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SUSTAINABLE CITIES PROJECT-II
Additional Financing

Karapinar Water Transmission Line Project

Environmental and Social Management Plan

TUMAS - ENCON JOINT VENTURE

JANUARY 2024

SÜRDÜRÜLEBİLİR ŞEHİRLER
TÜRKİYE CUMHURİYETİ ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK TÜRKİYE'NİN YAPICI GÜCÜ
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12	January 2024	WB comments addressed	ILBANK	KOSKI	TUMAS & ENCON Joint Venture

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LIST OF ABBREVIATIONS

ABPRS	Address Based Population Registration System
AF	Additional Financing
AFAD	Disaster and Emergency Management Presidency
AoI	Area of Influence
AZE	Alliance for Zero Extinction
BP	Bank Policy
CCD	UN Convention to Combat Desertification
CCTV	Closed-circuit Television
CEKUL	Foundation for the Protection and Promotion of the Environment and Cultural Heritage
CIMER	Presidency's Communication Centre
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COVID-19	Coronavirus Disease of 2019
CLRTAP	Convention on Long Range Transboundary Air Pollution
dBA	Decibels adjusted
DLP	Defect Liability Period
DWTP	Drinking Water Treatment Plant
E&S	Environmental and Social
EC	European Commission
EHS	Environmental, Health and Safety
EHSG	Environmental, Health and Safety Guidelines
EIA	Environmental Impact Assessment
EMEP	European Monitoring and Evaluation Programme
ENCON	ENCON Cevre Danısmanlık Ltd. Sti.
ESF	Environmental and Social Framework
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
GIIP	Good International Industry Practice
GIS	Geographical Information System
GRM	Grievance Redress Mechanism
GP	Good Practices
IAPCR	Industrial Air Pollution Control Regulation
IBA	Important Bird Area

IBRD	International Bank for Reconstruction and Development
IFC	International Finance Corporation
ILBANK	ILBANK A.S.
ILO	International Labor Organization
IPA	Important Plant Area
IPCC	Intergovernmental Panel on Climate Change
IUCN	The International Union for Conservation of Nature
KBA	Key Biodiversity Area
KGM	General Directorate of Highways
KMM	Konya Metropolitan Municipality
KOSKI	Konya Water and Sewerage Administration
MSDS	Material Safety Data Sheets
MSIP	Municipal Services Improvement Project
MSP	Municipal Services Project
MSP-AF	Municipal Services Project Additional Financing
MoEUCC	Ministry of Environment, Urbanization and Climate Change
MoIT	Ministry of Industry and Technology
MoLSS	Ministry of Labor and Social Security
MTA	Mineral Research and Exploration General Directorate
NGOs	Non-Governmental Organizations
NRW	Non-Revenue Water
NTS	Non-Technical Summary
NUTS	Nomenclature of Territorial Units for Statistics
OHS	Occupational Health and Safety
OP	Operational Policies
PIU	Project Implementation Unit
$PM_{2.5}$	Particles with aerodynamic diameter smaller than 2.5μm
PM_{10}	Particles with aerodynamic diameter smaller than 10μm
PMU	Project Management Unit
POP	Persistent Organic Pollutant
PPE	Personal Protective Equipment
PIF	Project Introduction File
Project	Karapinar Group Transmission Line Project
PS	Performance Standard
RAMAQ	Regulation on the Assessment and Management of Air Quality
RAMSAR	Convention on Wetlands of International Importance, Especially as Waterfowl Habitat
RCA	Root Cause Analysis
RENC	Regulation on Environmental Noise Control
RESU	Regional Environment Sector Unit
SCM	Stakeholder Consultation Meeting
SCP-I	First Sustainable Cities Project
SCP-II	Second Sustainable Cities Project
SCP-II AF	Second Sustainable Cities Project Additional Financing
SEA/SH	Sexual Exploitation and Abuse/Sexual Harassment

SEF	Stakeholder Engagement Framework
SEGE	Socio-Economic Development Ranking Survey of Provinces and Regions
SEP	Stakeholder Engagement Plan
SEPA	Special Environmental Protection Areas
TAP	Union of Transportable Battery Manufacturers
TAYCED	Waste and Environmental Management Association
TCDD	General Directorate of Turkish State Railways
TEMA	Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats
TMP	Traffic Management Plan
ToR	Terms of Reference
TUBIVES	Türkiye Plant Data Service
TurkStat	Turkish Statistical Institute
TUMAS	Turk Muhendislik Musavirlik ve Muteahhitlik A.S.
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	UN Framework Convention on Climate Change
USEPA	United States Environmental Protection Agency
VU	Vulnerable
WB	World Bank
WBG	World Bank Group
WHO	World Health Organization
WWTP	Wastewater Treatment Plant
YIMER	Foreigners Communication Center

EXECUTIVE SUMMARY

Karapinar Water Transmission Line Project ("the Project") is one of the sub-projects covered under the Sustainable Cities Project-II - Additional Financing (SCP-II-AF) to support sustainable development in the cities of Türkiye. The emergence of the SCP-II-AF is a response to ongoing technical assistance for sustainable urban development and capital investment planning being provided under Component A of SCP-I. This exceptional demand includes identification of investments to improve public transport, water and sanitation, solid waste management, energy, environment, disaster risk management and climate resilience, and social infrastructure. The Project will be financed by the World Bank (WB). ILBANK A.S (ILBANK) is the Borrower of the loan, serving as a Financial Intermediary (FI) to Konya Water and Sewerage Administration (KOSKI). KOSKI will be responsible for the implementation of the Project at the local level (the Project Owner).

One of the tasks under the scope of the Project is the preparation of an Environmental and Social Management Plan (ESMP) in accordance with the WB Safeguard Policies, and the national legislation in force in Türkiye. This ESMP is therefore prepared to identify potential adverse environmental and social (E&S) impacts/risks, establish E&S baseline conditions and set out site specific mitigation, monitoring and institutional measures to be taken during land preparation, construction and operation phases of the above-mentioned Water Transmission Line Project to eliminate adverse environmental and social impacts/risks, offset or reduce them to acceptable levels. This report has been prepared by TUMAS Turk Muhendislik Musavirlik ve Muteahhitlik A.S. (TUMAS) & ENCON Cevre Danısmanlık Ltd. Sti. (ENCON) Joint Venture in the scope of the environmental and social impact and risk assessment studies conducted for Karapinar Water Transmission Line Project. Furthermore, a Stakeholder Engagement Plan (SEP) has also been prepared by TUMAS & ENCON Joint Venture for the Project. The SEP encompasses the identification of stakeholders, planned stakeholder consultation activities and the process of stakeholder engagement.

The Project will be performed in Karapinar Group (Karapınar, Karatay, Cumra and Meram Districts) in Konya Province located in the Central Anatolia Region of Türkiye. In the current situation, the drinking water system is insufficient, outdated and results in expensive operational costs, which causes an additional burden on KOSKI in terms of providing reliable services. In order to solve this problem, Karapinar Water Transmission Line Project was included in the sub-projects of the SCP-II-AF. The Project aims to provide safe, reliable and sustainable drinking water in Karapinar Group Districts and remove the additional burden on KOSKI in terms of providing reliable services through construction of 101.35 km drinking water transmission line and a pumping station. Within the scope of the Project, drinking water will be supplied from Blue Tunnel Project and will be transmitted to the existing Karapinar Storage Tank with a pumping station.

The expected results from the Project are listed below:

- The Project will enable KOSKI to provide safe and sufficient drinking water to the Karapinar Group Districts;
- The Project will provide contribution for Türkiye to comply with the national and EU's regulatory requirements established for the drinking water; and
- The Project will increase access to improved water services for the people living in the project area.

The Project's anticipated environmental and social impacts/risks will be in terms of air quality, soil, water resources, noise, biological environment, landscape, resources and waste, climate change, socioeconomic environment and occupational health and safety, cultural heritage, and community health, safety and security.

The project will be in compliance with the good international practice, including WB Safeguard Policies, guides, standards and best practices documents alongside the national legislation. Specific standards related to the project are as follows:

- WB Operational Policy (OP) 4.01 – Environmental Assessment,
- WB OP 4.04 – Natural Habitats,
- WB OP 4.11 – Physical Cultural Resources,
- World Bank Group (WBG) General Environmental, Health and Safety (EHS) Guidelines,
- WBG Industry Sector Guidelines for Infrastructure - Water and Sanitation,
- Bank Policy (BP) 17.50 Bank Disclosure Policy.

According to the repealed Environmental Impact Assessment (EIA) Regulation (Official Gazette dated November 25, 2014 and numbered 29186, water and storm water systems are out of the scope of the EIA Regulation. Therefore, an EIA study was not required for this project. “EIA Exemption” certificate was issued by Provincial Directorate of Environment, Urbanization and Climate Change (see Annex-3). This “EIA Exemption” certificate should still be valid as water and storm water systems are still out of the scope of the latest EIA Regulation (Official Gazette dated 29.07.2022 and numbered 31907).

On the other hand, the Project has been categorized as Category B Project according to the definitions in WB OP/BP 4.01 on Environmental Assessment. In addition, the project is classified as Moderate Risk according to WB’s Environmental and Social (E&S) Policy. Reasons for the risk characterization of the Project is given below:

- The planned Project is exempted from the EIA process according to Turkish EIA Regulation;
- Expropriation of private parcels is not foreseen within the Project;
- There is no national protected area in or around the Project Area;
- In terms of internationally protected areas, the 2,200 m of the transmission line is within the Karapinar Plain Key Biodiversity Area (KBA) / Important Bird Area (IBA) and passes 600 m south of the Hotamış Marshes KBA/IBA. However, the transmission line will be within the right of way of the existing cadastral roads. The area affected by the construction of the line in the KBA consists of anthropogenic steppe and ruderal vegetation. It has been determined by literature and field studies that there are no protected species in this region, which has lost its natural characteristics in the current situation; and
- With the realization of the Project, access to water services will be improved for the people living in the project area. Therefore, the Project will have a positive impact on the public.

Within the scope of the Project, the construction of drinking water transmission line will be carried out in rural areas. Transmission lines will mainly follow cadastral roads, however, some parts of the lines will pass through lands that are under the responsibilities of public administration or pasture lands. Within this regard, some part of the lines will pass through the land belonging to Directorate of Konya Soil, Water and Combating Desertification Research Institute and relevant permits were obtained by KOSKI (see Annex-2). It is stated that the pasture lands where the line passes correspond to a small part of the pasture lands belonging to the related neighborhoods and the impacts related to the project will be limited to the construction phase. Before the construction activities, permission will be obtained from the relevant institutions and the property will remain with

the relevant institutions. It has been determined that the effects of the activities in the construction phase on the use of pasture will also be low.

Additionally, parts of the transmission line will also cross one railway that are under the responsibilities of General Directorate of Turkish State Railways (TCDD). Within the scope of the project, the two highways through which the line passes are under the responsibility of the General Directorate of Highways. Related permits were obtained by KOSKI.

On the other hand, relevant permits will be obtained by KOSKİ for the pasture areas (Parcel 953/22) between the Karaman-Konya Highway and the Abditolu District, where the TMY-1 will be located.

The planned TMY1 pumping station will be constructed on parcels No. 953/21 and No. 953/22 of Gaziosmanpasa Neighborhood of Karapinar District, which are registered as road and pasture area, respectively. The pasture area is 930 m² and the area registered as the road is 3,140 m², totalling to 4,070 m^2. The necessary permission for the pasture area will be obtained by KOSKI from the Directorate of Cultural Heritage Conservation Regional Board; whereas, the necessary permissions for the road was obtained from 3rd Regional Directorate of Highways.

Based on the conducted site visit, no land use by formal and informal land users and squatters for any purpose was detected for the areas, on which project components will be located. All the lands is free of competing claims and other encumbrances as well.

Overall, the Project does not trigger OP 4.12 – Involuntary Resettlement; no land acquisition, resettlement nor economic displacement will be caused by any project components. The relevant parcels are not used by the residents of the neighborhood for livestock purposes. The impact on local businesses in the settlement area during the construction of drinking water transmission line and the pumping station will only be temporary and short-lived. These impacts can be noise, dust and/or traffic impacts from construction activities. Roads closures will be avoided as much as possible and therefore shops/stores are not expected to be closed due to the construction activities.

The transmission line will mainly follow the existing cadastral roads. It has been determined by literature and field studies that there are no protected species in this region, which has lost its natural characteristics in the current situation.

Although the exact total number of workers to be employed during the construction and operation phases is currently unknown, it is estimated as 100 and 10 for the construction and operation phases, respectively. In the employment process, priority will be given to the local community. The construction of the Project is planned to be completed in twelve (12) months.

ESMP Content and Key Mitigation Measures

The ESMP has described legal framework and WB Operational Policies applicable to the project, as well as E&S baseline conditions. In addition, it has identified mitigation measures and monitoring activities to reduce and avoid environmental and social impacts/risks associated with the project. This ESMP defines:

- Description of the environmental and social baseline conditions;
- Description of the potential environmental and social impacts/risks;
- Detailed mitigation measures and roles and responsibilities for mitigation implementation;

- Monitoring activities and roles and responsibilities for implementation of the monitoring activities;
- Institutional structure for oversight and management of the Project;
- Capacity building requirements; and
- Consultations with affected groups and non-governmental organizations.

A summary of mitigation measures addressed in this ESMP is provided in Table 1.

Table 1 Summary of Mitigation Measures

Areas of Potential Environmental and Social (E&S) Impacts	Mitigation Measures
Air Quality	Dust and exhaust emissions management Air quality monitoring
Soil and Contaminated Land	Topsoil preservation and restoration Prevention of soil contamination Erosion control measures
Water Resources	Proper storage of chemicals Prevention of surface runoff
Noise and Vibration	Regular maintenance of the construction machinery, equipment and vehicles Establishment of a robust grievance redress mechanism
Biological Environment	Re-vegetation, where possible Measures to further avoid and minimize the construction footprint
Landscape and Visual	Planting trees around the pumping station Painting the visible buildings to colors that suit to the background
Resources and Waste	Waste management in accordance with the waste management hierarchy Selection of most appropriate raw materials by evaluating clean production options Designation of temporary storage areas
Climate Change	Optimal utilization of the available construction equipment and materials Regular maintenance of construction vehicles and equipment
Employment and Procurement Opportunities	Providing transparent, non-discriminatory, equal recruitment opportunities with respect to ethnicity, religion, language, gender and sexuality
Infrastructure and Services	Prompt compensation of any damage to infrastructure
Labor Force	A grievance redress mechanism Preparation of information materials Managing and monitoring the performance of contractors in relation to the prohibition of child labor, unregistered employment and forced labor Proper adaptation of human rights policy and labor rights
Community Health, Safety and Security	Preparation of Traffic Management Plan Usage of appropriate traffic signage
Occupational Health and Safety	Awareness raising training for workers Code of Conduct
Archaeological and Cultural Heritage	Informing related Conservation Board or Museum Directorate as per Chance Find Procedure.

As a part of the mitigation measures, it is recommended by ESMP that an Environmental and Social Management System (ESMS) covering all phases of the Project and consisting of management plans on different subjects will be developed by KOSKI's Project Implementation Unit (PIU). ESMS will be established in KOSKI and KOSKI will ensure that the contractor will prepare

management plans. A table presenting the recommended management plans for both phases of the Project is given in Table 2.

Table 2 Recommended Management Plans for Construction and Operation Phases of the Project

Management Plans	Phase to be Prepared	Responsible Party	Approving Party
Construction Phase			
A Soil Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
A Dust Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
A Water Resources Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
A Pollution Prevention Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
A Noise Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
A Waste Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
A Traffic Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
A Community Health, Safety, and Security Management Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
An Occupational Health and Safety Management Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
A Workforce Management Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
An Emergency Preparedness and Response Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	Construction Contractor	ILBANK
A Security Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	KOSKI or Security Services Provider	ILBANK
A Contractor Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to construction	KOSKI or Third Party E&S Consultant	ILBANK
Operation Phase			
An Emergency Preparedness and Response Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific)	Prior to operation	KOSKI or Third Party E&S Consultant	ILBANK

I. INTRODUCTION

I.1. Project Background and Rationale

Karapinar Water Transmission Line Project ("the Project") is one of the sub-projects covered under the Sustainable Cities Project-II - Additional Financing (SCP-II-AF) to support sustainable development in Turkish cities. The emergence of the SCP-II-AF is a response to ongoing technical assistance for sustainable urban development and capital investment planning being provided under Component A (Municipal Investments) of SCP-I. This exceptional demand includes identification of investments to improve public transport, water and sanitation, solid waste management, energy, environment, disaster risk management and climate resilience, and social infrastructure.

The Project will be financed by WB. ILBANK A.S (ILBANK) is the Borrower of the loan, serving as a Financial Intermediary (FI) to Konya Water and Sewerage Administration (KOSKI). KOSKI, as the Project Owner, will be responsible for the implementation of the Project at the local level.

The Project will be implemented in Karapinar Group (Karapınar, Karatay, Cumra and Meram Districts) in Konya Province located in the Central Anatolia Region of Türkiye. In the current situation, the drinking water system is insufficient, outdated and results in expensive operational costs, which causes an additional burden on KOSKI in terms of providing reliable services. In order to solve this problem, Karapinar Water Transmission Line Project was included in the sub-projects of the SCP-II-AF. The Project aims to provide safe, reliable and sustainable drinking water in Karapinar Group Districts and remove the additional burden on KOSKI in terms of providing reliable services through construction of 101.35 km drinking water transmission line and a pumping station. Within the scope of the Project, drinking water will be supplied from Blue Tunnel Project and will be transmitted to existing Karapinar Storage Tank with a pumping station. Blue Tunnel is the tunnel that transfers the water of the Goksu River to the Konya Plain. It is the second largest irrigation project in Türkiye after the Southeastern Anatolia Project for 2015.

The Project is environmentally and socially beneficial for the service area. The provision of safe drinking water supply system in the Karapinar Group Districts will have numerous significant positive impacts on the livelihoods and the environment. The expected results from the Project is listed below:

- The Project will enable KOSKI to provide safe and sufficient drinking water to the Karapinar Group Districts;
- The Project will contribute to enable Türkiye to comply with the national and EU's regulatory requirements established for the drinking water; and
- The Project will increase access to improved water services for the people living in the project area.

I.2. Purpose and Scope of ESMP

According to the Turkish repealed Environmental Impact Assessment (EIA) Regulation, infrastructure projects such as sewerage networks, water supply systems and storm water systems are out of the scope of the EIA Regulation. Therefore, "EIA Exemption" decision was given for this Project as per the repealed EIA Regulation (see Annex-3). Sewerage networks, water supply systems and storm water systems are still exempt from the EIA procedure, therefore, the "EIA Exemption" letter is still valid. On the other hand, the Project has been categorized as Category B Project according to the definitions of WB OP/BP 4.01 on Environmental Assessment. In addition, the project classified as Moderate Risk according to World Bank's E&S Policy, which states that for moderate risk

projects the potential risks and impacts and issues are likely to have the following characteristics: (i) predictable and expected to be temporary and/or reversible, (ii) low in magnitude, (iii) site-specific, without likelihood of impacts beyond the actual footprint of the project and (iv) low probability of serious adverse effects to human health and/or the environment (e.g., do not involve use or disposal of toxic materials, routine safety precautions are expected to be sufficient to prevent accidents, etc.).

Reasons regarding to the impact/risk characterization of the Project is given below:

- The planned Project is exempt from the EIA process according to Turkish repealed EIA regulation;
- Expropriation of private parcels is not foreseen within the Project;
- There is no national protected area in or around the Project Area;
- In terms of internationally protected areas, the 2,200 m of the transmission line is within the Karapinar Plain KBA/IBA and passes 600 m south of the Hotamış Marshes KBA/IBA. However, the transmission line will pass through the existing cadastral roads. The area affected by the construction of the line in the KBA consists of anthropogenic steppe and ruderal vegetation. It has been determined by literature and field studies that there are no protected species in this region, which has lost its natural characteristics in the current situation; and
- With the realization of the Project, access to water services will be improved for the people living in the project area. Therefore, the Project will have a positive impact on the public.

One of the tasks under the scope of the Project is the preparation of an ESMP in accordance with the WB Safeguard Policies, and the national legislation in force in Türkiye. Accordingly, this ESMP has been prepared by TUMAS Turk Muhendislik Musavirlik ve Muteahhitlik A.S. (TUMAS) & ENCON Cevre Danismanlik Ltd. Sti. (ENCON) Joint Venture to assess and identify the potential environmental and social impacts and risks arising from the development of the Project 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 primary purpose of this ESMP is to ensure that the environmental and social requirements and commitments associated with the Project are carried forward into construction and operation phases of the Project and are effectively managed. The specific objectives of this ESMP are as follows:

- to conduct all project activities in accordance with the applicable national legislation and in compliance with the WB's Environmental and Social Safeguard Policies and procedures (OP/BP);
- to identify all anticipated adverse environmental and social risks and impacts of the project;
- to identify mitigation measures by adopting the mitigation hierarchy, which anticipates and avoids, minimizes, and, where residual impacts remain, compensates or offset risks and impacts;
- to prevent or compensate any loss of the affected person;
- to prevent environmental degradation as a result of either individual sub-projects or their cumulative effects;
- to enhance positive environmental and social outcomes;
- to ensure maximizing efficiency and minimizing costs in complying with environmental and social legislation and standards;
- to act as an Action Plan in order to ensure that the project impact mitigation measures are properly implemented and monitored; and
- to ensure that all stakeholders' concerns are addressed.

This ESMP assesses the environmental and social risks and impacts of the proposed project based on the available information; the type of the project, here is a water transmission line project; the specific context in which the proposed project will be developed and implemented; and the capacity and commitment of the Beneficiary (KOSKI) together with the findings of the Feasibility Report and the Project Explanation Report.

The assessment of the risks and impacts was carried out in accordance with the WB Safeguard Policies, including its Operational Policies (OPs), World Bank Group (WBG) General Environmental, Health and Safety (EHS) Guidelines, ILBANK's Environmental and Social Management Framework (ESMF) of SCP-II AF, alongside the national legislation. Identification of risks, mitigation and monitoring activities are considered for the two main phases of the Project, which are "Land Preparation and Construction" and "Operation". In order to achieve environmental and social outcomes consistent with the WB Safeguard Policies, potential adverse environmental and social impacts/risks anticipated in each phase of the project components have been identified; requirements for effective and timely interventions have been defined; and means for meeting these requirements have been described in the context of this ESMP.

This ESMP is a framework document that summarizes project specific environmental and social measures and translates them into management actions. It will be continuously reviewed and updated as the Project progresses, taking into account the following:

- Changes in national legislation and international standards;
- Changes in the project design parameters during the detailed design and tender document preparation stages (if any); and
- Monitoring results.

In the scope of the Project, Stakeholder Engagement Plan (SEP) has also been prepared by TUMAS & ENCON Joint Venture for KOSKI. The SEP encompasses planned stakeholder consultation activities and the process of stakeholder engagement.

The ESMP was developed based on the following source documents and information:

- Information provided by the KOSKI;
- Findings from the site visit performed by Encon Cevre Danısmanlık Ltd. Sti. (ENCON) on November 25th, 2021;
- Baseline measurements conducted by ENCON Laboratory;
- Requirements specified in the Terms of Reference (ToR) for the preparation of the ESMP;
- Environmental and Social Management Framework (ESMF) of SCP-II AF dated April, 2019,
- Environmental and social policies: WB Safeguard Policies, World Bank Group (WBG) General Environmental, Health and Safety (EHS) Guidelines and the national legislation,
- Karapinar Group Drinking Supply Feasibility Report prepared by Alter International Engineering and Consulting Services on February 2021;
- Project Explanation Report of Konya Province Karapinar and Sugla Group Drinking Water Supply Study and Preparation of Projects prepared by Art Environmental Technologies on 2020;
- EIA Exemption Decision given by Konya Governorship Provincial Directorate of Environment, Urbanization and Climate Change on February 2021;
- Relevant regulations (downloaded from internet in Turkish); and

- Technical papers from literature (in Turkish and English).

The content of this document is as follows:

- Chapter I: Introduction
  This chapter introduces the project background and rationale and also the purpose and scope of the ESMP.
- Chapter II: Legal Framework
  This chapter explains national and international legal requirements, and also environmental agreements that are relevant to the project.
- Chapter III: Description of the Proposed Project
  This chapter is a description of the project including its location, components, technical specifications, and a proposed schedule for implementation.
- Chapter IV: Baseline Conditions
  This chapter describes the baseline conditions in and around the proposed project area, including physical, biological and socio-economic conditions.
- Chapter V: Environmental and Social Impacts of the Project
  This chapter assesses the potential positive and negative impacts of the project.
- Chapter VI: Mitigation and Monitoring Plans
  This chapter describes potential environmental and social impacts and risks associated with the project activities. This chapter also describes proposed detailed management plans to address these impacts and risks; and a monitoring plan.
- Chapter VII: Institutional Arrangements and Capacity Building
  This chapter describes the project institutional arrangements for implementation of the ESMP and capacity building measures.
- Chapter VIII: Consultations with Affected Groups and Non-Governmental Organizations
  This chapter gives detailed information about the stakeholder consultation activities.

II. LEGAL FRAMEWORK

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

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 (*Toksoz, F., 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.

KOSKI is the key central administration in the scope of the Project under the Konya Metropolitan Municipality (KMM), which is the authority responsible for the implementation of the Project at the local level.

II.1. Turkish Legislation

The key national laws and regulations presented in this section include the legal requirements to reduce the potential environmental impacts that may arise from the construction and operational activities of the Project. Turkish Legislation related to the Project is presented in the following sections under relevant subtopics.

II.1.1. National Environmental, Health and Safety Legislation

Environmental Law No.2872, which is ratified in August 1983 (Official Gazette dated 11.08.1983 and numbered 18132), is one of the principal legislations related to the Project. Several by-laws and decrees are enforced under the Environmental Law.

The Environmental Impact Assessment (EIA) Regulation (Official Gazette dated July 29, 2022, and numbered 31907) defines the administrative and technical procedures and principles to be followed throughout the EIA process and is largely in line with the EU Directive on EIA. When an activity (a Project) is planned, the Project developer is responsible for preparing an EIA Report along with many other permits required to realize the Project. However, facilities are subject to the preparation of an EIA Report depending on the type of the facility, its capacity, or the location of the activity. The activities that are subject to the provisions of the EIA Regulation are listed in Annex I and Annex II of the Regulation. For Annex I activities a full EIA Report is required and those Projects go through the full EIA process. For Annex II activities, a Project Introduction File (PIF) is prepared in accordance with the outline given in the EIA Regulation and the relevant process has to be conducted. As a result of the submission of PIF, if “EIA is required” decision is given, a full EIA Report is prepared.

The EIA process starts with submitting a brief report (EIA Application File), summarizing the characteristics of the Project and the impact area, and the potential environmental impacts and mitigation measures, prepared according to the format provided in Annex III of the EIA Regulation to the Ministry of Environment, Urbanization and Climate Change (MoEUCC). According to the newly published EIA Regulation, cumulative environmental impact assessment, stakeholder engagement plan (SEP), environmental and social action plan, environmental monitoring plan, sustainability plan, zero waste plan, traffic management plan, greenhouse gas reduction plan and environmental and social management plan must be attached to the relevant sections of the EIA Application File. Then the MoEUCC, General Directorate of EIA, Permit and Inspection forms a committee from related governmental and non-governmental agencies, which also includes the Project Owner and the consultant that would prepare the EIA report. With the formation of this committee the scoping phase starts.

This committee aims to define the scope of the EIA report to be prepared for the Project. The EIA scope is defined based on findings of the committee and the comments and suggestions received from a public information and participation meeting to be held at the project site. The purpose of the meeting is to give information regarding the Project and take the opinion of the public and answer their questions regarding the Project.

The project owner organizes a “public information and participation meeting” under the chairmanship of the Provincial Director of Environment, Urbanization and Climate Change in a place easily accessible to the relevant local groups. An invitation to the meeting is announced in a local and a national newspaper at least ten (10) days before the meeting. Several notification channels such as brochures, project presentation and municipalities’ website are used to inform the related public authorities (including provincial governorates, district governorates, municipality mayors, etc.), mukhtars and local people, national and local media agencies and wider public including Non-Governmental Organizations (NGOs). Public information and participation meeting is held at a meeting location chosen by the relevant municipality. Minutes of the meeting are kept and submitted to the Ministry of Environment, Urbanization and Climate Change and the Governor's Office. The Governor's Office should inform the public about the timeframe for submission of public comments and recommendations. These opinions and suggestions are presented to the EIA commission.

In addition, the MoEUCC shall announce that the EIA process regarding the Project has been initiated and information regarding the EIA process may be obtained also via the internet. The scoping phase is completed with a meeting of this committee during which the EIA scope is agreed on. Based on the agreed scope, the EIA studies are conducted, and the report is prepared. After the submission of the EIA Report to the General Directorate of EIA, Permit and Inspection, it is checked with regard to the contents to decide whether the report is suitable for starting the review process. If the content of the report is found to be appropriate, the review period starts and ends with either a positive or negative decision.

MoEUCC and the governorships are responsible for informing the public that the review period of the EIA Report is started via announcements using local and national media, boards, internet etc. Thus, public will be able to access the EIA Report from the web site of the MoEUCC or the relevant Provincial Directorate and comment on the report. Those comments are reviewed in the Review Commission meeting and the results are reflected in the EIA Report.

The process regarding the projects in the Selection and Screening List (Annex II) begins with the submission of the Project Introduction File (PIF) prepared in accordance with Annex-IV to the Governor’s Office by the Project Owner, stating that the information and documents in the Project Introduction File and its annexes are correct. PIF is the file prepared for the purpose of investigating whether the Environmental Impact Assessment is necessary or not.

The Governorship examines the PIF prepared for the project within five working days within the framework of the criteria in Annex-IV. If there are deficiencies in the information and documents

within the scope of the file, they are requested from the institutions and organizations authorized by the Ministry.

After examining the environmental and social impacts/risks of the projects, the decision that the EIA is not required is made by the governorship, stating that there is no significant environmental impact and there is no need to prepare an EIA Report.

According to the repealed and latest EIA Regulations, infrastructure projects, such as sewerage networks, water supply systems and storm water systems, are out of the scope. Therefore, "EIA Exemption" decision was given for this Project and provided in Annex-3 of this report.

The rest of the National EHS Legislation that the Project will comply with is presented Table II.1.

Table II.1 National 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 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 waste generated at construction and operation stages.
Regulation on the Control of Medical Waste	January 25, 2017	29959	• Medical waste 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	• Electric and electronic wastes generated at construction and operation 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	• Establishment, development, monitoring and financing of a zero waste management system that aims to protect the environment and human health and all resources in waste management processes
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.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Water Quality Control and Management			
Water Pollution Control Regulation	December 31, 2004	25687	• Wastewater generated by the site staff at construction stage
Regulation on the Water Intended for Human Consumption	February 17, 2005	25730	• Drinking water supplied during construction and operation stages.
Regulation on the Control of Pollution Caused by Hazardous Substances in and around Water Environment	November 26, 2005	26005	• Management of hazardous substances at construction and operation stages.
Regulation on the Protection of Groundwater against Pollution and Deterioration	April 7, 2012	28257	• Protection of groundwater sources against pollution during construction and operation stages.
Surface Water Quality Regulation	November 30, 2012	28483	• Monitoring of water quality at the river crossings during construction and operation stages.
Regulation on the Monitoring of Surface Waters and Groundwater	February 11, 2014	28910	• Monitoring of water quality at receiving body during construction and operation stages.
Air Quality Control and Management			
Regulation on the Assessment and Management of Air Quality	June 6, 2008	26898	• Emissions during construction and operation stages.
Industrial Air Pollution Control Regulation	July 3, 2009	27277	• Dust emissions due to the construction activities performed at construction and operation stages.
Regulation on the Control of Odor Causing Emissions	July 19, 2013	28712	• Odorous emissions generated 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
Noise Control and Management			
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.
Regulation on 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	31907	• Impacts during construction and operation stages.
Environmental Auditing Regulation	June 12, 2021	31509	• Environmental audits performed by either Project Owner or governmental authorities during construction and operation stages.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Environmental Permits and Licensing Regulation	September 10, 2014	29115	• Required environmental permits and licenses at all stages of the Project.
Regulation on Wastewater Collection and Disposal Systems	January 6, 2017	29940	• 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 Against the Dangers of Explosive Environments	April 30, 2013	28633	• Health and safety measures to be taken during construction and operation stages.
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

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project 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.
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.
Regulation on Management of Dust	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.
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.
Communique on Occupational Health and Safety Hazard Classes List	December 26, 2012	28509	• Determination of hazard classes during construction and operation phases.
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.
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 and Packaging of Materials and Mixtures	December 11, 2013	28848	• Chemicals and mixtures to be used during construction and operation phases.
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	June 18, 2022	31870	• Hazardous goods to be transported during construction phase.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Hazardous Goods			
Land Use			
Regulation on the Protection, Usage and Planning of Agricultural Lands	December 9, 2017	30265	• Management of change in the land use during the planning phase of the Project
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
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.
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.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Criminal Law	October 12, 2004	25611	• To protect individual rights and freedoms, public order and security, the rule of law, community health and environment, public peace and to prevent crime 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.

**Relevant amendments of the listed legislation will be applicable.*

KOSKI shall comply with the requirements of the current national legislation and codes of practice and fulfill all other legal requirements. 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.

II.1.2. Turkish Legislation on the Conservation of Nature and Wildlife

Project-related Turkish legislation on conservation of nature and wildlife is presented in Table II.2.

Table II.2 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 Located on Environmental Conservation Lands	May 2, 2013	28635	• Measures to be taken during chance finds at the construction stage.
Regulation on Protection of Wildlife and Wildlife Development Area	November 8,2004	25637	• Measures to be taken during the construction and operation stages.
Regulation on the Protection of Wetlands	April 4, 2014	28962	• Measures to be taken during the construction and operation stages.
Pasture Law No:4342	February 28, 1998	23272	• Measures to be taken during the construction and operation stages
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	• Monitoring requirements regarding hunting and wildlife.
Law on Aquatic Products	April 4, 1971	13799	• Measures to be taken during the construction and operation stages.

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
No. 1380			
Regulation on Aquatic Products	March 10, 1995	22223	• Measures to be taken during the construction and operation stages.

II.1.3. 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 with the exception of 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, gender, 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 in order 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 International Labor Organization (ILO) 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.

The 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 down 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.

II.1.4. 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 public institutions and 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.

II.1.5. Permits

The Project-related permits to be taken are as follows:

- Construction license from Konya Metropolitan Municipality (in pre-construction phase of the Project);
- Building license from Konya Metropolitan Municipality (in pre-construction phase of the Project);
- Permits related to pasture crossing from from the Directorate of Cultural Heritage Conservation Regional Board and road crossing from the 3rd Regional Directorate of Highways,respectively;
- Operation license from Provincial Directorate of Environment, Urbanization and Climate Change (after construction phase of the Project).

II.2. 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 baseline and impact assessment studies will also guarantee that Project's design, construction and operation will be satisfactory for international environmental standards alongside national legislation.

II.2.1. International Environmental Conventions to which 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 Established 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 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.

II.2.2. EU Directives

II.2.2.1 Water Framework Directive (2000/60/EC)

The EU Water Framework Directive 2000/60/EC provides sustainable guidelines for the role of water in human health and environmental protection. The Directive aims to provide a framework for the preservation, protection of all subterranean and surface water sources, in prudent utilization of natural sources, and the sustainability and development of the water environment of the EU. All legislation related to water is in support of the Framework Directive (European Commission, 2000).

II.2.2.2 Drinking Water Framework (98/83/EC)

This directive concerns the quality of water intended for human consumption to ensure that all water intended for human consumption is clean and safe, aiming to protect public health from the adverse effects of possible contamination of water sources (European Commission, 1998).

II.2.2.3 Surface Water Abstraction Directive

This Directive belongs to the 'first wave' of EU water legislation adopted in the 1970s and 1980s. The Directive aims to protect public health by ensuring that surface water abstracted for use as drinking water reaches certain quality standards before it is supplied to the public. The Directive lays down nonbinding ‘guide’ values and binding ‘imperative’ values and requires Member States to monitor the quality of surface waters from which drinking water is abstracted and to take measures to ensure that it complies with the minimum quality standards.

This directive is integrated into the Water Framework Directive and is repealed and replaced by the relevant provisions hereof with effect from 22 December 2007. As such, it is no longer directly relevant to the project. However, the main principal obligations mentioned below are still relevant.

Member states are required (among other things) to:

- Establish water quality standards applicable to surface water used for the abstraction of drinking water, for the parameters specified in the Directive;
- Carry out sampling and analysis of surface waters used for the abstraction of drinking water, and assess the extent to which surface waters used for the abstraction of drinking water comply with the quality standards;
- Take measures to ensure that surface waters used for the abstraction of drinking water comply with the minimum quality standards; and do not allow waters that do not meet these standards to be used for the abstraction of drinking water, other than in exceptional circumstances; and
- Ensures the progressive reduction of pollution of surface water and prevents its further pollution.

The directive specifies which parameters to control and other directives specify methodologies for measurement.

II.2.2.4 Habitats Directive (92/43/EEC)

- Adopted in 1992, the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora aims to promote the maintenance of biodiversity, taking account of economic, social, cultural and regional requirements. It forms the cornerstone of Europe's nature conservation policy with the Birds Directive and establishes the EU wide Natura 2000 ecological network of protected areas, safeguarded against potentially damaging developments.

II.2.3. World Bank Policies and Standards

Since the main finance source of the Project is the WB, the Project must be in compliance with the good international practice, including WB Safeguard Policies, guides, performance standards and best practices documents alongside the national legislation.

