardıçlı Mahallesinde bulunan ve 1/1000 ölçekli uygulama imar planında belediye hizmet alanı (garaj, triyaj alanı ve idari tesis alanı) olarak ayrılan, 3755346/4555490 oranında hissesi Hazineye (37.553,46 m²), 800144/4555490 oranında hissesi Konya Büyükşehir Belediyesine (8.001,44 m²) ait olan 45610 ada 1 parsel numaralı ve 45.554,90 m² yüzölçümlü arsa vasıflı taşınmazın Hazine hissesine isabet eden 37.553,46 m²'lik kısmının, **2022/15 ve 2024/7 sayılı Cumhurbaşkanlığı Genelgeleri kapsamında tahsis amacına yönelik yatırımın yapılabilmesine ilişkin olarak alınması gereken tüm izinlerin Konya Büyükşehir Belediye Başkanlığınca alınması, ticari amaçla kullanılmaması, üçüncü kişilere ticari amaçla kullandırılmaması/ devredilmemesi, tahsisli idarenin ilgili mevzuatları ile belirlenen ve alınması zorunlu olan gelirler dışında her ne ad altında olursa olsun herhangi bir ücret alınmaması, bu hususlar dışında ticari amaca yönelik ünitelerin söz konusu ve zorunlu olması durumunda ise Hazine Taşınmazlarının İdaresi Hakkında Yönetmeliğin 67, 70 ve 73/A maddesine göre işlem yapılması kaydıyla, 1 Numaralı Cumhurbaşkanlığı Kararnamesinin 101 inci maddesinin birinci fıkrasının (ç) bendi ile 5018 sayılı Kanunun 47 nci maddesi gereğince, "ulaşım transfer istasyonu, park ve belediye hizmet alanı yapılmak ve yol olarak kullanılmak üzere" Konya Büyükşehir Belediye Başkanlığı adına 2 (iki) yıl süreyle ön tahsisi uygun görülmüştür.**

Bu belge, güvenli elektronik imza ile imzalanmıştır.

Doğrulama Kodu: A4F740B9-5D3C-4AE8-8A6E-C78EE2E9FD63

Doğrulama Adresi: <https://www.turkiye.gov.tr>

KEP Adresi : cevrevesehircilikbakanligi@hs01.kep.tr

Bilgi için: Fevzi ESKİN
Çevre ve Şehircilik Uzmanı



Söz konusu taşınmazın 2 (iki) yıl süre içerisinde yatırım projesinin hazırlanması, yatırım programına alınması ve tesis/bina inşaatına başlanması halinde ön tahsisin hizmet süresince devamı için kesin tahsise dönüştürülmesi yönünde talepte bulunulacaktır. Aksi halde tahsis işlemi herhangi bir işleme ve yazışmaya gerek olmaksızın kendiliğinden kalkmış sayılacaktır.

Bilgi edinilmesini ve gereğini rica ederim.

Ömer BULUT
Bakan a.
Bakan Yardımcısı

Ek: [Google Görüntüsü](#)

Dağıtım:

Gereği:

KONYA VALİLİĞİNE (Çevre, Şehircilik ve İklim
Değişikliği İl Müdürlüğü)

Bilgi:

KONYA BÜYÜKŞEHİR BELEDİYE
BAŞKANLIĞINA

Bu belge, güvenli elektronik imza ile imzalanmıştır.

Doğrulama Kodu: A4F740B9-5D3C-4AE8-8A6E-C78EE2E9FD63

KEP Adresi : cevresehicilikbakanligi@hs01.kep.tr

Doğrulama Adresi: <https://www.turkiye.gov.tr>

Bilgi için:Fevzi ESKİN
Çevre ve Şehircilik Uzmanı



Annex D – Site Photographs

Photo No: 01	
Date: 30.09.2021	
Location: Selçuklu District	
Details/Notes: Previous field studies	
Photo No: 02	
Date: 14.10.2021	
Location: Fırat Street, Selçuklu	
Details/Notes: Previous biodiversity studies	
Photo No: 03	
Date: 14.04.2026	
Location: Lot-1 and Lot-2 Connection Point	
Details/Notes: Site visit conducted in 2026	

Photo No: 04
Date: 14.04.2026
Location: Konya Metropolitan Municipality Meeting Hall
Details/Notes: Mukhtar information meeting



Annex E – Baseline Measurements

			
ENCON LABORATUVARI A.Ş. Mutlukent Mahallesi Uluirnak Sokak No:23 Çankaya/ANKARA Tel: 0 312 447 71 22 Faks: 0 312 447 69 88 mail: encon@enconlab.com.tr web: www.enconlaboratory.com			
PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT			
Müşteri Adı / Client Name	ENCON Çevre Danışmanlık Ltd. Şti.		
Müşteri Adresi / Client Address	Prof. Dr. Ahmet Taner Kışlalı Mah. Bangabandhu Bulvarı No:94/39 Özçelik İmaj İş Merkezi Kat 4 06810 Çankaya / ANKARA		
Teklif Numarası / Proposal Number	LT26-0158	Numune Türü / Sample Type	PM 10
Rapor Tarihi / Numarası / Report Date / No	08.05.2026 / LR.26.2698	Ölçüm Yöntemi / Sampling Method	Gravimetrik Yöntem (Gravimetric Method)
Numune Kayıt Numarası / Sample Record No	NUM.26.2698	Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling	Parçalı Bulutlu
Proje Adı / Cihaz Kurulum Noktası / Project Name / Sampling Location	KBB Raylı Sistem Hattı Projesi / AQ - 1	Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat / Date/Time the Final Filter Arrives at Laboratory	05.05.2026 17:30
Ölçümü Yapan Kişi / Person Conducted Sampling	Ozan ÜNAL	Dolu Filtrenin Tartıldığı Tarih / Date of Final Filter Weighing	08.05.2026
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	Sayfa Sayısı / Number of Pages	2
Boş Filtrenin Tartıldığı Tarih / Date of Empty Filter Weighing	30.04.2026		
Açıklamalar/Remarks: Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına göre akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a test laboratory. Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalanmıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports. Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.			
Yayınlandığı Tarih / Date	Raporu Kontrol Eden / Checking the report	Onaylayan/ Approval / Tarih/ Date	
08.05.2026	Dilard SUSLU Laboratuvar Müdür Yardımcısı	Hüseyin TEKİN Laboratuvar Müdürü	
	e-imza ile imzalanmıştır / signed with E-SIGNATURE	e-imza ile imzalanmıştır / signed with E-SIGNATURE	
Açıklamalar/Remarks: Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz. -İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid. -Rapordaki analiz sonuçları laboratuvara teslim edilen, deney yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received. -Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc.. - (*) İşaretili parametreler akredite olmayan parametrelerdir. / (*) Parameters with "*" are those not accredited. - (**) İşaretili parametreler ISO 17025 Akreditasyonuna sahipLaboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at which is holding ISO-17025 accreditation. -Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır./This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070 https://encon.enlab.io/rapor-dogrula bağlantı adresinden raporlarınızı doğrulayabilirsiniz./ https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.			
Doküman No ENC.P.14.F.67.C	İlk Yayın Tarihi 29.07.2011	Revizyon No / Tarihi 13/17.06.2025	Sayfa No 1/2



TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T

LR.26.2698

05-26

ENCON LABORATUVARI A.Ş.

Mutlukent Mahallesi Uluirmak Sokak No:23 Çankaya/ANKARA

Tel: 0 312 447 71 22 Faks: 0 312 447 69 88

mail: encon@enconlab.com.tr web: www.enconlaboratory.com

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

	Cihaz Adı / Device Name	Marka / Model Brand / Model	Seri No / Serial No				
Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	GC Model Tartım Cihazı GC Model Weighing Device	Sartorius/GC	18805603				
	PM10 Örneklem Cihazı PM10 Sampling Device	Eurometrics-PM-NAC2	PM-2543				
	Sıcaklık ve Nem Veri Toplayıcı Cihazı Temperature and Humidity Data Collector	CEM (DT-172 Model)	9115542				
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	37,994245 / 32,485780						
Filtrenin Boş Ağırlığı (g) Empty Weight of Filter	Filtrenin Dolu Ağırlığı (g) Final Weight of Filter	Kör numune ilk tartım (g) Blank first weighing	Kör numune son tartım (g) Blank last weighing	Filtrenin Takılma Tarihi Date of Filter Set	Filtrenin Çıkarılma Tarihi Date of Filter Take Off	Geçen Hava Miktarı (m³) Amount of Air Passes (m³)	PM10 Sonuç /Result (µg/m³)
0.12744	0.12808	0.12630	0.12630	04.05.2026	05.05.2026	55.20	11.6

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.

Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.

For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.

The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer, our company waives the consequences arising from this information.

Açıklamalar/Remarks: Müşten talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
-İmzasız Deney Raporları geçersizdir / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc.
- (**) işaretli parametreler akredite olmayan parametrelerdir. / (**) Parameters with ** are those not accredited.
- (**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Laboratuvar tarafından yapılmıştır. / (**) Parameters with ** are conducted at
- Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070
<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz. / <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No
ENC.P.14.F.67.C

İlk Yayın Tarihi
29.07.2011

Revizyon No / Tarihi
13/17.06.2025

Sayfa No
2/2

ENCON LABORATUVARI A.Ş.

Mutlukent Mahallesi Ulurmak Sokak No:23 Çankaya/ANKARA

Tel: 0 312 447 71 22 Faks: 0 312 447 69 88

mail: encon@enconlab.com.tr web: www.enconlaboratory.com

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık Ltd. Şti.		
Müşteri Adresi / Client Address	Prof. Dr. Ahmet Taner Kışlalı Mah. Bangabandhu Bulvarı No:94/39 Özçelik İmaj İş Merkezi Kat 4 06810 Çankaya / ANKARA		
Teklif Numarası / Proposal Number	LT26-0158	Numune Türü / Sample Type	PM 10
Rapor Tarihi / Numarası / Report Date / No	08.05.2026 / LR.26.2699	Ölçüm Yöntemi / Sampling Method	Gravimetrik Yöntem (Gravimetric Method)
Numune Kayıt Numarası / Sample Record No	NUM.26.2699	Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling	Parçalı Bulutlu
Proje Adı / Cihaz Kurulum Noktası / Project Name / Sampling Location	KBB Raylı Sistem Hattı Projesi / AQ -2	Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat / Date/Time the Final Filter Arrives at Laboratory	05.05.2026 17:30
Ölçümü Yapan Kişi / Person Conducted Sampling	Ozan ÜNAL	Dolu Filtrenin Tartıldığı Tarih / Date of Final Filter Weighing	08.05.2026
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	Sayfa Sayısı / Number of Pages	2
Boş Filtrenin Tartıldığı Tarih / Date of Empty Filter Weighing	30.04.2026		

Açıklamalar/Remarks:
Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına göre akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a test laboratory.
Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.
Deney ve hespa ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu sertifikadan tanımlayan kısma olan takip eden sayılarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Yayımlandığı Tarih
Date

Raporu Kontrol Eden
Checking the report
DİDAR SÜSLÜ
Laboratuvar Müdür Yardımcısı

Onaylayan/ Approval
Tarih/ Date
Hüseyin TEKİN
Laboratuvar Müdürü

e-imza ile imzalanmıştır
signed with E-SIGNATURE

e-imza ile imzalanmıştır
signed with E-SIGNATURE

08.05.2026

08.05.2026

Açıklamalar/Remarks: Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
-İmzasız Deney Raporları geçersizdir / Reports without signature are not valid.
-Rapordeki analiz sonuçları laboratuvara teslim edilen, deney yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.' nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir. / (*) Parameters with "*" are those not accredited.
- (**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Laboratuvar tarafından yapılmıştır. / (**) Parameters with "**" are conducted at which is holding ISO-17025 accreditation.
-Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070
<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz. / <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No ENC.P.14.F.67.C	İlk Yayın Tarihi 29.07.2011	Revizyon No / Tarihi 13/17.06.2025	Sayfa No 1/2
-------------------------------	--------------------------------	---------------------------------------	-----------------

ENCON LABORATUVARI A.Ş.

Mutlukent Mahallesi Ulurmak Sokak No:23 Çankaya/ANKARA

Tel: 0 312 447 71 22 Faks: 0 312 447 69 88

mail: encon@enconlab.com.tr web: www.enconlaboratory.com

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

	Cihaz Adı / Device Name	Marka / Model Brand / Model	Seri No / Serial No				
Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	GC Model Tartım Cihazı GC Model Weighing Device	Sartorius/GC	18805603				
	PM10 Örneklem Cihazı PM10 Sampling Device	Eurometrics-PM-NAC2	PM-2543				
	Sıcaklık ve Nem Veri Toplayıcı Cihazı Temperature and Humidity Data Collector	CEM (DT-172 Model)	9115542				
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	37,993672 / 32,517754						
Filtrenin Boş Ağırlığı (g) Empty Weight of Filter	Filtrenin Dolu Ağırlığı (g) Final Weight of Filter	Kör numune ilk tartım (g) Blank first weighing	Kör numune son tartım (g) Blank last weighing	Filtrenin Takılma Tarihi Date of Filter Set	Filtrenin Çıkarılma Tarihi Date of Filter Take Off	Geçen Hava Miktarı (m³) Amount of Air Passes (m³)	PM10 Sonuç /Result (µg/m³)
0.12365	0.12429	0.12717	0.12717	04.05.2026	05.05.2026	55.18	11.6

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.

Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilginin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.

For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.

The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer, our company waives the consequences arising from this information.

Açıklamalar/Remarks: Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
-İmzasız Deney Raporları geçersizdir / Reports without signature are not valid.
-Raporadaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (**) işaretli parametreler akredite olmayan parametrelerdir. / (**) Parameters with "" are those not accredited.
- (**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "" are conducted at, which is holding ISO-17025 accreditation.
-Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070
<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz. / <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No ENC.P.14.F.67.C	İlk Yayın Tarihi 29.07.2011	Revizyon No / Tarihi 13/17.06.2025	Sayfa No 2/2
-------------------------------	--------------------------------	---------------------------------------	-----------------

ENCON LABORATUVARI A.Ş.