WB governs projects and activities by the Safeguard Policies in order to assure that they are conducted in an environmentally, financially and socially sound manner. Safeguard Policies include Environmental Assessments and other policies that define environmental and social adverse effects of the projects as well as their reduction and prevention. These policies are enlarged upon in “The World Bank Operations Manual”, which also provides guidance on compilation with the Operational Policies (OP), Bank Procedures (BP) and Good Practices (GP). OPs are defined as statements of policy objectives and operational principles including the roles and obligations of both the Borrower and the Bank, while BPs are compulsory procedures to be followed by both the Borrower and the Bank and GP are non-compulsory advisory material. Specific policies related to the Project are listed below:

- Environmental and Social OPs

  - OP/BP 4.01 Environmental Assessment
  - OP/BP 4.04 Natural Habitats

- OP/BP 4.11 Physical Cultural Resources
- OP/BP 7.50 International Waterways
- OP/BP 4.12 Involuntary Resettlement

- BP 17.50 Bank Disclosure Policy

The main objectives and tasks of the Project-related WB Safeguard Policies are explained below:

OP/BP 4.01 Environmental Assessment

- To ensure the proposed projects' environmental and social sustainability and soundness
- To inform decision-makers about the environmental and social risks
- To increase transparency by providing stakeholder engagement in the decision-making process

OP/BP 4.04 Natural Habitats

- To conserve natural habitats and biodiversity
- To avoid significant conversion/degradation of critical natural habitats
- To ensure the sustainability of services and products provided to human society by natural habitats

OP/BP 4.11 Physical Cultural Resources

- To minimize and mitigate impacts on physical cultural resources
- To ensure that measures are in compliance with the framework of national and international agreements

OP 7.50 International Waterways

- There is no international waterway within the scope of the Project and hence, OP7.50 is not triggered.

OP/BP 4.12 Involuntary Resettlement

- This project will not trigger OP 4.12 as no involuntary resettlement is of concern.

BP 17.50 Bank Disclosure Policy

- To support the decision-making process by allowing public access to information on environmental and social aspects of the project.

Under the WB's OP for Environmental Assessment (OP 4.01), projects are classified as Category A, B and C, based on the level of their likely environmental and social impacts/risks. Brief definition of these categories is given as follows:

- Category A: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts (based on type, location, sensitivity, and scale of the project and the nature and magnitude of its potential impacts). These impacts are generally large-scale, irreversible, sensitive, diverse, cumulative or precedent setting and may affect an area broader than the sites or facilities financed by the project. For a Category A project, the borrower is required to prepare an Environmental and Social Impact Assessment (ESIA) Report which examines the project's potential negative and positive environmental impacts/risks as well as its social impacts/risks, compares them with those feasible alternatives (including the "without project" situation), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental and social performance. ESIA also includes an ESMP which details the measures to be taken during the implementation and operation of a project to eliminate, reduce or offset adverse environmental and social impacts/risks, the actions needed to implement these measures as well as monitoring indicators and actions and responsibilities.

- Category B: A proposed project is classified as Category B if the potential impacts on the environment are typically site-specific, reversible in nature, less adverse than those of Category A projects and for which mitigatory measures can be designed more readily. The scope of Environmental Assessment for a Category B projects may vary from project to project, but is narrower than that of Category A. Like Category A ESIA, it examines the project's potential negative and positive environmental and social impacts/risks and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. If the project is recognized as Category B, this information may be contained in an ESMP only unless there are site-specific issues which necessitate a site-specific assessment in addition to the ESMP.

- Category C: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts/risks. Beyond screening, no further Environmental Assessment action is required for a Category C project.

It should be noted that Turkish laws, notably Law No. 2863 dated 21.07.1983 on the Protection of Cultural and Natural Assets (revised through the amendment issued in the Official Gazette dated 27.07.2004 and numbered 25535) and practices meet the WB requirements for physical cultural resources (OP 4.11). The Regulation on Research, Drillings and Excavations in Relation to the Cultural and Natural Assets, which was published in the Official Gazette dated 10.08.1994 and numbered 18485, define the procedures and obligations concerning the cultural and natural assets found out during construction.

The World Bank Group (WBG) EHS Guidelines constitutes technical reference resources that include general and sector specific examples of international good sector practices. It includes the information on applicable environmental, health and safety issues for all industrial sectors. WBG uses the EHS Guidelines as a technical source of information during project appraisal. EHS Guidelines include performance levels and measurements that can be achieved at newly installed facilities using WBG's available technologies at reasonable cost.

WBG General Health and Safety Guidelines include the following main items;

- Environmental
  - Air Emissions and Ambient Air Quality

- Energy Conservation
- Wastewater and Ambient Water Quality
- Water Conservation
- Hazardous Materials Management
- Waste Management
- Noise
- Contaminated Land

- Occupational Health and Safety
  - General Facility Design and Operation
  - Communication and Training
  - Physical Hazards
  - Chemical Hazards
  - Biological Hazards
  - Radiological Hazards
  - Personal Protective Equipment
  - Special Hazard Environments
  - Monitoring

- Community Health and Safety
  - Water Quality and Availability
  - Structural Safety of Project Infrastructure
  - Life and Fire Safety
  - Traffic Safety
  - Transport of Hazardous Materials
  - Disease Prevention
  - Emergency Preparedness and Response

- Construction and Decommissioning
  - Environment
  - Occupational Health and Safety
  - Community Health and Safety

In addition to the WBG General EHS Guidelines, WBG Industry Sector Guidelines for Infrastructure - Water and Sanitation is also applicable. Moreover, WB Good Practice Note on Addressing Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) and WB 2010 Access to Information Policy are other specific guides.

II.2.4. Comparison of Turkish EIA Regulation and WB OP 4.01

There are differences between the Turkish EIA Regulation and WB's OP 4.01 Policy regarding the project classification, environmental assessment policy, and public consultation and disclosure requirements. For subprojects that require an EIA, the "pre-scoping" Public Information and Participation Meeting is required by the Turkish EIA Regulation. The Stakeholder Participation Plan (SEP), which has become obligatory within the scope of renewed EIA regulation explains the requirements for the Public Information and Participation Meeting and how it will be done. The only formal requirement for stakeholder engagement is this meeting. It is largely equivalent to the first consultation meeting required by WB for Category A projects. However, WB requires consultation on the draft environmental assessment document for both Category A and Category B subprojects. There is no equivalent provision in the EIA Regulation in Türkiye. Although the EIA Regulation in Türkiye does not require a public consultation for projects that are not subject to an EIA, WB policy does require at least one public consultation.

The EIA Regulation in Türkiye only requires announcing the evaluation results together with their justifications. On the other hand, WB has different consultation requirements for Category A and Category B projects. According to WB policies, two (2) separate public consultations are required for Category A projects: one at the scoping stage (where the public has an opportunity to comment on the definition according to the ESIA) and the other at the draft Environmental Assessment (EA) stage. For Category B projects, as per WB OP 4.01, the draft EA document has to be made available to local NGOs and project-affected groups. The final ESMP Report for Category B subprojects should be published on WB website. For Category A subprojects, WB requires that the final ESMP be published locally as well as on the WB external website and submitted to WB Board.

The gap analysis between the WB OPs triggered by the Project and Turkish legislation is presented in Table II.3 and detailed differences between WB 4.01 and EIA Regulation are given in Table II.4.

Table II.3 Gap Analysis between Turkish Legislation and World Bank OPs

WB OPs	Turkish Legislation	Gap Analysis	Requirements to be applied to this Project
WB OP 4.01 Environmental Assessment: According to World Bank OP 4.01 projects are classified as A, B and C. While a comprehensive ESIA is prepared for Category A projects, a partial ESIA is required if the project is designated Category B+. For all Category A and B subprojects proposed for World Bank financing, during the Environmental Assessment process, the borrower consults and takes into account the views of subproject-affected groups and non-governmental organizations regarding the environmental aspects of the subproject. These requirements are not apply to Category B subprojects. The responsibility to ensure that OP 4.01 requirements are met rests with the FI..	***Environmental Impact Assessment Regulation No. 31907:*** The EIA Regulation classifies projects into two categories, *Annex I* projects are that have significant potential impacts and require an EIA. *Annex II* projects are projects that may or may not have significant effects on the environment. While comprehensive EIA is prepared for Annex-I projects, PIF is prepared for Annex-II projects. A public information and participation meeting is held for projects subject to EIA. The project proponent presents a project dossier (PIF for Annex II projects or using the PIF outline for Annex I projects) to a commission, which comprises representatives of MoEUCC and relevant organizations as identified by MoEUCC. In this process, the commission takes into account the views expressed at the public information and participation meeting. While the EIA identifies a project's environmental impacts and mitigation measures, it does not specify costs and institutional responsibilities associated with these mitigation measures. The EIA does not require a monitoring plan. The final EIA report is then submitted to the MoEUCC for final review.	• The main differences are related to project classification, EA content (ESMP, ESIA, partially ESIA) and public consultation. • In the EIA Regulation in Türkiye, there is no provision limiting the suitability of experts to prevent conflict of interest. • The content of the environmental and social assessment document required by the World Bank depends on the special conditions of the project. In any case, an ESMP is required, but this requirement is only partially introduced in the EIA Regulation in Türkiye. The "pre-scoping" consultation which is required by Turkish EIA Regulation for subprojects requiring an EIA is largely equivalent to the first consultation required by WB for Category a subprojects. However, WB requires a consultation on draft environmental assessment document for both Category A and Category B subprojects; there is no equivalent provision in the Turkish EIA Regulation	• Within the scope of the project, WB OP 4.01 was taken into consideration, the project category was determined and ESMP was prepared accordingly. WB OP 4.01 requirements will also be implemented during the lifetime of the Project (e.g. public/stakeholder consultation meeting, monitoring)

WB OPs	Turkish Legislation	Gap Analysis	Requirements to be applied to this Project
WB OP 4.04 Natural Habitats: WB Policies require all projects to be evaluated together with the associated facilities especially in terms of natural habitats. WB Policies require identification and definitions of the project area of influence (including the associated facilities as well) during scoping of the report.	***Environmental Impact Assessment Regulation No. 31907:*** EIA regulation requires the coverage of all issues regarding biological diversity and terrestrial and aquatic flora and fauna in the EIA reports. Turkish EIA regulation allows consideration of all projects in an integrated fashion, but does not necessarily require it. The area of influence is rather implicit in many EIA studies in Turkiye, in many cases without a specific or clear definition in the report. In Turkiye, there is no specific habitat compensation requirement. There is only a policy regarding forest areas, which aims to reforest at least as much as the forest area lost due to development activities, fires, etc.	• The process for identification of important natural habitats and lack of consultation with relevant stakeholders in this process. • Requirements to work in important natural habitats • Identification of the projects that would be allowed in such areas. • Determination of work requirements for projects to be realized in important/critical natural habitats	• WB OP 4.04 has been taken into account as the purpose of this report is an integrated assessment.
WB OP 4.11 Physical Cultural Resources This policy addresses the issue of physical cultural resources, defined as movable or immovable objects, areas, structures, groups of buildings and natural features and landscapes of archaeological, paleontological, historical, architectural, religious, aesthetic or other cultural significance.	***Law No. 2863 dated 21/07/1983 on the Protection of Cultural and Natural Assets*** The purpose of this Law is to define the definitions of cultural and natural assets that need to be protected, and to regulate the actions and activities to be organized. This law is an important guide for excavation work. Article 4 includes the responsibility to inform. It is obligatory to inform the Museum Directorate, Mukhtar or local administrative chiefs within 3 days following the discovery of movable and immovable cultural and natural properties.	• The main idea here is two-dimensional: (i) identification of chance finds during construction and (ii) potential impact of the project on known cultural assets. In case of chance finds in both WB procedures and national legislation, the works will be stopped and the Museum Directorate will be informed. There is no gap between the national legislation and the OP.	• In both implementation, the Chance Find Procedure will be applied, and if cultural heritage is found, the work will be stopped and the relevant units will be notified.

WB OPs	Turkish Legislation	Gap Analysis	Requirements to be applied to this Project
WB OP 4.12 Involuntary Resettlement: OP 4.12 states that no land can be acquired until full compensation is paid to the affected people. During the preparation of the resettlement plan under the project, affected people should be systematically informed and consulted about their options and rights. While OP 4.12 covers all affected people, it requires Projects to be particularly concerned with the needs of vulnerable people.	***Expropriation Law No. 2942:*** Within the legal framework in Turkiye, land acquisition / expropriation is based on Expropriation Law No. 2942 (as amended by Law No. 4650 in 2001). According to the Expropriation Law, the expropriation value of the expropriated land is determined depending on the average annual net income of the relevant land, which is determined by the rotation system. A valuation commission consisting of at least three members is formed within the organization responsible for land acquisition. ***Municipal Law No. 5393:*** In accordance with the Municipality Law, the Municipality responsible for land acquisition or the municipal water and sewerage administration may cooperate with other organizations regarding the planning and implementation of resettlement.	• Informal users are also defined as project-affected people, according to World Bank policies. • According to World Bank policies, affected persons' loss of land and other real estate must be compensated at full replacement cost prior to construction work. • According to the legislation in Turkey, only legal real estate owners can receive monetary compensation and the law states that depreciation must be deducted in the valuation process of buildings (for expropriation purposes). This provision may result in the expropriation cost (which does not allow depreciation) to be lower than the full replacement cost defined in OP 4.12.	• While compensation is paid to the land owner in Turkish legislation, according to WB OP 4.12 everyone affected by the project should be paid. The project will be realized according to WB OPs and is based on OP 4.12.

Sources: Land Acquisition and Resettlement Policy Framework (LARPF), ILBANK, April 2019
ILBANK "Sustainable Cities Project - II Additional Financing Environmental and Social Management Framework", April 2019

Table II.4 Comparison of WB OP 4.01 and National EIA Regulation

Steps	EIA Regulation	WB OP 4.01
Screening	The EIA Regulation classifies the proposed projects into two categories: 1. Annex-I Projects: Projects with considerable potential impacts, which require an EIA process and EIA Report. 2. Annex-II Projects: Projects with or without considerable potential impacts on the environment.	Within the scope of WB OP 4.01, the proposed projects are classified into three categories: 1. Category A: A proposed project is classified as Category A, if it is likely to have significant adverse environmental and social impacts (depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts). In general, these impacts are major, irreversible, sensitive, variable, cumulative, precedent, and potentially influential over an area broader than the sites and facilities financed under the project. 2. Category B: A proposed project is classified as Category B if its environmental and social impacts are typically site-specific and structurally irreversible and if its impacts are less adverse than those of Category A subprojects and if mitigatory measures can be designed more readily than for Category A subprojects. The projects classified as Category B sometimes vary from the same type of Category A projects only in terms of their scale. 3. Category C: A proposed project is classified as Category C, if it is likely to have minimal or no adverse environmental impacts. If a project financed by the WB includes a series of sub-projects that are selected by a Financial Intermediary (FI) and financed by the WB loan, the project is classified as Category FI.
Public/ Stakeholder Consultation Meetings	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, 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.	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.
Scope of Environmental Assessment	For the projects in the list of Annex-I, an EIA Application File (EAF) will be prepared in line with the format given in Annex-III to the EIA Regulation. Cumulative environmental impact assessment, stakeholder engagement plan (SEP), environmental and social action plan, environmental monitoring plan, sustainability plan, zero waste plan, traffic management plan, greenhouse gas reduction plan and environmental and social management plan shall be attached to the relevant sections of the EIA Application File. According to the information given in the EAF, a special EIA report format will be prepared based on the views of committee members to be formed by the Ministry, and the EIA report will be written in line with this format, and then submitted to the Ministry. For the projects in the list of Annex-II, a Project Introduction File (PIF) will be prepared based on the format given in Annex-IV to the EIA Regulation. The prepared report will be submitted to the Provincial Directorate of Environment.	For Category A subprojects, the borrower is responsible for preparing an ESIA report that examines the project's potential negative and positive environmental and social impacts, compares them with those of feasible alternatives, and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental and social performance. The scope of the environmental and social assessment document for a Category B subproject may vary from subproject to subproject, but it is narrower than that of Category A ESIA. As with the ESIA required for Category A, the borrower will investigate the potential negative and positive environmental and social impacts of the subproject, and will recommend measures required to prevent, minimize, mitigate or compensate for adverse impacts and enhance environmental and social performance. When the project category is identified as B; this information could be included in ESMP, if there are no site-specific problems that require a site-specific assessment process in

Steps	EIA Regulation	WB OP 4.01
		addition to ESMP.
EA Review and Approval	The Committee will review the draft version of EIA report for the projects in the list of Annex-I. Then, the final EIA Report containing the committee's assessments will be submitted to MoEUCC for final review. MoEUCC will determine whether EIA is positive; an "EIA Positive" decision is rendered, the project will not be continued further. The PIF prepared for the projects in the list of Annex-II will be reviewed by the Provincial Directorate of Environment, Urbanization and Climate Change and the "EIA Required" or "EIA Not Required" decision will be taken accordingly. For the projects for which the "EIA is Required" decision is rendered, the procedure governing the projects in the list of Annex-I will apply.	For projects involving Financial Intermediaries (FI), the financial intermediary is responsible for meeting the requirements in OP 4.01. Normally, the EA process should be completed by the Financial Intermediary before the subproject is approved for funding of WB loan.
Disclosure	The EIA Report for the projects in the list of Annex-I will be made available to the public opinion at the headquarters of MoEUCC or provincial directorates. Following MoEUCC's final assessment of the EIA report, the Governor's Office will disclose its reasoned decision publicly. For the projects in the list of Annex-II, the final PIF will be disclosed publicly at the Provincial Directorates.	In addition to the points given in the Public Participation section, the Financial Intermediary will make the draft ESIA report prepared in local language for Category A subprojects available at a public place accessible to project-affected groups and local Non-governmental organizations (NGOs). Upon finalization of a Category A subproject ESIA report, the Financial Intermediary will submit an English copy of the final report to the WB together with the English Executive Summary. The Bank will distribute the executive summary to its executive directors, and discloses it publicly on an external website. For Category B subprojects, the Financial Intermediary will submit an English copy of the final version of the Category B EA report to the WB and the WB will disclose it publicly on an external website.
Implementation, Monitoring and Inspection	Pursuant to the EIA Regulation, MoEUCC will monitor and inspect the projects that are regarded as "EIA Not Required" or "EIA Positive", respectively, according to the provisions provided in PIF or EIA Report. In addition, the project owner should submit monitoring reports to MoEUCC, and MoEUCC needs to submit these reports to the Governor's Office for announcement to the public.	During subproject implementation, the Financial Intermediary will report to the World Bank on (a) compliance with measures agreed with the Bank on the basis of the findings and results of the EA and additional social assessments, if any, including implementation of ESIA, and (b) the findings of monitoring programs. The Bank will base supervision of the project's environmental aspects on the findings and recommendations of the Environmental Assessment, including the measures outlined in legal agreements, ESMP, and other project documents.

Source: ILBANK "Sustainable Cities Project - II Additional Financing Environmental and Social Management Framework", April 2019

III. DESCRIPTION OF THE PROPOSED PROJECT

III.1. Project Location

The project area is located in Karapinar Group (Karapınar, Karatay, Cumra and Meram Districts) in Konya Province located in the Central Anatolia Region of Türkiye. The Project aims to provide safe, reliable and sustainable drinking water in Karapinar Group Districts and remove the additional burden on KOSKI in terms of providing reliable services through construction of 101.35 km drinking water transmission line and a pumping station. Within the scope of the Project, drinking water will be supplied from Blue Tunnel Project and will be transmitted to existing Karapinar Storage Tank with a pumping station.

The districts and neighborhoods within scope of the Project are given below:

- Karapinar District
    - Central Neighborhood
    - Akcayazı Neighborhood
    - Hotamıs Neighborhood
    - Sazlıpınar Neighborhood
- Cumra District
    - Buyukaslama Neighborhood
    - Karkın Neighborhood
    - Abditolu Neighborhood
- Karatay District
    - İsmil Neighborhood
    - Ovakavagı Neighborhood
    - Hayıroglu Neighborhood
    - Bakırtolu Neighborhood
    - Sakyatan Neighborhood
    - Satır Neighborhood
- Meram District
    - Kasınhanı Neighborhood
    - Boruktolu Neighborhood
    - Carıklar Neighborhood

Site location maps of the Project are given in Figure III.2. For the planned transmission line Project, there will be a labor camp site within the project area. On the other hand, material loan pit/quarry is not required since materials will be procured from the surrounding area.

Within the scope of the Project, the construction of drinking water transmission line will be carried out in rural areas. Transmission lines will mainly follow the alignment of existing cadastral roads, however, some parts of the lines will pass through lands that are under the responsibilities of public administration or pasture lands. Within this regard, some part of the lines will pass through the land belonging to Directorate of Konya Soil, Water and Combating Desertification Research Institute and related permits were obtained by KOSKI. It is stated that the pasture lands where the line passes correspond to a small part of the pasture lands belonging to the related neighborhoods and the

impacts related to the project will be limited to the construction phase. Before the construction activities, permission will be obtained from the relevant institutions and the property will remain with the relevant institutions. It has been determined that the effects of the activities in the construction phase on the use of pasture will also be low.

Additionally, parts of the transmission lines will also cross two highways and one railway that are under the responsibilities of General Directorate of Highways (KGM) and General Directorate of Turkish State Railways (TCDD), respectively. Related permits were obtained by KOSKI from these authorities on 11.01.2022. On the other hand, for the pasture areas located between Karaman-Konya Highway and Abditolu Neighborhood, which the transmission lines will pass through, related permits will be obtained from the Directorate of Cultural Heritage Conservation Regional Board by KOSKI. The planned TMY1 pumping station will be constructed on parcels 953/21 and 953/22 of Gaziosmanpasa Neighborhood of Karapinar District, which are registered as road and pasture area, respectively. Within this regard, related permits will be obtained by KOSKI for pasture areas. There will be no compensation payment as it is the state land. The pumping station is located on both a pasture and a road, and during the meeting with the mukhtar of the Gaziosmanpaşa neighborhood, it was learned that the relevant parcel was not used for livestock purposes by the residents of the neighborhood. The parcels have a total area of 4,070 m^2. No expropriation of private parcels is foreseen within the Project and also the project will not cause any economic displacement. For that reason, the Project does not trigger OP 4.12 – Involuntary Resettlement; no land acquisition, resettlement, and economic displacement is of concern regarding all of its components.

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

The potential area of influence for the Project includes the neighborhoods that are located in the Project area and their close vicinity. The settlement areas located within the potential area of influence is shown in Figure V.2. The identified sensitive receptors are shown on a map presented in Figure V.3

This project is co-funded by the European Union, the Republic of Turkey and the World Bank
Bu Proje Avrupa Birliği, Türkiye Cumhuriyeti ve Dünya Bankası tarafından ortaklaşa finanse edilmektedir

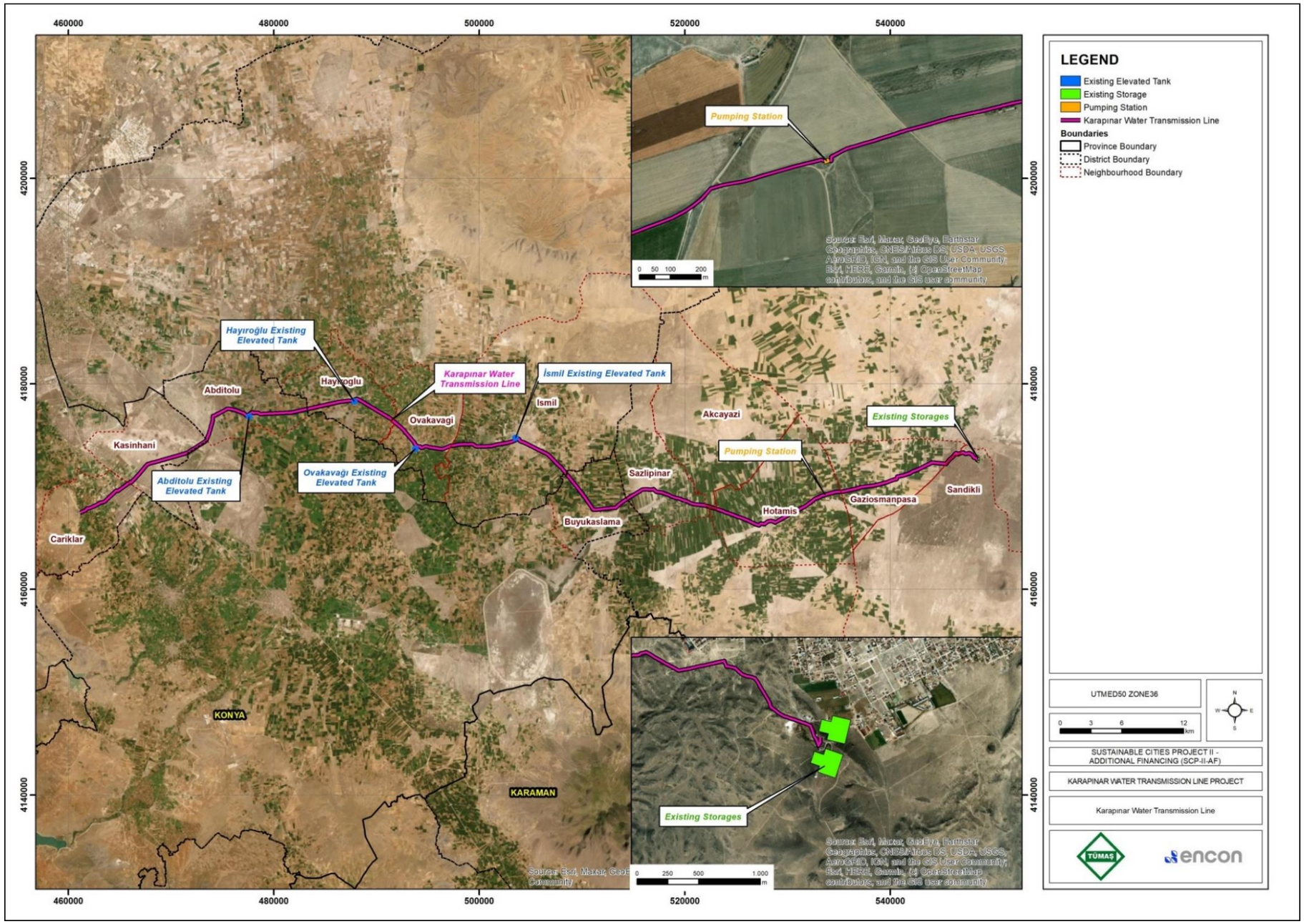

Figure III.1. Karapinar Water Transmission Line

This project is co-funded by the European Union, the Republic of Turkey and the World Bank
Bu Proje Avrupa Birliği, Türkiye Cumhuriyəti və Dünya Bankası tarafından ortaklaşa finansə edilməktədir

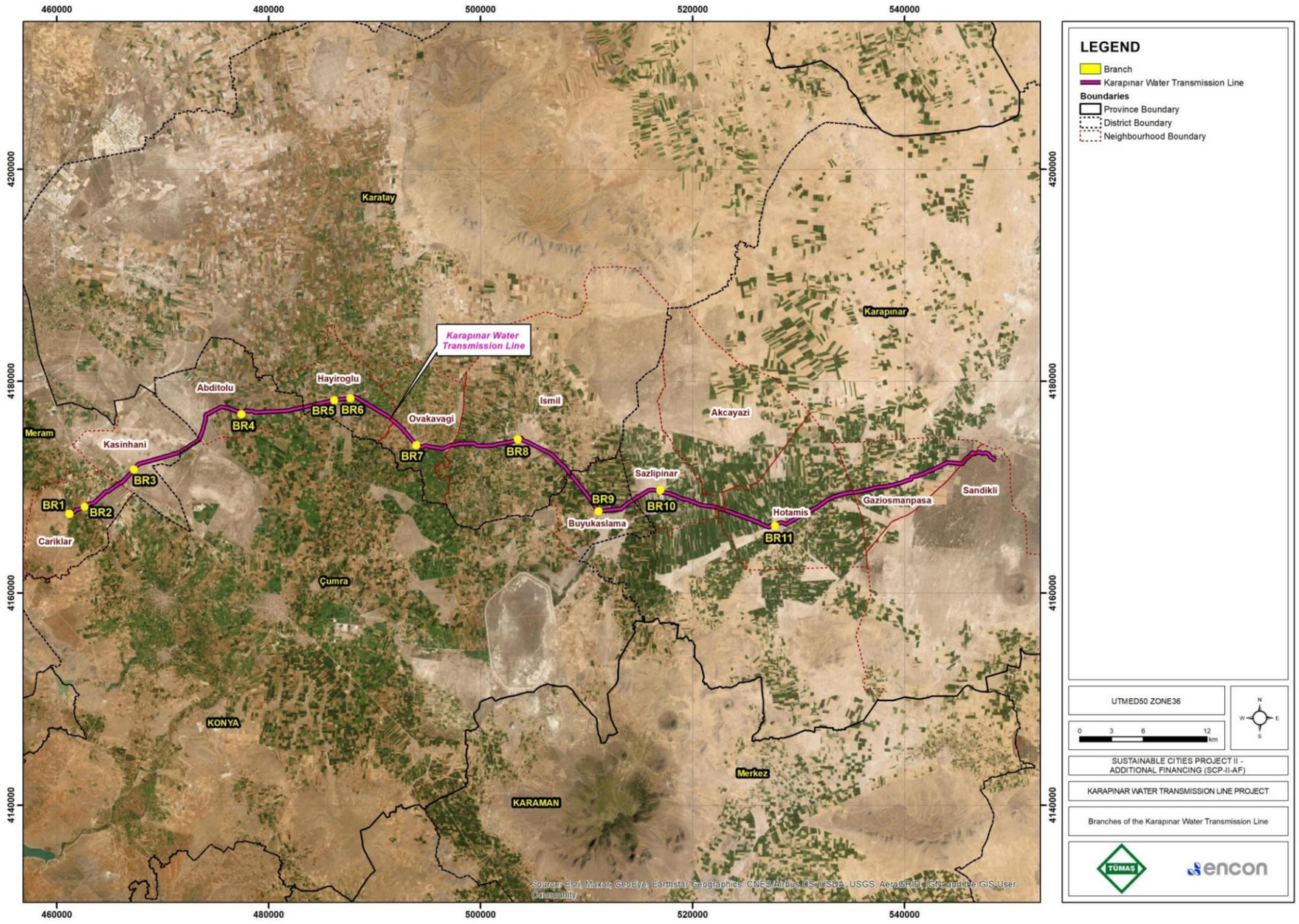

Figure III.2 Karapinar Water Transmission Line

III.2. Lifetime of the Project

According to ILBANK technical specifications, the design lifetime of the Project has been accepted as 2055.

III.3. Population Projection

Population projection for Karapınar, Karatay, Cumra and Meram Districts was carried out using the census results performed by TurkStat between 1965 and 2000 with traditional census method (by physical counting of individuals at the localities where they are physically present on census day) and the census results between 2007 and 2019 with Address Based Population Registration System (ABPRS) within the scope of the Feasibility Study.

The population projection for the districts was carried out by traditional methods, namely ILBANK and arithmetic increase methods. The results obtained from the methods were compared and the result obtained by the ILBANK method was selected for design of the Project. Accordingly, the design year population is accepted as 95,900 (Karapinar Water Transmission Line Project, Feasibility Report). The population of Karapinar Group projected over the period from 2018 to 2055 is given in the Table III.1.

Table III.1 Konya Karapinar Group Population Projections According to the ILBANK Method

District	Neighborhood	2018	2020	2025	2030	2035	2040	2045	2050	2055
Karapınar	Central	37,166	38,146	40,711	43,448	46,370	49,488	52,815	56,366	60,156
Karapınar	Akcayazı	687	712	777	849	927	1,013	1,106	1,208	1,320
Karapınar	Hotamıs	1,901	1,939	2,038	2,142	2,251	2,366	2,487	2,614	2,747
Karapınar	Sazlıpınar	1,059	1,080	1,135	1,193	1,254	1,318	1,385	1,456	1,530
Cumra	Buyukaslama	822	839	881	926	973	1,023	1,075	1,130	1,188
Cumra	Abditolu	623	636	668	702	738	775	8,15	857	900
Cumra	Karkın	3,229	3,294	3,462	3,639	3,824	4,019	4,224	4,440	4,666
Karatay	Sakyatan	453	462	486	510	536	564	593	623	655
Karatay	Bakırtolu	215	219	231	242	255	268	281	296	311
Karatay	Hayıroglu	1,278	1,304	1,370	1,440	1,514	1,591	1,672	1,757	1,847
Karatay	İsmil	5,859	5,977	6,282	6,602	6,939	7,293	7,665	8,056	8,467
Karatay	Ovakavagı	2,004	2,044	2,149	2,258	2,373	2,494	2,622	2,755	2,896
Karatay	Satır	253	258	271	285	300	315	331	348	366
Meram	Kasınhanı	3,876	3,963	4,187	4,425	4,676	4,931	5,222	5,518	5,831
Meram	Boruktolu	979	999	1,050	1,103	1,159	1,219	1,281	1,346	1,415
Meram	Carıklar	1,111	1,133	1,191	1,252	1,316	1,383	1,453	1,528	1,605

Source: *Karapinar Water Transmission Line Project, Project Feasibility Report, 2021.*

III.4. Water Demand Forecast

Drinking Water Requirements are made in accordance with the requirements of the "Technical Specification for Study Preparation, Feasibility and Project Design of Drinking Water Facilities" (ILBANK, 2013). The summary of the water demand projection for the Project is given in Table III.2.

Table III.2. Water Demand Forecast Summary of the Project for 2055

District	Neighborhood	Total Gross Water Demand (L/s)	Water Loss/Leakage Rate (%)	Total Water Demand (L/s)	Accepted Water Demand (L/s)
Karapınar	Central	97.99	20	122.49	125.00
Karapınar	Akcayazı	5.17	20	6.46	6.50
Karapınar	Hotamıs	6.14	20	7.68	7.50
Karapınar	Sazlıpınar	3.91	20	4.89	5.00
Cumra	Buyukaslama	2.94	20	3.68	3.50
Cumra	Abditolu	3.14	20	3.93	4.00
Cumra	Karkın	15.43	20	19.29	20.00
Karatay	Sakyatan	3.14	20	3.93	4.00
Karatay	Bakırtolu	0.97	20	1.21	1.50
Karatay	Hayıroglu	5.93	20	7.41	7.50
Karatay	İsmil	23.88	20	29.85	30.00
Karatay	Ovakavagı	7.51	20	9.39	10.00
Karatay	Satır	1.99	20	2.49	2.50
Meram	Kasınhanı	11.19	20	13.99	14.00
Meram	Boruktolu	5.65	20	7.06	7.00
Meram	Carıklar	6.33	20	7.91	8.00
				Kasınhanı Industry	5.00
				TOTAL	**261.00**

Source: *Karapinar Water Transmission Line Project, Project Feasibility Report.*

III.5. Technical Characteristics of Karapinar Water Transmission Line Project

Within the scope of this project, works will be carried out as mentioned below:

- Construction of 101.35 km water transmission line with 11 branches;
- Construction of one pumping station in 930 m^2 area.

The transmission line will consist of ductile pipes having diameters of 400-600 mm. The system is divided into 11 branches.

The information about the proposed water transmission line pipes including all the branches (BR) and pumping stations (TMY) is provided in Table III.3.

Table III.3. Information about Proposed Transmission Line

Branch Name	Flow Rate (L/s)	Water Transmission Properties	Pipe Diameter (mm)	Pipe Type	Length (m)	Number of Pumps
BR1-BR2	261.00	Gravity	600	Ductile	1,640.00	-
BR2-BR3	232.00	Gravity	600	Ductile	6,046.00	-
BR3-BR4	227.00	Gravity	600	Ductile	13,081.00	-
BR4-BR5	223.00	Gravity	600	Ductile	9,133.00	-

Branch Name	Flow Rate (L/s)	Water Transmission Properties	Pipe Diameter (mm)	Pipe Type	Length (m)	Number of Pumps
BR5-BR6	215.00	Gravity	600	Ductile	1,522.00	-
BR6-BR7	207.50	Gravity	600	Ductile	7,952.00	-
BR7-BR8	197.50	Gravity	600	Ductile	10,007.00	-
BR8-BR9	147.50	Gravity	500	Ductile	10,641.00	-
BR9-BR10	144.00	Gravity	500	Ductile	6,418.00	-
BR10-BR11	132.50	Gravity	500	Ductile	11,594.00	-
BR11-TMY1	125.00	Gravity	500	Ductile	11,783.00	-
TMY1-Karapınar	125.00	Pumped	400	Ductile	11,538.00	2+1
				Total	**101,355.00**	

Source: *Karapinar Water Transmission Line Project, Project Feasibility Report*

The existing reservoirs of the majority of the settlements on the Blue Tunnel - Karapinar Transmission Line are insufficient. When the current conditions of the settlements on the route are examined, it is seen that the transmission lines are fed by the hydrophore system. Due to the flat geographical structure of the land in this region, a new, suitable area for reservoir could not be found to provide drinking water with sufficient pressure to the settlements. In order to eliminate the operating costs of the hydrophore, the neighborhoods fed by the hydrophore on the route will be fed with the branches to be made from the Blue Tunnel – Karapinar transmission line. Karapınar Group to be taken with the branch (BR1) to be built in Carıklar area will be brought to Karapınar Warehouse by drinking water transmission line. The needs of the settlements within the scope of the project have been left as an end flow to the branches planned at suitable places along the route. Where necessary, the required pressures should be provided by placing pressure breaker valves by the municipality before the existing network connections. If the pressure breaker valves are adjusted to allow the water to reach the existing tanks, the existing tank-hydrophore systems can be used in emergency situations.

The method statement for construction works under the scope of the Project will be carried out by the Contractor and submitted to the KOSKI/PIU and ILBANK before commencement of the works. Without the approval from the KOSKI/PIU and ILBANK, no work will be performed on site. The environmental mitigation measures that need to be taken during the construction works are explained in Section VI (Mitigation Management and Monitoring Plan) of this report.

III.6. Project Schedule

The tendering and contracting period of the Project is expected to take place in the fourth quarter (Q4) of 2023, and after the tendering period, the construction works will start and last for 12 months for the Project. The defect liability period (DLP) starts just after that and lasts for 12 months. The anticipated schedule of the Project is provided in Table III.4.

Table III.4 Project Schedule

Year	2023 Quarters				2024 Quarters				2025 Quarters				2026 Quarters			
Item	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Tender docs, tendering																
Construction																
DLP																

Source: Karapinar Water Transmission Line Project, Project Feasibility Report

IV. BASELINE CONDITIONS

IV.1. Physical Environment

This chapter includes information regarding geological, hydrogeological and hydrological characteristics, seismicity and natural hazard conditions, soil, topography, land use characteristics, climate, environmental air quality and noise levels, 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 and 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 Systems (GIS) studies and satellite imagery.

IV.1.1. Geographical Location

Having an area of 39,000 km^2, Konya Province is located on the southern part of the Central Anatolian Region of Türkiye. The project area includes some neighborhoods of Karapınar, Cumra, Karatay and Meram Districts of Konya Province. The districts and neighborhoods within scope of the Project are given below:

- Karapinar District
  - Central Neighborhood
  - Akcayazı Neighborhood
  - Hotamıs Neighborhood
  - Sazlıpınar Neighborhood
- Cumra District
  - Buyukaslama Neighborhood
  - Karkın Neighborhood
  - Abditolu Neighborhood
- Karatay District
  - İsmil Neighborhood
  - Ovakavagı Neighborhood
  - Hayıroglu Neighborhood
  - Bakırtolu Neighborhood
  - Sakyatan Neighborhood
  - Satır Neighborhood
- Meram District
  - Kasınhanı Neighborhood
  - Boruktolu Neighborhood
  - Carıklar Neighborhood

Site location map of the Project is given in Figure IV.1.

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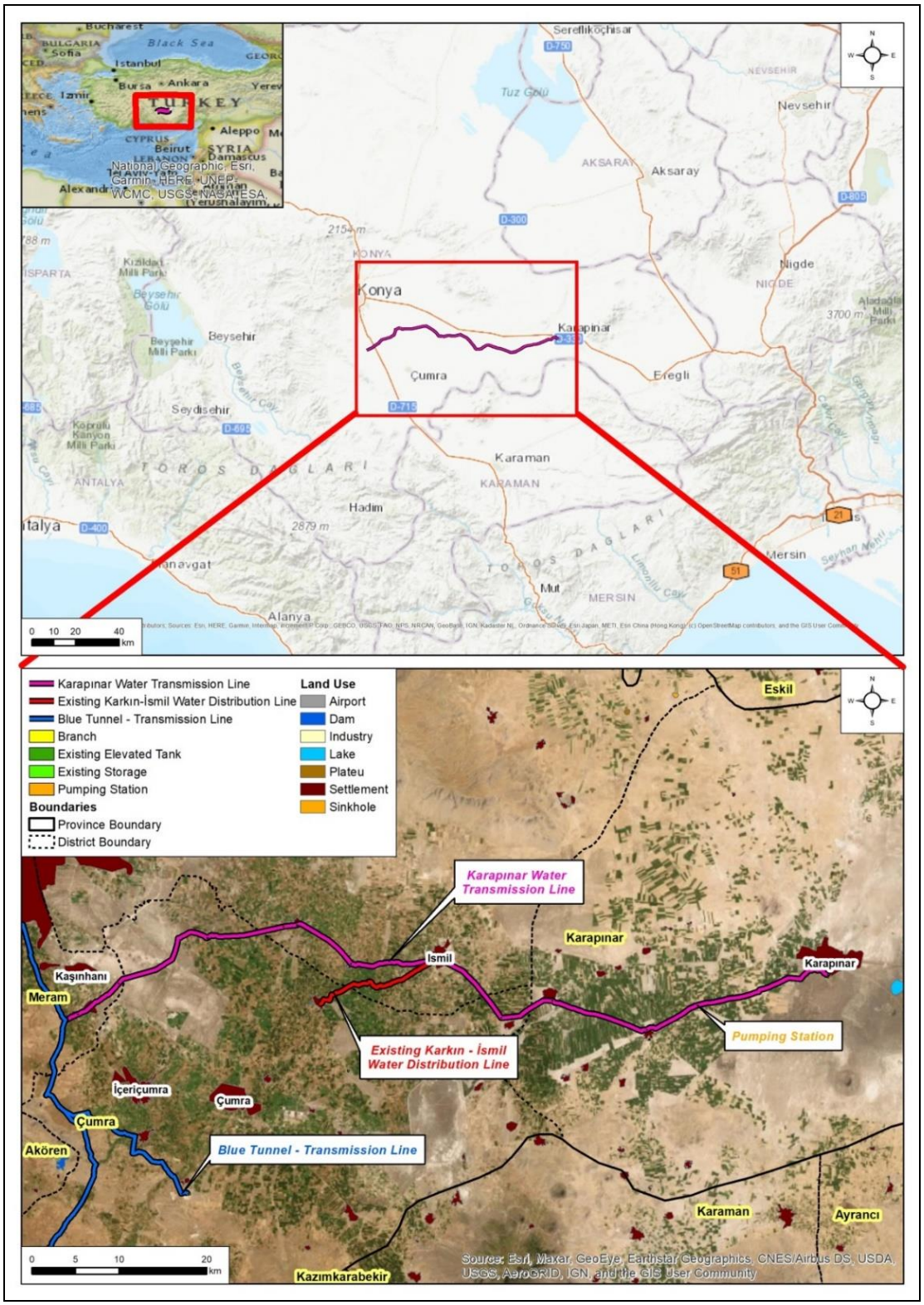

Figure IV.1 Project Area

Karapinar District

Karapinar District is located 95 km east of the Konya Province Center. The district is surrounded by Konya Province and Cumra District in the west, Karaman Province and Ayrancı District in the south, Eregli District in the east, Emirgazi District in the northeast and Aksaray Province in the north. The area of the district is 2,623 km^2.

Cumra District

Cumra District is located 59 km southeast of the Konya Province Center. The district is surrounded by Karatay District in the north, Guneysınır District, Bozkır District and Karaman Province in the south, Akoren and Meram District in the west and Karapinar District in the east. The area of the district is 2,090 km².

Karatay District

Karatay District is located 4 km east of the Konya Province Center. The district is surrounded by Altınekin District in the north, Cumra District in the south, Meram and Selcuklu Districts in the west and Karapinar District in the east. The area of the district is 2,818 km².

Meram District

Meram District is located 4 km southwest of the Konya Province Center. The district is surrounded by Selcuklu District in the north, Akoren District in the south, Beysehir District in the west and Karatay District in the east. The area of the district is 1,680 km².

IV.1.2. Land Use and Property

Within the scope of the Project, the construction of drinking water transmission line will be carried out in rural areas as shown in Figure IV.3. Transmission lines will mainly follow cadastral roads, however, some parts of the lines will pass through lands that are under the responsibilities of public administration or pasture lands. Within this regard, some part of the lines will pass through the land belonging to Directorate of Konya Soil, Water and Combating Desertification Research Institute and related permits were obtained by KOSKI and presented in the Annex 2 of this report.

Additionally, parts of the transmission line will also cross one railway that are under the responsibility of General Directorate of Turkish State Railways (TCDD). Within the scope of the project, the two highways through which the line passes are under the responsibility of the General Directorate of Highways. In this context, relevant permissions have been obtained by KOSKİ.

On the other hand, for the pasture areas located between Karaman-Konya Highway and Abditolu Neighborhood and which transmission lines will pass through, related permits will be obtained by KOSKI.

The planned TMY1 pumping station will be constructed on parcels No. 953/21 and No. 953/22 of Gaziosmanpasa Neighborhood of Karapinar District, which are registered as road and pasture area, respectively and the size of the land allocated for the pumping station is 930 m². Within this regard, related permits will be taken by KOSKI for the pasture area. The parcels have a total area of 4,070 m^2.

Photographs taken from the project area during the site visit conducted by ENCON on November 25th, 2021 are provided in Figure IV.2.

Figure IV.2 Photographs Taken from the Project Area

Based on the conducted site visit, no land use for any purpose is detected for the areas which project components will be located. There is no unofficial land user or vulnerable people at the project area as well.

Overall, the Project does not trigger OP 4.12 – Involuntary Resettlement, no land acquisition, resettlement, and economic displacement is of concern for the Project.

Land Use according to the Environmental Master Plan

The project area is located in sections M29, M30 and M31 of 1/100,000 scale Environmental Master Plan of Konya-Karaman Planning Zone, which was approved in September 16, 2013 by the MoEUCC. According to Environmental Master Plan, the project area consists of urban development area, first degree road, organized agriculture/livestock area, high-speed railway, second degree road, pasture area and third degree road. A demonstration of the project components on the Environmental Master Plan is presented in Figure IV.3.

Land Use According to the Provincial Land Use Database

Land use and soil maps for Konya Province were developed by the former General Directorate of Rural Services in 1993. According to the analysis of this data, the land use types

corresponding to project components are settlement, irrigated agriculture, plateau and pasture. The land use map of the project area based on the Provincial Land Use Database is presented in Figure IV.4.

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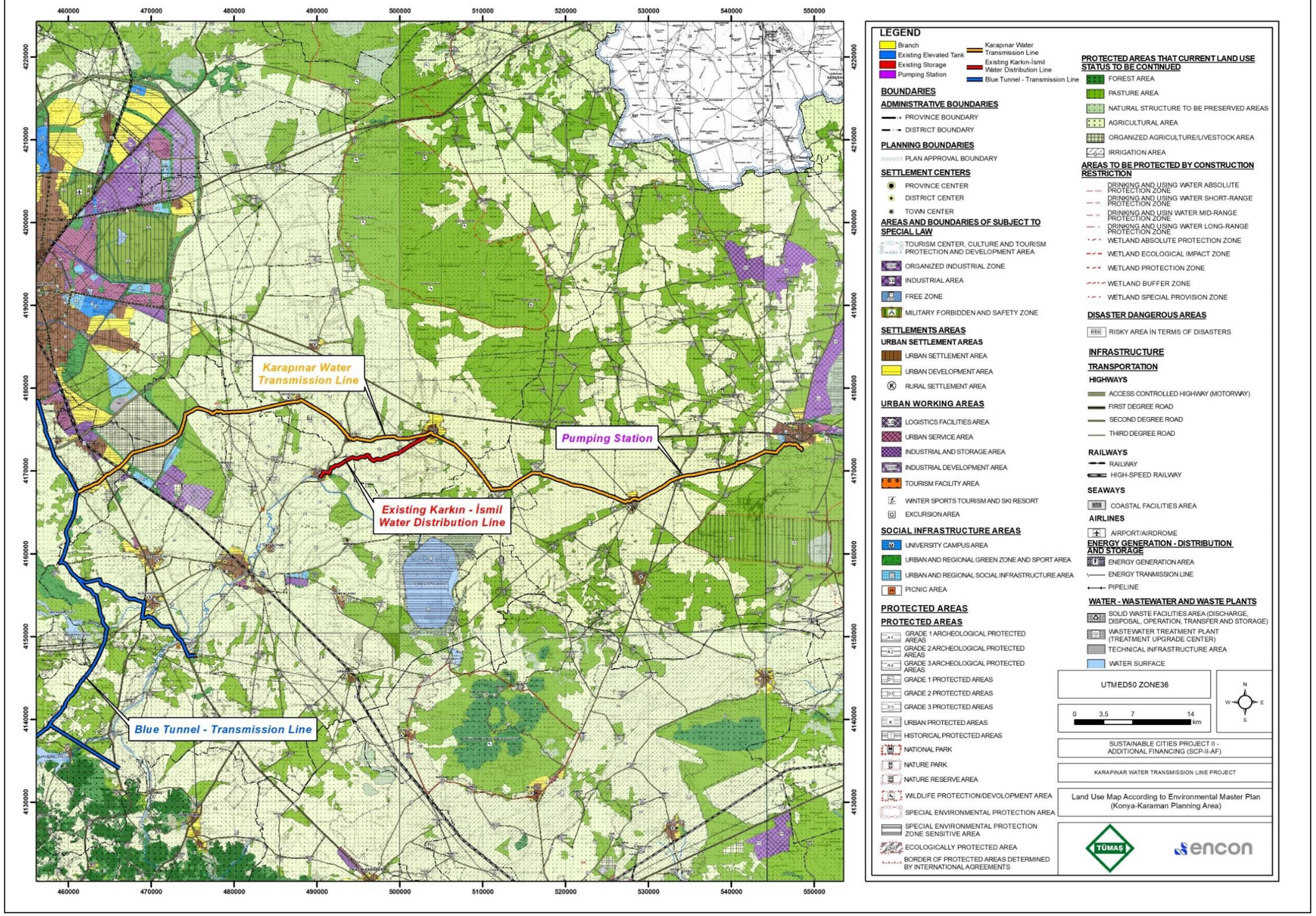

Figure IV.3 Land Use Map According to Environmental Master Plan (Konya-Karaman Planning Area)

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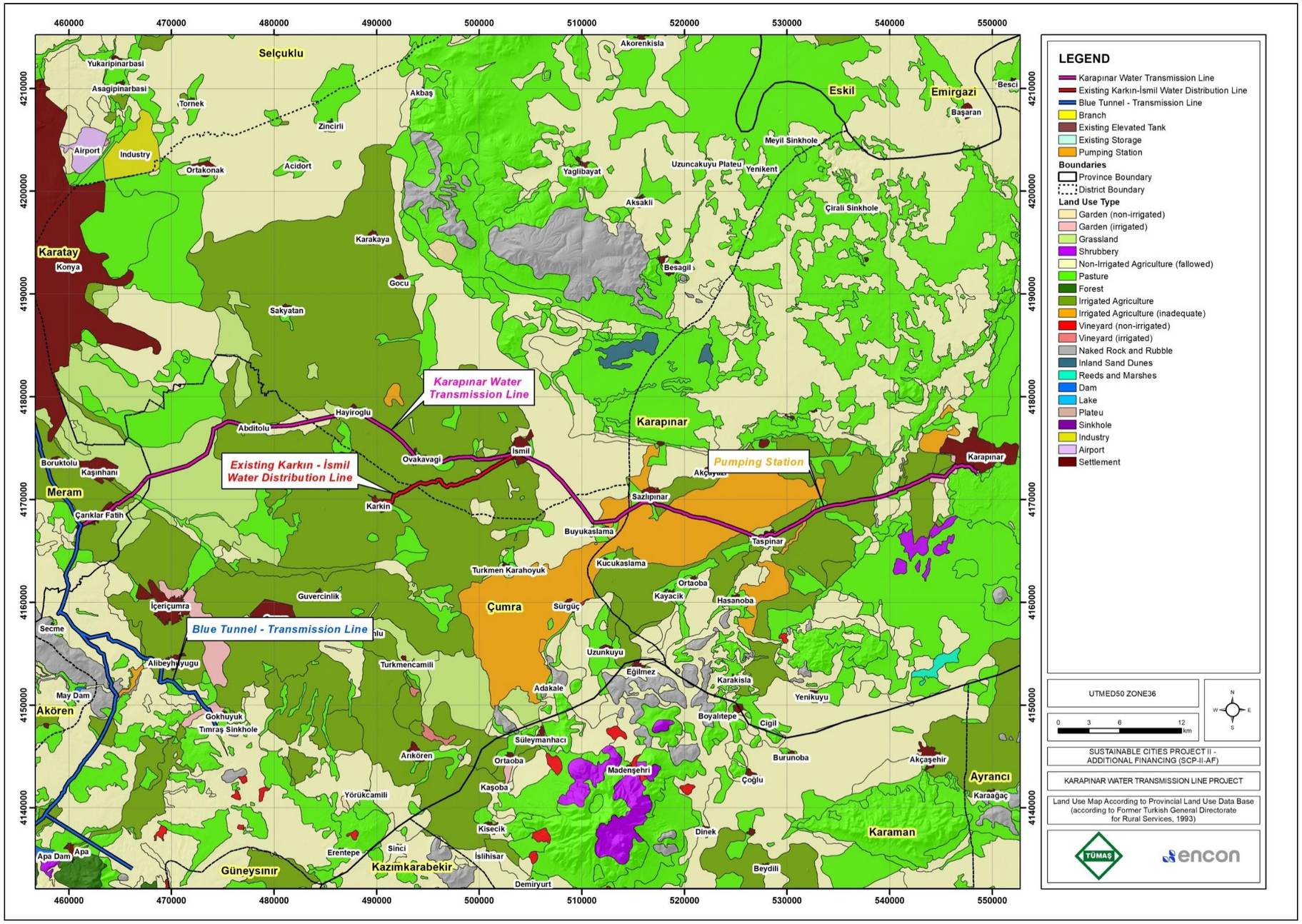

Figure IV.4 Land Use Map according to Provincial Land Use Database

IV.1.3. Climate Conditions and Meteorology

Continental climate prevails in Konya. Summers are dry and hot, winters are cold and snowy. It is very affected by the hot-cold air centers around it. Although it is located in the southernmost region of Central Anatolia, it is colder than other Central Anatolian cities. The reason for this is that the middle Taurus completely avoids the sea effect. Convectional rains are often seen in the spring. Another feature of the Konya climate is that summers start very late and winters end very late. The province also has the highest number of fog density and foggy days in Türkiye.

The records taken from the Turkish State Meteorological Service show that annual average temperature is 11.7°C. The highest temperature is recorded as 40.6ºC in July and the lowest temperature is recorded as –28.2ºC in January. Precipitation is higher in the months of May and December than the other months and average annual precipitation is measured as 329.2 mm. The tabular representation of the average, maximum, minimum temperature records are given in Table IV.1.

Table IV.1 Long Term Meteorological Data of Konya Province (1929-2020)

Parameter	January	February	March	April	May	June	July	August	September	October	November	December	Yearly
	Measurement Period (1929-2020)												
Avg. Temperature (°C)	-0.2	1.4	5.5	11.1	15.9	20.1	23.5	23.3	18.8	12.8	6.5	1.7	11.7
Highest Avg. Temperature (°C)	4.6	7.0	11.7	17.5	22.4	26.7	30.2	30.2	26.0	20.1	13.0	6.6	18.0
Lowest Avg. Temperature (°C)	-4.2	-3.3	-0.2	4.3	8.6	12.6	15.9	15.6	11.0	5.9	0.8	-2.3	5.4
Average Number of Rainy Days	11.1	10.0	10.9	11.7	13.0	8.4	3.2	2.6	4.4	7.9	8.2	11.4	102.8
Average Monthly Amount of Rain (mm)	37.8	28.5	29.1	32.1	43.4	25.7	7.0	6.3	13.4	29.8	32.5	43.6	329.2
	Measurement Period (1929-2020)												
Highest Temperature (°C)	17.6	23.8	28.9	30.9	34.4	36.7	40.6	39.0	38.8	31.6	25.4	21.8	40.6
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

Karapinar District

In Karapınar, which has a typical continental climate, summers are very hot and dry while winters are cold and snowy. According to 21 years of observation data obtained from Turkish State Meteorological Service, the annual average temperature is 10.9ºC in the district. Karapinar is one of the places with the least rainfall in Türkiye with the annual precipitation rate of 279.5 mm.

Wind erosion causes great damage as well. The most important area exposed to wind erosion in Türkiye is Karapinar District and its surroundings, which correspond to 20% of the area exposed to erosion throughout the country. The minimum rainfall and the insufficiency of surface waters lead to dry agriculture in the district.

Cumra District

Cumra District has continental climate type; therefore, the natural vegetation of the district is steppe. The plain is mostly covered with drought-resistant and heat-resistant plants.

Karatay District

Karatay District has a typical continental climate that results in hot and dry summers, and cold and snowy winters. Based on that, the natural vegetation of the district is steppe.

Meram District

The climate of Meram District is continental climate as well. The north and west of Meram District is surrounded by mountains and hills, while the southern part is composed of plain. The vegetation type of the district is steppe.

IV.1.4. Topography, Soils and Geology

This chapter identifies existing topographical, soil and geological conditions along the Karapinar Water Transmission Line.

Topography

The province of Konya is located in the south of the Central Anatolia Region, which is in the middle of the Anatolian Peninsula. Konya Province continues to Haymana Plateau in the north, Cihanbeyli Plateau and Salt Lake in the northeast, Beysehir Lake and Aksehir Lake in the west, and south of Karaman province, starting from the Sultan Mountains in the south. The Obruk and Cihanbeyli Plateaus in the region consist of wide plains with an average altitude of 1,000 m. Cihanbeyli plateau is located in the west of Salt Lake and Obruk plateau is located in the south. The biggest of these is the Kızoren pothole.

The elevations in the northern part of the province generally extend in the east-west direction. The most important mountains are Bozdaglar. Hills rise from place to place on Bozdaglar. The highest of these peaks is Karadag Hill (1919 m) on the west of Bozdaglar. In addition, volcanic masses and lands have an important place in this area. Karacadag is located in the south of the Karapinar Plain, Erenler Mountain is located in the southwest of Konya, and Takkeli Mountain is located in the west.

The average elevation of Karapinar District above sea level is 1,026 m. Karacadag volcano is the most important mountainous mass within the borders of the district. Another important volcanic mass is Uzecek Mountain. Karapinar Plain is located between these two mountainous areas.

The average elevation of Cumra district above sea level is 1,013 meters. In the southwest, there are Kel Mountain and Cokek Mountain with an altitude of 1,321 m, Kabakbası and Karaburun Mountains in the south, and Karadag with an altitude of 2,288 meters in the middle of the plain that separates the Cumra and Karaman borders in the east.

The average elevation of Karatay District above sea level is 1,016 meters. The land structure of Karatay is generally flat plain. Bozdag cuts this plain on the northwest-northeast axis.

The average elevation of Meram District above sea level is 1,016 meters. The western and southwestern sides of the district are mountainous, and the southeastern side is plains and the vegetation is steppe. There are also some forested areas within the district.

Soil

Turkish General Directorate for Rural Services database defines the land use capabilities in eight different classes as summarized in Table IV.2. These classes represent the agricultural potential of the soil. 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 IV.2 (*Former Ministry of Agricultural and Rural Services, July 2008*).

Table IV.2 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 is 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 major soil groups and land use capability classes for the project area is represented in Figure IV.5.

Transmission lines will mainly follow cadastral roads, however, the sections that do not follow cadastral roads, mainly correspond to classes VI and VII.

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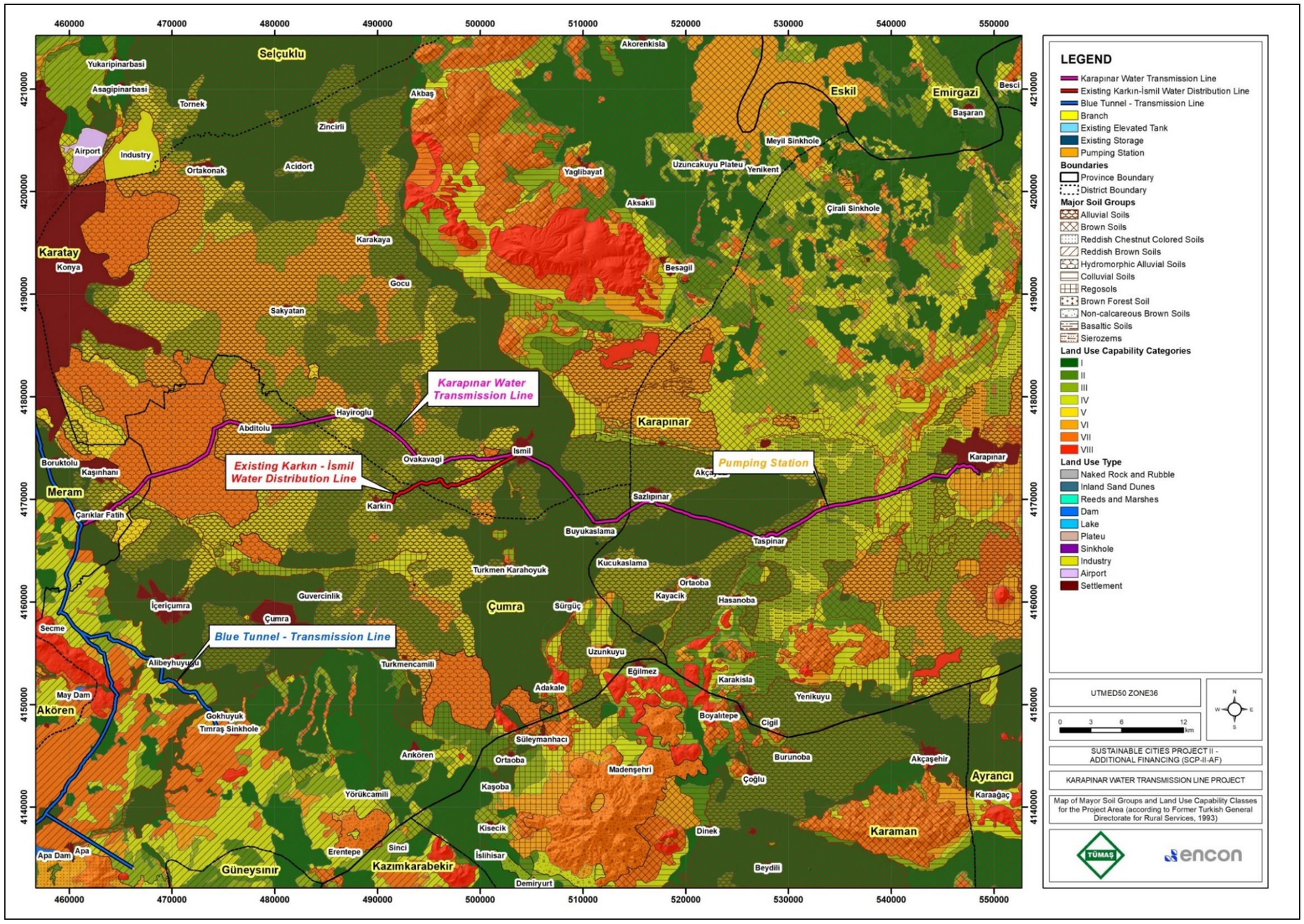

Figure IV.5. Great Soil Groups and Land Use Capability Classes for the Project Area

Geology

1/500,000 scale geology maps of the region were prepared in 2003 by Mineral Research and Exploration General Directorate (MTA) and it is given in Figure IV.6.

Some of the rocks belonging to the middle part of the Kutahya-Bolkardagı belt are found in the project area and its surroundings located in the southwest of Konya. There are two formations as the oldest unit in Konya and its surroundings. One of them is the Lorasdagı Formation of Late Triassic-Late Cretaceous aged, deposited on a shallow and stable carbonate platform. The other is the Midostepe Formation, which consists of Late Cretaceous radiolarite and chert interbedded limestones. These units can be mapped in the Hatip ophiolitic complex, which consists of Late Cretaceous cherty limestone, mudstone, serpentinite and ophiolitic rock fragments. The İkisivritepe olistoliths are tectonically overlain. Cayırbagı Ophiolites, which are composed of Late Cretaceous aged dark green, locally browned, serpentinized peridotite, gabbro and pyroxenites, are overlain at the Hatip ophiolite complex, by tectonic contact. The Ulumuhsine Formation, which consists of Late Miocene-Early Pliocene aged, gray, dirty yellow, and cream colored lacustrine limestones, covers the other units unconformably, while Quaternary-Current alluviums overlie the older units in an angular unconformability.

The Lorasdagı Formation consists of recrystallized limestone, dolomitic limestone and dolomites. The most typical outcrops are observed in the Lorasdagı section. The unit starts with gray-beige colored, massive 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 the rock is calcite. Recrystallized calcite and occasional chert formations are observed in the cracks. In some petrographic sections, it is seen that the unit also exhibits dolomitic features. It has been determined that the primary texture of the unit has completely disappeared in the sections where recrystallization is high. The unit crops out around Lorasdagı in the northwest of the study area. In addition, there are many blocks in the Hatip ophiolite complex. The Lorasdagı Formation, which forms the base of the Project area and its surroundings, is overlain by the Midostepe Formation conformably.

In Midostepe Formation, the unit consists of radiolarite and pelagic limestones with red-pink colored chert interlayers. The Midostepe Formation is represented by grayish colored pelagic mudstone and reddish colored pelagic carbonates with radiolarian chert intermediate bands at the bottom. The rate of cherts increases gradually towards the top. The lower part of the chert layers is gray, the upper parts are reddish. Gray colored coarse-grained carbonates are observed between these chert levels. 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 upward 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. 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-Seydisehir highway.

In Hatip ophiolite mix, the unit is composed of a matrix mostly composed of serpentinite and ophiolite rock units and radiolarite, shale, gabbro and limestone blocks in them. The matrix of this melange unit is composed of red-brown, radiolarite, red-pink colored pelagic limestones, harzburgite, dunite, gabbro, diabase, pillow lavas, serpentinite, purple and gray colored shale and sandstones. In some sections, the serpentinites are highly fractured and weathered and contain very few magnesite veins. A schist structure, foliation and occasional folds are observed in flysch shale and sandstone depending on deformations. Red and green colored, weathered, quartz veined mudstones are also 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. The limestones constituting the İkisivritepe olistoliths are gray

in color, with chert interlayers in places, and with a medium-thick bedded and massive in places. The size of olistoliths varies from block size to mountain size. The limestone blocks were weathered from time to time and acquired a brecciated structure. 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 has emplaced in the region due to the compression at the approaching plate boundaries. The fact that it contains blocks belonging to the Triassic-Jurassic Lorasdagı and Midostepe formations indicates that it was emplaced in the study area with 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.

Gray, green and brown colored Cayırbagı ophiolite mainly consists of gabbro, diabase, serpentinite, peridodite and pyroxenites. The gabbros are macroscopically massive, gray-dark gray in color and heavily cracked. Although the rocks sometimes have a schist structure due to the deformation effect, they generally have a richly cracked and fractured structure, and talcization is observed in these cracks from place to place. Serpentinites formed by the weathering of ophiolitic rocks are observed in the form of blocks in some parts and are green and dark green in color on their fresh surfaces. In some serpentinite blocks, there are magnesite formations in the form of stockwork veins. In areas where magnesite is formed, serpentinite takes on a yellow and brown color.

Ulumuhsine Formation consists of gray, dirty yellow, and cream colored lacustrine limestones. The dominant lithology of the formation is off-white, gray and beige colored limestones. It is generally observed as well bedded and medium-thick bedded. Conglomerates are observed in the lower parts of the formation. The grain sizes of these conglomerates are between coarse pebbles and fine pebbles. It is observed in the southwest of Dikmeli (Godene) Village. The Ulumuhsine formation unconformably overlies the Hatip ophiolite complex and Cayırbagı ophiolite, which covers a large area in the field.

Topraklı Formation consists of scree-alluvial complex deposits of Plio-Quaternary aged coarse clastics and irregular-thick horizontal layers. This formation crops out in the west of Yenibahce, around Kayihuyuk and around Kavak. Topraklı formation begins with a thick and irregular bedded, poorly sorted, heterogeneous-polygenic conglomerate. Between these red, brown and ocher colored conglomerates there are interlayers of poorly sorted, coarse grained, red colored sandstone and sandy mudstone. 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.

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 an angular unconformity.

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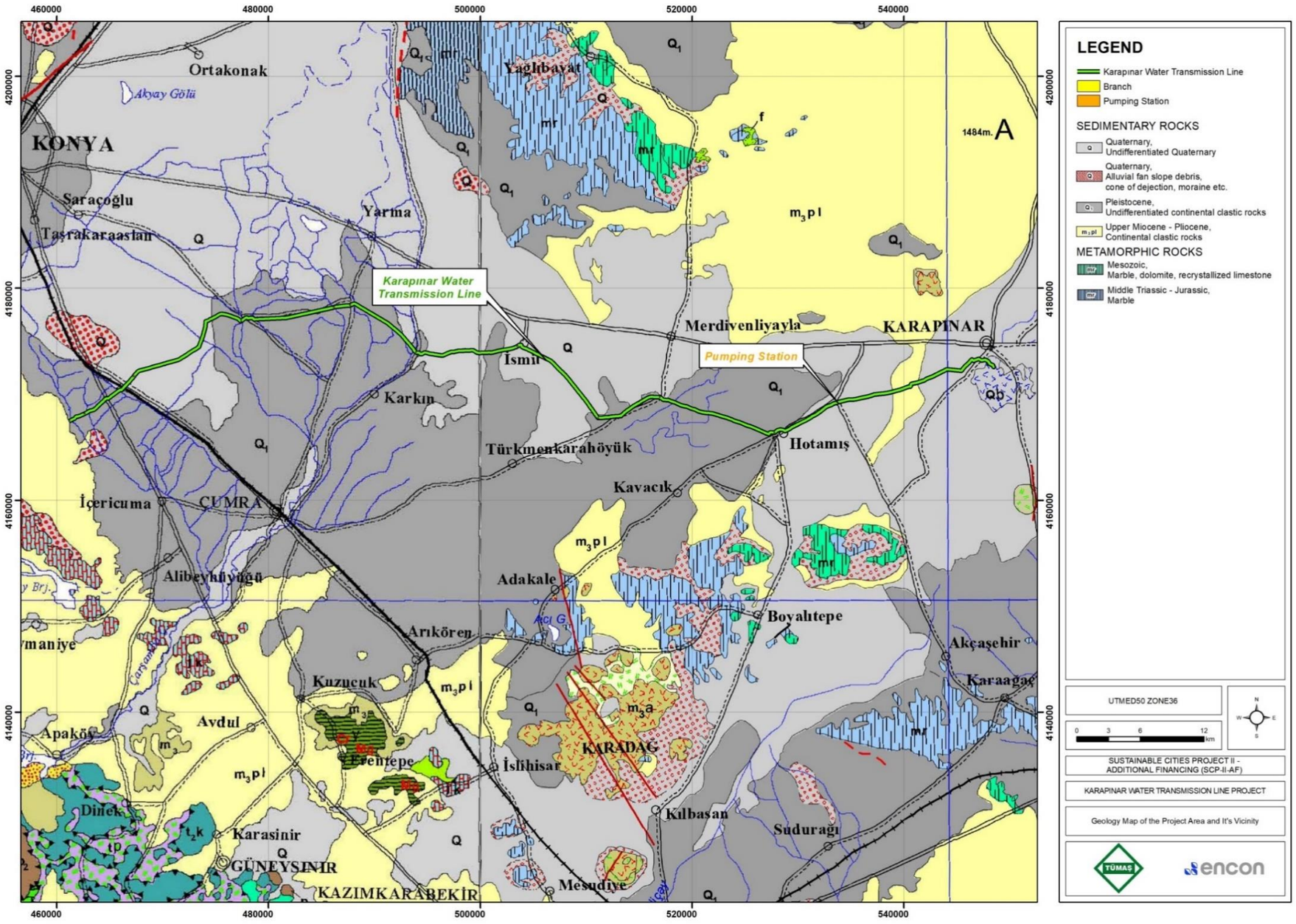


Figure IV.6 Geology Map of the Project Area and Its Vicinity

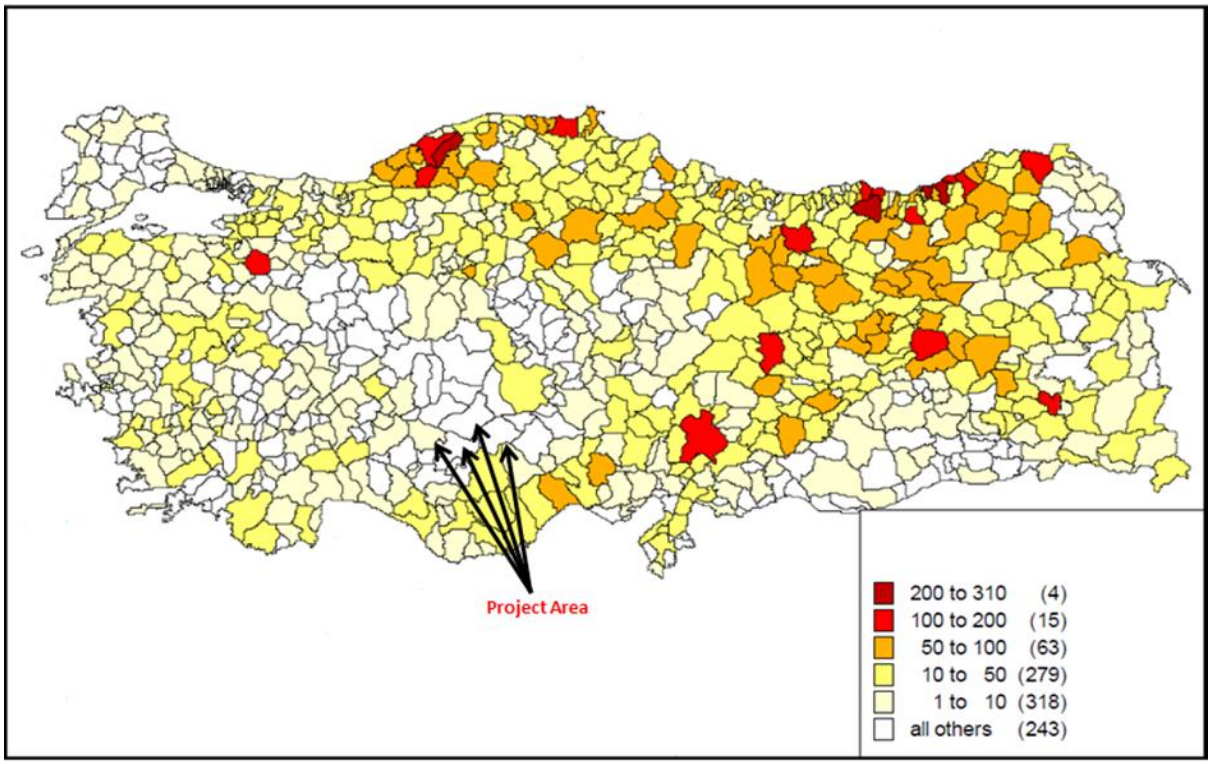
IV.1.5. Natural Hazards and Seismicity

Natural Hazards

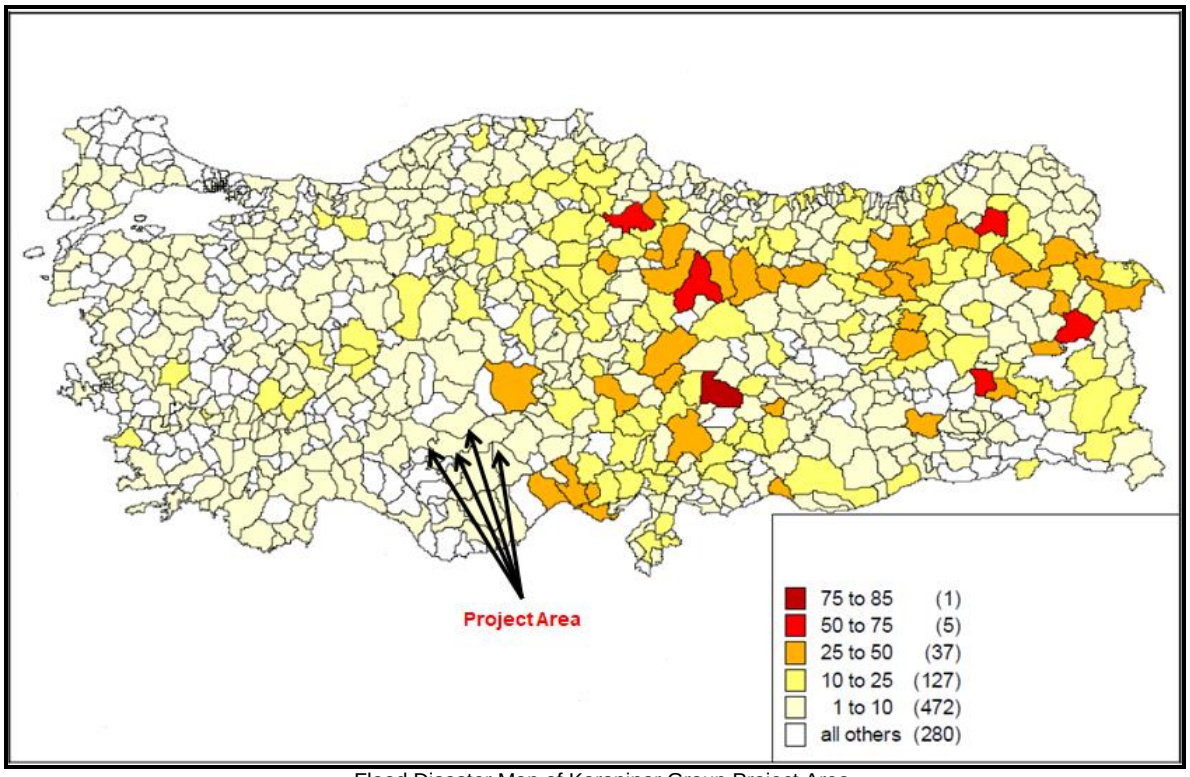
According to the report "Overview of 2019 within the scope of Statics of Natural Events within the scope of Disaster Management " prepared by Disaster and Emergency Management Presidency (AFAD) in 2020, the natural disasters that occurred in the province of Konya between 1950-2019 are landslide/rockfall (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, the natural disasters observed in Konya Province are; landslides, floods and rock falls.