Mutlukent Mahallesi Ulurmak Sokak No:23 Çankaya/ANKARA

Tel: 0 312 447 71 22 Faks: 0 312 447 69 88

mail: encon@enconlab.com.tr web: www.enconlaboratory.com

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık Ltd. Şti.		
Müşteri Adresi / Client Address	Prof. Dr. Ahmet Taner Kışlalı Mah. Bangabandhu Bulvarı No:94/39 Özçelik İmaj İş Merkezi Kat 4 06810 Çankaya / ANKARA		
Teklif Numarası / Proposal Number	LT26-0158	Numune Türü / Sample Type	PM 10
Rapor Tarihi / Numarası / Report Date / No	08.05.2026 / LR.26.2700	Ölçüm Yöntemi / Sampling Method	Gravimetrik Yöntem (Gravimetric Method)
Numune Kayıt Numarası / Sample Record No	NUM.26.2700	Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling	Parçalı Bulutlu
Proje Adı / Cihaz Kurulum Noktası / Project Name / Sampling Location	KBB Raylı Sistem Hattı Projesi / AQ - 3	Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat / Date/Time the Final Filter Arrives at Laboratory	05.05.2026 17:30
Ölçümü Yapan Kişi / Person Conducted Sampling	Ozan ÜNAL	Dolu Filtrenin Tartıldığı Tarih / Date of Final Filter Weighing	08.05.2026
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	Sayfa Sayısı / Number of Pages	2
Boş Filtrenin Tartıldığı Tarih / Date of Empty Filter Weighing	30.04.2026		

Açıklamalar/Remarks:
Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına göre akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a test laboratory.
Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.
Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Yayınlandığı Tarih
Date

Raporu Kontrol Eden
Checking the report
Dilbar SÜSLÜ
Laboratuvar Müdür Yardımcısı

Onaylayan/ Approval
Tarih/ Date
Hüseyin TEKİN
Laboratuvar Müdürü

e-imza ile imzalanmıştır
signed with E-SIGNATURE

e-imza ile imzalanmıştır
signed with E-SIGNATURE

08.05.2026

08.05.2026

Açıklamalar/Remarks: Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
-İmzasız Deney Raporları geçersizdir / Reports without signature are not valid.
-Rapordeki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (*) işaretli parametreler akredite olmayan parametrelerdir. / (*) Parameters with "*" are those not accredited.
- (**) işaretli parametreler ISO 17025 Akreditasyonuna sahipLaboratuvar tarafından yapılmıştır. / (**) Parameters with "**" are conducted at which is holding ISO-17025 accreditation.
-Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070
<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz / <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No ENC.P.14.F.67.C	İlk Yayın Tarihi 29.07.2011	Revizyon No / Tarihi 13/17.06.2025	Sayfa No 1/2
-------------------------------	--------------------------------	---------------------------------------	-----------------



Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T

LR.26.2700

05-26

ENCON LABORATUVARI A.Ş.

Mutlukent Mahallesi Ulurmak Sokak No:23 Çankaya/ANKARA

Tel: 0 312 447 71 22 Faks: 0 312 447 69 88

mail: encon@enconlab.com.tr web: www.enconlaboratory.com

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

	Cihaz Adı / Device Name	Marka / Model Brand / Model	Seri No / Serial No				
Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	GC Model Tartım Cihazı GC Model Weighing Device	Sartorius/GC	18805603				
	PM10 Örneklem Cihazı PM10 Sampling Device	Eurometrics-PM-NAC2	PM-2543				
	Sıcaklık ve Nem Veri Toplayıcı Cihazı Temperature and Humidity Data Collector	CEM (DT-172 Model)	9115542				
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	37,905586 / 32,490627						
Filtrenin Boş Ağırlığı (g) Empty Weight of Filter	Filtrenin Dolu Ağırlığı (g) Final Weight of Filter	Kör numune ilk tartım (g) Blank first weighing	Kör numune son tartım (g) Blank last weighing	Filtrenin Takılma Tarihi Date of Filter Set	Filtrenin Çıkarılma Tarihi Date of Filter Take Off	Geçen Hava Miktarı (m³) Amount of Air Passes (m³)	PM10 Sonuç /Result (µg/m³)
0.12565	0.12641	0.12355	0.12355	04.05.2026	05.05.2026	55.16	13.8

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.

Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.

For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.

The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer, our company waives the consequences arising from this information.

Açıklamalar/Remarks: Müşten talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz. İmzasız Deney Raporları geçersizdir / Reports without signature are not valid. Raporadaki analiz sonuçları laboratuvara teslim edilen, deney yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received. Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc.. (*) işaretli parametreler akredite olmayan parametrelerdir / (*) Parameters with ** are those not accredited. (**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Laboratuvar tarafından yapılmıştır. / (**) Parameters with *** are conducted at which is holding ISO-17025 accreditation. Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070 https://encon.enlab.io/rapor-dogrula bağlantı adresinden raporlarınızı doğrulayabilirsiniz / https://encon.enlab.io/rapor-dogrula You can verify your reports via the link			
Doküman No ENC.P.14.F.67.C	İlk Yayın Tarihi 29.07.2011	Revizyon No / Tarihi 13/17.06.2025	Sayfa No 2/2



Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T

LR.26.2701

05-26

ENCON LABORATUVARI A.Ş.
Mutlukent Mahallesi Uluirnak Sokak No:23 Çankaya/ANKARA
Tel: 0 312 447 71 22 Faks: 0 312 447 69 88
mail: encon@enconlab.com.tr web: www.enconlaboratory.com

PARTİKÜL MADDE (PM) ANALİZ RAPORU /
PARTICULATE MATTER (PM) ANALYSIS REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık Ltd. Şti.		
Müşteri Adresi / Client Address	Prof. Dr. Ahmet Taner Kışlalı Mah. Bangabandhu Bulvarı No:94/39 Özçelik İmaj İş Merkezi Kat 4 06810 Çankaya / ANKARA		
Teklif Numarası / Proposal Number	LT26-0158	Numune Türü / Sample Type	PM 2,5
Rapor Tarihi / Numarası Report Date / No	08.05.2026 / LR.26.2701	Ölçüm Yöntemi / Sampling Method	Gravimetrik Yöntem (Gravimetric Method)
Numune Kayıt Numarası / Sample Record No	NUM.26.2701	Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling	Parçalı Bulutlu
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	KBB Raylı Sistem Hattı Projesi / AQ -1	Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat Date/Time the Final Filter Arrives at Laboratory	05.05.2026 17:30
Ölçümü Yapan Kişi / Person Conducted Sampling	Ozan ÜNAL	Dolu Filtrenin Tartıldığı Tarih Date of Final Filter Weighing	08.05.2026
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	Sayfa Sayısı/ Number of Pages	2
Boş Filtrenin Tartıldığı Tarih Date of Empty Filter Weighing	30.04.2026		

Açıklamalar/Remarks:

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına göre akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a test laboratory. Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports. Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikadan tanımlayıcı kısmı olan takip eden sayılarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Yayınlandığı Tarih
Date

Raporu Kontrol Eden
Checking the report
Dilard SÜSLÜ
Laboratuvar Müdür Yardımcısı

Onaylayan/ Approval
Tarih/ Date
Hüseyin TEKİN
Laboratuvar Müdürü

e-imza ile imzalanmıştır
signed with E-SIGNATURE

e-imza ile imzalanmıştır
signed with E-SIGNATURE

08.05.2026

08.05.2026

Açıklamalar/Remarks: Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz. -Imzasız Deney Raporları geçersizdir/ Reports without signature are not valid. -Rapordeki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received. -Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc.. - (**) işaretli parametreler akredite olmayan parametrelerdir. / (**) Parameters with "" are those not accredited. - (**) işaretli parametreler ISO 17025 Akreditasyonuna sahipLaboratuvar tarafından yapılmıştır. / (**) Parameters with "" are conducted at which is holding ISO-17025 accreditation. -Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır./This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070 <https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz/ <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No ENC.P.14.F.67.C	İlk Yayın Tarihi 29.07.2011	Revizyon No / Tarihi 13/17.06.2025	Sayfa No 1/2
-------------------------------	--------------------------------	---------------------------------------	-----------------

ENCON LABORATUVARI A.Ş.
Mutlukent Mahallesi Uluırmak Sokak No:23 Çankaya/ANKARA
Tel: 0 312 447 71 22 Faks: 0 312 447 69 88
mail: encon@enconlab.com.tr web: www.enconlaboratory.com

**PARTİKÜL MADDE (PM) ANALİZ RAPORU /
PARTICULATE MATTER (PM) ANALYSIS REPORT**

	Cihaz Adı / Device Name	Marka / Model Brand / Model	Seri No / Serial No				
Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	GC Model Tartım Cihazı GC Model Weighing Device	Sartorius/GC	18805603				
	PM10 Örneklem Cihazı PM10 Sampling Device	Eurometrics-PM-NAC2	PM-2541				
	Sıcaklık ve Nem Veri Toplayıcı Cihazı Temperature and Humidity Data Collector	CEM (DT-172 Model)	9115542				
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	37,994245 / 32,485780						
Filtrenin Boş Ağırlığı (g) Empty Weight of Filter	Filtrenin Dolu Ağırlığı (g) Final Weight of Filter	Kör numune ilk tartım (g) Blank first weighing	Kör numune son tartım (g) Blank last weighing	Filtrenin Takılma Tarihi Date of Filter Set	Filtrenin Çıkarılma Tarihi Date of Filter Take Off	Geçen Hava Miktarı (m³) Amount of Air Passes (m³)	PM 2,5 Sonuç /Result (µg/m³)
0.12644	0.12680	0.12630	0.12630	04.05.2026	05.05.2026	55.20	6.52

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.

Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.

For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.

The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer, our company waives the consequences arising from this information.

Açıklamalar/Remarks: Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz. -İmzasız Deney Raporları geçersizdir / Reports without signature are not valid. -Raporlardaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received. -Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc.. -(*) işaretli parametreler akredite olmayan parametrelerdir. / (*) Parameters with "*" are those not accredited. -(**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Laboratuvar tarafından yapılmıştır. / (**) Parameters with "**" are conducted at which is holding ISO-17025 accreditation. -Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070 https://encon.enlab.io/rapor-dogrula bağlantı adresinden raporlarınızı doğrulayabilirsiniz. / https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.			
Doküman No ENC.P.14.F.67.C	İlk Yayın Tarihi 29.07.2011	Revizyon No / Tarihi 13/17.06.2025	Sayfa No 2/2



Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T

LR.26.2702

05-26

ENCON LABORATUVARI A.Ş.
Mutlukent Mahallesi Uluırmak Sokak No:23 Çankaya/ANKARA
Tel: 0 312 447 71 22 Faks: 0 312 447 69 88
mail: encon@enconlab.com.tr web: www.enconlaboratory.com

PARTİKÜL MADDE (PM) ANALİZ RAPORU /
PARTICULATE MATTER (PM) ANALYSIS REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık Ltd. Şti.		
Müşteri Adresi / Client Address	Prof. Dr. Ahmet Taner Kışlalı Mah. Bangabandhu Bulvarı No:94/39 Özçekil İmaj İş Merkezi Kat 4 06810 Çankaya / ANKARA		
Teklif Numarası / Proposal Number	LT26-0158	Numune Türü / Sample Type	PM 2,5
Rapor Tarihi / Numarası / Report Date / No	08.05.2026 / LR.26.2702	Ölçüm Yöntemi / Sampling Method	Gravimetrik Yöntem (Gravimetric Method)
Numune Kayıt Numarası / Sample Record No	NUM.26.2702	Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling	Parçalı Bulutlu
Proje Adı / Cihaz Kurulum Noktası / Project Name / Sampling Location	KBB Raylı Sistem Hattı Projesi / AQ - 2	Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat / Date/Time the Final Filter Arrives at Laboratory	05.05.2026 17:30
Ölçümü Yapan Kişi / Person Conducted Sampling	Ozan ÜNAL	Dolu Filtrenin Tartıldığı Tarih / Date of Final Filter Weighing	08.05.2026
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	Sayfa Sayısı / Number of Pages	2
Boş Filtrenin Tartıldığı Tarih / Date of Empty Filter Weighing	30.04.2026		

Açıklamalar/Remarks:
Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına göre akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a test laboratory.
Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınması konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports.
Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Yayınlandığı Tarih / Date

Raporu Kontrol Eden / Checking the report
Dildar SÜSLÜ
Laboratuvar Müdür Yardımcısı

Onaylayan/ Approval / Date
Hüseyin TEKİN
Laboratuvar Müdürü

e-imza ile imzalanmıştır / signed with E-SIGNATURE

e-imza ile imzalanmıştır / signed with E-SIGNATURE

08.05.2026

08.05.2026

Açıklamalar/Remarks: Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
-İmzasız Deney Raporları geçersizdir / Reports without signature are not valid.
-Raporlardaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (**) işaretli parametreler akredite olmayan parametrelerdir. / (**) Parameters with "" are those not accredited.
- (**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Laboratuvar tarafından yapılmıştır. / (**) Parameters with "" are conducted at which is holding ISO-17025 accreditation.
-Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070
<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz. / <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No / ENC P.14.F.67.C	İlk Yayın Tarihi / 29.07.2011	Revizyon No / Tarihi / 13/17.06.2025	Sayfa No / 1/2
------------------------------	-------------------------------	--------------------------------------	----------------



Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T

LR.26.2702

05-26

ENCON LABORATUVARI A.Ş.

Mutlukent Mahallesi Ulurmak Sokak No:23 Çankaya/ANKARA

Tel: 0 312 447 71 22 Faks: 0 312 447 69 88

mail: encon@enconlab.com.tr web: www.enconlaboratory.com

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

	Cihaz Adı / Device Name	Marka / Model Brand / Model	Seri No / Serial No				
Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	GC Model Tartım Cihazı GC Model Weighing Device	Sartorius/GC	18805603				
	PM10 Örnekleme Cihazı PM10 Sampling Device	Eurometrics-PM-NAC2	PM-2541				
	Sıcaklık ve Nem Veri Toplayıcı Cihazı Temperature and Humidity Data Collector	CEM (DT-172 Model)	9115542				
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	37,993672 / 32,517754						
Filtrenin Boş Ağırlığı (g) Empty Weight of Filter	Filtrenin Dolu Ağırlığı (g) Final Weight of Filter	Kör numune ilk tartım (g) Blank first weighing	Kör numune son tartım (g) Blank last weighing	Filtrenin Takılma Tarihi Date of Filter Set	Filtrenin Çıkarılma Tarihi Date of Filter Take Off	Geçen Hava Miktarı (m³) Amount of Air Passes (m³)	PM 2,5 Sonuç /Result (µg/m³)
0.12144	0.12182	0.12717	0.12717	04.05.2026	05.05.2026	55.18	6.89

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.

Laboratuvar yetkili personel tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.

For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.

The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer, our company waives the consequences arising from this information.

Açıklamalar/Remarks: Müşten talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
-İmzasız Deney Raporları geçersizdir / Reports without signature are not valid.
-Raporadaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (**) işaretli parametreler akredite olmayan parametrelerdir / (**) Parameters with ** are those not accredited.
- (**) işaretli parametreler ISO 17025 Akreditasyonuna sahipLaboratuvar tarafından yapılmıştır. / (**) Parameters with ** are conducted at, which is holding ISO-17025 accreditation.
-Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır /This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070
<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz./ <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	13/17.06.2025	2/2



Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T

LR.26.2703

05-26

ENCON LABORATUVARI A.Ş.

Mutlukent Mahallesi Ulurmak Sokak No:23 Çankaya/ANKARA

Tel: 0 312 447 71 22 Faks: 0 312 447 69 88

mail: encon@enconlab.com.tr web: www.enconlaboratory.com

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

Müşteri Adı / Client Name	ENCON Çevre Danışmanlık Ltd. Şti.		
Müşteri Adresi / Client Address	Prof. Dr. Ahmet Taner Kışlalı Mah. Bangabandhu Bulvarı No:94/39 Özçelik İmaj İş Merkezi Kat 4 06810 Çankaya / ANKARA		
Teklif Numarası / Proposal Number	LT26-0158	Numune Türü / Sample Type	PM 2,5
Rapor Tarihi / Report Date / No	08.05.2026 / LR.26.2703	Ölçüm Yöntemi / Sampling Method	Gravimetrik Yöntem (Gravimetric Method)
Numune Kayıt Numarası / Sample Record No	NUM.26.2703	Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling	Parçalı Bulutlu
Proje Adı / Cihaz Kurulum Noktası / Project Name / Sampling Location	KBB Raylı Sistem Hattı Projesi / AQ - 3	Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat / Date/Time the Final Filter Arrives at Laboratory	05.05.2026 17:30
Ölçümü Yapan Kişi / Person Conducted Sampling	Ozan ÜNAL	Dolu Filtrenin Tartıldığı Tarih / Date of Final Filter Weighing	08.05.2026
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	Sayfa Sayısı / Number of Pages	2
Boş Filtrenin Tartıldığı Tarih / Date of Empty Filter Weighing	30.04.2026		

Açıklamalar/Remarks:

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına göre akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TÜRKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a test laboratory. Türk Akreditasyon Kurumu (TÜRKAK) deney raporlarının tanınırlığı konusunda Avrupa Akreditasyon Birliği (EA) ile Çok Taraflı Anlaşma ve Uluslararası Laboratuvar Akreditasyon Birliği (ILAC) ile karşılıklı tanıma anlaşması imzalamıştır. Turkish Accreditation Agency (TÜRKAK) is a signatory to the European co-operation for Accreditation (EA) Multilateral Agreement (MLA) and to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of test reports. Deney ve/veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metodları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir. The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Yayınlandığı Tarih
Date

Raporu Kontrol Eden
Checking the report
Dilidar SÜSLÜ
Laboratuvar Müdür Yardımcısı

Onaylayan/ Approval
Tarih/ Date

Hüseyin TEKİN
Laboratuvar Müdürü

e-imza ile imzalanmıştır
signed with E-SIGNATURE

e-imza ile imzalanmıştır
signed with E-SIGNATURE

08.05.2026

08.05.2026

Açıklamalar/Remarks: Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.

-İmzasız Deney Raporları geçersizdir / Reports without signature are not valid.

-Rapordeki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.

-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..

-(*) işaretli parametreler akredite olmayan parametrelerdir. / (*) Parameters with "*" are those not accredited.

-(**) işaretli parametreler ISO 17025 Akreditasyonuna sahipLaboratuvar tarafından yapılmıştır. / (**) Parameters with "**" are conducted at

....., which is holding ISO-17025 accreditation.

-Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070

<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz / <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No ENC.P.14.F.67.C	İlk Yayın Tarihi 29.07.2011	Revizyon No / Tarihi 13/17.06.2025	Sayfa No 1/2
-------------------------------	--------------------------------	---------------------------------------	-----------------



Test
TS EN ISO/IEC 17025
AB-0168-T

AB-0168-T

LR.26.2703

05-26

ENCON LABORATUVARI A.Ş.

Mutlukent Mahallesi Uluirmak Sokak No:23 Çankaya/ANKARA
Tel: 0 312 447 71 22 Faks: 0 312 447 69 88

mail: encon@enconlab.com.tr web: www.enconlaboratory.com

PARTİKÜL MADDE (PM) ANALİZ RAPORU / PARTICULATE MATTER (PM) ANALYSIS REPORT

	Cihaz Adı / Device Name		Marka / Model Brand / Model		Seri No / Serial No		
Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	GC Model Tartım Cihazı GC Model Weighing Device		Sartorius/GC		18805603		
	PM10 Örnekleme Cihazı PM10 Sampling Device		Eurometrics-PM-NAC2		PM-2541		
	Sıcaklık ve Nem Veri Toplayıcı Cihazı Temperature and Humidity Data Collector		CEM (DT-172 Model)		9115542		
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	37,905586 / 32,490627						
Filtrenin Boş Ağırlığı (g) Empty Weight of Filter	Filtrenin Dolu Ağırlığı (g) Final Weight of Filter	Kör numune ilk tartım (g) Blank first weighing	Kör numune son tartım (g) Blank last weighing	Filtrenin Takılma Tarihi Date of Filter Set	Filtrenin Çıkarılma Tarihi Date of Filter Take Off	Geçen Hava Miktarı (m³) Amount of Air Passes (m³)	PM 2,5 Sonuç /Result (µg/m³)
0.12594	0.12630	0.12355	0.12355	04.05.2026	05.05.2026	55.16	6.53

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
Laboratuvar yetkilisi tarafından alınmayan ve/veya uygun koşullarda teslim alınmayan numunelerden teknik ve hukuki olarak sorumluluk kabul etmemektedir. Müşteri tarafından sağlanan bilgilerin hukuki sorumluluğu müşteriye aittir, firmamız bu bilgilerden kaynaklanacak sonuçlardan feragat eder.
For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.
The Laboratory does not accept technical and legal responsibility for samples that are not sampled by authorized personnel and/or received under inappropriate conditions. The legal responsibility of the information provided by the customer belongs to the customer, our company waives the consequences arising from this information.

Açıklamalar/Remarks: Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz. -İmzasız Deney Raporları geçersizdir / Reports without signature are not valid. -Rapordeki analiz sonuçları laboratuvara teslim edilen, deney yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received. -Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc.. - (**) işaretli parametreler akredite olmayan parametrelerdir / (**) Parameters with "" are those not accredited. - (**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Laboratuvar tarafından yapılmıştır. / (**) Parameters with "" are conducted at which is holding ISO-17025 accreditation. -Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070 https://encon.enlab.io/rapor-dogrula bağlantı adresinden raporlarınızı doğrulayabilirsiniz / https://encon.enlab.io/rapor-dogrula You can verify your reports via the link.			
Doküman No ENC.P.14.F.67.C	İlk Yayın Tarihi 29.07.2011	Revizyon No / Tarihi 13/17.06.2025	Sayfa No 2/2

ÇEVRESEL GÜRÜLTÜ SEVİYESİ DEĞERLENDİRME RAPORU / ENVIRONMENTAL SOUND LEVEL EVALUATION REPORT

1 GENEL BİLGİLER

Konya Büyükşehir Belediyesi Raylı Sistem Hattı Projesi, Mayıs 2026 döneminde gerçekleştirilen çevresel gürültü raporudur.

2 ÖLÇÜM NOKTALARI

Ölçüm noktaları ve koordinatları Görsel 1 ve çizelge'de belirtilmiştir.



Görsel 1 Ölçüm Noktaları Uydu Görüntüsü

Açıklamalar/Remarks:

-İmzasız Deney Raporları geçersizdir. / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (**) işaretli parametreler akredite olmayan parametrelerdir. / (**) Parameters with "" are those not accredited.
- (**) işaretli parametreler ISO 17025 Akreditasyonuna sahipLaboratuvarı tarafından yapılmıştır. / (**) Parameters with "" are conducted at which is holding ISO-17025 accreditation.
-Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070.
<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz. / <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC-LABFR-RAP.67.B	04.05.2007	12/19.06.2025	3/10



ENCON LABORATUVARI A.Ş.
Mutlukent Mahallesi Ulurmak Sokak No:23 Çankaya/ANKARA
Tel: 0 312 447 71 22 Faks: 0 312 447 69 88
mail: encon@enconlab.com.tr web: www.enconlaboratory.com

Test TS EN ISO IEC 17025 AB-0168-T
AB-0168-T
LR.26.2704- 2709
05-26

**ÇEVRESEL GÜRÜLTÜ SEVİYESİ DEĞERLENDİRME RAPORU /
ENVIRONMENTAL SOUND LEVEL EVALUATION REPORT**

Lokasyon Adı	Enlem	Boylam
N-1	37.994245°	32.485780°
N-2	37.993672°	32.517754°
N-3	37.905586°	32.490627°

Çizelge 1 Ölçüm Noktaları Koordinatları

3 ÖLÇÜM YÖNTEMLERİ, STANDARTLAR

03-05 Mayıs 2026 yukarıda belirtilen noktalarda, hafta içi ve hafta sonu, gündüz, akşam ve gece olmak üzere 3 farklı zaman diliminde 15 dakikalık gürültü ölçümleri gerçekleştirilmiştir. Çevresel gürültü ölçümleri TS ISO 1996-1 & TS ISO 1996-2 Standartlarına uygun olarak gerçekleştirilmiştir.

Açıklamalar/Remarks:

-İmzasız Deney Raporları geçersizdir / Reports without signature are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayınlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc..
- (**) işaretli parametreler akredite olmayan parametrelerdir. / (**) Parameters with "" are those not accredited.
- (**) işaretli parametreler ISO 17025 Akreditasyonuna sahipLaboratuvarı tarafından yapılmıştır. / (**) Parameters with "" are conducted at which is holding ISO-17025 accreditation.
-Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. /This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070
<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz. / <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No ENC.LABFR.RAP.67.B	İlk Yayın Tarihi 04.05.2007	Revizyon No / Tarihi 12/19.06.2025	Sayfa No 4/10
----------------------------------	--------------------------------	---------------------------------------	------------------

ENCON LABORATUVARI A.Ş.

Mutlukent Mahallesi Ulırmak Sokak No:23 Çankaya/ANKARA
Tel: 0 312 447 71 22 Faks: 0 312 447 69 88
mail: encon@enconlab.com.tr web: www.enconlaboratory.com

ÇEVRESEL GÜRÜLTÜ SEVİYESİ DEĞERLENDİRME RAPORU / ENVIRONMENTAL SOUND LEVEL EVALUATION REPORT

4 METEOROLOJİK PARAMETRELER

4.1 Hafta İçi Meteorolojik Parametreler

Nokta Adı	Ölçüm Tarihi	Zaman Dilimi	Rüzgar Hızı (m/s)	Rüzgar Yönü	Sıcaklık (°C)
N-1	04.05.2026	Gündüz	2,2	KD	7,2
		Akşam	1,7	K	6,0
		Gece	1,5	K	5,4
N-2	04.05.2026	Gündüz	1,6	KD	7,1
		Akşam	1,4	K	5,8
		Gece	1,4	K	5,4
N-3	04.05.2026	Gündüz	1,5	KD	7,2
		Akşam	1,6	K	5,7
		Gece	1,1	K	5,2

Çizelge 2 Hafta içi meteorolojik parametreler

4.2 Hafta Sonu Meteorolojik Parametreler

Nokta Adı	Ölçüm Tarihi	Zaman Dilimi	Rüzgar Hızı (m/s)	Rüzgar Yönü	Sıcaklık (°C)
N-1	03.05.2026	Gündüz	1,8	KB	12,4
		Akşam	1,0	KB	8,2
		Gece	0,9	KB	7,4
N-2	03.05.2026	Gündüz	1,5	KB	12,6
		Akşam	0,9	KB	8,0
		Gece	0,9	KB	7,3
N-3	03.05.2026	Gündüz	1,2	KB	12,3
		Akşam	1,0	KB	7,9
		Gece	0,7	KB	7,1

Çizelge 3 Hafta sonu meteorolojik parametreler

Açıklamalar/Remarks:

-İmzasız Deney Raporları geçersizdir / Reports without signature are not valid.
-Raporlardaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc.
- (*) işaretli parametreler akredite olmayan parametrelerdir. / (*) Parameters with "*" are those not accredited.
- (**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Laboratuvarı tarafından yapılmıştır. / (**) Parameters with "**" are conducted at which is holding ISO-17025 accreditation.
-Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070
<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz. / <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.LABFR.RAP.67.B	04.05.2007	12/19.06.2025	5/10

ENCON LABORATUVARI A.Ş.

Mutlukent Mahallesi Ulurmak Sokak No:23 Çankaya/ANKARA

Tel: 0 312 447 71 22 Faks: 0 312 447 69 88

mail: encon@enconlab.com.tr web: www.enconlaboratory.com

ÇEVRESEL GÜRÜLTÜ SEVİYESİ DEĞERLENDİRME RAPORU / ENVIRONMENTAL SOUND LEVEL EVALUATION REPORT

5 ÖLÇÜM SONUÇLARI

5.1 Hafta İçi Ölçüm Sonuçları

Nokta Adı	Ölçüm Tarihi	Zaman Dilimi	Ölçüm Saati	Leaq (dBA)	ÇGY Sınır Değer (dBA)
N-1	04.05.2026	Gündüz	12:31:41	49,2	65
		Akşam	21:03:15	43,1	60
		Gece	23:06:36	47,4	55
N-2	04.05.2026	Gündüz	12:59:20	49,5	65
		Akşam	21:32:02	48,0	60
		Gece	23:40:55	44,2	55
N-3	04.05.2026 05.05.2026	Gündüz	13:47:27	47,6	65
		Akşam	22:16:13	47,7	60
		Gece	00:21:32	46,3	55

Çizelge 4 Hafta içi ölçüm sonuçları

5.2 Hafta Sonu Ölçüm Sonuçları

Nokta Adı	Ölçüm Tarihi	Zaman Dilimi	Ölçüm Saati	Leaq (dBA)	ÇGY Sınır Değer (dBA)
N-1	03.05.2026	Gündüz	12:16:14	49,2	65
		Akşam	20:03:42	43,1	60
		Gece	23:11:31	47,4	55
N-2	03.05.2026	Gündüz	12:43:24	49,5	65
		Akşam	20:27:58	48,0	60
		Gece	23:39:10	44,2	55
N-3	03.05.2026 04.05.2026	Gündüz	13:37:54	47,6	65
		Akşam	21:14:47	47,7	60
		Gece	00:18:35	46,3	55

Çizelge 5 Hafta sonu ölçüm sonuçları

Açıklamalar/Remarks:

-İmzasız Deney Raporları geçersizdir / Reports without signature are not valid.
-Rapordeki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in this report represents the results of the analyses of the samples received.
-Bu rapor ve sonuçları ENCON Laboratuvarı A.Ş.'nin izni olmadan ticari ve reklam amaçlı tamamen veya kısmen çoğaltılamaz veya yayımlanamaz. / This report and results given in this report cannot be reproduced for commercial or advertising purposes without prior consent of ENCON Laboratory Inc.
- (*) işaretli parametreler akredite olmayan parametrelerdir / (*) Parameters with "*" are those not accredited.
- (**) işaretli parametreler ISO 17025 Akreditasyonuna sahip Laboratuvar tarafından yapılmıştır. / (**) Parameters with "**" are conducted at which is holding ISO-17025 accreditation.
-Bu belge 5070 sayılı Elektronik İmza Kanunu kapsamında E-İMZA ile imzalanmıştır. / This document has been signed with E-SIGNATURE within the scope of Electronic Signature Law No. 5070

<https://encon.enlab.io/rapor-dogrula> bağlantı adresinden raporlarınızı doğrulayabilirsiniz. / <https://encon.enlab.io/rapor-dogrula> You can verify your reports via the link.

Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.LABFR.RAP.67.B	04.05.2007	12/19.06.2025	6/10

Annex F – E&S Incident Notification Form Template

1) Incident Details			
Date of Incident: [Please indicate]		Time of Incident: [Please indicate]	
Location of the Incident:		[Please indicate]	
Full Name of Sub-borrower:		[Please indicate]	
Date Reported to ILBANK: [Please indicate]	Reported to ILBANK by: [Please indicate]	Notification Type: [Please indicate; e-mail/phone call/media notice/other]	
Date Reported to WB: [Please indicate]	Reported to WB by: [Please indicate]	Notification Type: [Please indicate; e-mail/phone call/media notice/other]	
Full Name of the Contractor of the Subproject:		[Please indicate]	
Full Name of the Sub-contractor involved in the incident:		[Please indicate]	
2) Type of incident (please check all that apply) ¹⁶			
☐ Fatality ☐ Lost time injury ☐ Displacement without due process ☐ Child labor ☐ Forced labor ☐ Disease outbreaks		☐ Acts of violence/protest ☐ Unexpected impacts on heritage resources ☐ Unexpected impacts on biodiversity resources ☐ Environmental pollution incident ☐ Dam failure ☐ Other	
3) Description/Narrative of Incident			
<i>For example:</i> I. What is the incident? [Please briefly describe] II. What were the conditions or circumstances under which the incident occurred (if known)? [Please briefly describe] III. Are the basic facts of the incident clear and uncontested, or are there conflicting versions? What are those versions? [Please briefly describe] IV. Is the incident still ongoing or is it contained? [Please briefly describe] V. Have any relevant authorities been informed? [Please briefly describe]			
4) Actions taken to contain the incident			
Short Description of Action	Responsible Party	Expected Date	Status

¹⁶ See Appendix 2 for definitions.