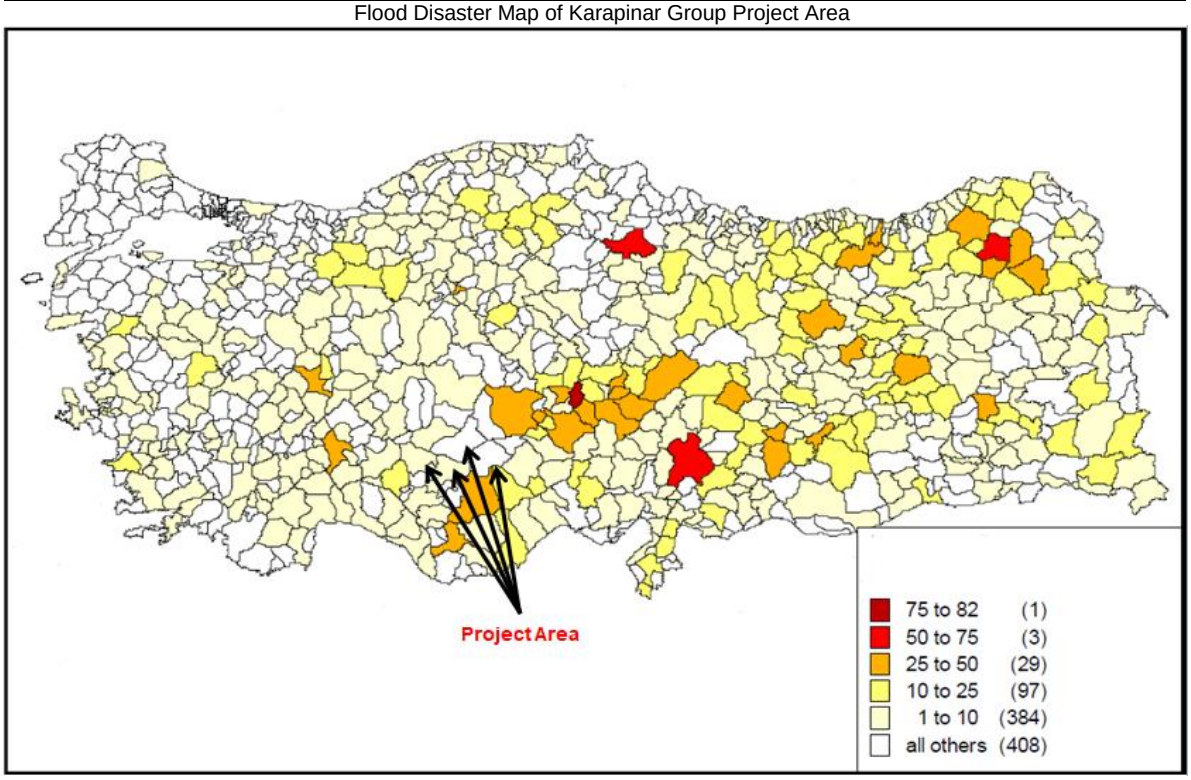
When Karapınar, Cumra, Karatay and Meram Districts are examined in the Distribution of Disaster Events maps prepared by former Ministry of Public Works and Settlement, records of landslides, floods and rock falls can be observed on maps but they are not potentially high. The disaster distribution maps regarding the above given disasters are provided in Figure IV.7.



Landslide Disaster Map of Karapinar Group Project area



Flood Disaster Map of Karapinar Group Project Area



Rock Fall Disaster Map of Karapinar Group Project Area

Figure IV.7 Disaster Maps of Karapinar Water Transmission Line Project Area Districts (Karapinar, Meram, Cumra, Karatay Districts)

On the other hand, no natural disasters such as avalanches, earthquakes, active and potential mass movements (landslides) are observed in the districts and their immediate surroundings.

Seismicity

According to the active fault map of Konya Province given in
Figure IV.8, Nasuhpınar Fault, Hotamış Fault Zone, Seyit Hacı Fault and Konya Fault are located 6.9, 7.4, 7.9 and 23.5 km away from the project area, respectively. The faults are classified as normal faults.

According to the Earthquake Hazard Map of Türkiye, given in Figure IV.9, issued in the Official Gazette numbered 30364 and dated 18.03.2018, ground acceleration of Karapınar, Cumra, Karatay and Meram Districts are classified as between 0.0-0.1 g.

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

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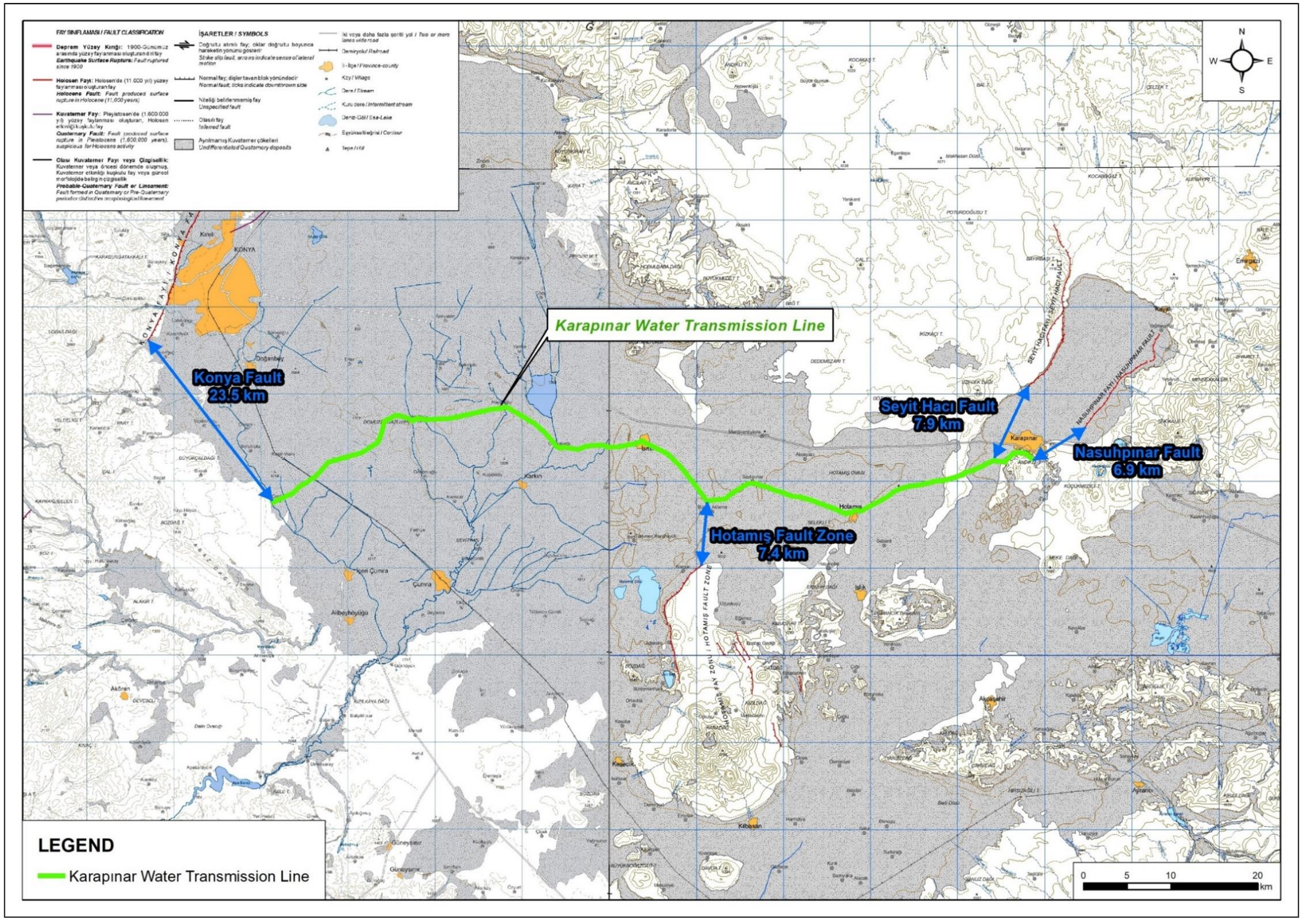

Figure IV.8. Active Fault Map of Konya

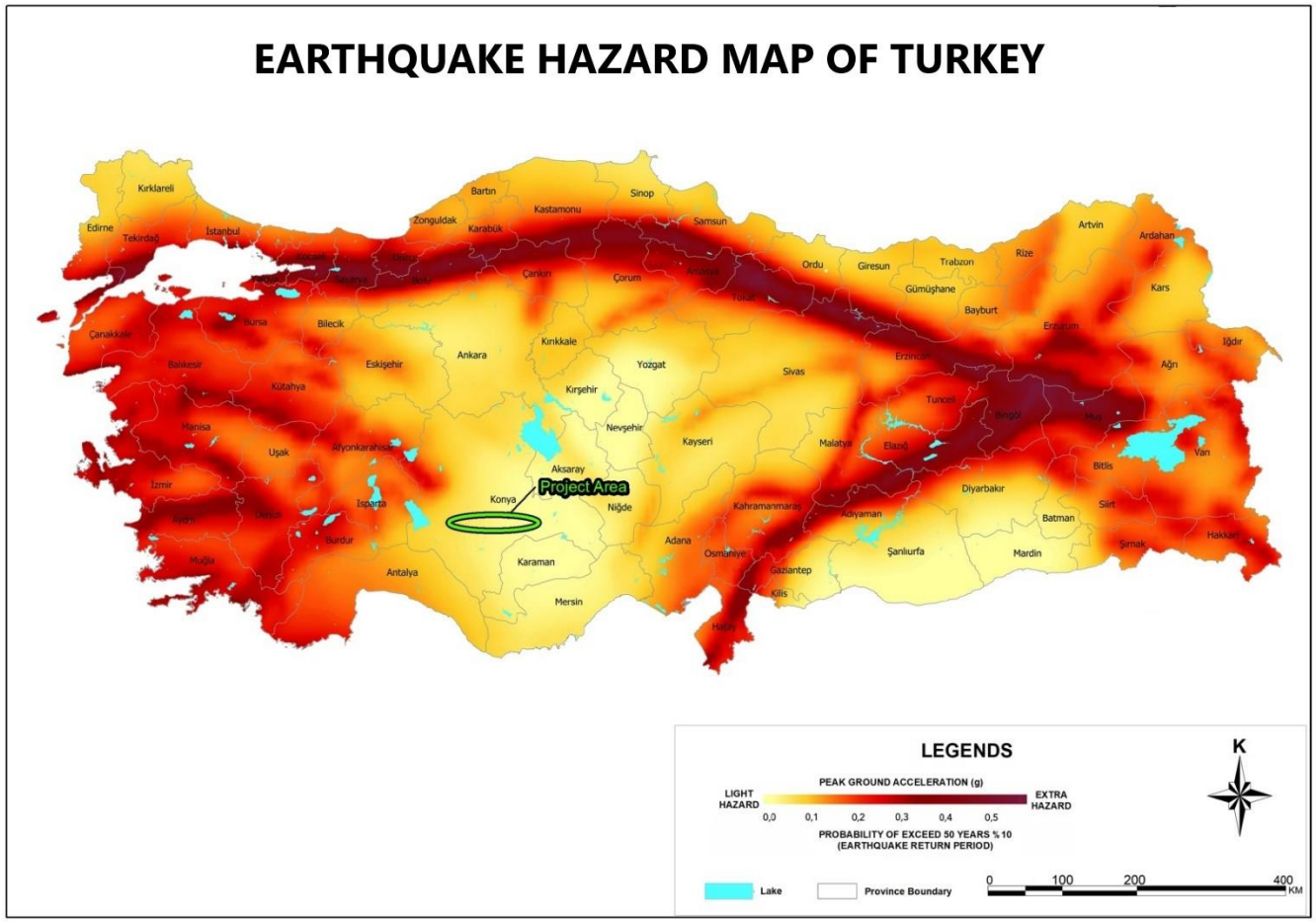

Figure IV.9. Earthquake Hazard Map of Türkiye

IV.1.6. Hydrogeology and Hydrology

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. This is 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.

Generally, lakes do not form in Konya and Eregli plains due to drought, and the streams that take their source from the elevations here disappear in the plain. The largest and most important stream in Konya is Carsamba Water. It takes its source from the elevations in Bozkır District. It combines with the skirt of Beysehir Lake and forms the Cumra Plain irrigation network. The Apa Dam, which was built on Carsamba Stream, was established both to prevent floods and to irrigate a part of the Konya Plain.

Tuz Golu 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 Golu 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 the effect of 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.

Beysehir Lake is located in the west of Konya on the Konya-Isparta border. Beysehir 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 IV.3.

Table IV.3. Dams and Ponds in Konya Province

Name of the Dam/Pond	Corresponding River	Application Area	Area (m^2)
Dams			
Altinapa Dam	Meram River	Irrigation, Flood Protection, Drinking Water	3,823,919
Apa Dam	Carsamba River	Irrigation	15,506,487
Damlapinar Dam	Damlapinar River	Irrigation	960,780
Derebucak Dam	Kocacay River	Irrigation	938,835
Ivriz Dam	Ivriz Stream	Irrigation, Flood Protection	4,663,876
May Dam	Meram Stream	Irrigation, Flood Protection	11,588,765
Sille Dam	Sille Stream	Irrigation, Flood Protection	240,231
Ponds			
Akoren Pond	Bayindir River	Irrigation	888,234
Aydogmus Pond	Bogaz River	Irrigation	331,009
Bashuyuk Pond	Kurudere River	Irrigation	296,177
Bostandere Pond	Kalayci River	Irrigation	405,092

Name of the Dam/Pond	Corresponding River	Application Area	Area (m^2)
Cihanbeyli Pond	Insuyu River	Irrigation	1,574,576
Caglayan Pond	Yayla River	Irrigation	889,403
Cavus Pond	Ilmen River	Irrigation	276,139
Ciftlikozu Pond	Karakaya River	Irrigation	356,115
Cukurcimen Pond	Cokuk River	Irrigation	165,530
Derbent Pond	Belbasi River	Irrigation	151,639
Erenkaya Pond	Carsak River	Irrigation	919,179
Evliyatekke Pond	Arkil River	Irrigation	268,769
Guneydere Pond	Gavur River	Irrigation	2,354,084
Kiziloren Pond	Yayla River	Irrigation	145,670
Malas Pond	Uludere River	Irrigation and Tap	235,065
May-Kayasu Pond	Peynirli River	Irrigation	159,458
Sefakoy Pond	Kavakdere River	Irrigation	140,738

Source: Konya Closed Basin Protection Action Plan

The main surface water resources of the province are also given in the Table IV.4. Among them Carsamba Creek, which is one of the largest surface waters in the province, is an important surface water resource in agricultural irrigation of Konya Province.

Table IV.4 Surface Water Sources in Konya Province

Water Source	Average Annual Flowrate (m^3/s)
Uludere	143.2
Beysehir Lake	446
Cavuk Stream	37.4
Suberte Creek	117.9
Carsamba Creek	164.8
Zanapa Stream	233.6
May Stream	53.6
Meram Creek	51
Sille Stream	2
Insuyu Stream	14.7
Goksu River	818.7
Yunak Gokpinar Stream	223.2
Ilgin Stream	124
Bakirpinari, Zengi, Besgoz Resources	36.4
Others	472.5

Source: Konya Provincial Environmental Status Report, 2019

Moreover, there are 26 sites with geothermal resource exploration licenses, one site with natural mineral water exploration license and 18 sites with geothermal resource operation licenses in

the Province. Production takes place in nine (9) of these geothermal resource operating licensed areas. Information regarding to the sites with operating licenses are provided in Table IV.5. Within this regard, six of them are located in Karapınar, Karatay, and Meram Districts.

Table IV.5 Groundwater Potential of Konya Province

District	Name of Drilling/Spring	Flow Rate (L/s)
Ilgın	SJ-1	130
	SJ-2	50
	SJ-3	40
	SJ-4	40
	SJ-5	50
Tuzlukcu	KT-1	60
	Buhar-1	57
	Buhar-2	55
	Buhar-3	60
	Buhar-4	55
Seydisehir	KSK-1	100
	KSK-2	40
Seydisehir	SK-1	2.5
	SK-2	110
Karapınar	KRP-1	15
Huyuk	K-1	50
Kadınhanı	KNB-1	50
Karatay	SK-1	20
	SK-2	20
	SK-3	18
	SK-4	18
Eregli	A10	60
	A11	22
Cihanbeyli	BK-1	100
Ilgın	IBJ-1	12
Seydisehir	JT-1	8
Seydisehir	BSK-1	5
Meram	K-1	30
Tuzlukcu	SJ-1	22
Cihanbeyli	KC-1	38
	NT-2	40
Seydisehir	G-1	35
Tuzlukcu	Zeybek-1	50

Source: Konya Provincial Environmental Status Report, 2019

Water Quality Measurements

In order to identify the baseline water quality in the project area, especially around the planned pumping station, a groundwater sampling campaign was conducted by ENCON Laboratory on December 15th, 2021. Photograph regarding the sampling campaign is provided in Figure IV.10.

Sampling location is shown in Figure IV.11 and measurement and analysis results are presented in Table IV.6. The laboratory reports are presented in Annex-4 of this report.

Figure IV.10 Groundwater Sampling

Table IV.6 Groundwater Sampling Measurement Parameters, Location and Analysis Results

Parameter	Units	Groundwater Sampling Location-1 (X: 533461/Y:4169495) and Results
Ammonium	mg/L	<0.02
Arsenic	µg/L	20.58
Mercury	µg/L	<1.0
Conductivity	µS/cm	890.0
Cadmium	µg/L	<5.0
Chloride	mg/L	22.28
Lead	µg/L	<5.0
Nitrate	mg/L	1.8711
Nitrite	mg/L	0.069
Sulfate	mg/L	74.87
Tetrachloroethylene	µg/L	<0.2
Total Phosphorus	mg/L	0.10
Total Pesticide	µg/L	<0.1
Trichloroethylene	µg/L	<0.2
Salinity	‰	0.44

Based on the Water Pollution Control Regulation, groundwater quality is defined as Class-I water. Class-I is defined as water that has the potential to be used as drinking water, can be used for recreational purposes including those that require body contact such as swimming, and can be used for animal production and farm needs.

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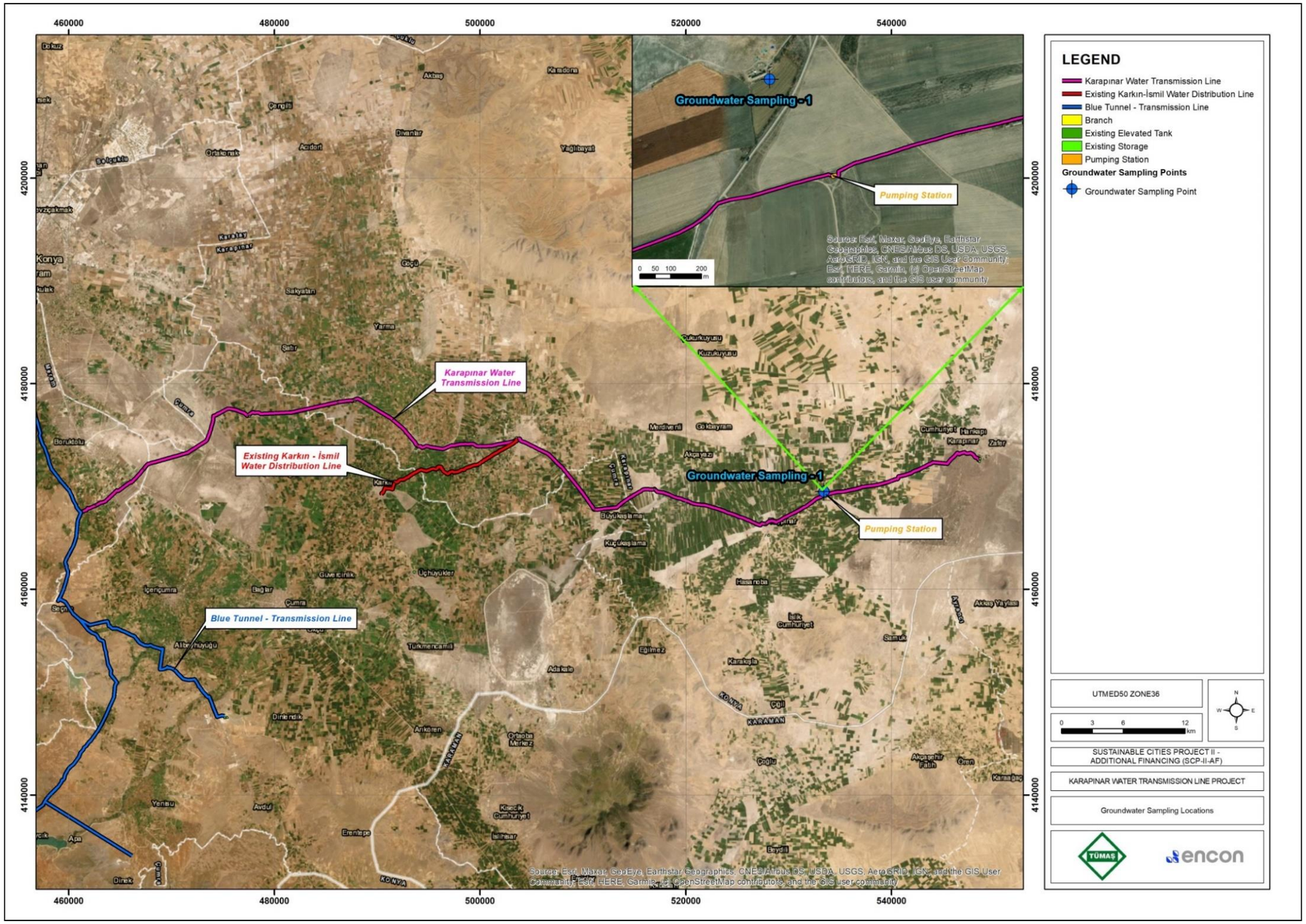

Figure IV.11. Groundwater Sampling Location

Within the scope of the Project, 21 river crossings will be constructed. However, no flow is observed during the site visit conducted by ENCON on November 25th, 2021 and the measurement campaign conducted by ENCON Laboratory on December 15th, 2021. Photographs taken from the river crossings are provided in Figure IV.12.

Figure IV.12 Photographs taken from the River Crossings

IV.1.7. Protected Areas

To identify and evaluate the protected areas in and around the project area, desktop studies and literature research were carried out using the databases of the relevant institutions within the scope of the Project. For this purpose, the sensitive area list available in Annex 5 of the EIA Regulation was used as a reference. This list covers areas that need to be protected in accordance with international conventions that Türkiye is a contracting party and nationally declared protected areas.

Primary data sources utilized within the scope of the desktop studies, but not limited to, are listed below:

- Database of Ministry of Culture and Tourism, General Directorate of Cultural Heritage and Museums (https://kvmgm.ktb.gov.tr/)
- Database of Ministry of Agricultural and Forestry, General Directorate of Nature Conservation and National Parks (https://www.tarimorman.gov.tr/DKMP)
- Türkiye National Geographic Information Systems, National Geographic Information Platform (https://www.atlas.gov.tr/)
- Map of Prohibited and Open Hunting Areas in Konya Province for years 2021-2022 (https://avlakharitalari.tarimorman.gov.tr/AvlakHaritalari/42.jpg)

Protected Areas in accordance with National Legislation

Areas required to be protected as per the Turkish legislation defined under Annex 5 (Sensitive Regions) of the EIA Regulation are listed in the following items. The evaluations related to the indicated areas are presented therein.

National Parks, Nature Parks, Nature Monuments, and Nature Conservation Areas are defined in Articles 2 and 3 of the National Parks Law.

There are no National Parks, Nature Parks, Nature Monuments, or Nature Conservation Areas in the project area. The protected areas around the project area are shown in Figure IV.18

Meke Lake Natural Monument is located 7.3 km east, Akgol Eregli Reeds Nature Conservation Area is located 23.3 km southeast, Akyokus Natural Park is 27.2 km northeast, and Fossil Juniper Natural Monument Area is located 35.8 km south of the project area.

Wildlife Protection Areas, Wildlife Development Areas, and Wild Animal Nestling Areas are determined by the Land Hunting Law

Map of prohibited and open hunting areas for years 2021-2022, prepared by the Ministry of Agricultural and Forestry, General Directorate of Nature Conservation and National Parks, is presented in Figure IV.17 .There are various hunting areas in the province, and there are no Wildlife Protection Areas, Wildlife Development Areas, or Wild Animal Nestling Areas in and around the project area. Konya Bozdag Wildlife Development Area is located 23.3 km north of the project area.

Areas defined as Cultural Property, Natural Property, Protected Site, and Protected Area according to Law on Protection of Cultural and Natural Properties No. 2863, published in the Official Gazette dated 23.07.1983 and numbered 18113, Article 3, Paragraph 1, Clause (a) (Definitions); Sub-clauses 1, 2, 3 and 5; and areas identified and registered in the same Law and amendments.

There is no cultural property, natural property, protected site, or protected area in the project area.

Areas defined in Regulation on the Assessment and Management of Air Quality

According to the 7th Article of Regulation on the Assessment and Management of Air Quality, zones and sub-zones for air quality identification are listed in Annex-1 of Memorandum 2013/37. With the relevant circular, Türkiye is divided into various regions and sub-regions. With this distinction, the Ministry of Environment, Urbanisation, and Climate Change tried to determine the pollution profile of the provinces. The list in Annex-III of the circular is divided into two groups according to the pollution profile of provinces substances: "high pollution potential cities" and "low pollution potential cities." Pollution profiles of provinces were determined by using the 2012-2013 winter season air quality data and air quality bulletins received from air quality monitoring stations connected to the national air quality monitoring network. According to this, the Konya Province is in the list of "high pollution potential."

Aquaculture Production and Breeding Sites within the scope of Aquaculture Law

There are no aquaculture production and breeding sites in and around the project area.

Areas identified and declared as Special Environmental Protection Areas (SEPA) by the Cabinet of Ministers in accordance with the 9th Article of Environment Law

The nearest SEPA to the Project Area is Salt Lake SEPA, located about 60 km north of the project area.

Areas defined in Pasture Law

The project area is not located in pastureland, which is subjected to Pasture Law No. 4342.

Areas designated in accordance with the Regulation of the Wetland Conservation

There is no designated area in accordance with the Regulation of the Wetland Conservation Area in the project area. Meke Maar Ramsar Area is located 6.9 km east, and Eregli Reeds Wetland Protection Zone is located 23.6 km southeast of the project area (see Figure IV.18).

Agricultural Areas: Agricultural development areas, irrigated areas, potentially irrigated areas, areas with land use capability class of I, II, III, and IV, rainfed agricultural lands classified as I and II, and specific product plantations areas

According to the Land Use map shown in Figure IV.4, the land use types corresponding to project components are settlement, irrigated agriculture, plateau and pasture.

Wetlands: Natural or artificial, permanently, or temporarily, standing water or flowing, freshwater, hard or salt water, all the wetlands have importance for the organisms especially for aquatic birds, sea depth range below six meters during the low tide, swamp, reeds, and turbaries and ecologically wetlands on their coastal sides

In the field studies, it has been determined that there are mostly seasonal streams within the project area.

Protected Areas in accordance with International Conventions

Areas required to be protected in accordance with the international conventions to which Türkiye is a party and defined under Annex 5 (Sensitive Regions) of the EIA Regulation are listed in the following items, and the evaluations related to the indicated areas are presented therein.

Internationally Recognized Areas within the Region of the Project Area

The map showing the KBAs in and around the project area can be seen in Figure IV.13. Türkiye's KBAs have been identified on a national scale by Doga Dernegi (the Nature Society of Türkiye) in collaboration with the Ministry of Agriculture and Forestry, Birdlife International, and Royal Society for the Protection of Birds.

There are 184 Important Bird Areas (IBAs) in Türkiye, according to the BirdLife International Data Zone. Twenty of them are classified as IBAs in danger.

The 2,200 m of the Transmission Line is within the Karapinar Plain KBA/IBA and passes 600 m south of the Hotamış Marshes KBA/IBA, as shown in Figure IV.13 .. The Karapinar Plain KBA/IBA is located to the south of the Konya Closed Basin. It encompasses mudflats and salty meadows around the remains of a shallow salt lake in a barren plain. The water source of the KBA/IBA is the surface currents from Karacadag in the east of the area. Meke Maar, which is

protected as a Ramsar site and the Crater Lake nearby are also included in the KBA/IBA. The salty meadows around the lake turn into swamps in winter and dry up entirely in summer.

Important Plant Areas (IPAs) are globally important sites for wild plants and threatened habitats. IPAs are natural or semi-natural areas containing affluent populations of rare, endangered, and/or endemic plant species and/or have extraordinarily rich and/or valuable vegetation in terms of botany. The closest IPA is Akyay Plains IPA, located 16.2 km northwest of the project area.

The recognized areas around the project area and their distances are given in Table IV.7.

Table IV.7. Distance of Recognized Areas to the Project Area

Recognized Area	Distance	Location
Karapinar Plain KBA/IBA	within	East
Hotamis Marshes KBA/IBA	600 m	South
Eregli Plain KBA/IBA	11.6 km	Southeast
Hodulbaba Mountain KBA	14.4 km	North
Akyay Plains KBA/IBA/IPA	16.2 km	Northwest
Obruk Plateau KBA/IBA	16.4 km	North

As shown in the Figure IV.18, there is no national protected area in or around the project area.

The Alliance for Zero Extinction (AZE), established in 2004 and comprising 88 biodiversity conservation Non-Governmental Organizations (NGOs), is dedicated to identifying and safeguarding all KBAs, effectively holding the entire global population of at least one Critically Endangered or Endangered species. In Türkiye, there are three AZE sites have been determined. The closest one to the project area is Bolkar Mountains; about 59 km southeast to the project area (see Figure IV.16). Since Bolkar Mountains AZE is quite far from the project area, it will not be affected by the project activities.

The Ramsar Convention is a convention that aims to protect wetlands, which are the habitat of waterfowl of international importance. In Türkiye, 14 wetlands have been declared as Ramsar areas. There are two RAMSAR areas, Meke Maar and Kızoren Pothole, in Konya Province. Meke Maar Ramsar Area is located 6.9 km east, and Eregli Reeds Wetland Protection Zone is located 23.6 km southeast of the Project Area.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Sites are places of importance to cultural or natural heritage as described in the UNESCO World Heritage Convention, established in 1972. Türkiye accepted the convention on 16 March 1983, making its historical sites eligible for inclusion on the list. As of 2021, there are nineteen World Heritage Sites in Türkiye, including seventeen cultural and two mixed sites. There is no protected area per this convention in and around the Project Area.

Man and the Biosphere Programme (MAB) is an intergovernmental scientific program launched in 1971 by UNESCO. It aims to establish a scientific basis for improving relationships between people and their environments. There is no protected area per this program in and around the Project Area.

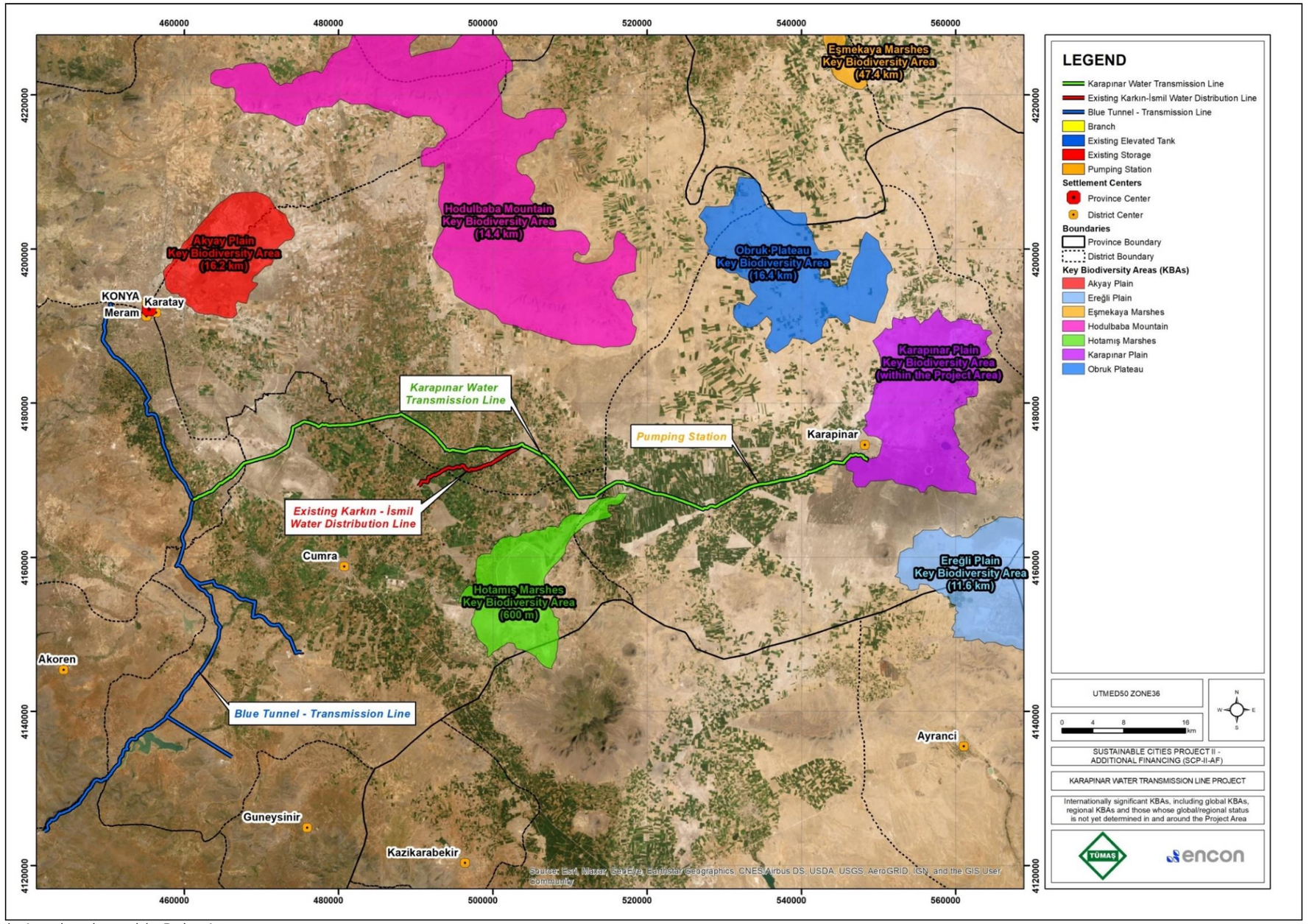

Figure IV.13. Key Biodiversity Areas in and around the Project Area

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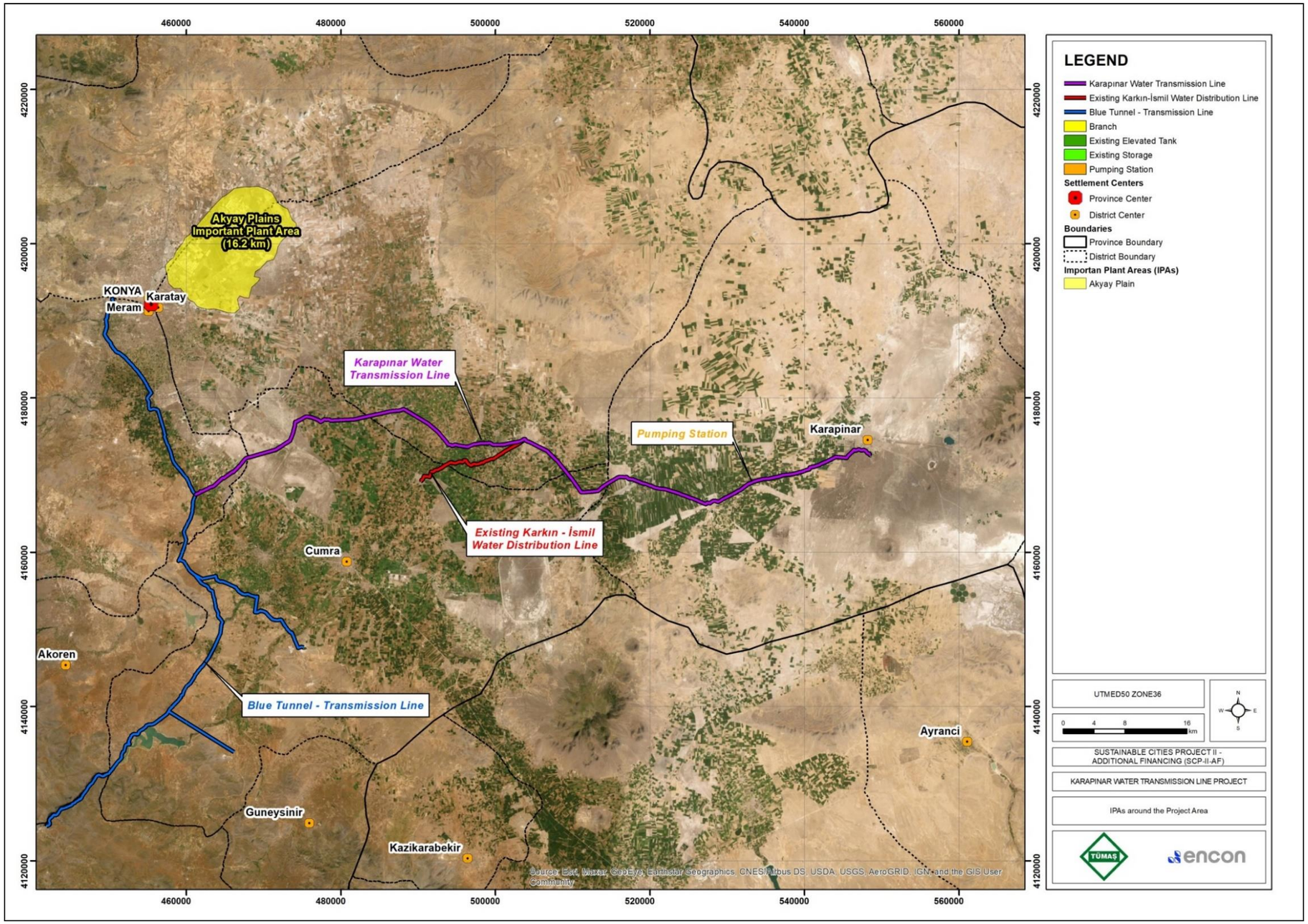

Figure IV.14. Important Plant Areas in and around the Project Area

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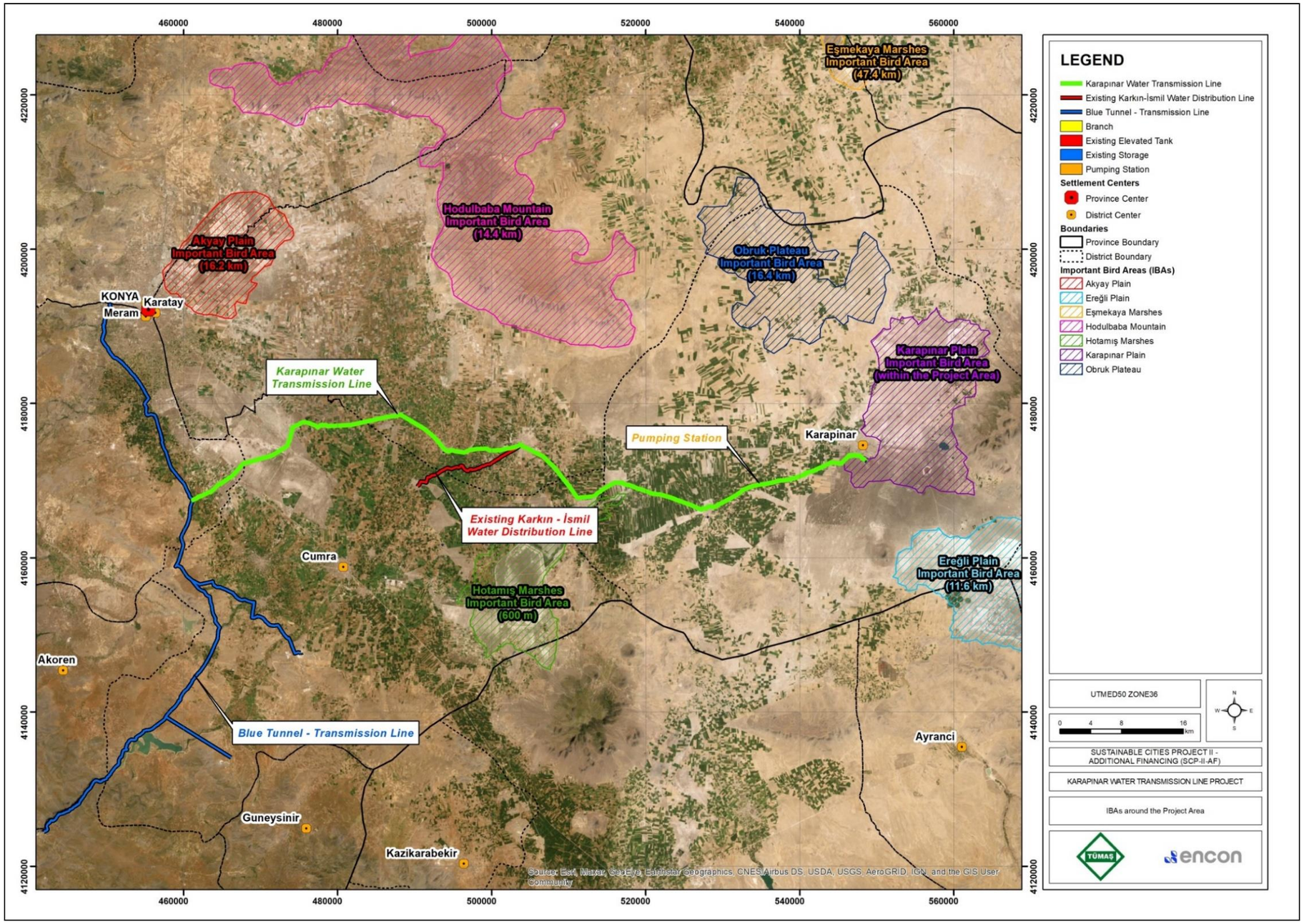

Figure IV.15. Important Bird Areas in and around the Project Area

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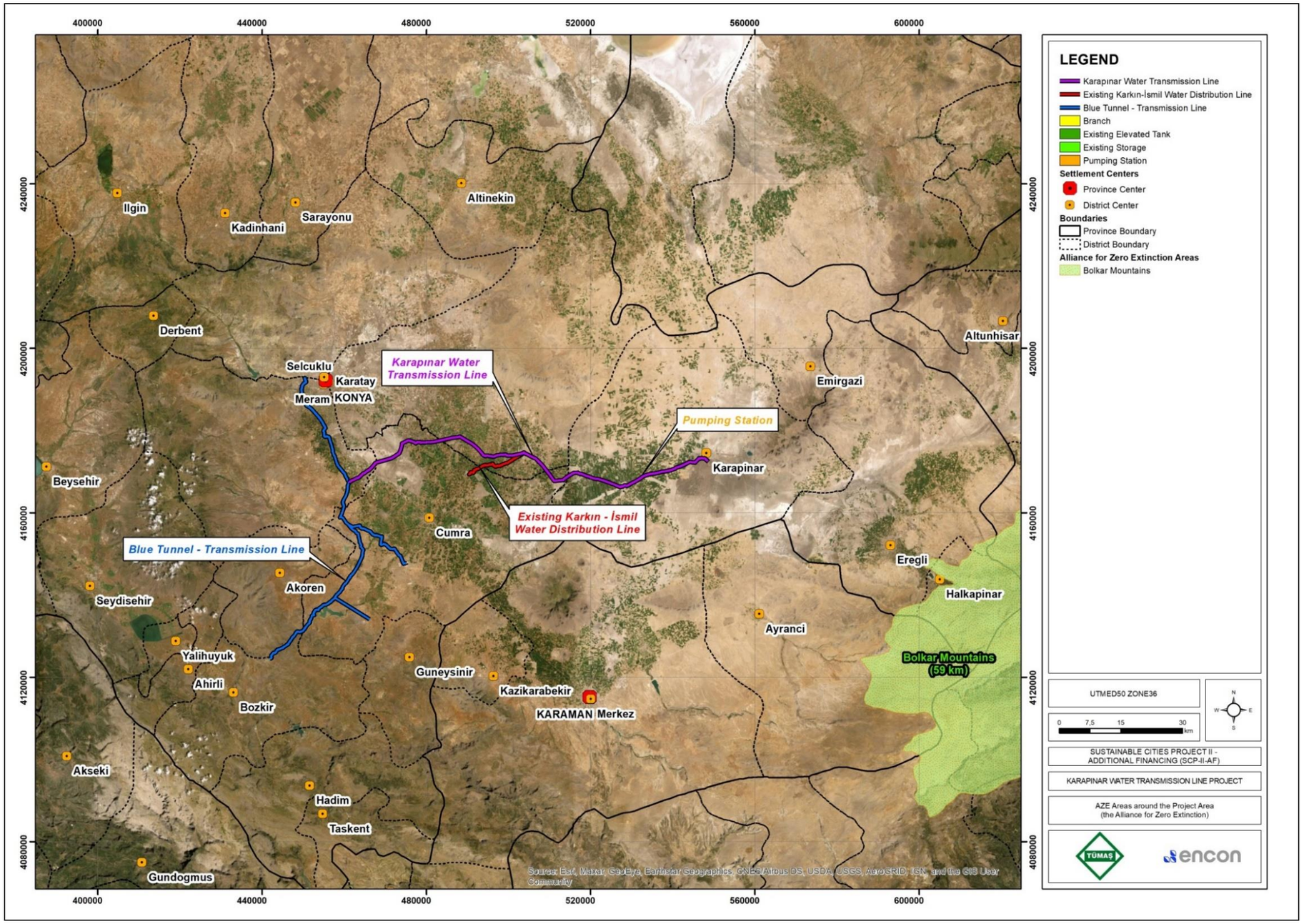

Figure IV.16. Zero Extinction Areas around the Project Area

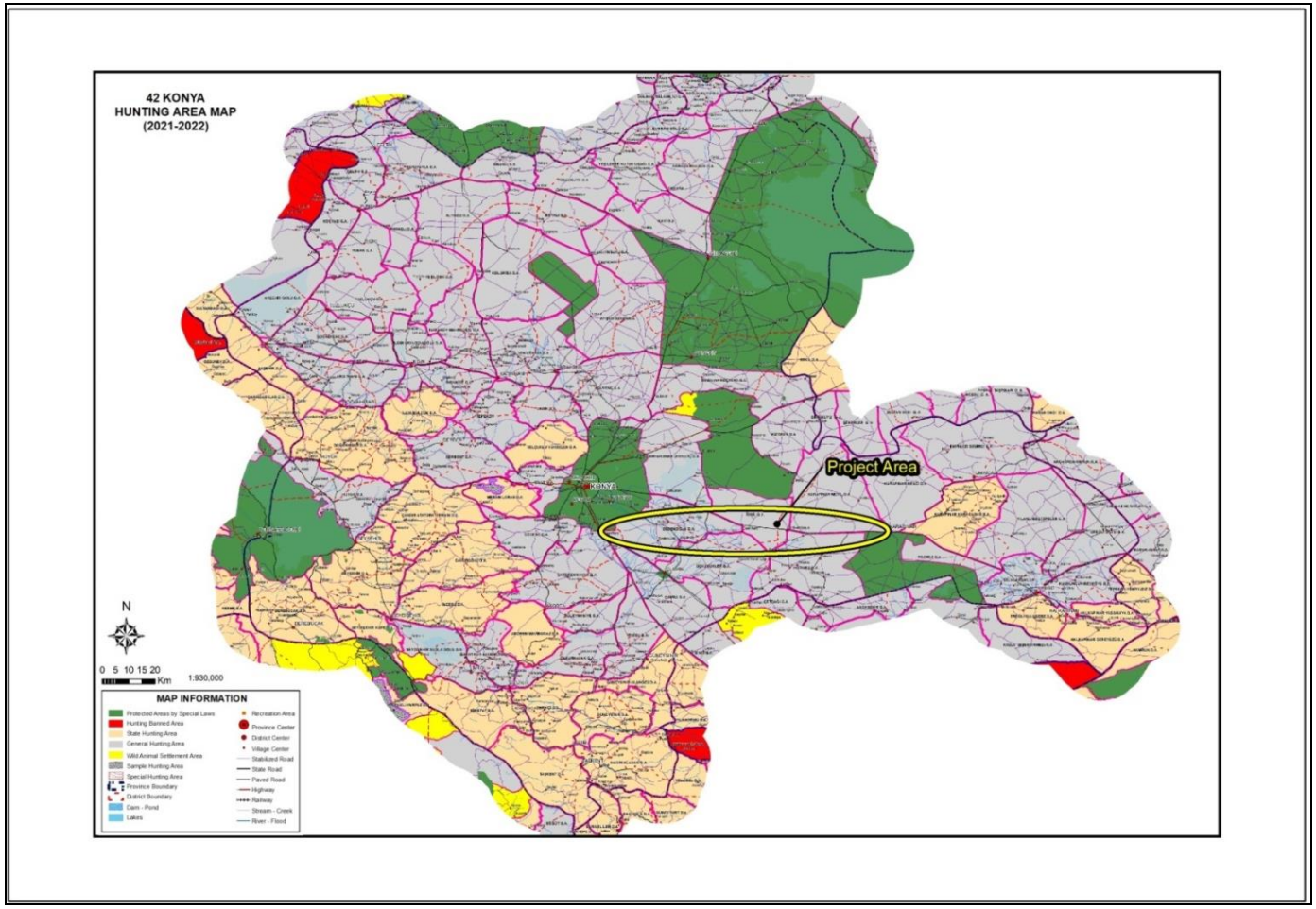

Figure IV.17. Prohibited and Open Hunting Areas in Konya (2021-2022)

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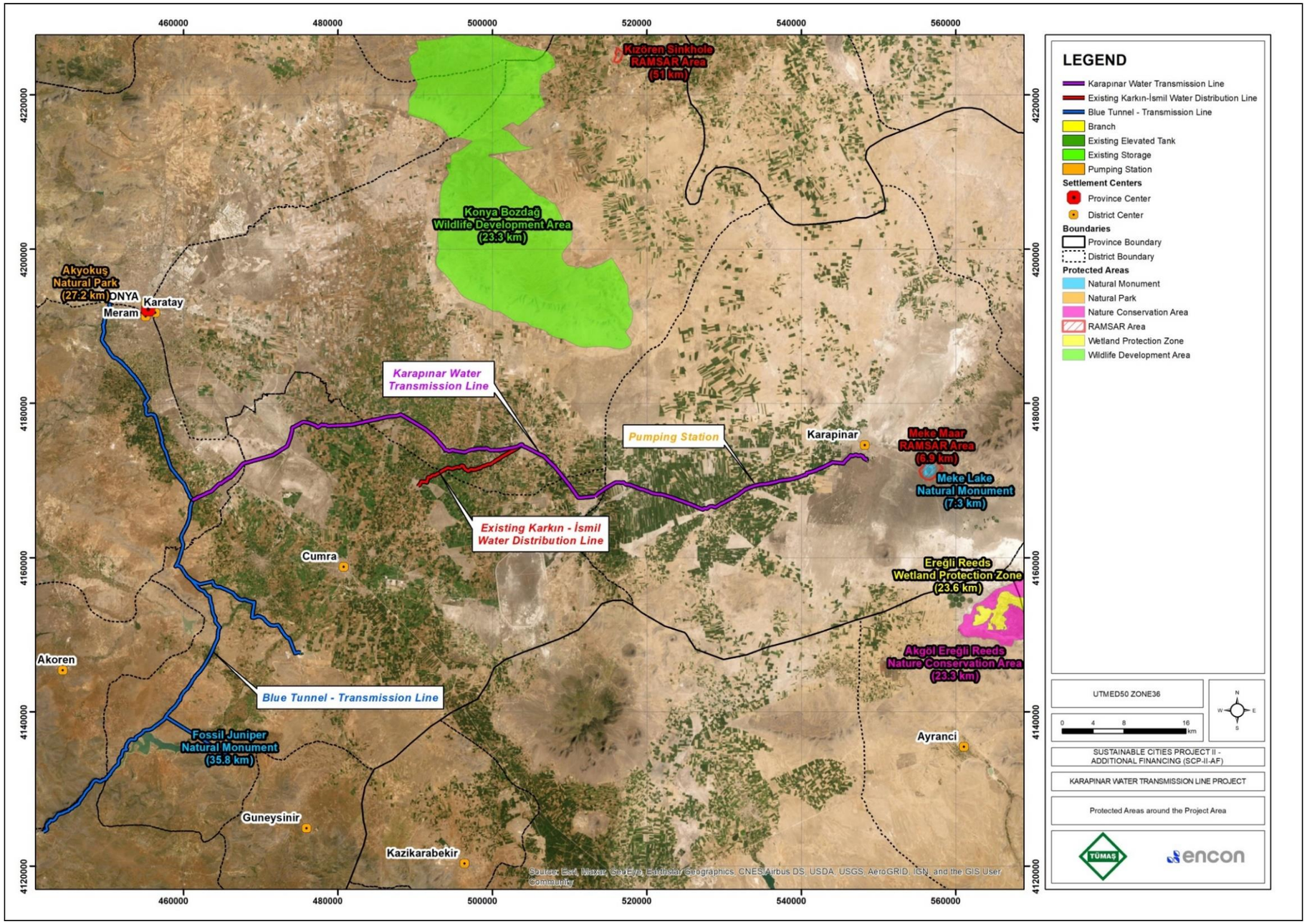

Figure IV.18. Protected Areas around the Project Area

IV.1.8. Air Quality

In Konya Province, there are two (2) air quality monitoring stations located in the Meram and Karatay Districts, which are the closest air quality monitoring stations to the project area. The monthly average concentrations of the parameters PM_{10}, CO, NO_2, NO_x and SO_2 measured at Meram air quality monitoring station between January 1st, 2020 and September 30th, 2021 are presented in Table IV.8. As seen from the table, the monthly PM_{10} concentrations are higher in the cold seasons than in the warm seasons similar with SO_2 and CO concentrations.

Table IV.8 Air Quality Parameters Measured in Meram District

Measurement Location: Konya Meram Station	Average Monthly Concentrations				
	SO_2 (µg/m^3)	PM_{10} (µg/m^3)	CO (µg/m^3)	NO_2 (µg/m^3)	NO_X (µg/m^3)
January 2020	25.97	35.57	1,245.04	53.13	89.01
February 2020	22.22	32.11	1,076.11	51.09	83.72
March 2020	12.15	27.18	1,023.36	53.21	90.35
April 2020	8.56	21.39	632.00	-	-
May 2020	5.51	21.82	504.68	29.9	85.8
June 2020	6.18	24.15	550.63	37.05	96.42
July 2020	5.27	22.01	510.75	-	-
August 2020	5.77	22.86	651.24	43.80	106.41
September 2020	4.78	24.34	650.03	36.68	51.54
October 2020	5.02	33.03	726.68	35.38	61.09
November 2020	10.04	45.73	1,250.94	33.47	53.65
December 2020	26.42	65.15	2,006.52	50.27	112.86
January 2021	27.50	57.49	1,897.82	36.89	80.92
February 2021	28.03	41.43	1,399.35	36.47	65.98
March 2021	19.98	26.86	971.26	30.60	43.69
April 2021	7.01	18.57	680.44	28.25	36.98
May 2021	10.20	10.11	443.12	31.56	37.52
June 2021	2.83	15.80	448.06	35.23	41.44
July 2021	3.84	26.52	476.10	34.22	40.36
August 2021	3.45	23.96	560.44	49.69	62.38
September 2021	6.48	16.35	561.34	44.22	64.85
Limit Value	125*	50*	10,000*	40*	30*

Source: https://sim.csb.gov.tr/STN/STN_Report/StationDataDownloadNew
* As stipulated by the Regulation on the Assessment and Management of Air Quality

The monthly average concentrations of the parameters PM_{10}, CO, NO_2, NO_x, SO_2 and O_3 measured at Karatay air quality monitoring station between January 1st, 2020 and September 30th, 2021 are presented in Table IV.9.

Table IV.9 Air Quality Parameters Measured in Karatay Air Quality Monitoring Station

Months	Average Monthly Concentrations					
	SO_2 (µg/m^3)	PM_{10} (µg/m^3)	CO (µg/m^3)	NO_2 (µg/m^3)	NO_X (µg/m^3)	O_3 (µg/m^3)
January 2020	38.51	11.80	965.44	30.27	49.49	20.34
February 2020	28.01	20.76	706.57	26.48	37.74	24.65
March 2020	31.69	16.62	725.95	25.49	40.54	22.30
April 2020	20.88	11.45	447.17	19.54	22.76	24.52
May 2020	42.81	13.50	331.67	16.75	19.69	22.54
June 2020	24.04	17.09	280.73	17.95	19.98	23.76
July 2020	31.59	6.075	267.85	17.11	19.62	36.37
August 2020	34.38	6.70	401.04	21.71	136.84	30.62
September 2020	43.78	5.38	383.77	29.70	40.32	21.25
October 2020	58.13	2.94	537.88	20.39	49.74	17.90
November 2020	51.78	7.54	1,233.86	39.79	84.25	12.86
December 2020	69.26	15.59	1,703.54	35.54	88.73	14.20
January 2021	74.25	14.69	2,188.24	35.21	94.50	16.81
February 2021	47.77	14.96	2,100.96	34.98	71.68	12.01
March 2021	33.79	10.08	4,276.06	28.73	42.04	5.53
April 2021	27.77	5.87	-	23.29	28.71	-
May 2021	27.29	4.83	-	20.39	24.97	-
June 2021	19.48	6.08	359.61	26.03	30.12	17.53
July 2021	33.38	7.70	203.53	27.47	31.70	25.97
August 2021	38.82	5.06	-	34.55	45.44	14.88
September 2021	39.54	5.85	-	26.02	34.12	9.21
Limit Value	125*	50*	10,000*	40*	30*	120*

Source: https://sim.csb.gov.tr/STN/STN_Report/StationDataDownloadNew
** As stipulated by the Regulation on the Assessment and Management of Air Quality*

Moreover, in order to constitute a baseline inventory and to determine air quality in the project area; 24-hour PM_{10} and $PM_{2.5}$ measurements were conducted by ENCON Laboratory between December 16th and 18th, 2021. The measurement locations of AML-1 and AML-2 are located 20 m and 15 m away from the nearest receptors. The measurement results are presented in Table IV.10 with WBG EHS Guideline and Regulation on the Assessment and Management of Air Quality limit values, while photographs taken from the measurement campaign are provided in Figure IV.19. On the other hand, sampling locations are shown in Figure IV.20 . and laboratory reports are presented in Annex-4 of this report.

Table IV.10 PM10 and PM2.5 Measurement Results for AML-1 and AML-2 with WBG EHS Guideline and Turkish Regulation Limit Values

Parameter	Averaging Period	WBG EHS Guideline Limit Value in µg/m³	Regulation on the Assessment and Management of Air Quality Limit Value in µg/m³	UTM-ED50-Z35	
				Measurement Results at Coordinates of AML*-1 X:533461/Y:4169495 in µg/m3	Measurement Results at Coordinates of AML*-2 X:461099/Y:4167293 in µg/m3
NO_2	24-Hour	20	40	-	
	10-Minute	500			
PM_{10}	1-Year	20			
	24-Hour	50	50	53.55	27.57
$PM_{2.5}$	1-Year	10			
	24-Hour	25	25**	42.33	17.25
O_3	8-Hour daily maximum	100	120	-	

**AML: Air Quality Measurement Location*

According to the Industrial Air Pollution Control Regulation, PM_{10} 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 PM_{10} and $PM_{2.5}$ values should not exceed 50 µg/Nm³ and 25 µg/Nm³, respectively. Within this regard, PM_{10} and $PM_{2.5}$ baseline measurement results exceed both national and WBG General EHS Guidelines ambient air quality limit values for the AML-1, while, measurement results satisfy the limit values for AML-2. AML-1 location has a livestock farm and feed storage, solid manure storage, loading and unloading activities that potentially affect the air quality. As the pumping station construction will generate dust, PM_{10} and $PM_{2.5}$ values will increase, but this will be limited to the construction phase.

Figure IV.19 PM_{10} and $PM_{2.5}$ Measurement Point for AML-1 and AML-2, respectively

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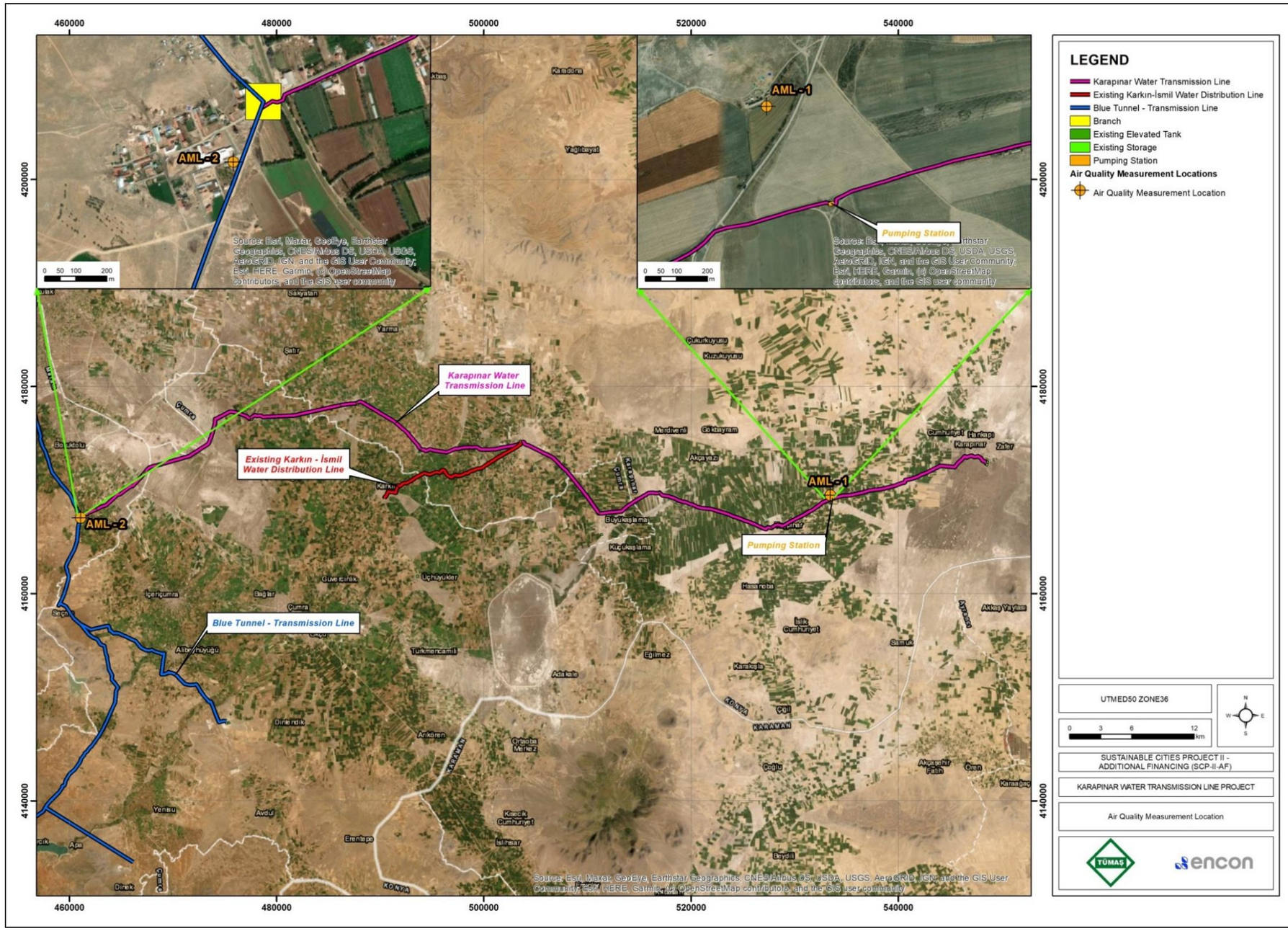


Figure IV.20. Air Quality Measurement Locations

IV.1.9. Noise Level

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 being and the environment.

The operation noise limit values defined in RENC are presented in Table IV.11.

Table IV.11. Environmental Noise Limits Values provided in RENC

Noise Source	**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},S_{min}	65	60	55
Workplaces	$LA_{eq\ 63\text{-}250\ Hz}$	Background + 5 dB(A)		Background +3 dB(A)
In case of multiple workplaces	LA_{eq},S_{min}	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, WBG General EHS Guidelines: Environmental Noise. 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 IV.12. WBG EHS Guidelines require that noise levels should not exceed the levels presented in Table IV.12, or result in a maximum increase in background noise levels of 3 dB at the nearest receptor location off-site.

Table IV.12. 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

Within the scope of the Project, construction activities will be carried out gradually and in a short period of time. In operation phase, the main source of noise generation is expected to be the pumping station, which is located 350 meters away from the nearest receptor. For this reason, the noise impacts from the construction activities are expected to be short-term. However, to determine the impact significance, background noise levels should be known. Therefore, a noise level measurement study was conducted to determine background levels in the protected area, especially around the planned pumping station, by ENCON Laboratory in between December 13th and 15th, 2021. The measurement locations of NML-1 and NML-2 are located 20 m and 15 m away from the nearest receptors. The nearest receptors are residential areas. The measurement results are presented in Table IV.13, while photographs taken from the measurement campaign are provided in

Figure IV.21. On the other hand, sampling locations are same with the air quality measurement locations and laboratory reports are presented in Annex-4 of this report.

Table IV.13 Background Noise Level Measurement Results for NML-1 and NML-2

Measurement Point	Type of the Receptor	Measurement Coordinates (UTM-ED50-Z35)	Measurement Results and Limit Values (Leq) (dBA)				
			RENC			WBG General EHS Guideline	
			Daytime (07.00-19.00)	Evening (19.00-23.00)	Night (23.00-07.00)	Daytime (07.00-22.00)	Nighttime (22.00-07.00)
NML-1	Residential	533461/4169495	54.7	50.3	52.7	54.0	52.6
NML-2	Industrial	461099/4167293	50.7	53.7	45.7	51.9	45.7
Limit Values			65	60	55	55	45

Figure IV.21 Photograph of NML-1

As it is seen from Table IV.13, background noise levels for the AML-2 are below the limit values defined in RENC for daytime, evening and night time frames and WBG General EHS Guidelines: Environmental Noise. On the other hand, the night time background noise level is above the limits defined in the WBG General EHS Guidelines: Environmental Noise. Based on these measurement results, noise impact should not exceed the levels presented in the WBG General EHS Guidelines (see Table 1.7.1), or background noise levels should not be exceeded more than 3 dB at the nearest receptor location off-site during the construction and operation phases of the Project.

Since the measurements were carried out in overcast weather conditions, it is thought that the limit exceedances may be due to the weather.

IV.1.10. Waste Management

Pursuant to the Environmental Law No. 2872, it is prohibited to directly or indirectly deliver, 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 (see Table II.1).

Studies are carried out within the scope of the collection of wastes generated in Konya Province within the scope of the relevant legislation (see Table II.1), the establishment, recording, disposal and management of the waste storage areas required for their temporary storage. Wastes from the project will be transported by Konya Metropolitan Municipality to Konya Landfill and Incineration Facility that has environmental permit. The capacities of Konya Solid Waste Landfill Facility and Thermal Incineration Facility are 1500 ton/day and 822 ton/day, respectively.

The number of solid waste disposal facilities in Konya as of 2019 is given in Table IV.14

Table IV.14 Number of Solid Waste Processing Plants in Konya Province as of 2019

Solid Waste Disposal Facility (Municipal)	Number in Konya Province
Licensed Packaging Waste Collection Separation Facility and Recycling Facility	46
Hazardous Waste Recovery Facility	15
Waste Oil Recovery Facility	1
Vegetable Waste Oil Intermediate Storage Facility	2
Number of End-of-Life Tire Recovery Facilities	2
Medical Waste Sterilization Facility	1
Non-Hazardous Waste Recovery Facility	85
Waste Electrical and Electronic Goods Processing Facility	2
Mining Waste Disposal-Storage Category B	1

IV.1.11. Landscape

Within the scope of the Project, the construction of drinking water transmission line will be carried out in rural areas. Transmission lines will mainly follow cadastral roads, however, some parts of the lines will pass through lands that are under the responsibilities of public administration or pasture lands. Figure IV.2 shows photos taken at the Project Area during site visit conducted by ENCON on November 25th, 2021.

The planned TMY1 pumping station will be constructed on parcels 953/21 and 953/22 of Gaziosmanpasa Neighborhood of Karapinar District, which are registered as road and pasture area, respectively and the size of the land allocated for the pumping station is 930 m².

IV.2. Ecology and Biodiversity

For this Project, the biological environment was investigated, including habitat structures of the project area, protected areas, and Key Biodiversity Areas (KBA), which are internationally recognized areas. For this purpose, both desktop studies and field surveys were carried out. The related literature and previous studies have been reviewed, and the general biological characteristics of the region have been revealed. Also, a field visit was conducted by the biologist on November 25th, 2021 (see Figure IV.22).

Figure IV.22. Biological Field Studies in and Around the Planned Karapinar Water Transmission Line Project Area

The entire transmission line was visited within the scope of the biodiversity studies. A major part of the line will be built along the road. Biological field studies were carried out, especially in the areas where the line exits the road. 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://bizimbitkiler.org.tr), which contains up-to-date information was used. Within the scope of desktop studies, previous thesis and article studies in the region were researched.

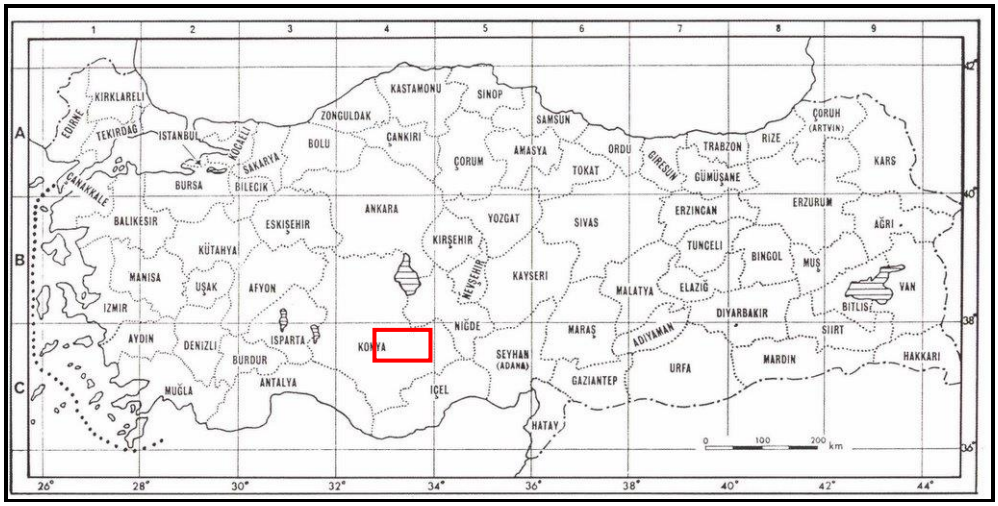
Fauna studies have been carried out in and around the project area and in the habitats suitable for feeding, shelter, and breeding areas for fauna species. In determining the terrestrial fauna species, the existence of suitable habitats, traces, and signs of animals (nests, nest holes, excrement and 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 done, while identifying the species in and around the project area during the faunistic field studies. GPS was used to determine the elevations and geographical coordinates during the field studies.