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.

Annex G – E&S Incident Investigation Form Template

1) Investigation Findings						
<i>For example:</i> I. <i>where and when the incident took place,</i> II. <i>who was involved, and how many people/households were affected,</i> III. <i>what happened and what conditions and actions influenced the incident,</i> IV. <i>what were the expected working procedures and were they followed,</i> V. <i>did the organization or arrangement of the work influence the incident,</i> VI. <i>were there adequate training/competent persons for the job, and was necessary and suitable equipment available,</i> VII. <i>what were the underlying causes; where there any absent risk control measures or any system failures.</i>						
2) Corrective Actions from the investigation to be implemented (to be fully described in Corrective Action Plan)						
Action	Responsible Party		Expected Date			
3a) Fatality/Lost Time Injury Information						
Fatality ☐			Lost time injury ☐			
Immediate cause of fatality/injury for worker or member of the public (please check all that apply) ¹⁷: ☐ Caught in or between objects ☐ Struck by falling objects ☐ Stepping on, striking against, or struck by objects ☐ Drowning ☐ Chemical, biochemical, material exposure ☐ Falls, trips, slips ☐ Fire & explosion ☐ Electrocution ☐ Homicide ☐ Medical Issue ☐ Suicide ☐ Project Vehicle Work Travel ☐ Non-project Vehicle Work Travel ☐ Project Vehicle Commuting ☐ Non-project Vehicle Commuting ☐ Vehicle Traffic Accident (Members of Public Only) ☐ Other						
Name	Age/ Date of Birth	Nationality	Gender	Date of Fatality/ Injury	Cause of Fatality/ Injury	Affected Party (Employee/ Public)
			☐ Female ☐ Male			☐ Sub-borrower employee ☐ Contractor employee ☐ Sub-contractor employee ☐ Public

¹⁷ See Appendix 1 for definitions

3b) Financial Support/Compensation Types (to be fully described in Corrective Action Plan template – template is given in Appendix 3)			
☐ No Compensation Required ☐ Workman's Compensation/National Insurance ☐ Contractor Direct		☐ Contractor Insurance ☐ Other ☐ 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. <u>Vehicle Traffic</u> 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 employees
- ☐ 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 H – Chance Finds Procedure

1. INTRODUCTION

This Chance Finds Procedure is a Subproject-specific procedure which will be followed in the Subproject 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. 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 WB ESS8 and national legislation; 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 Project/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)	Konya Museum Directorate Address: Sahibata Mah. Sahibata Cad. No:95, Meram/Konya Tel: +90 332 351 89 58 \ E-mail: konyamuzesi@ktb.gov.tr
Regional Board(s) for the Conservation of Cultural Heritage	Konya Regional Board for the Conservation of Cultural Heritage Address: Şems-i Tebrizi Mah., Mevlana Cad., Hükümet Meydanı 1. Vakıf İşhanı Kat:2 No:33/201, Karatay/Konya Tel: +90 332 350 93 19 \ E-mail: konyakurul@ktb.gov.tr

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

2. ROLES AND RESPONSIBILITIES

The roles and responsibilities of the Subproject parties associated with the implementation of this Procedure are described in Table 43.

The Sub-borrower will ensure that all Subproject personnel (including direct or contracted workers) involved in site works are trained by qualified staff on this Subproject-specific Chance Finds Procedure and its implementation upon recruitment.

Table 43 Roles and Responsibilities associated with Chance Finds Procedure Implementation

Party	Role	Responsibilities
Sub-borrower		
Konya Metropolitan Municipality	Sub-borrower Management	• Ensure compliance with national and local laws regarding the discovery of cultural heritage or archaeological finds. • Inform relevant authorities (e.g., Ministry of Culture and Tourism, Archaeological Museums Directorate) in case of a find. • Oversee the implementation of the Chance Finds Procedure on-site. • Coordinate with the construction consultant and contractor to ensure appropriate measures are taken when finds occur. • Ensure that the chance finds procedure is incorporated into the Subproject's Environmental and Social Management Plan (ESMP). • Document and report any finds to the relevant authorities as per the legal framework.
Construction Supervision Consultants	Construction Supervision	• Advise the contractor and Subproject stakeholders on the correct implementation of the Chance Finds Procedure. • Ensure that all staff and workers are aware of the Chance Finds Procedure and the actions to take if finds are discovered. • Supervise the on-site implementation of the procedure and maintain proper documentation of any finds. • Notify the Konya Municipality and relevant authorities immediately if a find occurs. • Work with the archaeologists or heritage experts to evaluate and protect the finds as necessary.
Construction Contractor	Construction Team	• Immediately cease work and secure the area if any potential cultural or archaeological find is encountered. • Inform the construction consultant and Konya Municipality without delay about the discovery of any finds. • Follow the instructions of the construction consultant and the local authorities regarding how to handle the find. • Cooperate with the archaeologists or heritage professionals to facilitate the investigation and conservation of the find. • Ensure that workers are trained and informed about the Chance Finds Procedure before beginning work.

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.
- 5) Protection of the chance find site shall not be transported, lifted or damaged further.

Step 2 – Registration

- 1) Chance Find Notification Form Section A shall be filled in by the relevant Subproject representative (such as environmental or social staff – to be designated by the Contractor upon appointment) and a copy shall be forwarded to the Contractor's management and the Sub-borrower in **24 hours** of the discovery.
- 2) Completed Chance Find Notification Form Section A s shall be forwarded by the Contractor's management to the Sub-borrower in **24 hours** of the discovery.

Step 3 – Communication with Local Authorities

- 1) The director of the respective museum shall be notified by the relevant Subproject representative regarding the chance find.

Step 4 – Museum Assessment and Decision

- 1) The Museum officials evaluate the significance of the discovery and determines the required actions:
 - a) Site/Chance Find is of No Significance:
 - The Museum officials declare the site or find as **insignificant**.
 - Records are maintained and chance finds procedure is closed.
 - No further action is required. Construction activities may resume.
 - b) Site/Chance Find is Significant:
 - The Museum officials declare the site or find as **significant**.
 - The Museum officials decide on further action and notify the relevant Subproject representative.
 - The Subproject representative communicates with the Sub-borrower and relevant Subproject parties to coordinate actions.

Step 5 – Site Survey

- 1) The Subproject's site workers are notified by relevant Subproject representative regarding the decision and instructions of the relevant Museum Directorate.
- 2) The Museum officials determine the significance level of the site/chance find following a site survey.
 - a) Sites/chance finds of **minor** significance:
 - The Museum officials declare the site or find as of minor significance.
 - The relevant Subproject representative notifies the Contractor's management.
 - The Contractor's management notify the Sub-borrower.
 - Records are maintained by the relevant Subproject representative and chance finds procedure is closed.
 - 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.
 - 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 ILBANK, 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

PART A <i>BÖLÜM A</i>		
Date: <i>Tarih</i>		Form No: <i>Form No</i>
Sub-borrower: <i>Alt borçlu</i>		Subproject: <i>Alt Proje</i>
Construction Supervision Consultant: <i>Müşavir Firma</i>		Contractor: <i>Yüklenici</i>
Subproject Location <i>Alt Proje Sahası</i>	District: <i>İlçe</i>	Neighborhood/Village: <i>Mahalle/Köy</i>
Name of person reporting chance find: <i>Rastlantısal bulguyu rapor eden kişinin ismi</i>		
IMMEDIATE ACTIONS <i>ACİL ÖNLEMLER</i>		
Was work stopped in the immediate vicinity of the chance find? <i>Rastlantısal bulgunun tam çevresinde iş durduruldu mu?</i>	☐ Yes <i>Evet</i>	☐ No <i>Hayır</i>
Was a buffer zone created to protect the chance find? <i>Rastlantısal bulguyu korumak için tampon bölge oluşturuldu mu?</i>	☐ Yes <i>Evet</i>	☐ No <i>Hayır</i>
Contractor's management representatives (e.g. Project/Site Manager) contacted? <i>Yüklenici yönetim temsilcileri (ör. Proje/Saha Müdürü) ile irtibata geçildi mi?</i>	☐ Yes <i>Evet</i>	☐ No <i>Hayır</i>
Supervision Consultant's E&S team contacted? <i>Müşavir firma Ç&S ekibi ile irtibata geçildi mi?</i>	☐ Yes <i>Evet</i>	☐ No <i>Hayır</i>
Sub-borrower contacted? <i>Alt borçlu ile irtibata geçildi mi?</i>	☐ Yes <i>Evet</i>	☐ No <i>Hayır</i>
CHANCE FIND DETAILS <i>RASTLANTISAL BULGU AYRINTILARI</i>		
GPS coordinates <i>GPS koordinatları</i>	Photo record <i>Fotoğraf kaydı</i> ☐ Yes ☐ No <i>Evet Hayır</i> Other records ☐ Yes ☐ No <i>Diğer kayıtlar</i> <i>Evet</i> <i>Hayır</i> Specify (drawings, HD quality videos, etc.): <i>Belirtin (çizimler, HD kalite videolar, vb.)</i>	
Description of chance find: <i>Tesadüfi buluntunun tanımı</i>		
Description of site/finding and other specifications of site/finding: (e.g. surface sediment type, ground surface visibility, distance to closest watercourse, etc.) <i>Sahanın / bulgunun ve saha/bulgunun diğer özelliklerinin tanımı: (örn. Yüzey sediman türü, yüzey zemin görünürlüğü, en yakın su yoluna olan mesafe, vb.)</i>		

--

PART B BÖLÜM B		
NOTIFICATION OF MUSEUM DIRECTORATE OFFICIALS MÜZE MÜDÜRLÜĞÜ YETKİLİLERİNE BİLDİRİM		
Subproject representative contacted relevant Museum Directorate? <i>Alt proje temsilcisi müze müdürlüğü ile irtibata geçti mi?</i>		
☐ Yes <i>Evet</i>	☐ No <i>Hayır</i>	
Date of notification: <i>Bildirim tarihi</i>		
Name of Museum Directorate: <i>Müze müdürlüğünün adı</i>		
Name of the relevant Museum official: <i>Müze Müdürlüğü yetkilisinin adı</i>		
Contact number of the official: <i>Yetkilinin iletişim numarası</i>		
DECISION OF MUSEUM DIRECTORATE ARCHAEOLOGIST MÜZE MÜDÜRLÜĞÜ ARKELOĞUNUN KARARI		
Date of site visit: <i>Saha ziyaret tarihi:</i>		
☐ Site/Finding of no significance – Construction to proceed with no further action – End of chance find procedure <i>Önemsiz Saha – Bulgu - daha fazla araştırma yapılmadan inşaat devam edilebilir – Rastlantısal bulgu prosedürün sonu.</i>	☐ Site/Finding of <u>significance</u> – Further actions required <i>Önemli Saha – Bulgu - Ek araştırma gerekmektedir Please Fill out Part C Lutfen Bölüm C'yi doldurun.</i>	
Date of notice to resume work: <i>İşe devam etme tarihinin bildirisi</i>		
Name of Museum directorate official: <i>Müze müdürlüğü yetkilisinin ismi</i>		
Contact information: <i>İletişim numarası</i>		
Contractor's management representatives (e.g. Project/Site Manager) contacted? <i>Yüklenici yönetim temsilcileri (ör. Proje/Saha Müdürü) ile irtibata geçildi mi?</i>		
☐ Yes <i>Evet</i>	☐ No <i>Hayır</i>	
Supervision Consultant's E&S team contacted? <i>Müşavir firma Ç&S ekibi ile irtibata geçildi mi?</i>		
☐ Yes <i>Evet</i>	☐ No <i>Hayır</i>	
Sub-borrower contacted? <i>Alt borçlu ile irtibata geçildi mi?</i>		
☐ Yes <i>Evet</i>	☐ No <i>Hayır</i>	
PART C – FURTHER FIELD INVESTIGATION		
BÖLÜM C – İLAVE SAHA ARAŞTIRMALARI		
☐ Site/Finding of minor significance <i>Az önem taşıyan saha/bulgu</i>	☐ Site/Finding of moderate significance <i>Orta derecede önemli saha/bulgu</i>	☐ Site/Finding of high significance <i>Çok önemli saha/bulgu</i>
Describe additional actions required to be implemented: <i>İlave aksiyonların tanımı</i>		

PART D – IMPLEMENTATION OF ACTIONS AND RESUMPTION OF WORKS**BÖLÜM D – AKSİYONLARIN TAMAMLANMASI VE İŞE DEVAM****Date of actions started:***Aksiyonların başlangıç tarihi:***Date of notice from the cultural heritage authorities to resume work:***Otorilerden alınan işe devam izni tarihi:***Date of actions completed:***Aksiyonların tamamlanma tarihi:***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 losed	Other Remarks

Annex I – Change Notification Form

Change Notification Form	
Subproject Name	
Subproject Location	
Subproject Phase	☐ Pre-construction
	☐ Construction
	☐ Operation
Name of the Institution Notifying the Change	
Date	
Category of the Change (please select all that apply)	☐ Legislative Change
	☐ Design Change
	☐ Schedule Change due to E&S factors
	☐ Project Schedule Changes due to technical, financial, legal or administrative factors
	☐ Changes due to E&S issues encountered at Subproject implementation
	☐ Contractor or Construction Supervision Consultant Change
	☐ 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	

Annex J – Legal Framework

This section is constructed to elucidate the main aspects of the legal and administrative framework followed in the design of this ESMP. Various national and international legislations explained in the following sections are also to be complied with during different stages of the Project, including land preparation, construction, and operation.

The administrative structure in Türkiye is governed by central and local administrations. The central administration is organized so that the land mass of the country is divided into provinces and the provinces into further smaller divisions (i.e. districts, municipalities, villages/neighborhoods) according to geographic and economic conditions, and the need for public services. For the purpose of meeting collective local needs, the populations of provinces, municipalities, and villages/neighborhoods are administered by units of local government established by law (Toksöz, 2006).

Ministries are the units of central administration. Local branches of ministries are composed of provincial organizations attached to governors and district organizations attached to the district governors (Hacettepe University, 2015). At the local level, municipality mayors and the headmen of the villages/neighborhoods (mukhtar) are the representatives of the administrative structure.

KMM is the authority responsible for the implementation of the Project at the local level.