Data from the literature on biotopes, protected areas, endemic species, endangered species, and wildlife habitats in and around the project area were collected and evaluated. According to national and international sources, the danger categories of flora and fauna species were assessed.

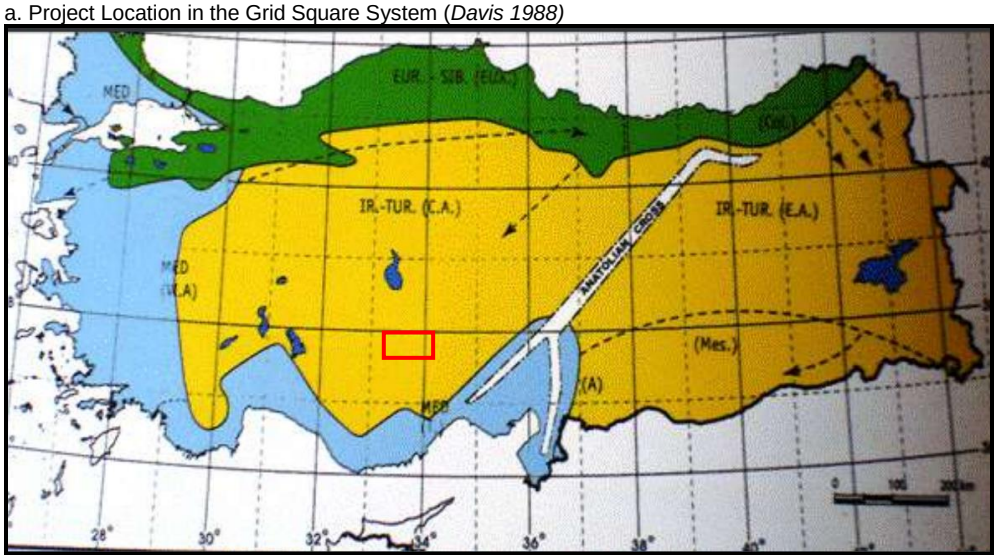
Vegetation Types of the Biodiversity

The vegetation type of the project area is closely related to the climate characteristics, altitude, and soil characteristics (Buldur, A.D., 1998, s.78).

The planned transmission line is in the Central Anatolian regions and, situated in the Irano-Turanian Phytogeographical Region, as seen in Figure IV.23. The project area is located in the C4 grid in the grid square system of the flora of Türkiye.



a. Project Location in the Grid Square System (*Davis 1988)*



b. Phytogeographical Regions Map in Türkiye *(www.ktu.edu.tr)*

Davis P.H.,Harper P.C. andHege I.C. (eds.), 1971. Plant Life of South-West Asia. The Botanical Society of Edinburg]

EUR.-SİB.(EUX): Europa-Siberian Region (Euxin sub-region); Col.:Colsic sector of the Euxine sub-region

MED.: Mediterranean Region (Eastern Mediterranean sub-region); W.A: Western Anatolia region; T.: Taurus Region; A.: Amanus Region

IR.-TUR.: Iran-Turanian Region; C.A.: Central Anatolia Region; E.A.: Eastern Anatolia Region (Mes: Mesopotamia) X: Central European/Balkan subregion of possibly Euro-Siberian region (mt): Mountain

Figure IV.23. Bio-ecological Location of the Project

Due to the characteristics of the geography in which it is located, Konya Province generally has subaerial climate conditions. However, the effects of altitude on temperature and precipitation, which are climatic elements, were also different. This feature has also affected the differentiation of the plains and the vegetation in the mountainous and high areas.

The dominant vegetation of the vast areas within the provincial borders of Konya is the steppe. Depending on the elevation, there are steppes on the plain floor and forests on the hills. However, Halophytes are found in salty and barren soils that occur depending on the geological structure around salty and brackish watery lakes.

Also; Anthropogenic Steppes (steppes) have been formed in forest areas that humans have destroyed for various reasons since the first ages. Bush formations scattered between the steppes were observed. In the agricultural fields on the plains, cultural plants occupy large areas. The most important of these are cereals, legumes, and sugar beet.

Konya Province is poor in terms of forests. From the edges of the plain, after the bush formations, forests are passed. In the forests of Konya, trees are commonly seen: Black Pine, Juniper, Aspen, Cedar, Fir, Lebanese Cedar, Kasnak Oak, Thuja, Turkish Oak, Acorn Oak, and Scotch Pine from Plantations.

The planned Karapinar Transmission Line is about 101 km. The entire line was studied in the biological field studies, and the vegetation in and around the line was determined. As a result of field and desktop studies;

a) A major part of the line will be built along the road. These areas have lost their natural character in the current situation.
b) Field studies were carried out in the areas where the line exits the road. These areas have Central Anatolian steppe, dominant throughout Konya, halophyte steppe and ruderal vegetation.
c) There are generally agricultural or residential areas around the line that will be built.
d) In the examinations carried out on the project route, it has been determined that there is no water in the creeks that the line passes through and that there is no flowing creek. Riparian vegetation was determined around the irrigation canal of State Hydraulic Works.

a) Ruderal vegetation and Roads

b) Steppe and Ruderal Vegetation

c) Agricultural and Residential Areas

d) Dry Creeks and Riparian Vegetation

Figure IV.24. Vegetation types in and around the Project Area

International Legal and Regulatory Framework for Ecology and Biodiversity

BERN Convention

Bern Convention was put forward in 1982 in order to protect the European wildlife and natural habitats. Species to be protected according to the Bern Convention are listed in four appendices, which are presented in Table IV.15 with their explanations:

Table IV.15 Annexes to the Bern Convention

Annex	Explanation
I	Strictly protected flora species
II	Strictly protected fauna species
III	Protected fauna species
IV	Prohibited means and methods of killing, capture and other forms of exploitation

The Convention aims at conserving and promoting biodiversity, developing national policies for the conservation of wild flora and fauna and their natural habitats, protection of the wild flora and fauna from the planned development and pollution, developing trainings for protection practices, promoting and coordinating the research made regarding this subject. It has been signed by 26 member states of the European Council (as well as Türkiye) with the aim of conserving the wildlife in Europe. Species that are not included within the appendices of the Convention are those that do not require any special protection. Species are not listed individually but instead are protected due to the habitat protection approach of the Bern Convention. All the nations, which are party to the BERN Convention, have signed the Convention on Biological Diversity as well. Parties of this convention are responsible for ensuring sustainable use of resources in line with their national development trends and conserving the threatened species.

CITES

CITES stands for the Convention on International Trade in Endangered Species of Wild Flora and Fauna. It is an international agreement that has been ratified by governments of 164 states

(including Türkiye), whose aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. The principles of CITES are based on sustainability of the trade in order to safeguard ecological resources (live animals and plants, vast array of wildlife products derived from them, including food products, exotic leather goods, etc.). CITES was signed in 1973 and entered in force on July 1, 1975. Türkiye ratified the Convention in 1996. Categories and species included in CITES are listed in three different appendices based on their protection statuses. These appendices and their explanations are given in Table IV.16.

Table IV.16 Appendices to CITES

Appendix	Explanation
I	covers the species, which are under the threat of extinction. Trade in the specimens of these species is not allowed except extraordinary circumstances
II	includes species, which are not threatened with extinction, but trade in specimens is restricted in order to prevent utilization incompatible with their survival
III	for which other parties of CITES is applied for assistance in controlling trade and which are conserved at least in one country.

IUCN

The International Union for Conservation of Nature (IUCN) publishes its Red List of Threatened Species, which intends to draw attention to species, whose populations are at risk or under threat. The IUCN places a species on the Red List only after studying its population and the reasons for its decline. Some countries pay greater attention to IUCN-listed species than Bern-listed species, since the Red List relies on more research. The 1994 (ver.2.3) and 2001 (ver.3.1) categories and criteria of the IUCN Red List are presented below in Table IV.17. The Red List Categories and Criteria had been re-formed through evaluating more open and easier to use systems. As a result, the IUCN Commission made revisions in February 2000, and the new set of categories and criteria were published in 2001.

Table IV.17 IUCN Red List Categories and Criteria

IUCN Red List Categories and Criteria 1994 (ver. 2.3)		IUCN Red List Categories and Criteria 2012 (ver. 4.0)	
EX	Extinct	EX	Extinct
EW	Extinct in the Wild	EW	Extinct in the Wild
CR	Critically Endangered	CR	Critically Endangered
EN	Endangered	EN	Endangered
VU	Vulnerable	VU	Vulnerable
LR	Lower Risk		
	cd : conservation dependent	NT	Near Threatened
	nt : near threatened	LC	Least Concern
	lc : least concern		
DD	Data Deficient	DD	Data Deficient
NE	Not Evaluated	NE	Not Evaluated

IV.2.1. Flora

The planned transmission line area consists of generally ruderal and steppe vegetation and has riparian vegetation in a small area. The vegetation through which the line passes has typically the species of the general steppe and ruderal vegetation of Konya Province, where it is located.

According to field studies and literature reviews, the flora types in and around the project area are presented in Table IV.18.

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

Table IV.18. Flora Species in and around the Project Area[1]

Family	Taxon	Endemism	IUCN	BERN	CITES		
				Annex 1	App1	App2	App3
EQISETACEAE	*Equisetum ramosissimum Desf*	-	LC	-	-	-	-
PINACEAE	*Picea orientalis (L.) Peterm.*	-	LC	-	-	-	-
	Pinus nigra subsp. pallasiana (Lamb.) Holmboe	-	LC	-	-	-	-
CUPRESSACEAE	*Cupressus sempervirens L.*	-	LC	-	-	-	-
	Ephedra major Host.	-	LC	-	-	-	-
RANUNCULACEAE	*Anemone blanda Schott & Kotschy*	-	-	-	-	-	-
	Consolida orientalis (Gay) Schrod.	-	-	-	-	-	-
	Consolida regalis S.F.Gray subsp. paniculata (Host) Soo var. paniculata	-	-	-	-	-	-
	Adonis aestivalis L. subsp. aestivalis	-	-	-	-	-	-
	Adonis flammea Jacq.	-	-	-	-	-	-
	Ranunculus cuneatus Boiss.	-	-	-	-	-	-
	Ranunculus arvensis L.	-	-	-	-	-	-
BERBERIDACEAE	*Berberis crataegina DC*	-	-	-	-	-	-
PAPAVERACEAE	*Glaucium flavum Crantz.*	-	LC	-	-	-	-
	Papaver macrostomum Boiss.& Huet ex Boiss.	-		-	-	-	-
	Hypecoum pendulum L.	-		-	-	-	-
	Fumaria vaillantii Lois.	-		-	-	-	-
BRASSICACEAE	*Brassica elongata Ehrh.*	-	LC	-	-	-	-
	Sinapis arvensis L.	-	LC	-	-	-	-
	Eruca sativa Mill.	-	LC	-	-	-	-
	Conringia orientalis (L.) Andrz	-	-	-	-	-	-
	Crambe tataria Sebeok var. tataria	-	LC	-	-	-	-
	Cardaria draba (L.) Desv.subsp. drab	-	-	-	-	-	-
	Isatis glauca Aucher ex Boiss. subsp. glauca	-	-	-	-	-	-
	Aethionema arabicum (L.) Andrz. ex DC	-	-	-	-	-	-
	Hymenolobus procumbens (L.) Nutt.	-	-	-	-	-	-

[1] *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.*
BAGCI Yavuz, CAN Ahmet Alper, DOGU Suleyman. "The flora of region among Ahırlı-Yalıhüyük and Bozkır (Konya/Türkiye)." 2012
Turkish Red Data Book of Turkish Plants (TRDB; Appim et al., 2000)
Turkish Plants Lists (www.bizimbitkiler.org.tr)
Türkiye e-flora website (https://www.turkiyeflorasi.org.tr)
IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. https://www.iucnredlist.org

Family	Taxon	Endemism	IUCN	BERN	CITES		
				Annex 1	App1	App2	App3
	ex Torrey & Gray						
	Capsella bursa-pastoris (L.) Medik.	-	LC	-	-	-	-
	Euclidium syriacum (L.) R. Br.	-	-	-	-	-	-
	Alyssum sibiricum Willd.	-	-	-	-	-	-
	Erophila verna (L.) Chevall. subsp. verna	-	-	-	-	-	-
	Malcolmia africana (L.) R.Br	-	-	-	-	-	-
	Erysimum repandum L.	-	-	-	-	-	-
	Sisymbrium altissimum L	-	-	-	-	-	-
CISTACEAE	*Fumana procumbens (Dun.) Gren. & Godr*	-	-	-	-	-	-
CARYOPHYLLACEAE	*Cerastium perfoliatum L.*	-	-	-	-	-	-
	Holosteum umbellatum L. var. umbellatum	-	-	-	-	-	-
	Petrorhagia cretica (L.) Ball & Heywood	-	-	-	-	-	-
	Vaccaria pyramidata Medik. var grandiflora (Fisch. ex DC.) Cullen	-	-	-	-	-	-
	Silene vulgaris (Moench) Garcke var. vulgaris	-	LC	-	-	-	-
POLYGONACEAE	*Polygonum cognatum Meissn.*	-	-	-	-	-	-
	Rumex crispus L.	-	LC	-	-	-	-
AMARANTHACEAE	*Amaranthus retroflexus L*	-	-	-	-	-	-
	Beta vulgaris L.	-	LC	-	-	-	-
	Salsola nitraria Pall.	-	-	-	-	-	-
	Suaeda altissima Pall.	-	-	-	-	-	-
TAMARICACEAE	*Tamarix parviflora DC*	-	LC	-	-	-	-
HYPERICACEAE	*Hypericum perforatum L.*	-	LC	-	-	-	-
MALVACEAE	*Malva sylvestris L*	-	LC	-	-	-	-
	Althaea officinalis L.	-	LC	-	-	-	-
LINACEAE	*Linum nodiflorum L*	-	-	-	-	-	-
	Linum bienne Mill	-	-	-	-	-	-
GERANIACEAE	*Geranium stepporum P.H.Davis.*	-	-	-	-	-	-
	Erodium cicutarium (L.) L'Herit. ex DC. subsp. cicutarium	-	-	-	-	-	-
ZYGOPHYLLACEAE	*Peganum harmala L*	-	-	-	-	-	-
FABACEAE	*Genista acanthoclada DC.*	-	-	-	-	-	-
	Robinia pseudoacacia L	-	-	-	-	-	-
	Galega officinalis L.	-	LC	-	-	-	-
	Astragalus odoratus Lam.	-	-	-	-	-	-
	Astragalus oxytropifolius Boiss.	-	-	-	-	-	-
	Astragalus microcephalus Willd.	-	-	-	-	-	-
	Vicia peregrina L	-	LC	-	-	-	-
	Trifolium pratense L. var. pratense	-	LC	-	-	-	-
	Medicago phrygia (Boiss. & Balansa)	-	-	-	-	-	-

Family	Taxon	Endemism	IUCN	BERN	CITES		
				Annex 1	App1	App2	App3
	E.Small						
	Onobrychis oxyodonta var. armena (Boiss. & Huet) Aktoklu	-	-	-	-	-	-
ROSACEAE	*Prunus x domestica L.*	-	-	-	-	-	-
	Rubus discolor Weihe & Nees	-	-	-	-	-	-
	Agrimonia eupatoria L.	-	LC	-	-	-	-
	Rosa canina L.	-	LC	-	-	-	-
	Crataegus orientalis Pall. ex Bieb. var. orientalis	-	-	-	-	-	-
	Pyrus communis L. subsp. communis	-	LC	-	-	-	-
APIACEAE	*Echinophora tournefortii Jaub. & Spach*	-	-	-	-	-	-
	Eryngium campestre var. virens	-	-	-	-	-	-
	Scandix iberica Bieb.	-	-	-	-	-	-
	Falcaria vulgaris Bernh.	-	-	-	-	-	-
	Turgenia latifolia (L.) Hoffm.	-	-	-	-	-	-
DIPSACACEAE	*Dipsacus laciniatus L*	-	-	-	-	-	-
	Cephalaria syriaca (L.) Schrader	-	-	-	-	-	-
ASTERACEAE	*Inula montbretiana DC*	-	-	-	-	-	-
	Senecio vernalis Waldst. & Kit	-	-	-	-	-	-
	Anthemis cretica L. subsp. anatolica (Boiss.) Grierson	-	-	-	-	-	-
	Artemisia santonicum L.	-	LC	-	-	-	-
	Achillea wilhelmsii C.Koch	-	-	-	-	-	-
	Cirsium arvense (L.) Scop.	-	-	-	-	-	-
	Carduus nutans subsp. nutans L.	-	-	-	-	-	-
	Centaurea virgata Lam.	-	-	-	-	-	-
	Cirsium ligulare Boiss.	-	-	-	-	-	-
	Echinops ritro L.	-	-	-	-	-	-
	Cichorium intybus L.	-	LC	-	-	-	-
	Tragopogon latifolius Boiss. var. angustifolius Boiss.	-	-	-	-	-	-
	Xanthium spinosum L.	-	-	-	-	-	-
	Crepis foetida L. subsp. foetida	-	-	-	-	-	-
CONVOLVULACEAE	*Convolvulus arvensis L*	-	-	-	-	-	-
BORAGINACEAE	*Echium italicum L.*	-	-	-	-	-	-
	Anchusa azurea Mill. var. azure	-	-	-	-	-	-
SCROPHULARIACEAE	*Verbascum campestre Boiss. & Heldr*	-	-	-	-	-	-
	Veronica polita Fries	-	-	-	-	-	-
LAMIACEAE	*Teucrium polium L.*	-	-	-	-	-	-
	Lamium amplexicaule L	-	-	-	-	-	-
	Stachys annua subsp. annua var. lycaonica R.Bhattacharjee	-	-	-	-	-	-
	Prunella vulgaris L.	-	LC	-	-	-	-

Family	Taxon	Endemism	IUCN	BERN	CITES		
				Annex 1	App1	App2	App3
	Ziziphora tenuior L.	-	-	-	-	-	-
	Salvia virgata Jacq	-	-	-	-	-	-
PLANTAGINACEAE	*Plantago major L. subsp. Major*	-	LC	-	-	-	-
EUPHORBIACEAE	*Euphorbia helioscopia L.*	-	-	-	-	-	-
	Euphorbia macroclada Boiss.	-	-	-	-	-	-
PLATANACEAE	*Platanus orientalis L*	-	-	-	-	-	-
FAGACEAE	*Quercus ithaburensis Decne. subsp. macrolepis (Kotschy) Hedge & Yalt*	-	LC	-	-	-	-
	Quercus trojana P.B.Webb	-	LC	-	-	-	-
SALICACEAE	*Salix alba L.*	-	LC	-	-	-	-
	Populus alba L.	-	LC	-	-	-	-
LILIACEAE	*Allium cepa L.*	-	LC	-	-	-	-
	Ornithogalum nutans L.	-	-	-	-	-	-
	Muscari neglectum Guss	-	-	-	-	-	-
	Gagea granatellii (Parl.) Parl	-	LC	-	-	-	-
POACEAE	*Phragmites australis (Cav.) Trin. Ex Steudel*	-	LC	-	-	-	-
	Arrhenatherum palaestinum Boiss.	-	LC	-	-	-	-
	Aegilops markgrafii (Greuter) Hammer	-	LC	-	-	-	-
	Stipa arabica Trin. & Rupr.	-	-	-	-	-	-
	Hordeum murinum L. subsp. murinum	-	LC	-	-	-	-
	Bromus tectorum L	-	-	-	-	-	-
	Poa bulbosa L	-	-	-	-	-	-
	Zea mays L.	-	LC	-	-	-	-

IV.2.2. Fauna

The fauna lists prepared via the field and desktop studies carried out in and around the project area and the interviews made with the local people are given under the following headings.

Fish

In the field studies on the project route, it has been determined that the creeks that the line passes through are dry, and there is no flow. Therefore, it has been determined that there are no fish species.

In the case of seasonal flow in creeks, the fish species that are possibly found in and around the areas where the line passes are given in Table IV.19.

These species are not only found in these areas but also exist in other regions in Türkiye. Among the detected species, there are no endemic or protected species in the region. *Cyprinus carpio* (Sazan) is considered as vulnerable (VU) according to the IUCN Red List, but populations found in inland waters of Türkiye consist of cultural forms (see Figure IV.25).

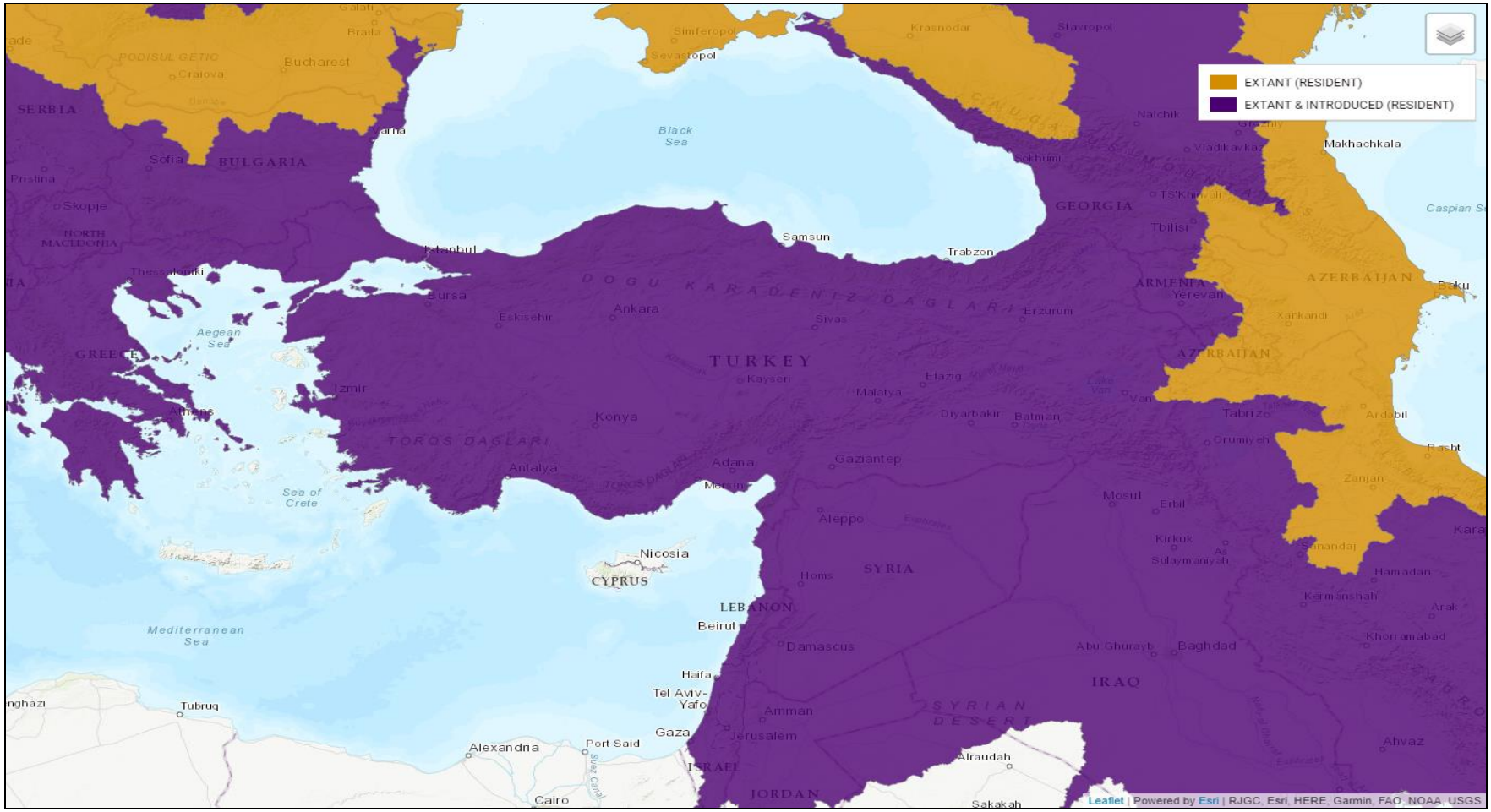


Figure IV.25 Geographic range map of Cyprinus carpio (Source: www.iucnredlist.org)

Table IV.19. Possible Fish Species in the Project Area[2]

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	IUCN
FISH					
CYPRINIFORMES	CYPRINIDAE	*Capoeta baliki*	Siraz	Fourbarbel Scraper	LC
		Capoeta damascina	Siraz	Levantine Scraper	LC
		Cyprinus carpio	Sazan	Carp	VU
		Squalius cephalus	Akbalık	European chub	LC
	LEUCISCIDAE	*Alburnus escherichii*	İnci	Sakarya Bleak	LC
		Pseudophoxinus battalgili	Yag Baligi	Tuz Lake Spring Minnow	LC
	SALMONIDAE	*Salmo trutta*	Alabalik	Brown Trout	LC

Amphibians and Reptilians

The habitat of reptile and amphibian species are riparian vegetation. 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 IV.20.

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 IV.20. Reptile and Amphibian Species in and around the Project Area[3]

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
AMFIBIA							
ANURA	Bufonidae	*Pseudepidalea viridis*	Gece Kurbagasi	Green Toad	LC	Annex-II	-
		Pelophylax ridibundus	Ova Kurbagasi	Marsh Frog	LC	Annex-III	-
REPTILIA							
TESTUDINES	Testudinidae	*Testudo graeca*	Tosbaga	Spur-Thighed Tortoise	VU	Annex-II	APP-2
SQUAMATA	Gekkonidae	*Mediodactylus kotschyi*	Ince Parmakli Keler	Kotschy's Gecko	LC	-	-
	Agamidae	*Laudakia stellio*	Dikenli Keler	Hardim	LC	Annex-II	-
		Trapelus lessonae	Bozkir Keleri	-	LC	Annex-III	-
	Lacertidae	*Ophisops elegans*	Tarla Kertenkelesi	Wester Sanke-Eyed Lizard	LC	Annex-II	-

[2] *IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. https://www.iucnredlist.org*
İlhan, Ali, Suleyman BALIK, and S. A. R. I. Hasan. "Distribution And Conservation Status Of Central and West Anatolia Endemic Inland Water Fishes." Aquatic Sciences and Engineering 29.2 (2014): 9-34.
[3] [3] *IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. https://www.iucnredlist.org*
Olgun, Kurtulus Kumlutas, Yusuf and Baran İbrahim. Türkiye Amphibians and Reptiles. TUBITAK, 2012.
The Amphibians and Reptiles Monitoring & Photography Society in Türkiye (AdaMerOs Herptil Türkiye) (http://www.turkherptil.org/)

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
		Anatololacerta danfordi	Toros Kertenkelesi	Danford's Lizard	LC	Annex-III	-
		Lacerta media	Sivas Kertenkelesi	-	LC	Annex-III	-
		Parvilacerta parva	Cuce Kertenkele	Dwarf Lizard	LC	Annex-II	-
	Scincidae	*Ablepharus budaki*	Budak Ketenkelesi	-	LC	Annex-III	-
	Colubridae	*Eirenis modestus*	Uysal Yilan	Ring-Headed Dwarf Snake	LC	Annex-III	-
		Dolichophis schmidti	Kirmizi Yilan	Red-Bellied Racer	LC	Annex-III	-
		Natrix natrix	Yarisucul Yilan	Grass Snake	LC	Annex-III	-

Birds

One of the most important main routes of the European-African migration routes is located in Türkiye. The Hatay-Istanbul Strait line is an important route for large-winged gliding migrating species, and this line also passes through the province of Konya. 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 IV.21. 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 IV.26. There are no endemic or critical bird species within the project area.

(Source: ***https://www.iucnredlist.org***)

Figure IV.26. Geographic range map of *Turtle Dove (Streptopelia turtur)*

Table IV.21. Bird Species in and around the Project Area[4]

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
AVES							
Ciconiiformes	Ciconiidae	*Ciconia ciconia*	Leylek	White Stork	LC	Annex-II	APP-II
Accipitriformes	Accipitridae	*Accipiter nisus*	Atmaca	Sparrowhawk	LC	Annex-II	APP-II
		Buteo buteo	Sahin	Buzzard	LC	Annex-II	APP-II
		Buteo rufinus	Kizil Sahin	Long-Legged Buzzard	LC	Annex-II	APP-II
		Hieraaetus pennatus	Kucuk Kartal	Booted Eagle	LC	Annex-II	APP-II
		Circus cyaneus	Gokce Delice	Hen Harrier	LC	Annex II	APP-II
Falconiformes	Falconidae	*Falco naumanni*	Kucuk Kerkenez	Lesser Kestrel	LC	Annex-II	APP-II
Galliformes	Phasianidae	*Alectoris chukar*	Kinali Keklik	Chukar	LC	Annex-III	–
		Perdix perdix	Cilkeklik	Grey Partridge	LC	Annex-III	-
		Coturnix coturnix	Bildircin	Quail	LC	Annex-III	-
Columbiformes	Columbidae	*Columba livia*	Kaya Guvercini	Rock Dove	LC	Annex-III	-
		Columba palumbus	Tahtali	Woodpigeon	LC	-	–
		Streptopelia turtur	Uveyik	Turtle Dove	VU	Annex-III	-
Cuculiformes	Cuculidae	*Cuculus canorus*	Guguk	Cuckoo	LC	Annex-III	-
Caprimulgiformes	Apodidae	*Apus apus*	Ebabil	Swift	LC	Annex-III	–
Coraciiformes	Meropidae	*Merops apiaster*	Arikusu	Bee-Eater	LC	Annex-II	-
Charadriiformes	Scolopacidae	*Gallinago gallinago*	Su Cullugu	Common Snipe	LC	Annex-III	-
Bucerotiformes	Upupidae	*Upupa epops*	İbibik	Eurasian Hoopoe	LC	Annex-II	-
Anseriformes	Anatidae	*Mareca strepera*	Boz Ordek	Gadwall	LC	Annex-III	-
		Anas platyrhynchos	Yesilbas	Mallard	LC	Annex-III	-
Passeriformes	Alaudidae	*Melanocorypha bimaculata*	Kucuk Bogmakli Toygar	Bimaculated Lark	LC	Annex-II	-
		Galerida cristata	Tepeli Toygar	Crested Lark	LC	Annex-III	-
		Alauda arvensis	Tarlakusu	Skylark	LC	Annex-III	-
	Hirundinidae	*Hirundo rustica*	Kir Kirlangici	Swallow	LC	Annex-II	-
	Motacillidae	*Anthus campestris*	Kir İncirkusu	Tawny Pipit	LC	Annex-II	-
		Motacilla alba	Ak Kuyruksallayan	Pied Wagtail	LC	Annex-II	-

[4] *IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. https://www.iucnredlist.org*
Sullu, N. "Avifauna of Konya-Eregli Akgol. Selcuk University." Graduate School of Natural and Applied Sciences, Master Thesis, Konya (2006).
Anonymous Birds of Türkiye: TRAKUS (https://www.trakus.org/)

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
	Troglodytidae	*Troglodytes troglodytes*	Citkusu	Wren	LC	Annex-II	–
	Muscicapidae	*Erithacus rubecula*	Kizilgerdan	Robin	LC	Annex-II	-
		Luscinia megarhynchos	Bulbul	Nightingale	LC	Annex-II	-
		Phoenicurus ochruros	Kara Kizilkuyruk	Black Redstart	LC	Annex-II	-
		Saxicola torquata	Taskusu	Stonechat	LC	Annex-II	-
		Oenanthe isabellina	Boz Kuyrukkakan	Isabellina Wheatear	LC	Annex-II	-
		Oenanthe oenanthe	Kuyrukkakan	Northern Wheatear	LC	Annex-II	-
	Turdidae	*Turdus merula*	Karatavuk	Blackbird	LC	Annex-III	-
	Sittidae	*Sitta krueperi*	Kucuk Sivaci	Krueper's Nuthatch	LC	Annex-II	–
		Sitta neumayer	Kaya Sivaci	Rock Nuthatch	LC	Annex-II	-
	Corvidae	*Garrulus glandarius*	Alakarga	Jay	LC	–	–
		Pica pica	Saksagan	Magpie	LC	-	-
		Corvus monedula	Kucuk Karga	Jackdaw	LC	-	-
		Corvus frugilegus	Ekin Kargasi	Rook	LC	-	-
		Corvus cornix	Les Kargasi	Hooded Crow	LC	-	-
		Corvus corax	Kuzgun	Raven	LC	Annex-III	–
	Sturnidae	*Sturnus vulgaris*	Sigircik	Starling	LC	-	-
	Passeridae	*Passer domesticus*	Serce	House Sparrow	LC	-	-
		Passer montanus	Agac Sercesi	Tree Sparrow	LC	Annex-III	-
	Fringillidae	*Fringilla coelebs*	İspinoz	Chaffinch	LC	Annex-III	-
		Carduelis carduelis	Saka	Goldfinch	LC	Annex-II	-
	Emberizidae	*Emberiza hortulana*	Kirazkusu	Ortolan	LC	Annex-III	-
		Miliaria calandra	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 IV.22. There are no endemic or critical mammal species.

Table IV.22. Mammal Species in and around the Project Area[5]

ORDER	FAMILY	SPECIES	TURKISH NAME	ENGLISH NAME	THREATENED CATEGORIES		
					IUCN	BERN	CITES
MAMMALIA							
Insectivora	Erinaceidae	*Erinaceus concolor*	Kirpi	Hedgehog	LC	-	-
Rodentia	Cricetidae	*Microtus guentheri*	Gunther Tarla Faresi	Gunther's Vole	LC	-	-
		Microtus anatolicus	Anadolu Tarla Faresi	Anatolian Vole	DD	-	-
	Muridae	*Meriones tristrami*	Anadolu Col Sicani	Tristram's Jird	LC	-	-
		Mus macedonicus	Sari Ev Faresi	Macedonian Mouse	LC	-	-
		Apodemus gurkha	Sari Boyunlu Orman Faresi	Nepalese Field Mouse	LC	-	-
	Dipodidae	*Allactaga williamsi*	Arap Tavsani	Williams's Jerboa	LC	-	-
	Sciuridae	*Spermophilus xanthoprymnus*	Gelengi	Anatolian Ground Squirrel	NT	-	-
		Sciurus anomalus	Anadolu Sincabi	Caucasian Squirrel	LC	Annex-II	-
Eulipotyphla	Erinaceidae	*Erinaceus concolor*	Kirpi	Southern White-Breasted Hedgehog	LC	Annex-II	-
	Rhinolophidae	*Rhinolophus hipposideros*	Kucuk Nalburunluyarasa	Lesser Horseshoe Bat	LC	Annex - II	-
Carnivora	Mustelidae	*Martes foina*	Kaya Sansari	Beech Marten	LC	Annex - III	-
		Meles meles	Porsuk	Eurasian Badger	LC	Annex - III	-
	Canidae	*Canis lupus*	Kurt	Grey Wolf	LC	Annex - II	-
		Vulpes vulpes	Tilki	Red Fox	LC	-	-
Cetartiodactyla	Suidae	*Sus scrofa*	Yaban Domuzu	Wild Boar	LC	Annex - III	-

IV.3. Socio-Economic Environment

In this section, information regarding the economic activities and demographic features of Konya Province and Karapınar, Cumra, Karatay and Meram Districts (Karapinar Group Districts) are presented.

Konya Province ranks as the 7th province of Türkiye in terms of total population, as of 2020 with its population of 2,250,020. Population density (number of people per square kilometer) of the province is 58 people/km^2. It is lower than the average of Türkiye (109 people/km^2) (TurkStat, 2020).

[5] *Anonymous Mammalia of Türkiye: TRAMEM (https://www.tramem.org/)*
IUCN 2022. The IUCN Red List of Threatened Species. Version 2021-3. https://www.iucnredlist.org

Although the exact total number of workers to be employed during the construction and operation phases is currently unknown, it is estimated as 100 and 10 for the construction and operation phases, respectively. In the employment process, priority will be given to the local community. The construction of the Project is planned to be completed in 12 months.

IV.3.1. Population

Konya Province is divided into 31 districts. According to the 2020 census results obtained from the Address Based Population Registration System (ABPRS), the population of the Karapınar, Karatay, Meram and Cumra Districts, where the Project Area is located, is 50,304, 351,422, 344,549 and 67,901 respectively. The population distribution of Konya Province and the population of the districts together with the gender distribution are given in Table IV.23.