Table 44 Turkish EHS Legislation Related to the Project

Legislation*	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Waste Management			
Waste Management Regulation	April 2, 2015	29314	• Management of wastes generated by construction staff during the construction stage and by operation staff during the operation stage • Hazardous wastes generated at construction and operation stages
Regulation on Landfill of Wastes	March 26, 2010	27533	• Management of construction materials wastes.
Regulation on the Control of Waste Oil	December 21, 2019	30985	• Waste oils generated at construction and operations stages.
Regulation on the Control of Waste Vegetable Oil	June 6, 2015	29378	• Waste vegetable oils generated at construction and operation stages.
Regulation on the Control of Packaging Waste	June 26, 2021	31523	• Packaging wastes generated at construction and operation stages.
Regulation on the Control of Medical Waste	January 25, 2017	29959	• Medical wastes generated at construction and operation stages.
Regulation on the Control of End-of-Life Tires	November 25, 2006	26357	• End-of-life tires generated at construction and operation stages.
Regulation on the Control of Waste Batteries and Accumulators	August 31, 2004	25569	• Waste batteries and accumulators generated at construction and operation stages.
Regulation on Control of Waste Electric and Electronic Goods	May 22, 2012	28300	• Controlling the generation of electrical and electronic wastes and the amount of waste to be disposed during the construction and operation phase of the Project.

Legislation*	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Regulation on the Control of Excavation Soil, Construction and Demolition Wastes	March 18, 2004	25406	Excavation materials, construction and demolition wastes generated during construction stage.
Regulation on the Control of End-of-Life Vehicles	December 30, 2009	27448	Management of end-of-Life vehicles currently stored in the Project Area.
Regulation on Zero Waste	July 12, 2019	30829	Determining the general principles of the zero waste management system, which aims to protect the environment and human health and all resources in the waste management processes of raw materials and natural resources.
Communique on Recycling and Recovery of Certain Non-Hazardous Wastes	June 17, 2011	27967	Minimizing the negative effects of some non-hazardous wastes generated during construction and operation phase of the Project and reducing the amount of waste.
<i>Water Quality Control and Management</i>			
Water Pollution Control Regulation	December 31, 2004	25687	- Wastewater generated by the site staff at construction stage and by operation staff and during the operation stage. - Wastewater generated by the cleaning/washing of the vehicle.
Regulation on the Water Intended for Human Consumption	February 17, 2005	25730	Drinking water supplied during construction and operation stages.
Regulation on the Protection of Groundwater against Pollution and Deterioration	April 7, 2012	28257	Protection of groundwater sources against spills/leaks during construction and operation stages.
Regulation on Surface Water Quality	November 30, 2012	28483	Monitoring of water quality during construction and operation stages.
<i>Air Quality Control and Management</i>			
Regulation on the Control of Air Pollution from Heating	January 13, 2005	25699	Heating of the operational buildings/stations during operation stage.
Regulation on the Assessment and Management of Air Quality	June 6, 2008	26898	Emissions during operation stage.
Industrial Air Pollution Control Regulation	July 3, 2009	27277	- Dust emissions due to the construction activities performed at construction stage. - Emissions during operation stage.
Regulation on the Monitoring of Greenhouse Gas Emissions	May 17, 2014	29003	Greenhouse gas emissions during construction and operation phases.
Regulation on Exhaust Gas Emission Control	March 11, 2017	30004	Operation of Project vehicles, machinery and equipment at all phases of the Project.
<i>Noise Control and Management</i>			
Regulation on the Environmental Noise Emissions Caused by Equipment Used Outdoors	December 30, 2006	26392	Noise levels caused by noise sources within the Project site at the construction and operation stages.

Legislation*	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Regulation on the Environmental Noise Control	November 30, 2022	32029	Noise emissions at construction and operation stages
Soil Quality Control and Management			
Regulation on the Control of Soil Pollution and Lands Contaminated by Point Sources	June 8, 2010	27605	Risks of soil contamination at construction and operation stages.
Environmental Management, Permitting and Planning			
Environmental Impact Assessment Regulation	July 29, 2022 as amended 2026	31907	Impacts during construction and operation stages.
Environmental Auditing Regulation	June 12, 2021	31509	Environmental audits conducted by either Project Owner or governmental authorities during construction and operation stages.
Environmental Permits and Licensing Regulation	September 10, 2014	29115	Required permits and licenses at all stages of the Project.
Occupational and Community Health and Safety			
General Sanitation Law No: 1593	May 6, 1930	1489	Health and sanitation measures to be taken during construction and operation stages.
Occupational Health and Safety Law No. 6331	June 30, 2012	28339	Health and safety measures to be taken during construction and operation stages.
Regulation on Occupational Health and Safety	December 9, 2003	25311	Health and safety measures to be taken during construction and operation stages
Regulation on Risk Assessment for Occupational Health and Safety	December 29, 2012	28512	Management of occupational health and safety risk assessment during construction and operation stages
Regulation on Health and Safety Conditions Regarding Use of Work Equipment	April 25, 2013	28628	Work equipment to be used during construction and operation stages.
Manual Handling Operations Regulation	July 24, 2013	28717	Health and safety measures to be taken during manual handling activities at construction and operation stages.
Preparation, Completion and Cleaning Works Regulation	April 28, 2004	25446	Health and safety measures to be taken during preparation, completion and cleaning works at construction and operation stages.
Personal Protection Equipment Regulation	May 1, 2019	30761	Personal protection equipment to be used during construction and operation stages.
Regulation on the Use of Personal Protection Equipment at Workplaces	July 2, 2013	28695	Personal protection equipment to be used during construction and operation stages.
First Aid Regulation	July 29, 2015	29429	In case of a first aid requirement during construction and operation stages.
National Occupational Health and Safety Council Regulation	February 5, 2013	28550	Health and safety measures to be taken during construction and operation stages.
Regulation on the Protection of Workers	April 30, 2013	28633	Health and safety measures to be taken during construction and operation stages.

Legislation*	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Against the Dangers of Explosive Environments			
Regulation on Emergency Situations in Workplaces	June 18, 2013	28681	Measures to be taken during emergency situations in workplaces in all stages of the project.
Regulation on Health and Safety Precautions Regarding Working with Chemicals	August 12, 2013	28733	Chemical handling and necessary precautions to be taken during construction and operation stages.
Regulation on the Methods and Essentials of Occupational Health and Safety Trainings for Workers	May 15, 2013	28648	Health and safety trainings to be performed during construction and operation stages
Regulation on the Protection of Workers from Noise Related Risks	July 28, 2013	28721	Health and safety measures to be taken against the noise impacts during construction and operation stages.
Dust Management Regulation	November 5, 2013	28812	Management of to be generated dust during construction stage.
Regulation on Machinery Safety	March 3, 2009	27158	Maintaining machinery safety during construction, operation, and repair and maintenance stages.
Regulation on the Protection of Workers from Vibration Related Risks	August 22, 2013	28743	Health and safety measures to be taken against the vibration impacts during construction and operation stages.
Health and Safety Signs Regulation	September 11, 2013	28762	Health and safety signs to be placed during construction and operation stages.
Regulation on the Occupational Health and Safety for Temporary or Fixed Term Jobs	August 23, 2013	28744	Health and safety measures to be taken for temporary workers during construction and operation stages.
Regulation on the Occupational Health and Safety in Construction	October 5, 2013	28786	Constructional health and safety measures to be taken during construction phase.
Communiqué on Occupational Health and Safety Hazard Classes List	December 26, 2012	28509	Determination of hazard classes during construction and operation phases.
Regulation on the Safety of Railways	November 19, 2015	29537	Community health and safety measures to be taken during the operation stages.
Regulation on Measures and Application Principles to be Taken in Level Crossings	September 8, 2016	29825	Health and safety measures to be taken for pedestrians and structural safety during the operation stages.
Regulation on the Rights of Passengers Traveling by Rail	March 8, 2019	30708	Passenger health and safety measures to be taken during the operation stages.
Management of Chemicals and Other Dangerous Substances			
Water Pollution Control Regulation	December 31, 2004	25687	Chemicals and hazardous goods to be used during construction and operation phases.
Regulation on the Classification, Labelling	December 11, 2013	28848	Chemicals and mixtures to be used during construction and operation phases.

Legislation*	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
and Packaging of Materials and Mixtures			
Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals	June 23, 2017	30105	To ensure a high level of protection of human health and the environment during the construction and operation stages, to evaluate the damages of the substances used, to have information on the registration, evaluation, permission and restriction of those chemicals.
Regulation on Material Safety Data Sheets on Hazardous Materials and Mixtures	December 13, 2014	29204	Preparation and distribution of safety data sheets in order to ensure effective control and surveillance against the negative human health and the environment effects of hazardous substances and mixtures that may be used during construction and operation stages.
Regulation on the Road Transportation of Hazardous Goods	June 18, 2022	31870	Hazardous goods to be transported during operation phase.
General			
Regulation on the Implementation of the Law Concerning Private Security Services	October 7, 2004	25606	Private security services to be used during construction and operation services
Law on Private Security Services	June 26, 2004	25504	Private security services to be used during construction and operation services.
Criminal Law	October 12, 2004	25611	Protection of public order and safety, public health and the environment during construction and operation services.
Use of the Right to Petition Law No: 3071	November 10, 1984	18571	Management of proposal/grievance for all stages of the project.
Laws on Right to Information (No. 4982)	October 24, 2003	25269	Applies to activities of the public institutions and the professional organizations which qualify as public institutions
Regulation on the Principles and Procedures for The Enforcement of the Law on the Right to Information	April 27, 2004	25445	People's usage of right to information in accordance with democratic and transparent management during all stages of the project
Law on the Protection of Personal Data	April 7, 2016	29677	Protection of fundamental rights and freedoms of individuals, especially the privacy of private life, in the processing of personal data during all stages of the project.
Regulation on Subcontractors	September 27, 2008	27010	Management of the conditions for the establishment of the principal employer-subcontractor relationship, the notification and registration of the workplace belonging to the subcontractor, the issues that should be included in the subcontractor agreement.
Electric Indoor Facilities Regulation	November 04, 1984	18565	Provision regarding the establishment and operation of the electrical indoor facilities of the Project.

Legislation*	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Regulation Concerning the Buildings to be built in Earthquake Zones	March 6, 2007	26454	Construction works within the scope of the Project.
Building Earthquake Regulation	March 18, 2018	30364	Construction works within the scope of the Project.
Regulation on Structures to be built in Natural Disaster Areas	July 14, 2007	26582	Construction works within the scope of the Project.
Regulation on the Protection of Buildings from Fire	December 19, 2007	26735	Measures to be taken for fire protection during construction and operation phases.
Regulation Concerning the Ozone Depleting Substances	April 07, 2017	30031	Substances to be used during construction and operation phases.
Regulation Concerning the Increase in the Efficiencies of Energy Consumption and Energy Resources	October 27, 2011	28097	Energy consumption during construction and operation phases.
Regulation on the Procedures and Principles of Employment of Children and Young Workers	April 06, 2004	25425	To determine the basis of the way children and young workers work without endangering their health and safety, physical, mental, moral and social development or education, and to prevent their economic exploitation.
Regulation on Highway Traffic	July 18, 1997	23053	Ensuring traffic order on the highways during the construction and operation phase of the Project.
Regulations on Traffic Signs	June 19, 1985	18789	Traffic signs to be applied on highways for the purpose of ensuring traffic order and safety during construction and operation phase of the Project.
Regulation on Monitoring Greenhouse Gas Emissions	May 17, 2014	29003	Monitoring, reporting and verification of greenhouse gas emissions arising from activities included in the annexes of the regulation

KMM shall comply with the requirements of the current national legislations and codes of practice and fulfill all other legal requirements. Therefore, during each stage of the planned Project and implementation of related management plans, all activities will be carried in accordance with certain standards and limits set by the above-mentioned laws and regulations and any license and/or permit required for the upcoming stages of the Project will be acquired accordingly.

Turkish Legislation on the Conservation of Nature and Wildlife

Project-related Turkish legislation on conservation of nature and wildlife is presented in Table 45.

Table 45 Project related Turkish Legislation on the Conservation of Nature and Wildlife

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Regulation on the Management of Natural Assets, Natural Protected Areas, and State-Owned Lands	May 2, 2013	28635	Measures to be taken during chance finds at the construction stage.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Located on Environmental Conservation Lands			
Regulation on Protection of Wildlife and Wildlife Development Area	November 8, 2004	25637	The project area has been examined according to this regulation, but there is no relevant area.
Regulation on the Protection of Wetlands	April 4, 2014	28962	The project area has been examined according to this regulation, but there is no relevant area.
Law on Conservation of Cultural and Natural Assets No. 2863	July 23, 1983	18113	Measures to be taken during chance finds at the construction stage.
Land Hunting Law No. 4915	July 11, 2003	25165	The project area has been examined according to this regulation, but there is no relevant area.

Labor Law

The Turkish Labor Law (Law No: 4857) was enacted on 22.05.2003 and published in the Official Gazette dated 10.06.2003 and numbered 25134. The purpose of this law is to regulate the working conditions and work-related rights and obligations of employers and employees working under an employment contract. This Law applies to all establishments and to their employers, employer's representatives, and employees, irrespective of the subject matter of their activities except the activities and employment relationships listed in Article 4 of this law. Some examples to these exceptions are; sea and air transport activities, any construction work related to agriculture which falls within the scope of family economy, domestic services, sportsmen, etc. This law regulates the labor related subjects such as; the principle of equal treatment which aims to avert discrimination based on language, race, sex, political opinion, philosophical belief, religion, or similar reasons; the transfer of the establishment or one of its sections which defines the process of the transfer paying attention to not to victimize anyone; temporary employment relationships to protect the rights of both parties. Also, Labor Law regulates the employment contracts, types and terminations, wages, organization of work, employment service, supervision and inspection of working conditions, administrative penal provisions, and supplementary, transitional, and concluding provisions of labor related subjects.

Turkish Labor Law does not cover forced labor issues. However, the Constitution of the Republic of Türkiye, Article 18 prohibits forced labor. "No one shall be forced to work. Forced labor is prohibited. Work required of an individual while serving a sentence or under detention provided that the form and conditions of such labor are prescribed by law; services required from citizens during a state of emergency; and physical or intellectual work necessitated by the needs of the country as a civic obligation shall not be considered as forced labor." Article 80 of the Penal Code penalizes human trafficking and Article 117 penalizes violation of the freedom to work and labor. Türkiye has ratified the ILO (International Labor Organization) Convention No. 29 on Forced Labor and ILO Convention No. 105 on the Abolition of Forced Labor.

Turkish Labor Law sets the minimum age at which a child can be employed as well as the conditions under which children can work (Article 71, Chapter 4). The minimum employment age is 15, but in certain cases of vocational training, mild work may be allowed for 14-year-olds. According to Turkish Labor Law, Article 73, boys under the age of 18 and women irrespective of their age must not be employed on underground or underwater work like in mines, cable-laying and the construction of sewers and tunnels.

The Regulation on the Procedures and Principles of Employment of Children and Young Workers, which entered into force by publishing in the Official Gazette dated 06.04.2004 and numbered 25425, aims to determine the principles of working and to prevent economic exploitation of children and young workers without jeopardizing their health and safety, physical, moral and social development or

education. This Regulation has been prepared on the basis of Article 71 of the Labor Law No. 4857, published in the Official Gazette dated 10.6.2003 and numbered 25134.

National Programme on the Elimination of Child Labor (2017-2023) by the Ministry of Labor and Social Security (MoLSS) was put into effect in 2017 and implemented in cooperation with relevant institutions/organizations, social partners, and Non-Governmental Organizations (NGOs). In the program, the priority target groups have been identified as “Working on the Streets”, “Working in Heavy and Hazardous Works in Small and Medium-Sized Enterprises” and “Working in Mobile and Temporary Agricultural Labor Except for Family Business”; children under 18 years of age are particularly prohibited from working in these areas.