Table IV.23 Population of Konya Districts

District	Male	Female	Total	Male (%)	Female (%)	Population Percentage (%)
Ahirli	2,290	2,367	4,657	49.17	50.83	0.21
Akoren	2,912	2,854	5,766	50.50	49.50	0.26
Aksehir	46,045	47,953	93,998	48.99	51.01	4.18
Altinekin	7,214	7,057	14,271	50.55	49.45	0.63
Beysehir	37,578	37,954	75,532	49.75	50.25	3.36
Bozkir	12,581	13,251	25,832	48.70	51.30	1.15
Celtik	4,976	4,811	9,787	50.84	49.16	0.43
Cihanbeyli	26,053	26,057	52,110	50.00	50.00	2.32
Cumra	33,985	33,916	67,901	50.05	49.95	3.02
Derbent	2,046	2,175	4,221	48.47	51.53	0.19
Derebucak	2,980	2,996	5,976	49.87	50.13	0.27
Doganhisar	7,462	8,058	15,520	48.08	51.92	0.69
Emirgazi	4,313	4,146	8,459	50.99	49.01	0.38
Eregli	74,644	74,702	149,346	49.98	50.02	6.64
Guneysinir	4,651	4,615	9,266	50.19	49.81	0.41
Hadim	5,836	5,792	11,628	50.19	49.81	0.52
Halkapinar	1,966	2,008	3,974	49.47	50.53	0.18
Huyuk	7,625	7,970	15,595	48.89	51.11	0.69
Ilgin	26,865	27,450	54,315	49.46	50.54	2.41
Kadinhani	16,064	15,753	31,817	50.49	49.51	1.41
Karapinar	25,471	24,833	50,304	50.63	49.37	2.24
Karatay	17,6714	174,708	351,422	50.29	49.71	15.62
Kulu	25,601	25,892	51,493	49.72	50.28	2.29
Meram	17,1087	173,462	344,549	49.66	50.34	15.31
Sarayonu	13,794	13,748	27,542	50.08	49.92	1.22
Selcuklu	327,363	335,917	663,280	49.36	50.64	29.48
Seydisehir	32,774	32,611	65,385	50.12	49.88	2.91
Taskent	2,994	3,007	6,001	49.89	50.11	0.27

District	Male	Female	Total	Male (%)	Female (%)	Population Percentage (%)
Tuzlukcu	3,120	3,278	6,398	48.77	51.23	0.28
Yalihuyuk	770	803	1,573	48.95	51.05	0.07
Yunak	11,076	11,026	22,102	50.11	49.89	0.98
TOTAL	**1,111,299**	**1,099,292**	**2,210,591**	-	-	**100**

Source: TurkStat, 2020

The population census results of Konya Province gathered by Turkish Statistical Institute (TurkStat) between 1965 and 2000 via the traditional census method (by physical counting of individuals at the localities where they are physically present on census day) and the census results between 2007 and 2020 via the address based population registration system (ABPRS) are given in Table IV.24.

Table IV.24 Census Results for Konya Province

TurkStat –Traditional Census Results							
Year	**1965**	**1970**	**1975**	**1980**	**1985**	**1990**	**2000**
Capita	1,122,622	1,280,239	1,422,461	1,562,139	1,769,050	1,750,303	2,192,166
TurkStat – Address Based Population Registration System Results							
Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Capita	1,959,082	1,969,868	1,992,675	2,013,845	2,038,555	2,052,281	2,079,225	2,108,808
Year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**		
Capita	2,130,544	2,161,303	2,180,149	2,205,609	2,232,374	2,250,020		

Source: TurkStat, 2020

As seen from Table IV.24 the population increased from 2,232,374 in 2019 to 2,250,020 in 2020 with an annual population growth rate of 0.79%.

The information about the populations of Karapinar Group Districts is given in Table IV.25. According to ABPRS, the population of Karapinar Group Districts in 2018 is 61,515 which constitute 0.074% of Türkiye's population (83,614,362).

Table IV.25 Population of Karapinar Group

Districts	Neighborhood	1965	1970	1975	1980	1985	1990	2000	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Karapınar	Central	12,989	16,065	19,589	23,825	26,231	26,849	35,285	31,570	31,354	31,586	31,614	32,109	32,386	35,483	35,988	36,339	36,892	37,083	37,166
Karapınar	Akcayazi	516	474	544	734	614	556	571	611	282	717	680	642	639	651	619	602	617	609	687
Karapınar	Hotamis	3,976	4,148	4,737	1,230	1,477	2,293	3,068	2,058	2,063	2,055	2,001	2,002	1,979	2,035	1,969	1,957	1,961	1,312	1,901
Karapınar	Sazlipinar	542	616	768	893	976	965	1,569	1,113	1,123	1,100	1,050	1,050	1,064	1,054	1,097	1,085	1,077	1,066	1,059
Cumra	Buyukaslama	588	657	710	741	754	695	696	750	765	764	767	768	764	781	781	784	812	802	822
Cumra	Abditolu	771	743	666	666	664	618	629	-	-	-	-	-	-	607	606	604	609	601	623
Cumra	Kirgin	2,215	2,771	2,913	2,685	4,135	1,938	6,238	3,297	3,290	3,312	3,204	3,250	3,203	3,179	3,252	3,213	3,232	3,193	3,229
Karatay	Sakyatan	794	540	515	645	665	593	549	407	508	496	500	496	488	470	487	486	474	465	453
Karatay	Bakirtolu	257	217	183	196	252	243	241	217	249	273	246	258	250	253	232	215	211	221	215
Karatay	Hayiroglu	1,244	1,187	1,331	910	1,079	1,051	1,876	-	-	-	-	-	-	1,219	1,201	1,209	1,246	1,290	1,278
Karatay	İsmil	-	4,549	4,204	930	6,161	6,576	7,317	-	-	-	-	-	-	6,059	5,993	5,926	5,946	5,839	5,859
Karatay	Ovakavagi	1,561	1,693	2,326	2,131	2,332	2,261	3,163	-	-	-	-	-	-	2,054	2,024	2,026	1,994	1,974	2,004
Karatay	Satir	372	370	360	333	347	355	372	241	241	236	251	270	252	254	249	275	265	245	253
Meram	Kasinhani	1,228	1,515	1,489	1,968	2,199	3,358	3,855	3,514	3,514	3,511	3,564	3,618	3,563	3,705	3,832	3,803	3,853	3,845	3,876
Meram	Boruktolu	633	570	510	576	596	686	860	813	815	844	882	908	878	1,214	1,269	1,114	1,043	1,056	979
Meram	Carikli	851	907	828	912	1,061	1,078	1,550	1,147	1,206	1,195	1,154	1,157	1,127	1,127	1,145	1,157	1,172	1,137	1,111
Total		28,537	37,022	41,673	39,375	49,543	50,115	67,839	45,738	45,410	46,089	45,913	46,528	46,593	60,145	60,744	60,795	61,404	60,738	61,515

Source: TurkStat, 2020

Figure IV.27 below shows the annual population growth rate of Karapinar Group within last 11 years period. As seen from Figure IV.27, population growth rate of the Karapinar Group District remained generally stable except for the 2007 and 2013. In 2020, the population growth rate increased from -1.08% to 1.28%.

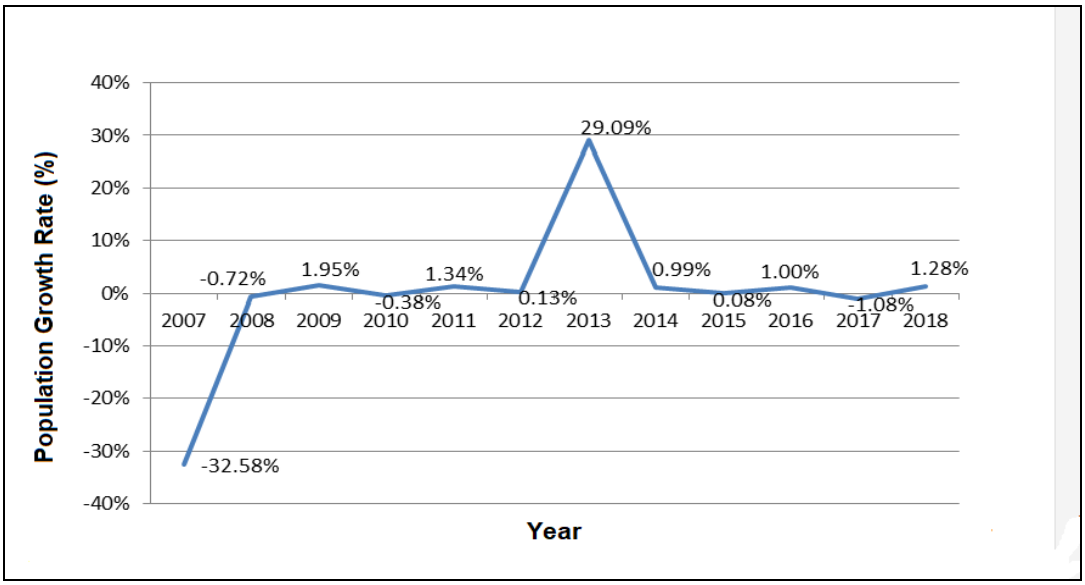


Figure IV.27 Population Growth Rate of Karapinar Group Districts

Age and gender distribution of the population in Karapınar, Cumra, Karatay and Meram Districts are presented in Figure IV.28, Figure IV.29, Figure IV.30 and Figure IV.31, respectively. As seen from the figures, the age distributions of the districts are balanced and young population is predominant in the region.

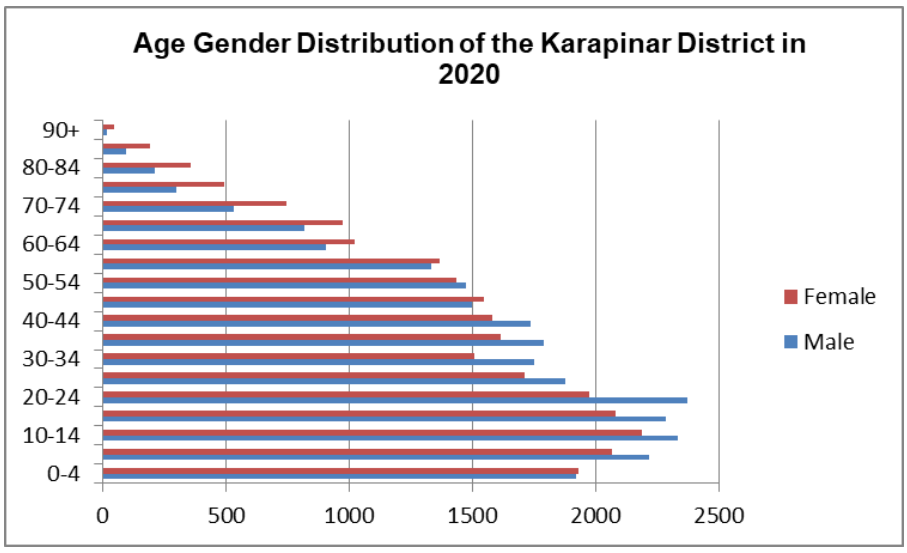


Figure IV.28 Age and Gender Distribution of the Population of Karapinar District in 2020

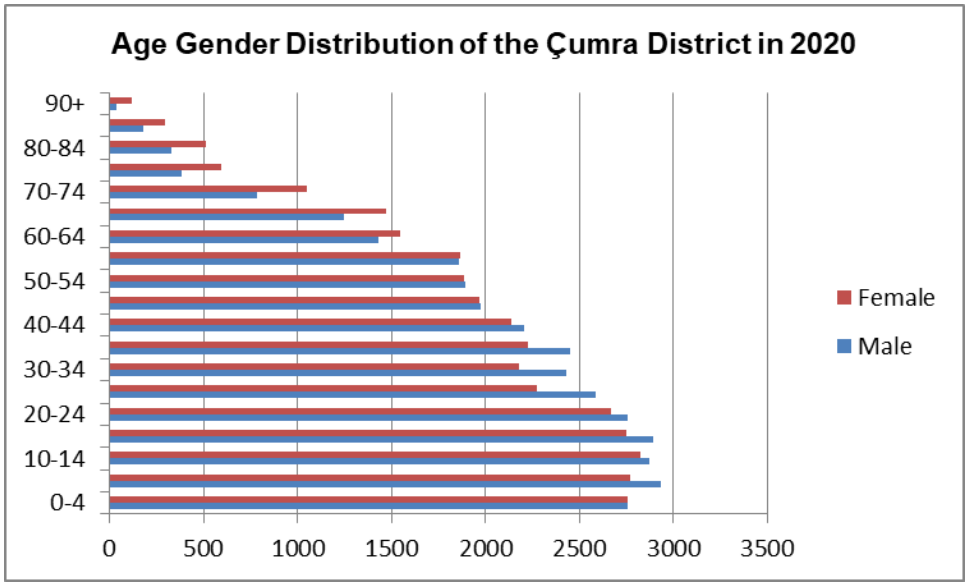


Figure IV.29 Age and Gender Distribution of the Population of Cumra District in 2020

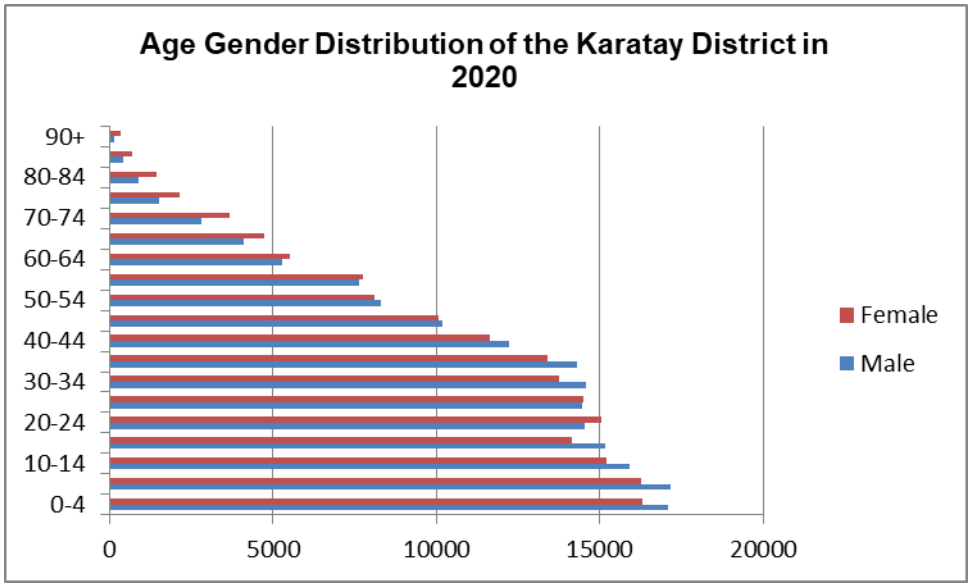


Figure IV.30 Age and Gender Distribution of the Population of Karatay District in 2020

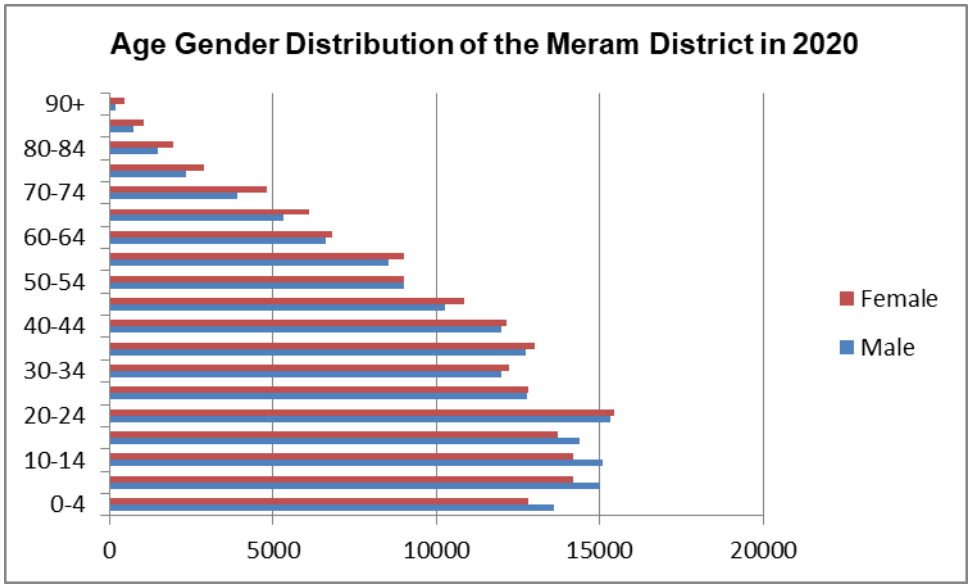


Figure IV.31 Age and Gender Distribution of the Population of Meram District in 2020

IV.3.2. Socio-Economic Characteristic

With a surface area of 39,000 km², Konya province is the largest province in Türkiye and is located in the south of Türkiye's Central Anatolia Region. Its location at the crossroads of important roads and railways, which connects Europe and Aegean Region to the Middle East, makes the city important.

Türkiye adopted the European Union's framework for regional policies and statistics in 2002, which categorized the country into 12 Nomenclature of Territorial Units for Statistics (NUTS) – 1 Region, 26 NUTS-2 Sub-regions, and 81 NUTS-3 (provinces) based on population, socioeconomic, and geographical data.

Konya Province takes place in TR5 Region6, one of the 26 NUTS 2 Level Regions of Türkiye and in Konya sub-region (TR52) together with the other Central Anatolian city of Karaman Province as seen in Figure IV.32.

[6] NUTS classification for Türkiye has been developed to collect regional statistics, to identify the framework of regional policies and to create a statistics database comparable to the European Union Regional Statistics System. Under this classification scheme, Turkish provinces are defined in NUTS-3. The neighboring provinces with economic, social and geographical similarities are hierarchically categorized as NUTS-2 by considering regional development plans and population. While, similarly, NUTS-1 is defined based on the grouping of NUTS-2. In this context, NUTS-1 which is TR5 (at the first level), corresponds to West Anatolia region and NUTS-2 of TR52 (at the second level) corresponds to Ankara and Konya sub-regions. At the NUTS-3, Konya sub-region (TR52) is divided into two provinces as Konya (TR 521) and Karaman (TR 522).

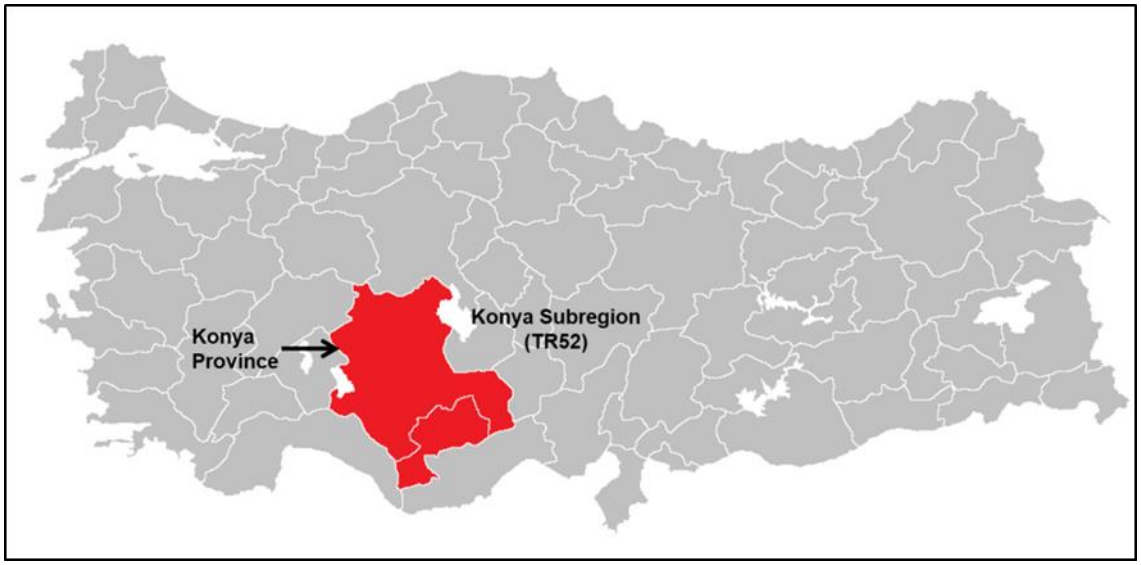


Figure IV.32. Konya Subregion (TR52)

TR52 Region has a strategic position at national and international scale due to its geographical location and socioeconomic structure. Having a total area of 47,420 km^2, TR52 Region comprises 6.05% of Türkiye's total area.

According to the *Socio-Economic Development Ranking Survey of Provinces and Regions, 2017,* which was published by the Ministry of Industry and Technology, General Directorate of Development Agencies, Konya was ranked as 14th while Cumra District was ranked as 397th, Meram District was ranked as 167th, Karatay District was ranked as 200th and Karapinar district was ranked as 453rd in Türkiye in terms of socio-economic development. In Table IV.26 indicators for development level of Konya Province are expressed.

Table IV.26 Indicators for Development Level of Konya Province

Parameters	Value
Socio-economic development ranking (Ministry of Development, 2011)	14th
Annual population growth rate (Konya Province Environmental Status Report, 2019)	1.21 ‰
GDP per capita (TurkStat, 2019)	7,201 $
Total exportation (TurkStat, 2019)	1.9 billion $
Total importation (TurkStat, 2019)	877.6 million $
Total cultivated agricultural area (Karapinar Group Feasibility Report, 2019)	1,876,344 ha
Total number of literate persons, 6+ (TurkStat, 2020)	1,963,962
Number of primary schools (TurkStat, 2019)	728
Number of middle school (TurkStat, 2019)	594
High School Graduation, 15+ (TurkStat, 2019)	361,476
University Graduation,15+ (TurkStat, 2019)	253,942
Number of Hospital (TurkStat, 2019)	45
Number of Hospital Bed (TurkStat, 2018)	7,597
Forest Area / Total Area Ratio (Konya Province Environmental Status Report, 2019)	14.1%
Total number of tourists overnight stays in certified accommodations (TurkStat, 2020)	2,699,470

Parameters	Value
Net Migration Rate (TurkStat, 2020)	-2.22‰

According to this index, Meram and Karatay Districts are the districts having 2nd Development Level, while Karapinar and Cumra districts have 3rd development level. Table IV.27 shows socio-economic development ranking of the districts of Konya on provincial basis.

Table IV.27. Socio-Economic Development Ranking of Districts on Provincial Basis

District	Overall Ranking	Development Score	Development Level
Selcuklu	32	2.106	1
Meram	167	0.866	2
Karatay	200	0.658	2
Aksehir	228	0.536	2
Eregli	249	0.418	3
Seydisehir	281	0.303	3
Beysehir	300	0.241	3
Ilgin	391	-0.022	3
Cumra	397	-0.036	3
Cihanbeyli	426	-0.101	3
Akoren	449	-0.122	3
Karapınar	453	-0.129	3
Kulu	462	-0.148	4
Sarayonu	488	-0.196	4
Hadim	496	-0.211	4
Taskent	526	-0.272	4
Guneysinir	528	-0.277	4
Huyuk	542	-0.305	4
Kadinhani	561	-0.331	4
Doganhisar	578	-0.354	4
Tuzlukcu	588	-0.371	4
Yalihuyuk	613	-0.411	4
Bozkir	649	-0.468	4
Derebucak	661	-0.486	4
Altinekin	676	-0.508	5
Celtik	682	-0.523	5
Yunak	692	-0.538	5
Derbent	726	-0.614	5
Halkapinar	749	-0.659	5
Emirgazi	782	-0.733	5
Ahirli	807	-0.817	5

Source: SEGE, 2017

On the other hand, neighborhood level socio-economic conditions were identified through face-to-face interviews conducted with the muhktars of Dedemoglu, Abditolu, İcericumra and

Gaziosmanpasa Neighborhoods on November 25th, 2021, which are the closest neighborhoods to the project area. Photographs from the interviews are presented in Figure IV.33.

Figure IV.33 Photographs Taken During the Interview Conducted with Muhktars of Dedemoglu, Abditolu, İcericumra and Gaziosmanpasa Neighbourhoods

The findings of the interviews are presented below:

- Dedemoglu Neighborhood Mukhtar
    - Major economic activities of the residents are agriculture and animal husbandry.
    - Main agricultural activities involve cultivation of barley, wheat and beetroot.
    - There are approximately 2,000 ovine and 500 bovine in the neighborhood.
    - There are approximately 12,000 decares of agricultural land and 12,000 decares of pastureland in the neighborhood.
    - As the vulnerable/disadvantaged individual/group, there is only a 24-year-old male with both mental and physical disabilities in the neighborhood.
    - There is no unofficial land use.
    - According to the information received from TurkStat, 357 people live in the neighborhood.

- Abditolu Neighborhood Mukhtar

- Major economic activities of the residents are agriculture and animal husbandry.
- Main agricultural activities involve cultivation of barley, wheat, beet and sunflower.
- There are approximately 45,000 ovine and 2,000 bovine in the neighborhood.
- There are approximately 80,000 decares of agricultural land and 12,000 decares of pastureland in the neighborhood.
- The transmission line passes from a part of the pasture of the neighborhood. It was learnt that the pasture area is used for grazing purposes.
- As the vulnerable/disadvantaged individual/group, there are two female-headed households and one disabled person.
- There is no unofficial land use.
- According to the information received from TurkStat, 643 people live in the neighborhood.

• İcericumra Neighborhood Mukhtar

- Major economic activities of the residents are agriculture and animal husbandry.
- Main agricultural activities involve cultivation of barley, wheat, beet, squash and beans.
- There are approximately 30,000 ovine and 28,000 bovine in the neighborhood.
- There are approximately 25,000 decares of agricultural land and 10,000 decares of pastureland in the neighborhood.
- As the vulnerable/disadvantaged individual/group, there are approximately 30 female-headed households and 20 physically disabled individuals.
- There is no unofficial land use.
- According to the information received from TurkStat, 6600 people live in the neighborhood.

• Gaziosmanpasa Neighborhood Mukhtar

- Major economic activities of the residents are agriculture and husbandry.
- Main agricultural activities involve cultivation of barley, wheat, sunflower seeds and corn.
- There are approximately 4,000 ovine and 5,000 bovine in the neighborhood.
- The planned pumping station within the scope of the project will be built on a small part of the pasture area of the neighborhood. It was learnt that, the area is not used for animal husbandry purposes.
- As a vulnerable/disadvantaged individual/group, there are approximately 10 female-headed households.
- There is no unofficial land use.
- According to the information received from TurkStat, 527 people live in the neighborhood.

IV.3.3. Agriculture and Livestock

Provincial Level

In terms of overall agricultural production value in 2019, the Konya Province is in the first place, accounting for 5.3% of Türkiye's total agricultural production value. Many types of vegetables and fruits are produced in Konya Province, especially field crops such as wheat, barley, sugar beet, haricot, potatoes, sunflower, hash, cumin, and safflower. As a result, agriculture is one of the province's most important economic activities. It meets approximately 40% of Türkiye's seed production (http://www.kto.org.tr).

According to TurkStat 2020 data, 14,732,575 decares of the 18,590,788 decares agricultural land of the province are used for the cultivation of cereals and other herbal products, 476,977 decares for the cultivation of fruits, beverages and spice plants, 308,814 decares for the cultivation of vegetable products, 836 decares for the cultivation of ornamental plants and 3,071,586 decares of it have been left fallow. A visual representation of the agricultural land use in Konya Province is given in Figure IV.34.

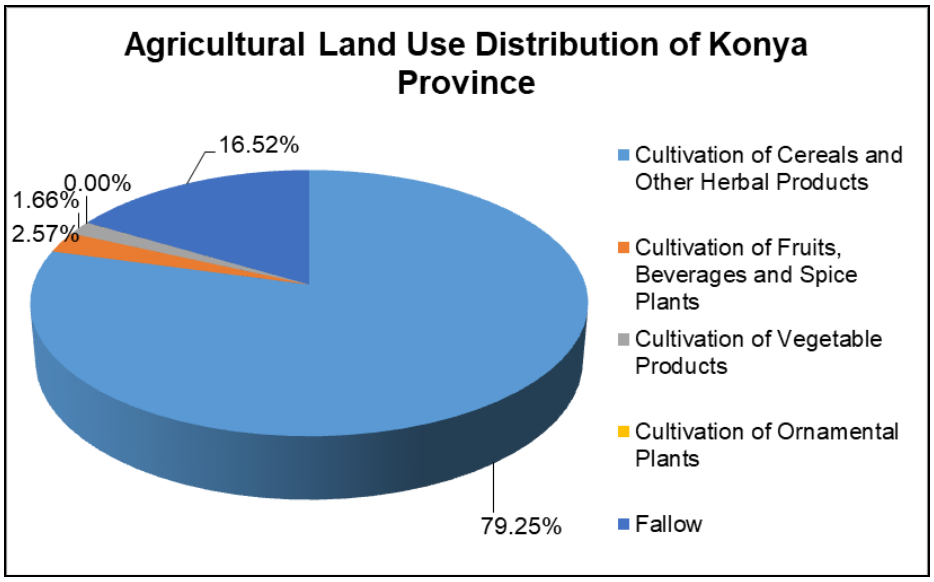


Figure IV.34 Agricultural Land Use Distribution of Konya Province (Source: TurkStat 2020).

Since the cultivated area of the products classified in the cereals and other herbal products group in the agricultural production in the province corresponds to approximately 95% of the total cultivated area, it is seen that the products in this group are the most cultivated products in the province. In other words, vegetable, fruit and ornamental plant production areas in the province are quite low compared to the areas where other agricultural products are cultivated. Agricultural products produced in significant amounts in the province are summarized in Table IV.28.

Table IV.28 Quantities of Crops Produced in Significant Amounts in Konya Province and Size of Cultivated Area

Product Type	Cultivated Area (Decares)	Production (Ton)
Sugar Beet	914,750	7,228,473
Corn (Silage)	417,091	2,570,984

Product Type	Cultivated Area (Decares)	Production (Ton)
Clover	359,916	1,774,504
Wheat, Excluding Durum Wheat	4,234,024	1,301,497
Corn	1,033,998	1,070,626
Barley (Other)	3,154,438	1,027,276
Potatoes (Excluding Sweet Potatoes)	151,807	638,171
Durum Wheat	1,968,582	619,203
Sunflower Seed (Oil)	668,054	278,546
Barley (Beer)	699,389	239,086
Vetch (Hungarian)	126,591	222,809
Total	**13,728,640**	**16,971,175**

Source: TurkStat, 2020

According to TurkStat 2020 data, livestock breeding is also common in the province. There are 951,640 bovines and 2,843,229 ovine in the province. In addition, there are 11,234,107 poultry animals and 1,093 beekeeping businesses in the province.

District Level

Karapinar District

According to TurkStat 2020 data, 966,027 decares of the 1,023,867 decares agricultural land of the district are used for the cultivation of cereals and other herbal products, 12,900 decares for the cultivation of vegetable products, 4,940 decares for the cultivation of fruits and 40,000 decares of it have been left fallow. A visual representation of the agricultural land use in Karapinar District is given in Figure IV.35.

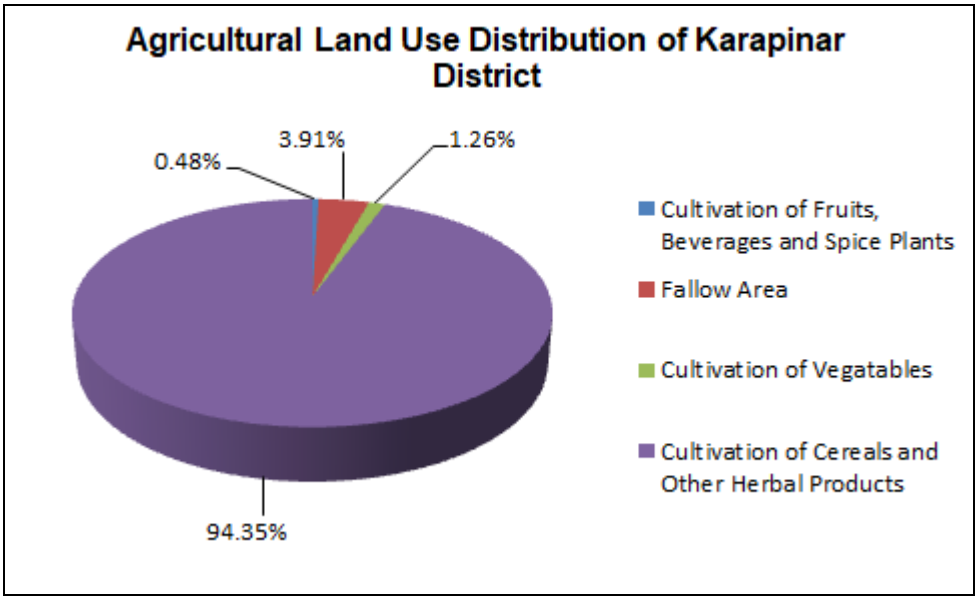


Figure IV.35 Agricultural Land Use Distribution of Karapinar District (TurkStat, 2020)

Since the cultivated area of the products classified in the cereals and other herbal products group in the agricultural production in the district corresponds to approximately 94% of the total cultivated area, it is seen that the products in this group are the most cultivated products in the district. In other words, vegetable and fruit production areas in the district are quite low compared to the areas where other agricultural products are cultivated. Agricultural products produced in significant amounts in the province are summarized in Table IV.29.

Table IV.29 Quantities of Crops Produced in Significant Amounts in Karapinar District and Size of Cultivated Area

Product Type	Cultivated Area (Decares)	Production (Ton)
Durum Wheat	98,286	40,613
Wheat (Excluding durum wheat)	205,610	92,352
Corn	192,080	184,950
Barley	120,405	42,316
Sunflower Seed (For oil)	84,080	31,733
Potato (Excluding sweet potato)	18,500	78,577
Sugar Beet	135,674	1,178,059
Vetch Seed (Green Grass)	18,000	7,156
Clover (Green Grass)	78,000	452,400
Corn (For silage)	48,000	320,000
Total	**998,635**	**2,428,156**

Source: TurkStat, 2020

According to TurkStat 2020 data, livestock breeding is also common in the district. There are 88,068 bovines and 369,667 ovines in the district. In addition, there are 20,011 poultry animals and eight beekeeping businesses in the district.

Cumra District

According to TurkStat 2020 data, 1,174,581 decares of the 1,267,038 decares agricultural land of the district are used for the cultivation of cereals and other herbal products, 40,432 decares for the cultivation of vegetable products, 7,100 decares for the cultivation of fruits and 44,925 decares of it have been left fallow. A visual representation of the agricultural land use in Cumra District is given in Figure IV.36.

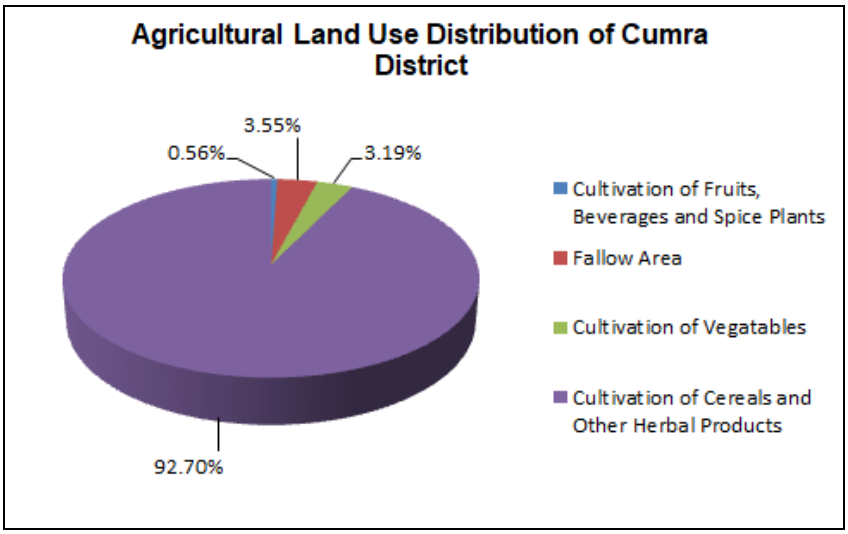


Figure IV.36 Agricultural Land Use Distribution of Cumra District (TurkStat, 2020)

Since the cultivated area of the products classified in the cereals and other herbal products group in the agricultural production in the district corresponds to approximately 93% of the total cultivated area, it is seen that the products in this group are the most cultivated products in the district. In other words, vegetable and fruit production areas in the district are quite low compared to the areas where other agricultural products are cultivated. Agricultural products produced in significant amounts in the province are summarized in Table IV.30.

Table IV.30 Quantities of Crops Produced in Significant Amounts in Cumra District and Size of Cultivated Area

Product Type	Cultivated Area (Decares)	Production (Ton)
Durum Wheat	187,545	32,466
Wheat (Excluding durum wheat)	133,320	21,429
Corn	243,040	248,000
Barley	212,953	102,890
Haricot Bean	70,000	21,700
Sunflower Seed (For oil)	72,705	27,432
Potato (Excluding sweet potato)	15,000	70,790
Sugar Beet	148,104	1,157,189
Vetch Seed (Green Grass)	13,550	20,050
Clover (Green Grass)	32,000	208,000
Corn (For silage)	43,000	326,000
Total	**1,171,217**	**2,235,946**

Source: TurkStat, 2020

According to TurkStat 2020 data, livestock breeding is also common in the district. There are 84,952 bovines and 204,499 ovines in the district. In addition, there are 1,710,183 poultry animals and 32 beekeeping businesses in the district.

Karatay District

According to TurkStat 2020 data, 1,348,191 decares of the 1,781,547 decares agricultural land of the district are used for the cultivation of cereals and other herbal products, 5,327 decares for the cultivation of vegetable products, 2,053 decares for the cultivation of fruits, 404 decares for the cultivation of ornamental plants and 425,572 decares of it have been left fallow. A visual representation of the agricultural land use in Karatay District is given in Figure IV.37.