Article 32 of Labor Law defines the wages as; “in general terms, wages are the amount paid to someone by the employer or third parties in exchange for a job and paid in money. As a rule, wages, premiums, and bonuses are paid, in Turkish Lira, to a bank account opened at the workplace or privately. If the wage has been decided in terms of a foreign currency, it may be paid in Turkish money according to the currency rate on the date of payment. Wage payment must not be made in bonds, coupons or another paper claimed to represent the national currency valid in the country or by any other means whatsoever.

Wage may be paid on a monthly basis at the latest. The time of remuneration may be reduced to one week by employment contract or by collective agreement. Statutory limitation on wage claims is five years.” The minimum wage limit is regulated by the Turkish Labor Law, Article-39.

Law on the Right to Information

The Turkish Law on the Right to Information (Law No: 4982) was adopted in 09.10.2003 and published in the Official Gazette dated 24.10.2003 and numbered 25269. The main objective of this law is to regulate the procedure and provide the basis of the right to information according to the principles of equality, impartiality and openness that are the necessities of a democratic and transparent government. This law applies to the activities of the public institutions and the professional organizations, which qualify as public institutions. The Law, which is divided into five parts in total, explains the legal rights and obligations about information disclosure processes. The first part of the law defines the objective, scope and definitions of terms that are used in law. The second part of the Law makes statements about the subjects of the Right to Information and the Obligation to Provide Information. According to Articles 4 and 5 of this Law found in this part, everyone has the right to information and the responsible parties are obligated to provide information. The application process for accessing information is explained in the third part of the law. In the fourth part of the Law, the information that is restricted is described and some examples are: information and documents pertaining to the state secrets, information and documents pertaining to the economic interests of the state, etc. Finally, the last part of the Law describes the miscellaneous aspects of this law such as entry into force and execution.

International Agreements and Standards

International financial institutions follow certain policies and procedures regarding assessment and management of environmental and social impacts/risks of the projects to be financed. As requirements of international extent of the Project, environmental and social database and impact assessment studies will also guarantee that Project’s design, construction, and operation will be satisfactory for international environmental standards alongside national legislation.

International Environmental Conventions that Türkiye is a Contracting Party

Turkish national policy on protection of cultural heritage and conservation of biological resources has been constituted on the base of relevant international agreements that Türkiye has ratified or acceded by laws or relevant legislation. In addition to these, there are various laws and regulations on protection and conservation of natural habitats, wildlife, and cultural heritage.

The international agreements and conventions on biological, cultural heritage, environmental and wildlife conservation that Türkiye had ratified are:

- Paris Convention on the Protection of the World Cultural and Natural Heritage (1975)
- Barcelona Convention on the Protection of the Mediterranean Sea Against Pollution (1976)
- Bern Convention on Protection of Europe's Wild Life and Living Environment (1982)
- The Convention for the Protection of Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) (1981)
- Convention on Long Range Transboundary Air Pollution (CLRTAP) (1983)
- Convention on Long-Range Transboundary Air Pollution and the Cooperative Programme for Monitoring and Evaluation of the Long-Range Transmissions of Air Pollutants in Europe (EMEP) (1983)
- Vienna Convention for the Protection of the Ozone Layer (1988)
- Montreal Protocol on Substances Depleting the Ozone Layer (1990)
- Convention on Biological Diversity (Rio Convention) (1992)
- The International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND 1992)
- International Convention on Civil Liability for Oil Pollution Damage (1992)
- UN Framework Convention on Climate Change (UNFCCC) (2004)
- Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (RAMSAR) (1994)
- Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal (1994)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1996)
- Kyoto Protocol (1997)
- UN Convention to Combat Desertification (CCD) (1998)
- European Landscape Convention (2001)
- United Nations (UN) Europe Economic Commission Convention on Transboundary Effects of Industrial Accidents (2000)
- Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) (2001)
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention) (2004)
- Stockholm Convention on Persistent Organic Pollutant (POPs)
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (1972)
- Mediterranean Sea Protocol Concerning Specially Protected Areas and Biodiversity (1988), including related protocols,
- Convention for the Protection of the Black Sea Against Pollution (Bucharest) (1994) and its protocols including the Protocol for the Protection of Biological and Landscape Diversity in the Black Sea (2004)
- ILO Conventions;
 - ILO Convention on Forced Labor (1930),
 - ILO Convention on Freedom of Association and Protection of the Right to Organize (1948),
 - ILO Convention on Right to Organize and Collective Bargaining (1949), ILO Convention on Equal Remuneration (1951),
 - ILO Convention on Abolition of Forced Labor (1957),
 - ILO Convention on Discrimination (Employment and Occupation) (1958),
 - ILO Convention on Minimum Age (1973),
 - ILO Convention on Worst Forms of Child Labor (1999).

Aside from the listed ILO Conventions which are categorized as fundamental conventions; Türkiye also ratified three out of four governance conventions, 48 out of 177 technical conventions, out of 59 Conventions ratified by Türkiye, of which 55 are in force, three Conventions have been denounced which are C 34 Fee-Charging Employment Agencies Convention, C 58 Minimum Age (Sea) Convention (Revised) and C 59 Minimum Age (Industry) Convention (Revised); one instrument abrogated which is C 15 Minimum Age (Trimmers and Stokers) Convention; none have been ratified in the past 12 months.

World Bank Environmental and Social Framework (ESF)

The World Bank Environmental and Social Framework (ESF), which came into effect in October 2018, sets out the requirements for managing environmental and social (E&S) risks and impacts in projects financed by the World Bank. The ESF replaces the former Safeguard Policies and introduces a more comprehensive, risk-based approach to E&S assessment and management throughout the Project lifecycle.

The ESF comprises ten Environmental and Social Standards (ESSs), which establish the responsibilities of the Borrower in identifying, assessing, mitigating, and monitoring environmental and social risks and impacts. The standards relevant to the Project include, but are not limited to:

- ESS1: Assessment and Management of Environmental and Social Risks and Impacts – establishes the framework for identifying, assessing, and managing E&S risks and impacts.
- ESS2: Labor and Working Conditions – addresses working conditions, labor management procedures, and occupational health and safety.
- ESS3: Resource Efficiency and Pollution Prevention and Management – covers efficient use of resources, waste management, and pollution control.
- ESS4: Community Health and Safety – focuses on potential risks to communities, including traffic safety, emergency preparedness, and exposure to hazardous materials.
- ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement – applies where land acquisition or economic displacement may occur.
- ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources – addresses impacts on biodiversity and ecosystem services.
- ESS8: Cultural Heritage – covers the protection of tangible and intangible cultural heritage.
- ESS10: Stakeholder Engagement and Information Disclosure – requires the preparation and implementation of a Stakeholder Engagement Plan (SEP), including a grievance mechanism.

In line with the ESF requirements, this Project has been screened and classified in accordance with the World Bank's risk classification system (High, Substantial, Moderate, or Low). Based on the nature and scale of the anticipated impacts, the Project is classified as Moderate Risk, with impacts that are site-specific, reversible, and can be mitigated through appropriate measures.

This ESMP has been prepared in accordance with the ESF to identify potential E&S risks and impacts, define mitigation and monitoring measures, and establish institutional arrangements to ensure effective implementation throughout the construction and operation phases of the Project. The ESMP also integrates applicable national legislation and international good practice, including the World Bank EHS Guidelines.

Comparison of Turkish EIA Regulation and WB ESSs

international industry practice, including WB Safeguard Policies, WB Group's EHS guidelines, ESF standards, including its ESSs and best practices documents alongside the national legislation.

The WB Environmental and Social Framework reflects the World Bank's commitment to sustainable development through ten ESS that are designed to support Borrowers' environmental and social (E&S) risk management.

The gap analysis between the WB ESSs triggered by the Project and Turkish EIA Regulation is presented in Table 46.

Table 46 Gap Analysis between Turkish Legislation and World Bank ESF

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
ESS1 Assessment and Management of Environmental and Social Risks and Impacts	The objectives of ESS1 are as follows: • To identify, evaluate, and manage the environment and social risks and impacts of the project in a manner consistent with the ESSs. • To adopt a mitigation hierarchy approach to: (a) Anticipate and avoid risks and impacts; (b) Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; (c) Once risks and impacts have been minimized or reduced, mitigate; and (d) Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible. • To adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and the • are not disadvantaged in sharing development benefits and opportunities resulting from the project. • To utilize national environmental and social institutions, systems, laws, regulations, and procedures in the assessment, development, and implementation of projects, whenever appropriate. • To promote improved environmental and social performance, in ways which recognize and enhance Borrower capacity.	Environmental and Social Assessment and Management System (ESMS) <u>World Bank's ESF</u> The Borrower will carry out an environmental and social assessment of the project to assess the environmental and social risks and impacts of the project throughout the project life cycle. The assessment will be proportionate to the potential risks and impacts of the project, and will assess, in an integrated way, all relevant direct, indirect, and cumulative environmental and social risks and impacts throughout the project life cycle, including those specifically identified in ESSs 2-10. The Borrower will (a) Conduct an environmental and social assessment of the proposed project, including stakeholder engagement; (b) Undertake stakeholder engagement and disclose appropriate information in accordance with ESS10; (c) Develop an Environmental and Social Commitment Plan (ESCP), and implement all measures and actions set out in the legal agreement including the ESCP; and (d) Conduct monitoring and reporting on the environmental and social performance of the project against the ESSs. <u>Turkish EIA Regulation</u> Environmental risks and impacts of the Project are identified to some extent. However, the range of potential environmental and social impacts has not been identified, for example, there is no social assessment, or assessment of	Conduct a complete assessment of potential environment and social impacts associated with both railway construction and operation. Complete an assessment of potential cumulative impacts. Establish a Project ESMS that describes mitigation and performance improvement measures and actions that address the identified environmental and social risks and impacts of the Project. Where the identified risks and impacts cannot be avoided, the client should identify mitigation and performance measures and establish corresponding actions to ensure the project will be operated in compliance with applicable laws and regulations, and meet the requirements ESSs.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
		landscape and visual impacts, forestry and in many cases operation of the project has been omitted in assessing impacts.	
		Organizational Capacity and Competency <u>World Bank's ESF</u> Where the project involves specifically identified physical elements, aspects and facilities that are likely to generate impacts, the ESMS will establish and maintain an emergency preparedness and response system so that the client, in collaboration with appropriate and relevant third parties, will be prepared to respond to accidental and emergency situations associated with the project in a manner appropriate to prevent and mitigate any harm to people and/or the environment. <u>Turkish EIA Regulation</u> Organisational arrangements and the competency of construction personnel have not been incorporated into the EIA.	Define project environment and social resources (construction, consortium and operational) in terms of organisation and competency with regard to environment and social issues.
		Emergency Preparedness and Response <u>World Bank's ESF</u> Where the project involves specifically identified physical elements, aspects and facilities that are likely to generate impacts, the ESMS will establish and maintain an emergency preparedness and response system so that the client, in collaboration with appropriate and relevant third parties, will be prepared to respond to accidental and emergency situations associated with the project	Prepare and implement an emergency response plan for both construction and operational phases.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
		in a manner appropriate to prevent and mitigate any harm to people and/or the environment. This preparation will include he identification of areas where accidents and emergency situations may occur, communities and individuals that may be impacted, response procedures, provision of equipment and resources, designation of responsibilities, communication, including that with potentially Affected Communities and periodic training to ensure effective response. The emergency preparedness and response activities will be periodically reviewed and revised, as necessary, to reflect changing conditions. <u>Turkish EIA Regulation</u> No emergency scenarios, including response mechanisms, have been identified within the EIA.	
		Monitoring and Review <u>World Bank's ESF</u> The project owner should establish procedures to monitor and measure the effectiveness of the management program, as well as compliance with any related legal and/or contractual obligations and regulatory requirements. Where the government or other third party has responsibility for managing specific risks and impacts and associated mitigation measures, the client will collaborate in establishing and monitoring such mitigation measures. Where appropriate, clients will consider involving representatives from Affected Communities to participate in monitoring activities. The client's monitoring program should be overseen by the appropriate level in the organization. For projects with significant impacts, the client will retain external experts to verify its monitoring information. The extent of	Once adequate baseline data has been captured and potential environmental and social impacts have been assessed for both construction and operational phases, a monitoring plan should be established to capture data to confirm that the project mitigation plans are delivering the desired results and that no unforeseen impacts are occurring.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
		monitoring should be commensurate with the project's environmental and social risks and impacts and with compliance requirements. <u>Turkish EIA Regulation</u> Although EIA is more limited in scope, it requires some environmental and social management plans. There is also a monitoring plan that indicates whether the environmental impacts of the project (in terms of air, water quality, noise and vibration) will comply with the Turkish Environmental Law and relevant legislation.	
		External Communications and Grievance Mechanisms <u>World Bank's ESF</u> The project owner should implement and maintain a procedure for external communications that includes methods to (i) receive and register external communications from the public; (ii) screen and assess the issues raised and determine how to address them; (iii) provide, track, and document responses, if any; and (iv) adjust the management program, as appropriate. In addition, clients are encouraged to make publicly available periodic reports on their environmental and social sustainability. Where there are Affected Communities, the client will establish a grievance mechanism to receive and facilitate resolution of Affected Communities' concerns and grievances about the client's environmental and social performance. The grievance mechanism should be scaled to the risks and adverse impacts of the project and have Affected Communities as its primary user. It should seek to resolve concerns promptly, using an understandable and transparent consultative process that is culturally appropriate and readily accessible	A communications plan and procedure (including identification of Affected Communities) should be prepared that describes mechanisms for external communications on environment and social topics. The plan should define how grievances and concerns can be made to the project and how these will be investigated, responded to and rectified, if appropriate.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
		and at no cost and without retribution to the party that originated the issue or concern. The mechanism should not impede access to judicial or administrative remedies. The client will inform the Affected Communities about the mechanism in the course of the stakeholder engagement process. <u>Turkish EIA Regulation</u> Stakeholder Engagement Plan: It is explained in EIA Regulation as a plan that explains how, what methods and tools will be used to communicate and inform legal/real persons (stakeholders) who may be affected by the project or have an interest in the project, at all stages of the planned project. Regulation does not address the issues of internal, external communication and grievance mechanism.	
		On-going Reporting to Affected Communities <u>World Bank's ESF</u> The project owner should provide periodic reports to the Affected Communities that describe progress with implementation of the project Action Plans on issues that involve on-going risk to or impacts on Affected Communities and on issues that the consultation process or grievance mechanism have identified as a concern to those Communities. If the management program results in material changes in or additions to the mitigation measures or actions described in the Action Plans on issues of concern to the Aff ected Communities, the updated relevant mitigation measures or actions will be communicated to them. The frequency of these reports will be proportionate to the concerns of Affected Communities but not less than annually.	Reporting to Affected Communities should be included within the Communication Plan and Procedure.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
		<u>Turkish EIA Regulation</u> The EIA does not define Affected Communities and therefore there is no definition of communication and reporting.	
ESS2 Labor and Working Conditions	ESS2 recognizes the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. Borrowers can promote sound worker management relationships and enhance the development benefits of a project by treating workers in the project fairly and providing safe and healthy working conditions. The objectives of ESS2 are as follows: • To promote safety and health at work. • To promote the fair treatment, non-discrimination, and equal opportunity of project workers. • To protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers, and primary supply workers, as appropriate. • To prevent the use of all forms of forced labor and child labor. • To support the principles of freedom of association and collective bargaining of	<u>World Bank's ESF</u> ESS2 requirements include the documentation and implementation of workforce management procedures applicable to the project. These procedures will specify how project workers will be managed in accordance with the requirements of internal law and this ESS and explain the following; (i) working conditions and management of worker relationship including terms and conditions of employment, non-discrimination and equal opportunities, worker's organizations, (such as the preparation and implementation of workfo ce management procedures applicable to the project); (ii) protection of the workforce, including the establishment of a minimum age for workers and the prohibition of child labor and forced labor; (iii) grievance mechanism (for workers); (iv) occupational health and safety (OHS) ; (v) contracted workers; (vi) community workers and (vii) primary supply workers. The Borrower will develop and implement written labor management procedures applicable to the project. These procedures will set out the way in which project workers will be managed, in accordance with the requirements of national law and this ESS. The project owner should adopt and implement human resources policies and procedures appropriate to its size and workforce that set out its approach to managing workers consistent with the requirements of this Performance Standard and national law	Prepare a Human Resources Policy. Prepare a project handbook that covers working conditions and employment arrangements. Prepare an Equality and Diversity Programme that defines protection of employees, contractors and suppliers. Establish a mechanism to protect workers. Provide a Grievance Mechanism.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
	project workers in a manner consistent with national law. To provide project workers with accessible means to raise workplace concerns.	The project owner should establish a mechanism to maintain, and improve the worker-management relationship and should also promote compliance with national employment and labour laws. The project owner should establish a mechanism to protect workers, including vulnerable categories of workers such as children, migrant workers, forced labour, workers engaged by third parties, and workers in the client's supply chain while it should also provide a tool to promote safe and healthy working conditions, and the ealth of workers. In countries where national law recognizes workers' rights to form and to join workers' organizations of their choosing without interference and to bargain collectively, the client will comply with national law. Where national law substantially restricts workers' organizations, the client will not restrict workers from developing alternative mechanisms to express their grievances and protect their rights regarding working conditions and terms of employment. The client should not seek to influence or contro these mechanisms. The client will provide a grievance mechanism for workers (and their organizations, where they exist) to raise workplace concerns. The client will inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them. The mechanism should involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned, without any retribution. The mechanism should also allow fo anonymous complaints to be raised and addressed. The mechanism should not impede access to other judicial or administrative remedies that might be	

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
		available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements. <u>Turkish EIA Regulation</u> There is no Human Resources (HR) Policy for the project. There are warnings about how the workers should prevent any harmful effects that may arise during construction and operation phases. However, detailed working conditions or terms of employment are not mentioned in the EIA report The EIA does not address worker employment and therefore, there is no documented or formal policy of non-discrimination, equal opportunity and fair treatment in the EIA.	
ESS3 Resource Efficiency and Pollution Prevention and Management	ESS3 recognizes that economic activity and urbanization often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services, and the environment at the local, regional, and global levels. The current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention, and GHG emission avoidance, and mitigation technologies and practices have become more accessible and achievable. This ESS sets out the requirements to address	<u>World Bank's ESF</u> The project owner should implement technically and financially feasible and cost effective measures for improving efficiency in its consumption of energy, water, as well as other resources and material inputs, with a focus on areas that are considered core business activities. Such measures will integrate the principles of cleaner production into product design and production processes with the objective of conserving raw materials, energy, and water. Where benchmarking data are available, the client will ake a comparison to establish the relative level of efficiency. The project owner should avoid the release of pollutants or, when avoidance is not feasible, minimize and/or control the intensity and mass flow of their release. This applies to the release of pollutants to air (including GHG emissions), water, and land due to routine, non-routine, and accidental circumstances with the potential for local, regional, and transboundary impacts. Where historical pollution such as land or ground water	Prepare an evaluation of potential resource efficiency during construction and operation. Define potential impacts and develop approaches for avoidance, minimisation and use of alternative materials in order to reduce the project impact on natural and scarce resources. Baseline information must be captured for topics such as potential contaminated land and environmental impacts associated with the soil movement required by the earthworks. All assessments should address current conditions and potential futu

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
	resource efficiency and pollution prevention and management throughout the project life cycle consistent with Good International Industry Practice (GIIP). The objectives of ESS3 are as follows: • To promote the sustainable use of resources, including energy, water, and raw materials. • To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities. • To avoid or minimize project-related emissions of short- and long-lived climate pollutants. • To avoid or minimize generation of hazardous and nonhazardous waste.	contamination exists, the project should seek to determine whether it is responsible for mitigation measures. It is also important to address potential adverse project impacts on existing ambient conditions, the client will consider relevant factors, including, for example (i) existing ambient conditions; (ii) the finite assimilative capacity of the environment; (iii) existing and future land use; (iv) the project's proximity to areas of importance to biodiversity; and (v) the potential for cumulative impacts with uncertain and/or irreversible consequences. In addition to applying resource efficiency and pollution control measures as required in this Performance Standard, when the project has the potential to constitute a significant source of emissions in an already degraded area, the project should consider additional strategies and adopt measures that avoid or reduce negative effects. These strategies include, but are not limited to, evaluation of project location alternatives and emissions offsets. <u>Turkish EIA Regulation</u> The EIA does not address resource consumption and resource efficiency measures. Baseline information is provided in the EIA on air emissions, wastewater, solid wastes, hazardous wastes and noise. The EIA assessments have focussed on construction phases and have not addressed operational phases for each of these elements. The EIA provides no information regarding the potential contamination of land associated with historical use and does not discuss the environmental and social impacts associated with the volumes of soil movements proposed in the earthworks activities.	the impacts of project construction and operation

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
ESS4 Community Health and Safety	ESS4 recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities that are already subjected to impacts from climate change may also experience an acceleration or intensification of impacts due to project activities. ESS4 addresses the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of Borrowers to avoid or minimize such risks and impacts, with particular attention to people who, because of their particular circumstances, may be vulnerable. The objectives of ESS4 are as follows: • To anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and nonroutine circumstances. • To promote quality and safety, and considerations relating to climate change in the design and construction of infrastructure. • To avoid or minimize community exposure to project-related traffic and road safety risks, diseases, and hazardous materials. • To have in place effective measures to address emergency events.	<u>World Bank's ESF</u> WB's ESF: The project should anticipate and avoid adverse impacts on the health and safety of the Affected Community and ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the Affected Communities. ESS4 requirements are as follows: (i) community health and safety, including infrastructure and equipment design and safety, safety of services, traffic and road safety, ecosystem services, community exposure to health issues, management and safety of hazardous materials, and emergency preparedness and response and security; and (ii) security personnel. <u>Turkish EIA Regulation</u> The EIA does not address regarding the environmental and social impacts associated with construction camps and the influx of temporary/migrant labour to support construction activities.	Assess the safety and security risks associated with construction and operation of the railway on the community and develop a plan to mitigate and manage risks.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
	To ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.		
ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	ESS6 recognizes that protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Biodiversity is defined as the variability among living organisms from all sources, including inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems. The objectives of ESS6 are as follows: - To protect and conserve biodiversity and habitats. - To apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity. - To promote the sustainable management of living natural resources. - To support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities.	<u>World Bank's ESF</u> The environmental and social assessment as set out in ESS1 will consider direct, indirect, and cumulative project-related impacts on habitats and the biodiversity they support. This assessment will consider threats to biodiversity, for example, habitat loss, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading, pollution and incidental take, as well as projected climate change impacts. It will determine the significance of biodiversity or habitats based on their vulnerability and irreplaceability at a global, regional, or national level and will also take into account the differing values attached to biodiversity and habitats by project-affected parties and other interested parties. The Borrower will avoid adverse impacts on biodiversity and habitats. When avoidance of adverse impacts is not possible, the Borrower will implement measures to minimize adverse impacts and restore biodiversity in accordance with the mitigation hierarchy provided in ESS1 nd with the requirements of this ESS. The Borrower will ensure that competent biodiversity expertise is utilized to conduct the environmental and social assessment and the verification of the effectiveness and feasibility of mitigation measures. Where significant risks and adverse impacts on biodiversity have been identified, the Borrower will develop and implement a Biodiversity Management Plan. <u>Turkish EIA Regulation</u> The EIA has provided inadequate baseline data regarding project biodiversity and natural habitats and the potential impacts associated with the project	Robust sampling methodologies and plans should be prepared to inform surveys for all identified habitats and species to ensure that robust baseline data is obtained to inform the assessment of p tential impacts, mitigation and compensation strategies.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
		during construction and operation. The EIA reports that ecological species and habitat evaluations were undertaken through habitat evaluation and literature review.	
ESS10 Stakeholder Engagement and Information Disclosure	This ESS recognizes the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. The objectives of ESS10 are as follows: • To establish a systematic approach to stakeholder engagement that will help Borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project affected parties. • To assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken into account in project design and environmental and social performance. • To promote and provide means for effective and inclusive engagement with project-affected parties throughout the project life cycle on issues that could potentially affect them.	<u>World Bank's ESF</u> Borrowers will engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a time frame that enables meaningful consultations with stakeholders on project design. The nature, scope, and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts. The process of stakeholder engagement will involve the following: (i) stakeholder identification and analysis; (ii) planning how the engagement with stakeholders will take place; (iii) disclosure of information; (iv) consultation with stakeholders; (v) addressing and responding to grievances; and (vi) reporting to stakeholders. For all Category A and B subprojects proposed for WB funding, the borrower will consult and consider the views of the project-affected groups and non-governmental organizations regarding the environmental impacts of the subproject during the EA process. <u>Turkish EIA Regulation</u> The EIA reports that a single, formal, information disclosure exercise has been carried out regarding the project. This occurred at the start of the EIA process. No further information disclosure activities have been undertaken prior to the EIA report being finalized. The EIA does not describe any stakeholder engagement and therefore it is assumed that none has been undertaken.	A stakeholder engagement plan should be prepared to address project start up, construction and operation. This should be a two way process of giving and receiving information. It should involve the local, regional and national communities as applicable to the project.

ESS	Scope / Aim of the ESS	Gaps between the Turkish EIA Regulation and World Bank's ESF	Environmental and Social Studies conducted/to be conducted to fill the gap
	• To ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible, and appropriate manner and format. • To provide project-affected parties with accessible and inclusive means to raise issues and grievances, and allow Borrowers to respond to and manage such grievances.	For the projects included in the list of Annex-I, which therefore require the preparation of an EIA Report, the public information and participation meeting, whose place and date is decided by the Provincial Directorate of Environment, Urbanization and Climate Change, is held not later than 10 days prior to the meeting by disclosing it publicly in local and national newspapers. No public information and participation meeting is held for the projects included in the list of Annex-II. <u>Public Information and Participation Meeting:</u> In the Turkish EIA Regulation, public consultation is required for the purpose of "preliminary scope determination" only for projects requiring EIA, and for this purpose, only the environmental assessment must be announced with its justification. However, ESS 10 does not specify how many times and by what method public consultation and public information will be carried out, instead it is requested to adopt a continuous stakeholder participation approach throughout the project life cycle, which will be decided in proportion to the nature, scale and impact size of the project.	

Project Standards

This section aims to provide the standards that are applicable to the Project. The most stringent amongst the national legislations and international standards is defined as Project Standard (see below table) that the Project will comply with.

Table 47 Project Standards

Environmental Standards						
No	Topic	National Standards/ Requirements	Limit Values in National Legislation	International Standards/ Requirements	Limit Values in International Legislation	Project Standards
1	Noise	Regulation on Environmental Noise Control (Official Gazette Date/Number: 30.11.2022/32029) Annex- 2 “Table-1 Limit Values for ambient noise level”	Noise Source: Industrial Facilities, Transportation: Day time (07:00-19:00): LAeq, 5 min.< 65 dB(A) Evening time (19:00-23:00): LAeq, 5 min.< 60 dB(A) Night time (23:00-07:00): LAeq, 5 min.< 55 dB(A)	WBG General EHS Guidelines: Environmental Noise Management Table 1.7.1 – Noise Level Guidelines Noise impacts should not exceed the levels specified in the Table 1.7.1, or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site.	Receptor: Residential; institutional, educational: Day time (07:00-22:00): One Hour LAeq dB(A) < 55 dB(A) Night time (22:00-07:00): One Hour LAeq dB(A) < 45 dB(A) Receptor: Industrial, commercial.: Day time (07:00-22:00): One Hour LAeq dB(A) < 70 dB(A) Night time (22:00-07:00): One Hour LAeq dB(A) < 70 dB(A)	Receptor: Industrial, commercial: Day time (07:00-19:00): LAeq, 5 min.< 65 dB(A) Evening time (19:00-23:00): LAeq, 5 min.< 60 dB(A) Night time (23:00-07:00): LAeq, 5 min.< 55 dB(A)
2	Air Quality	Regulation on the Assessment and Management of Air Quality (Official Gazette	PM ₁₀ 1-Year: 40 µg/ m ³	WBG General EHS Guidelines: Environmental Air Emissions and Ambient Air Quality Table 1.1.1.:	PM ₁₀ 1-Year: 20 µg/m ³	Turkish Legislation has not described a limit value for PM _{2.5} . Therefore, in the assessment of the

		Date/Number: 06.06.2008/26898) Annex-1	24-Hour: 50 $\mu\text{g}/\text{m}^3$ (not to be exceedance more than 35 times per year)	WHO Ambient Air Quality Guidelines	24-Hour: 50 $\mu\text{g}/\text{m}^3$ (99th percentile (i.e.3-4 exceedance days per year) PM_{2.5} 1-Year: 10 $\mu\text{g}/\text{m}^3$ 24-Hour: 25 $\mu\text{g}/\text{m}^3$ (99th percentile (i.e.3-4 exceedance days per year)	measurement result, the limit value set forth by the Ambient Air Quality and Cleaner Air for Europe (Directive 2008/50/EC) and WBG 24-hour limit values are used, which is 25 $\mu\text{g}/\text{m}^3$ for both of them. PM₁₀ 1-Year: 20 $\mu\text{g}/\text{m}^3$ 24-Hour: 50 $\mu\text{g}/\text{m}^3$ (99th percentile (i.e.3-4 exceedance days per year) PM_{2.5} 1-Year: 10 $\mu\text{g}/\text{m}^3$ 24-Hour: 25 $\mu\text{g}/\text{m}^3$ (99th percentile (i.e.3-4 exceedance days per year)
		Regulation on Industrial Air Pollution Control (Official Gazette Date/Number: 03.07.2009/27277 revised in the Official Gazette Date/Number: 6.11.2020/31296)) Annex-2 “Table-2.1 Mass Flows”	Non-stack Mass Flow CO: 50 kg/h Dust: 1 kg/h NO_x (as NO₂): 4 kg/h SO_x: 6 kg/h TOC: 3 kg/h	WBG General EHS Guidelines: Environmental Air Emissions and Ambient Air Quality	WBG General EHS Guidelines: Environmental Air Emissions and Ambient Air Quality mention that: “Emissions do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards by applying national legislated standards, or in their absence, the current WHO Air Quality Guidelines” Since National Standards exist, compliance with National Standards will be ensured.	The limit values for exhaust gas defined in Industrial Air Pollution Control Regulation will be complied in Project. Non-stack Mass Flow CO: 50 kg/h Dust: 1 kg/h NO_x (as NO₂): 4 kg/h SO_x: 6 kg/h TOC: 3 kg/h

3	Effluent Water Quality	Regulation on Water Pollution Control (Official Gazette Date/Number: 31.12.2004/25687 and revised in the Official Gazette Date/Number 12.05.2023/32188.) Wastewater Discharge Standards Defined in Table 19-Discharge Standards of Mixed Industrial Wastewater to The Receiving Environment (Small and Large Organized Industrial Zones and Other Industries for Which Sector cannot be Determined)	Discharge Standards for the Treated Process Water to Receiving Environment in the Regulation on Water Pollution Control for planned WWTP: COD: 250 mg/L TSS: 200 mg/L Oil and grease: 20 mg/L Total Phosphorus(P): 2 mg/L Total Chrome: 2 mg/L Chrome (Cr ⁺⁶): 0.5 mg/L Lead (Pb): 2 mg/L Total Cyanide (CN ⁻): 1 mg/L Cadmium (Cd): 0.1 mg/L Ferrous (Fe): 10 mg/L Fluoride (F ⁻): 15 mg/L Copper (Cu): 3 mg/L Zinc (Zn): 5 mg/L Mercury (Hg): 0.05 mg/L Sulphate (SO ₄ ⁻²): 1500 mg/L Total Kjeldahl Nitrogen (TKN): 20 mg/L Fish Bioassay (TDF): 10 Color: 280 Pt-Co pH:6-9			WBG General EHS Guidelines: Environmental Wastewater and Ambient Water Quality	WBG General EHS Guidelines Environmental-Wastewater and Ambient Water Quality mention that: "Compliance with national or local standards for sanitary wastewater discharges or, in their absence, the indicative guideline values applicable to sanitary wastewater discharges shown in Table 1.3.1." Since National Standards exist compliance with National Standards will be ensured.	The discharge criteria of the WWTP have been decided on the basis of the Water Pollution Control Regulation, Urban Wastewater Treatment Regulation, EU directives and WBG EHS Guidelines: Environmental Wastewater and Ambient Water Quality. COD: 250 mg/L TSS: 200 mg/L Oil and grease: 20 mg/L Total Phosphorus (P):: 2 mg/L Total Chrome: 2 mg/L Chromium (Cr ⁺⁶): 0.5 mg/L Lead (Pb): 2 mg/L Total Cyanide (CN ⁻): 1 mg/L Cadmium (Cd): 0.1 mg/L Ferrous (Fe): 10 mg/L Fluoride (F ⁻): 15 mg/L Copper (Cu): 3 mg/L Zinc (Zn): 5 mg/L Mercury (Hg): 0.05 mg/L Sulphate (SO ₄ ⁻²): 1500 mg/L Total Kjeldahl Nitrogen (TKN): 20 mg/L Fish Bioassay (TDF): 10 Color: 280 Pt-Co pH:6-9		
4	Surface Water Quality	Regulation on Surface Water Quality-Water Quality Classes (Official Gazette Date/Number: 30.11.2012/28483) Annex – 5)	Parameter	Unit	Surface Water Quality Regulation	WBG General EHS Guidelines: Environmental Wastewater and Ambient Water Quality	WBG General EHS Guidelines Environmental-Wastewater and Ambient Water Quality mention that: " Discharges to surface water should not result in	Parameter	Unit	Surface Water

[illegible]

[illegible]

			Nitrogen(, TKN)							Oxygen (DO)				
			Total Nitrogen, (TN)	mg/L	<3.5	11.5	>11.5			Conductivity	µS/cm	<400	1000	>1000
			Fluoride	µg/L	≤100	1500	>1500			Chemical Oxygen Demand (COD)	mg/L	<25	50	>50
			Manganese	µg/L	≤100	500	>500			Nitrate (NO ₃ ⁻)	mg/L	<3	10	>10
			Selenium	µg/L	≤10	15	>15			pH	-	6-9	6-9	6-9
			Sulphur	µg/L	≤2	5	>5			Total Phosphorus, (TP)	mg/L	<0.08	0.2	>0.2
										Orthophosphate (o-PO ₄ ⁻)	mg/L	<0.05	0.16	>0.16
										Total Kjeldahl Nitrogen(, TKN)	mg/L	<0.5	1.5	>1.5
										Total Nitrogen, (TN)	mg/L	<3.5	11.5	>11.5

						<table><tr><td></td><td></td><td></td><td></td><td>5</td></tr><tr><td>Fluoride</td><td>µg/L</td><td>≤ 1000</td><td>1500</td><td>> 1500</td></tr><tr><td>Manganese</td><td>µg/L</td><td>≤ 1000</td><td>500</td><td>> 500</td></tr><tr><td>Selenium</td><td>µg/L</td><td>≤ 10</td><td>15</td><td>> 15</td></tr><tr><td>Sulphur</td><td>µg/L</td><td>≤ 2</td><td>5</td><td>> 5</td></tr></table>					5	Fluoride	µg/L	≤ 1000	1500	> 1500	Manganese	µg/L	≤ 1000	500	> 500	Selenium	µg/L	≤ 10	15	> 15	Sulphur	µg/L	≤ 2	5	> 5
				5																											
Fluoride	µg/L	≤ 1000	1500	> 1500																											
Manganese	µg/L	≤ 1000	500	> 500																											
Selenium	µg/L	≤ 10	15	> 15																											
Sulphur	µg/L	≤ 2	5	> 5																											
5	Ground water Quality	Regulation on the Protection of Groundwater Against Pollution and Deterioration (Official Gazette Date/Number: 07.04.2012/28257) (Annex – 3)	Nitrate: 50 mg/L Total Pesticide: 0.5 µg/L For the other parameters given below (included in Annex-3 of the Regulation) no limit value is defined. Ammonium Arsenic Mercury Conductivity Cadmium Chloride Lead	WBG General EHS Guidelines: Environmental Wastewater and Ambient Water Quality	Environmental-Wastewater and Ambient Water Quality mention that: Properly designed and installed in accordance with local regulations and guidance to prevent any hazard to public health or contamination of land, surface or groundwater. Although there is a national regulation, no limit value is set in the regulation. So, limit values for surface water are used for the assessment.	Nitrate: 50 mg/L Total Pesticide: 0.5 µg/L For the other parameters (Ammonium, Arsenic, Mercury, Conductivity, Cadmium Chloride, Lead, Sulfate, Tetrachloroethylene, Trichloroethylene, Salinity) limit values defined for the surface waters will be used.																									

			Sulfate Tetrachloroethylene Trichloroethylene Salinity			
4	Soil Quality	Regulation on Soil Pollution Control and Point Source Contaminated Fields (Official Gazette Date/Number: 08.06.2010/27605 revised in the Official Gazette Date/Number: 11.07.2013/28704) ¹⁸	Antimony: 31 mg/kg Arsenic: 0.4 mg/kg Boron: - Cadmium: 70 mg/kg Chromium (VI): 235 mg/kg Copper: 3129 mg/kg Lead: 400 mg/kg Mercury: 23 mg/kg Nickel: 1564 mg/kg Selenium: 391 mg/kg Silver: 391 mg/kg Zinc: 23464 mg/kg Tin: 46929 mg/kg Titanium: 312857 mg/kg Total Petroleum Hydrocarbons (TPH): - Total Organic Halogens (TOX): -	WBG General EHS Guidelines: Environmental	Since limit values regarding soil quality are not given at WBG General EHS Guidelines: Environmental, compliance with National Standards will be ensured.	Antimony: 31 mg/kg Arsenic: 0.4 mg/kg Boron: - Cadmium: 70 mg/kg Chromium (VI): 235 mg/kg Copper: 3129 mg/kg Lead: 400 mg/kg Mercury: 23 mg/kg Nickel: 1564 mg/kg Selenium: 391 mg/kg Silver: 391 mg/kg Zinc: 23464 mg/kg Tin: 46929 mg/kg Titanium: 312857 mg/kg Total Petroleum Hydrocarbons (TPH): - Total Organic Halogens (TOX):-
Social Standards						
No	Topic	National Laws / Regulations	International Standards	Project Standards	Non-Compliances /Corrective Actions	Targets
1	Labor and working conditions	Labor Law (No. 4857), published in the Official Gazette no. 25134 dated 10 June 2003	ESS2 Labor and Working Conditions	ESS2 Labor and Working Conditions ESF Guidance Note 2 Labor and Working Conditions	Turkish national laws and regulations regarding labour and working conditions satisfies ESS2 requirements. Worker grievance mechanism is the main	Comply with national laws / regulations, international standards and ESS2

¹⁸ The parameters are selected by considering the classification given in Regulation on Soil Pollution Control and Point Source Contaminated Fields Annex-2, Table-2. NACE Code: 1330 (defined in Pollution Control and Point Source Contaminated Fields). Also limit values given in Regulation on Soil Pollution Control and Point Source Contaminated Fields Annex-1 are taken into consideration.

					gap between national legislative requirement and ESS2. Labor Management Procedures (LMP) is developed as a part of E&S documents of the main project. LMP will also provide guidance on the required mitigations or management implementations such as workers.	
2	Labor and working conditions	Law on Occupational Health and Safety (No. 6331), published in the Official Gazette no. 28339 dated 30 June 2012	ESS2 Labor and Working Conditions	ESS2 Labor and Working Conditions ESF Guidance Note 2 Labor and Working Conditions	Occupational Health and Safety plan, risk assessment, emergency response plan, explosion protection document will be prepared.	Comply with national laws / regulations, international standards, ESS2, WB OHS
3	Labor and working conditions	Regulation on Contractors and Sub-contractors, published in the Official Gazette no. 27010 dated 27 September 2008	ESS2 Labor and Working Conditions	ESS2 Labor and Working Conditions ESF Guidance Note 2 Labor and Working Conditions	Labor Management Procedures (LMP) is developed as a part of E&S documents. LMP will also provide guidance on the required mitigations or management implementations such as workers.	Comply with national laws / regulations, international standards. ESS2, ESS4
4	Community Health and Safety	Law on Occupational Health and Safety (No. 6331), published in the Official Gazette no. 28339 dated 30 June 2012	ESS4 Community Health and Safety	ESS4 Community Health and Safety WBG General EHS Guidelines: Environmental ESF Guidance Note 4 Community Health and Safety English	Project level management of specific risks such as labour influx, sexual exploitation and abuse and sexual harassment are the key gaps. The plans such as Traffic Management Plan and Community Health and Safety Plan etc. will be prepared.	Comply with national laws / regulations, international standards. ESS4, WB OHS
5	Stakeholder engagement	Laws on Right to Information (No. 4982), published in the Official Gazette no 25269 dated 24 October 2003	ESS10 Stakeholder Engagement and Information Disclosure	ESS2 Labor and Working Conditions ESF Guidance-Note 10 Stakeholder Engagement and Information Disclosure English	Effective and transparent stakeholder engagement is the main gap in terms of ESS10 requirement. Within this scope, a Stakeholder Engagement Plan required to identify	Comply with national laws / regulations, international standards. ESS10,

					the different stakeholders (project-affected parties and other interested parties including disadvantaged or vulnerable groups). Stakeholder engagement should be a continuous process.	
6	Environmental and Social Risks and Impacts	Regulation on the Environmental Impact Assessment (EIA) published in the official Gazette no. 31907 dated 29 July 2022	ESS1 Assessment and Management of Environmental and Social Risks and Impacts	ESS1 Assessment and Management of Environmental and Social Risks and Impacts WBG General EHS Guidelines: Environmental	Robust social risk assessments and required plans addressing relevant mitigations are the main gaps between Turkish regulation and ESS1.	Comply with national laws / regulations, international standards. WB ESF

Annex K – Official Correspondence

HİZMETE ÖZEL



T.C
KONYA BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Ulaşım Dairesi Başkanlığı

Sayı : 12212768-000-Otomatik
Konu : Uzatma Hattı İmar Planlarına İşlenmesi

İMAR VE ŞEHİRCİLİK DAİRESİ BAŞKANLIĞINA

Barış Caddesi Tramvay Hattı 2. Etap yapım YHT Gar uzatma hattının planlanan yerleri ekte gönderilmiştir, bu hususta gereken imar planlarına işlenmesi hususunda bilgilerinize ve gereğini arz ederim.

Hasan GÖRGÜLÜ
Ulaşım Dairesi Başkanı

Ek : 1 adet flash bellek

Adres: Sakarya Mah, Tramvay İşletme Md No:4, 42100 Horozluhan Osb/ Selçuklu/ Konya
Telefon No: 4445542 Faks No: (332)211 15 76
e-Posta: ulasimplanlama@konya.bel.tr İnternet Adresi: <https://www.konya.bel.tr>
Kep Adresi: konyabuyuksehirbelediyesi@hs03.kep.tr

Bilgi için: Veyisel AKYOKUŞ
İdari Büro Personeli
Telefon No: 4314



T.C.
KONYA BÜYÜKŞEHİR BELEDİYE BAŞKANLIĞI
Emlak ve İstimlak Dairesi Başkanlığı

Sayı : E-55556560-115.05.99-474168
Konu : Eski Sanayi Dönüşüm Alanı Hk.

ULAŞIM DAİRESİ BAŞKANLIĞINA

İlgi : 03.08.2026 tarihli ve E-12212768-755.01-473513 sayılı yazınız.

Sanayi Bölgeleri Kentsel Dönüşüm Projesi kapsamında, Selçuklu ilçesi sınırları içerisinde kalan "Eski Sanayi Sitesi" ve "Karatay Sanayi Sitesi" nin içinde bulunduğu alan, 5393 sayılı kanun kapsamında "Kentsel Dönüşüm ve Gelişim Proje Alanı" ve 6306 sayılı kanun kapsamında "Rezerv Alan" olarak ilan edilmiştir. Proje kapsamında Karatay İlçesi Fevziçakmak Mahallesi sınırları içerisinde yeni sanayi alanı yapımı devam etmektedir. Yeni sanayi alanı yapımının tamamlanmasının ardından, "Eski Sanayi Sitesi" ve "Karatay Sanayi Sitesi" nin bulunduğu mevcut alanda taşınma ve tahliye sürecine geçilecek olup, bu aşamaların ardından planlama/projelendirme çalışmalarına başlanılacaktır. Bu kapsamda Barış Caddesi Tramvay Hattı projesinin, Kentsel Dönüşüm Projelerimiz bünyesinde herhangi bir ilişiği bulunmamakta olup, olası bir proje çakışması durumunda kentsel dönüşüm projelerimiz; altyapı/üstyapı ulaşım hatlarının mevcut ve projelendirilme durumları göz önüne alınarak planlanacaktır.

Bilgilerinize arz ederim.

Cüneyd GEDİK
Daire Başkanı

bu belge, güvenli elektronik imza ile imzalanmıştır.

Doğrulama Kodu: fa65826e-0bea-4874-8f9f-d3d2d959970b

Doğrulama Linki: <https://www.turkiye.gov.tr/icisleri-belediye-ebys>

Adres: Konevi Mahallesi Millet Cad. No:14 Meram / Konya
Telefon No: 4445542 Faks No: (332)211 15 76
e-Posta: emlakyonetim@konya.bel.tr İnternet Adresi: <https://www.konya.bel.tr>
Kep Adresi: konyabuyuksehirbelediyesi@hs03.kep.tr

Bilgi için: Ali YAYLA
Şehir Plancısı
Telefon No: -