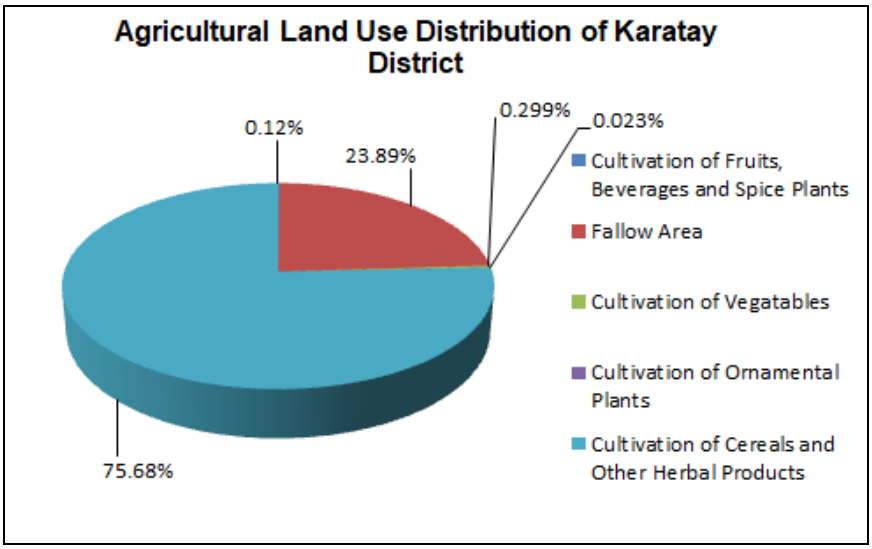


Figure IV.37 Agricultural Land Use Distribution of Karatay District (TurkStat, 2020)

Since the cultivated area of the products classified in the cereals and other herbal products group in the agricultural production in the district corresponds to approximately 76% of the total cultivated area, it is seen that the products in this group are the most cultivated products in the district. In other words, vegetable and fruit production areas in the district are quite low compared to the areas where other agricultural products are cultivated. Agricultural products produced in significant amounts in the province are summarized in Table IV.31.

Table IV.31 Quantities of Crops Produced in Significant Amounts in Karatay District and Size of Cultivated Area

Product Type	Cultivated Area (Decares)	Production (Ton)
Durum Wheat	45,021	16,143
Wheat (Excluding durum wheat)	456,864	152,730
Corn	132,104	123,975
Barley	268,326	112,699
Sunflower Seed (For oil)	202,193	89,867
Potato (Excluding sweet potato)	30,000	135,917
Sugar Beet	83,041	582,784
Vetch Seed (Green Grass)	15,600	12,135
Clover (Green Grass)	87,000	356,700
Corn (For silage)	46,200	274,230
Total	**1,366,349**	**274,230**

Source: TurkStat, 2020

According to TurkStat 2020 data, livestock breeding is also common in the district. There are 81,637 bovines and 248,317 ovines in the district. In addition, there are 2,025,954 poultry animals and 33 beekeeping businesses in the district.

Meram District

According to TurkStat 2020 data, 428,160 decares of the 612,157 decares agricultural land of the district are used for the cultivation of cereals and other herbal products, 43,898 decares for the cultivation of vegetable products, 7,306 decares for the cultivation of fruits, 252 decares for the cultivation of ornamental plants and 132,541 decares of it have been left fallow. A visual representation of the agricultural land use in Meram District is given in Figure IV.38.

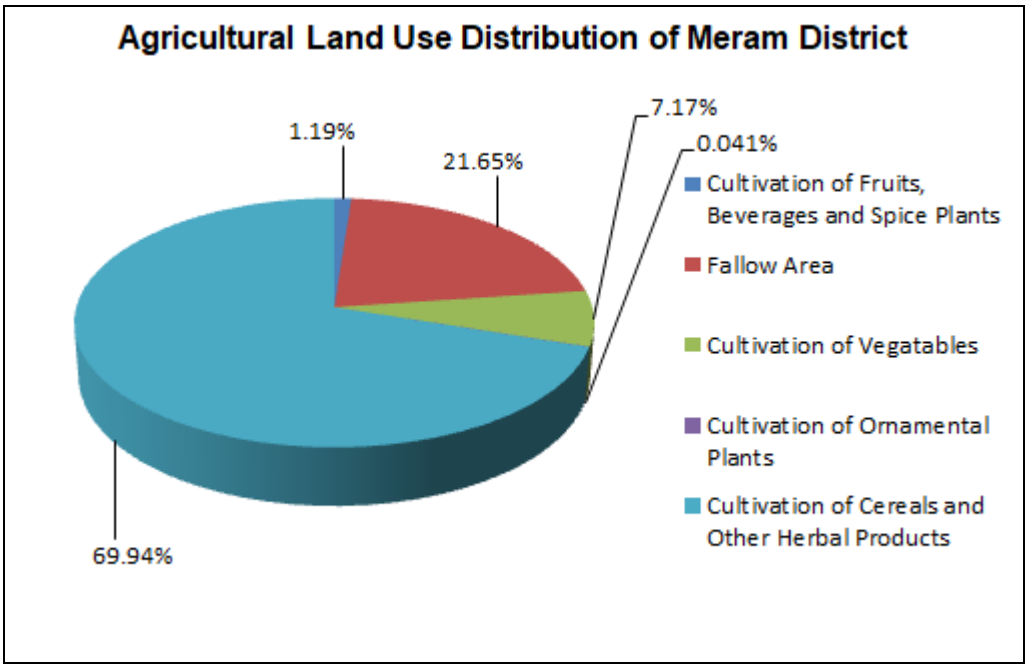


Figure IV.38 Agricultural Land Use Distribution of Meram District

Since the cultivated area of the products classified in the cereals and other herbal products group in the agricultural production in the district corresponds to approximately 70% of the total cultivated area, it is seen that the products in this group are the most cultivated products in the district. In other words, vegetable and fruit production areas in the district are quite low compared to the areas where other agricultural products are cultivated. Agricultural products produced in significant amounts in the province are summarized in Table IV.32.

Table IV.32 Quantities of Crops Produced in Significant Amounts in Meram District and Size of Cultivated Area

Product Type	Cultivated Area (Decares)	Production (Ton)
Durum Wheat	147,966	46,242
Wheat (Excluding durum wheat)	104,777	30,995

Product Type	Cultivated Area (Decares)	Production (Ton)
Corn	21,952	26,100
Barley	53,941	17,685
Potato (Excluding sweet potato)	6,100	21,879
Sugar Beet	10,101	75,405
Vetch Seed (Green Grass)	23,435	12,135
Clover (Green Grass)	13,500	54,000
Corn (For silage)	39,100	300,650
Total	**420,872**	**585,091**

Source: TurkStat, 2020

According to TurkStat 2020 data, livestock breeding is also common in the district. There are 85,661 bovines and 173,144 ovines in the district. In addition, there are 3,912,225 poultry animals and 110 beekeeping businesses in the district.

IV.3.4. Industry

Provincial Level

There are nine (9) organized industrial zones, eight (8) of which are active, 17 small industrial sites supported by the Ministry of Industry and Technology, 15 small industrial sites in the city center, 16 small industrial sites and 22 private industrial sites in the districts of Konya. In Table IV.33, the number of workplaces and employment is given by industry type.

Table IV.33 Workplace and Employment Numbers of Industrial Areas of Konya Province

Industry Type	Number	Active Workplace Number	Employment Number
Organized Industrial Zone	9	932	52,560
Industrial Zone	70	14,532	73.302
Total	79	15,464	125,862

Source: Konya Chamber of Commerce (2020). Konya Economy Report 2019, June 2020

Main business areas in the industrial area are automotive spare parts industry, machinery industry, agricultural machinery and equipment industry, plastic industry, furniture and wood industry, metal industry, food industry, construction materials, and packaging industry.

District Level

In Karapinar District, mining activities are weak, but with the newly discovered lignite deposits, the region will become a region where lignite is intensively extracted and energy is produced with the help of thermal power plants. Although the region is a center where agricultural products are produced, manufacturing industry investments have not developed at the same rate. Production such as flour, feed, milk and dairy products and eggs are made. There is a low-capacity agricultural machinery manufacturing activity in the Karapinar District. Other manufacturing industry activities are almost non-existent in the region. Karapinar also has one organized industrial zone and one energy specialized industrial zone.

In Cumra District, there is one organized industrial zone (OIZ). In addition, there is a mining and quarrying activity. Moreover, Cumra District has an important potential in terms of establishing agricultural-based industrial facilities due to its high agricultural potential, product variety and product quantity. Liquid sugar, malt, flour and feed factories established in the region are the main production facilities. In Cumra District, there is a facility related to the production of chemicals and chemical products, three facilities related to the ready-mixed concrete production and one facility related to the metal products.

In Karatay District, there is lignite mining. There are also ornamental building stones and limestone, salt extraction and gravel and sand quarries. The chemical fertilizers and nitrogen compounds are also manufactured in the district. There is no registered OIZ in the district.

In Meram, as of 2018, there are 5,696 registered workplaces. When the total number of workplaces according to the sectors is examined, the number of the enterprises in the retail trade sector is the most in the district. Construction comes second, food and beverage service activities come third. There is a proposed project for the construction of an OIZ in the district, however there is no present OIZ yet.

IV.3.5. Energy and Natural Resources

Konya, which has a very important position for industry, agriculture and trade due to its geographical location, natural resources and energy resources, and low disaster risks, is expected to contribute to energy production as well as national energy consumption. It is a very auspicious province in terms of renewable energy sources such as wind and solar power. In Konya, which has a total installed power of 281 MW with 51 production facilities, a significant part of the production is provided from fossil fuels (121 MW) and solar energy (117 MW).

It is possible to generate electricity from wind energy in the southern districts of Konya. The total installed power capacity for which a wind power plant can be installed in Konya is approximately 2,000 MW. A license has been obtained for the establishment of a total 136 MW wind power plant in Konya.

Konya Province is one of the leading regions of Türkiye in terms of its current situation and potential in the solar energy sector. It has significant leading potential due to its high solar radiation values, availability of suitable lands, and having many companies operating in the solar energy sector.

Konya, which has 34 solar power generation facilities, ranks the first in Türkiye in this respect. In addition, the first and the only Energy Specialized Organized Industrial Zone in Türkiye is in Karapinar District. Considering the solar radiation values, the amount of electrical energy to be obtained from any solar field in Karapinar will be approximately 70% more than the Bavarian region of Germany, where solar field investments are made the most in the world (http://www.konyadayatirim.gov.tr).

IV.3.6. Education

Provincial Level

According to the statement made by TurkStat, Konya Regional Directorate, in 2017, 30.4% of Konya's population aged 15 and over are primary school graduates, 20% high school or equivalent vocational school, 16.1% primary school graduates, while 11.9% of the population is graduated from secondary school or its equivalent, 4.2% are literate but did not complete a school, 2.8% are illiterate citizens. 13% of the population is college or faculty graduate, 1.3% is postgraduate graduate and

0.3% is doctoral graduate. There are 728 primary schools, 594 secondary schools and 374 secondary education institutions in the province.

District Level

Karapinar District has a literacy rate of 96%. The rate of illiterate people constitutes 3.69%. Those who can read and write but not involved in formal education has an important ratio with 22%.

Cumra District has a literacy rate of 97.21% in terms of basic education. The rate of illiterate people constitutes 2.79%. Those who can read and write but never go to school have an important place with a rate of 21.64%.

Karatay District has a literacy rate of 97% in terms of basic education. The rate of illiterate people constitutes 3%. Those who can read and write but never go to school occupy an important place with a rate of 23%. In general, the success of non-formal education courses opened within the scope of literacy mobilization is high. The illiterate population mainly covers the age of 65 and above.

Meram District has a rate of illiterate people is 1.6%, while the rate of those who can read and write but have not completed a school constitutes 9.6% of the total population. While 34% of the population is primary school graduates, 9.2% of the population of the district are secondary education graduates, 16.6% are high school and equivalent vocational school and 12.1% are higher education graduates.

IV.3.7. Health

According to the data obtained from the Konya Provincial Directorate of Health (https://konyaism.saglik.gov.tr), there is a total of 48 hospitals in the Province, that are 35 state and 13 are private hospitals. There are also Karapinar State Hospital, Cumra State Hospital, Konya Karatay City Hospital, and Meram State Hospital within the Project districts.

The number of physicians per thousand people is two in Konya Province according to the 2019 data of TurkStat, which is the same average for Türkiye. While the average number of hospital beds per hundred thousand people in Konya Province is 340, this rate is 286 in Türkiye.

IV.3.8. Transportation

Konya is one of the provinces with the longest road length in terms of both its surface area and its geographical location within the country. It is in the first place in the province with more than 3,000 kilometers of provincial and state roads.

Transportation is provided mainly by highways in the city. D715 Ankara-Konya-Antalya road is located on the north-south axis of the province. On the East-West axis, the D300 Aksaray-Konya-Afyon road is located.

Konya Province is located within the boundaries of the 3rd Regional Directorate of General Directorate of Highways. The total length of the 66 provincial roads registered to the General Directorate of Highways of Konya is 1,739 km.

Within the project area; D330 and D715 roads takes great importance. D330 is a very close road near Ismil town that is important for the transportation for both construction and operation phases and D715 road is being transpassed by the proposed transmission line.

The road distances between Karapinar group districts and some cities are given in Table IV.34- Table IV.37.

Table IV.34 Road Distances of Karapinar District to Some Important Cities

City Center	Distance (km)
Konya	102
Ankara	331
Istanbul	774
İzmir	652
Antalya	404
Isparta	343
Afyonkarahisar	323
Aksaray	107
Nigde	143
Karaman	82

Source: General Directorate of Highways Web Site

Table IV.35 Road Distances between Cumra District and Some Important Cities

City Center	Distance (km)
Konya	57
Ankara	308
Istanbul	728
İzmir	607
Antalya	319
Isparta	297
Afyonkarahisar	278
Aksaray	197
Nigde	232
Karaman	76

Source: General Directorate of Highways Web Site

Table IV.36 Road Distances between Karatay District and Some Important Cities

City Center	Distance (km)
Konya	7
Ankara	259
Istanbul	678
İzmir	557
Antalya	314
Isparta	247
Afyonkarahisar	228

City Center	Distance (km)
Aksaray	147
Nigde	236
Karaman	111

Source: General Directorate of Highways Web Site

Table IV.37 Road Distances between Meram and Some Important Cities

City Center	Distance (km)
Konya	21
Ankara	272
Istanbul	692
İzmir	571
Antalya	300
Isparta	261
Afyonkarahisar	242
Aksaray	161
Nigde	245
Karaman	109

Source: General Directorate of Highways Web Site

Konya's railway connection has been active since 1898. Trains passing through Konya are Toros Express, Central Anatolian Blue Train and Meram Express. The most important work in railway transportation is the high-speed train project between Konya and Ankara provinces, which has been successfully completed and is still in service. With the completion of this project in 2011, the transportation time between Konya and Ankara provinces was reduced to 1 hour and 40 minutes, and significant progress was made in Konya railway transportation. In 2013, high-speed train services between Konya and Eskisehir started. In 2015, Konya-Istanbul high-speed train services were started as well.

The closest airport, Konya Airport, which is located in Selcuklu District, is located 151 km away from the city center. There are 11 reciprocal flights between Konya and Istanbul every day, and during the summer months, flights are provided to European cities such as Amsterdam, Copenhagen, Oslo, Dusseldorf, Stuttgart and Rotterdam.

IV.4. Existing Infrastructure

IV.4.1. Existing Drinking Water Supply and Distribution Systems

There are existing reservoirs and drinking water network infrastructure in Karatay, Cumra, Meram and Karapinar districts. Detailed information of existing water supply and distribution components is provided below.

Reservoirs

In the Central Neighborhood of Karapinar District, there are two (2) reservoirs for both raw and treated drinking water that is processed in a treatment plant with each having capacities of 2,500

m^3. Water is supplied to these tanks from 5 wells, each has a flowrate of 30 L/s and the total flowrate is 150 L/s. Akcayazı and Hotamıs neighborhoods that are in Karapinar District have their own borehole and the drinking water needs are met from those boreholes. Sazlıpınar network is fed by the hydrophore located at the reservoir outlet.

In Meram District, Kasinhani, Boruktolu and Cariklar neighborhoods are currently fed from the Blue Tunnel line. However, in some conditions, pipe diameters do not meet the current water demand.

In Cumra district neighborhoods; the current reservoir of Abditolu neighborhood is an elevated tank and Buyukaslama neighborhood has a built-in. Both neighborhoods have their own borehole and its drinking water needs are met from these wells.

In Karatay District, water requirement of Hayiroglu and Ovakavagi neighborhoods are met from two elevated tanks that takes water from the borehole. Moreover, there is an elevated tank in İsmil neighborhood. The neighborhood has its own borehole, but it is insufficient with regards to current water demand. To meet the remaining water demand, the 35 km long water transmission line from Kayacık and Karkin neighborhoods are used. Reservoir names, construction year, volume, water source and other related information about reservoirs in Karapınar, Karatay, Meram and Cumra districts are provided in Table IV.38.

Table IV.38 Water Storage Tanks in Karapınar, Karatay, Cumra and Meram Districts

District	Neighborhood/Reservoir Name	Year of Construction	Reservoir Volume (m^3)	Source Name
Meram	Kasinhani	2018	100	Secme Water Treatment Plant
Meram	Boruktolu	2018	100	Secme Water Treatment Plant-Well
Meram	Cariklar	2018	100	Secme Water Treatment Plant
Karapinar	Karapinar Central Raw Water Reservoir	1989	2,500	Karyem Well 1, Karyem Well 2, Karyem Well 3,Erozyon Well 1, Erozyon Well 2, Eski1-5
Karapinar	Karapinar Central Treated Water Reservoir	1997	2,500	Karyem Well 1, Karyem Well 2, Karyem Well 3,Erozyon Well 1, Erozyon Well 2, Eski1-6
Karapinar	Akcayazi	1991	50	Gulfer Well
Karapinar	Hotamis	1996	50	Taspınar Well-Sabanlı Well
Karapinar	Sazlipinar	2000	100	Sazlipinar Well
Karatay	Hayiroglu	1995	100	Borehole
Karatay	Ovakavagi	1995	100	Borehole
Karatay	İsmil	2018	100	Secme Water Treatment Plant
Karatay	Bakirtolu	2018	100	Secme Water Treatment Plant-Well
Karatay	Satir	2018	100	Secme Water Treatment Plant
Cumra	Buyukaslama	1995	100	Karkin Village Well-Karkin Gokhuyuk Well-Karkin Gokhuyuk New Wells (No 5-No1-No4)
Cumra	Abditolu	1995	100	Abditolu Well-Village Well

Source: *Karapinar Water Transmission Line Project, Project Feasibility Report, 2021.*

Existing Drinking Water Network

The gathered information about existing network in relevant neighborhoods in Meram, Cumra, Karatay and Karapinar districts are provided in Table IV.39, Table IV.40, Table IV.41, and Table IV.42.

Table IV.39 Existing Drinking Water Network in Meram Districts

Neighborhood	Construction Year	Pipe Type	Pipe Diameter (mm)	Length (m)
Boruktolu	1989	Ductile	125	1,435
Boruktolu	2018	PE	140	5,480
Boruktolu	2018	PE	90	11,311
Boruktolu	1995	PVC	225	2,135
Boruktolu	1995	PVC	63	962
Boruktolu	1995	PVC	75	2,787
Boruktolu	1995	PVC	90	1,299
Cariklar	2018	Steel	900	82
Cariklar	2018	PE	140	9,562
Cariklar	2018	PE	200	12
Cariklar	2018	PE	90	54,702
Kasinhani	1980	Anchor Conduit	100	1,924
Kasinhani	1980	Anchor Conduit	125	233
Kasinhani	1980	Anchor Conduit	200	163
Kasinhani	1980	Anchor Conduit	80	1,961
Kasinhani	1989	Ductile	125	1,231
Kasinhani	2018	PE	140	7,831
Kasinhani	2018	PE	200	3,426
Kasinhani	2018	PE	63	27
Kasinhani	2018	PE	90	12,567
Kasinhani	1995	PVC	110	8,102
Kasinhani	1995	PVC	140	379
Kasinhani	1995	PVC	160	116
Kasinhani	1995	PVC	225	1,961
Kasinhani	1995	PVC	63	627
Kasinhani	1995	PVC	75	11,730
Kasinhani	1995	PVC	75	9,435
			TOTAL	**151,480**

Source: *Karapinar Water Transmission Line Project, Project Feasibility Report, 2021.*

Table IV.40 Existing Drinking Water Network in Cumra District

Neighborhood	Construction Year	Pipe Type	Pipe Diameter (mm)	Length (m)
Buyukaslama	1995	PVC	90-75-63	17,150
Buyukaslama	2014-2020	PE	-	830
Abditolu	1995	PVC	110-90-63-50	14,500
Abditolu	2014-2020	PE	90-200-250	17,500
Karkin	1995	PVC+AC	90-200-250	86,000

Neighborhood	Construction Year	Pipe Type	Pipe Diameter (mm)	Length (m)
Karkin	2014-2020	PE	-	3,500
			TOTAL	**139,480**

Source: *Karapinar Water Transmission Line Project, Project Feasibility Report, 2021.*

Table IV.41 Existing Drinking Water Network in Karatay District

Neighborhood	Construction Year	Pipe Type	Pipe Diameter	Length (m)
Hayiroglu	2007	PE	90	17,215
Hayiroglu	2014	PE	63	145
Hayiroglu	2014	PE	140	4,520
Hayiroglu	1995	PVC	75	17,947
Hayiroglu	1995	PVC	90	151
Hayiroglu	1995	Steel	100	4
Ovakavagi	1995	Ductile	350	1,505
Ovakavagi	2008	PE	140	3,753
Ovakavagi	2008	PE	90	1,257
Ovakavagi	1995	PVC	110	132
Ovakavagi	1995	PVC	160	161
Ovakavagi	1995	PVC	75	37,007
İsmil	1995	AC	100	189
İsmil	1995	Steel	280	6,290
İsmil	1995	Steel	300	34
İsmil	1995	Ductile	300	9,511
İsmil	1995	Ductile	350	6
İsmil	2010	PE	140	211
İsmil	2010	PE	90	16,980
İsmil	1995	PVC	110	2,490
İsmil	1995	PVC	160	15
İsmil	1995	PVC	75	123
İsmil	1995	PVC	90	69,500
Bakirtolu	2000	PVC	63	2,504
Bakirtolu	2000	PVC	75	70
Bakirtolu	2007	PE	90	4,706
Sakyatan	2015	PE	140	1,250
Sakyatan	2015	PE	90	9,707
Sakyatan	1996	PVC	110	7,414
Sakyatan	1996	PVC	63	1,831
Sakyatan	1996	PVC	75	245
Sakyatan	1996	PVC	90	3,475
Satir	2014	PE	140	3,900
Satir	2014	PE	63	282
Satir	2014	PE	90	15,071
Satir	1995	PVC	75	616
Satir	1995	PVC	90	10,725

Neighborhood	Construction Year	Pipe Type	Pipe Diameter	Length (m)
-	-	-	**TOTAL**	**250,942**

Source: *Karapinar Water Transmission Line Project, Project Feasibility Report, 2021.*

Table IV.42 Existing Drinking Water Network system in Karapinar District

Neighborhood	Construction Year	Pipe Type	Pipe Diameter (mm)	Length (km)
Hotamis	2017	PE	90	29.00
Hotamis	1996	PVC	63	3.00
Sazlipinar	2000	PVC	75	8.00
Sazlipinar	2000	PVC	63	3.00
Sazlipinar	2020	PE	90	0.80
Akcayazi	1991	PVC	63	60.00
Akcayazi	2017	PE	200	30.00
Central	1989	Ductile	200	0.39
Central	1989	Ductile	250	0.33
Central	1989	Ductile	300	2.06
Central	1989	Ductile	350	3.79
Central	1990	PVC	90	0.53
Central	1990	PVC	140	1.29
Central	1990	PVC	400	1.62
Central	2015	PE	90	3.18
Central	2015	PE	140	1.57
Central	2015	PE	200	21.37
Central	1980	Asbestos Cement Pipe (ACP)	150	0.11
Central	1980	ACP	200	2.32
Central	2000	Steel	80-150-160-200	0.013
			TOTAL	**172,373**

Source: *Karapinar Water Transmission Line Project, Project Feasibility Report, 2021.*

IV.4.2. Existing Wastewater System

Network

In existing situation, there is approximately 512 km length of sewerage network in the project area in total. In line with the information obtained from KOSKI, there is no sewerage network in Abditolu neighborhood in Cumra District, and Sakyatan, Bakırtolu and Satir neighborhoods in Karatay District. Information about existing wastewater network is given in Table IV.43.

Table IV.43 Existing Wastewater Network in Karapinar Group Districts

District	Neighborhood	Construction Year	Pipe Diameter (mm)	Length (km)
Karapınar	Central	2014	Ø300	172.00
Karapınar	Akcayazi	N/A	Ø300	0.40
Karapınar	Hotamis	2009	Ø200+Ø300	28.50

District	Neighborhood	Construction Year	Pipe Diameter (mm)	Length (km)
Karapınar	Sazlipinar	2018	Ø200	24.58
Cumra	Buyukaslama	2018	Ø300	22.25
Cumra	Kargın	2018	Ø300+Ø400	25.00
Karatay	Hayiroglu	2014	Ø300+Ø400	18.00
Karatay	İsmil	2014	Ø200+Ø300	74.00
Karatay	Ovakavagi	2014	Ø200+Ø300	26.00
Meram	Kasinhani	2014	Ø300+Ø400	73.00
Meram	Boruktolu	2014	Ø300+Ø400	14.50
Meram	Cariklar	2014	Ø200+Ø300+Ø400	33.80
			TOTAL	**512.028**

Source: *Karapinar Water Transmission Line Project, Project Feasibility Report, 2021.*

Pumping Stations

There are pumping stations for wastewater in Hayiroglu, Ismil, Cariklar and Karkin neighborhoods. Information about those pumping stations are provided in Table IV.44.

Table IV.44 Pumping Stations

District	Neighborhood / Pumping Station Name	Amount of Pumped Wastewater (L/s)	Construction Year
Karatay	Hayiroglu TM1	1	2016
Karatay	Hayiroglu TM2	1	2016
Karatay	Ovakavagi TM	2	2014
Karatay	İsmil TM1	1	2014
Karatay	İsmil TM2	1	2014
Karatay	İsmil TM3	1	2014
Karatay	İsmil TM4	1	2014
Karatay	İsmil TM5	1	2014
Meram	Cariklar TM	1	2014
Cumra	Karkin TM1	10	2015
Cumra	Karkin TM2	2	2015
Cumra	Karkin TM3	2	2015

Source: *Karapinar Water Transmission Line Project, Project Feasibility Report, 2021.*

Wastewater Treatment Plant

Wastewater of Karapinar district is sent to Karapinar Advanced Biological Wastewater Treatment Plant. The plant has been put into operation since 08.02.2021. The facility was designed with a capacity of 44,000 people and 7,000 m^3/day, considering the year 2033 and the permissions of the plant has been obtained.

IV.4.3. Konya Solid Waste Landfill and Incineration Facility

Pursuant to the Environmental Law No. 2872, it is prohibited to directly or indirectly deliver, 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.

Karapinar, Cumra and Karatay districts send solid waste to Konya Solid Waste Landfill and Incineration Facility. Wastes are transported by Konya Metropolitan Municipality. An average of 1500 tons of domestic waste from these districts is disposed of in Konya Solid Waste Landfill, eliminating the possible effects of waste on the environment.

The thermal incineration facility, which is located in the same area with the landfill, is used for domestic, commercial and institutional domestic solid wastes and non-hazardous industrial wastes collected in the solid waste landfill; In order to eliminate the possible pollutant effects on the environment and to minimize the final landfill, the construction of the Thermal Disposal Facility with a waste incineration capacity of 822 tons/day was completed and licensed in 2020..

V. ENVIRONMENTAL AND SOCIAL IMPACTS OF THE PROJECT

The main purpose of an Environmental and Social Impact Assessment (ESIA) is to identify and assess the potential positive and adverse impacts/risks that may be caused by the Project activities on the natural environment and on the socio-economic wellbeing and conditions of the population (community and workforce) at local and regional level. The following assessment is based on the Project characteristics and activities and the baseline conditions in the project area.

As a result of this assessment relevant mitigation measures were developed to avoid, minimize, mitigate and off-set significant adverse impacts and enhance beneficial impacts. Furthermore, the significance of project-induced residual adverse effects on the environment and community after implementation of the mitigation measures are assessed. And finally, planned monitoring activities for checking the effectiveness of the proposed mitigation measures are identified.

V.1. Scope-in/Scope-out Process

The first step in the ESIA is the scoping process of the planned project activities and the environmental and social aspects they would interact with in order to identify the issues to be focused on in the ESMP study. The analysis of these potential interactions has been done using a color code (see Table V.1) in a modified Leopold matrix[7] (see Table V.2). This approach provided the means to identify the potential interactions each project activity may have on a range of resources/receptors within the Project Area of Influence (AoI).

The Turkish EIA Regulation defines the area of influence as "*the area affected by a planned project before operation, during operation and after operation*". The area of influence may be different for different types of impacts and different environmental components (physical, biological, social) (WB Energy Sector Management Assistance Program (ESMAP), December 2012).

According to WBG International Finance Corporation (IFC) Performance Standard (PS) 1 Assessment and Management of Environmental and Social Risks and Impacts, the AoI is to encompass the following as appropriate:

- The area likely to be affected by: (i) the Project (e.g. project sites, immediate air shed and watershed, or transport corridors) and the Project Sponsors' activities and facilities that are directly owned, operated or managed (including by contractors) and that are a component of the project (e.g. tunnels, access roads, borrow and disposal areas construction camps); (ii) impacts from unplanned but predictable developments caused by the project that may occur later or at a different location; or (iii) indirect project impacts on biodiversity or on ecosystem services upon which Affected Communities' livelihoods are dependent.
- Associated facilities, which are facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable.
- Cumulative impacts that result from the incremental impact, on areas or resources used or directly impacted by the project, from other existing, planned or reasonably defined developments at the time the risks and impacts identification process is conducted.

[7] *The Leopold Matrix is a large two-dimensional matrix. It lists on one axis, the project activities which could cause environmental impact, and on the other, existing environmental conditions that may be affected. The items on the axes are general enough to be used as a reference checklist of the full range of actions and impacts that may relate to the proposed development. The axis listing environmental factors that may be affected is also useful as a reference and checklist in describing the existing environment (World Bank, 1980).*

Table V.1 Colour Code Used in the Scope-in/Scope-out Process

(White)	An interaction is not reasonably expected.	Aspect "scoped out"
(Grey)	An interaction is reasonably possible, but none of the resulting impacts are likely to lead to significant effects, and/or interaction is addressed through embedded mitigation measures.	Aspect "scoped out", but rationale is provided in relevant section of current report
(Red)	An interaction is reasonably possible and at least one of the resulting impacts is likely to lead to a negative effect (low, medium or significant).	"Scoped in" – subject to impact assessment.
(Green)	Impacts which are considered likely to be positive.	"Scoped in" – subject to impact assessment.

Those interactions that are colored white are scoped out of further consideration in the impact assessment process and no discussion is warranted in this ESMP. Those interactions that are colored grey are also scoped out, but during the impact assessment process these potential interactions have been reviewed to confirm that resulted impacts are not significant and/or are appropriately addressed through one or more embedded controls. Those interactions marked with red and green are scoped in and subject to impact assessment. These impacts would be assessed for their significance and additional mitigation measures, beyond the already planned embedded controls, would be proposed as necessary.

Table V.2 and

Table V.3 summarize the potential interactions between the Project and environmental resources (air, water, noise, etc.) and socio-economic receptors.

Table V.2 Potential Interactions between Project Activities and Environmental Resources

Project stage/activity	**Environmental Resources**								
	Air Quality	**Soils and Contaminated Land**	**Groundwater**	**Surface Water Resources**	**Noise and Vibration**	**Biological Environment**	**Landscape and Visual Amenity (Aesthetics)**	**Resources and Waste**	**Climate Change**
Construction									
Vegetation clearance, levelling works and construction activities in the project sites									
Excavation of surface material for laying down transmission line pipes									
Provision of material, equipment, and service									
Use of energy									
Collection of the generated wastes by the construction phase of the project and their disposal									
Operation									
Water supply and use (domestic)									
Emissions and odor									

Project stage/activity	Environmental Resources								
	Air Quality	Soils and Contaminated Land	Groundwater	Surface Water Resources	Noise and Vibration	Biological Environment	Landscape and Visual Amenity (Aesthetics)	Resources and Waste	Climate Change
Provision of material, equipment, and service									
Regular and timely maintenance works									

Table V.3 Potential Interactions between the Project Activities and Social/Socio-economic Receptors

Project stage/activity	Social / Socio-economic Receptors									
	Socio-Economic				Other Social Receptors					
	Local Economics	Community Demographics	Infrastructure and Services	Community Cultural Situation/ Social Cohesion	Ecosystem Services	Land Use	Livelihood	Occupational Health and Safety (Labor & Working Conditions)	Community Health and Safety and Security	Archaeological and Cultural heritage
Construction										
Employment of personnel and procurement of goods and services (from local market)										
Construction Activities										
Labor influx										
Physical presence of construction workers										
Construction traffic (transportation of workers and materials)										
Operation of construction machinery, equipment and generators										
Road closures										
Wastes/wastewater handling and disposal										
Operation										
Employment of personnel and procurement of goods and services (from local market)										
Maintenance of the water supply and distribution system										

Project stage/activity	Social / Socio-economic Receptors									
	Socio-Economic				Other Social Receptors					
	Local Economics	Community Demographics	Infrastructure and Services	Community Cultural Situation/ Social Cohesion	Ecosystem Services	Land Use	Livelihood	Occupational Health and Safety (Labor & Working Conditions)	Community Health and Safety and Security	Archaeological and Cultural heritage
Waste handling and disposal										
Air quality emissions										

V.2. Impact Assessment Approach and Methodology

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 following mitigation.

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 V.4 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 V.4 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

** Adapted from Scottish Natural Heritage – A handbook on environmental impact assessment, 2013*

V.3. Area of Influence

The location of the Project is presented in Figure V.1. The length of the transmission line is 101.35 km. As described before, the Project will have impacts especially in the vicinity of the project sites. The area of influence for the Project includes the neighborhoods that are located on the drinking water transmission line and their close vicinity. The settlement areas located within the area of influence is shown in Figure V.1; while the potential social influence area of the project is presented in Figure V.2. The size of both area of influence and social area of influence is 5537.6 ha. The identified sensitive receptors are shown on a map presented in Figure V.3.

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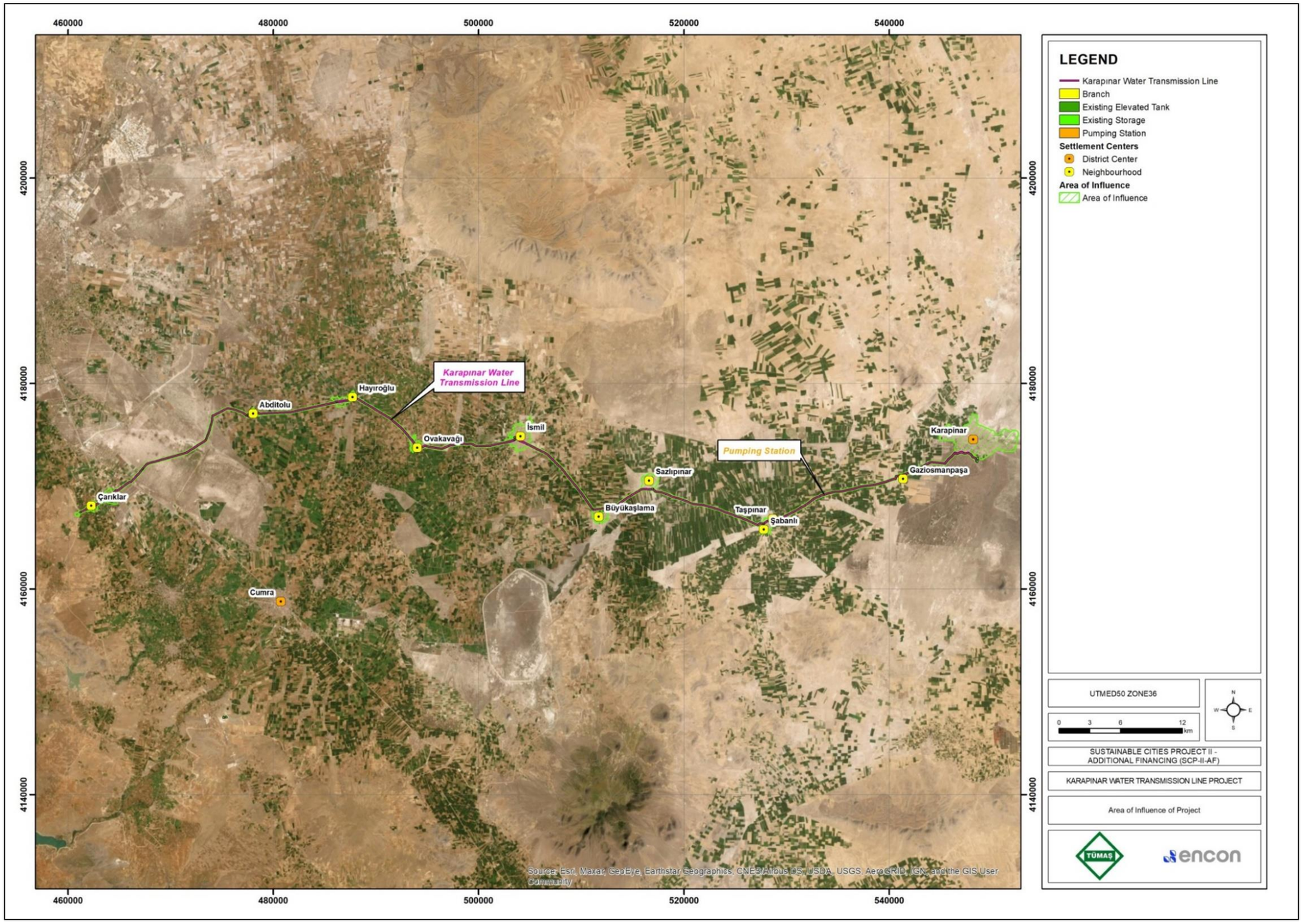

Figure V.1. Area of Influence of the Project

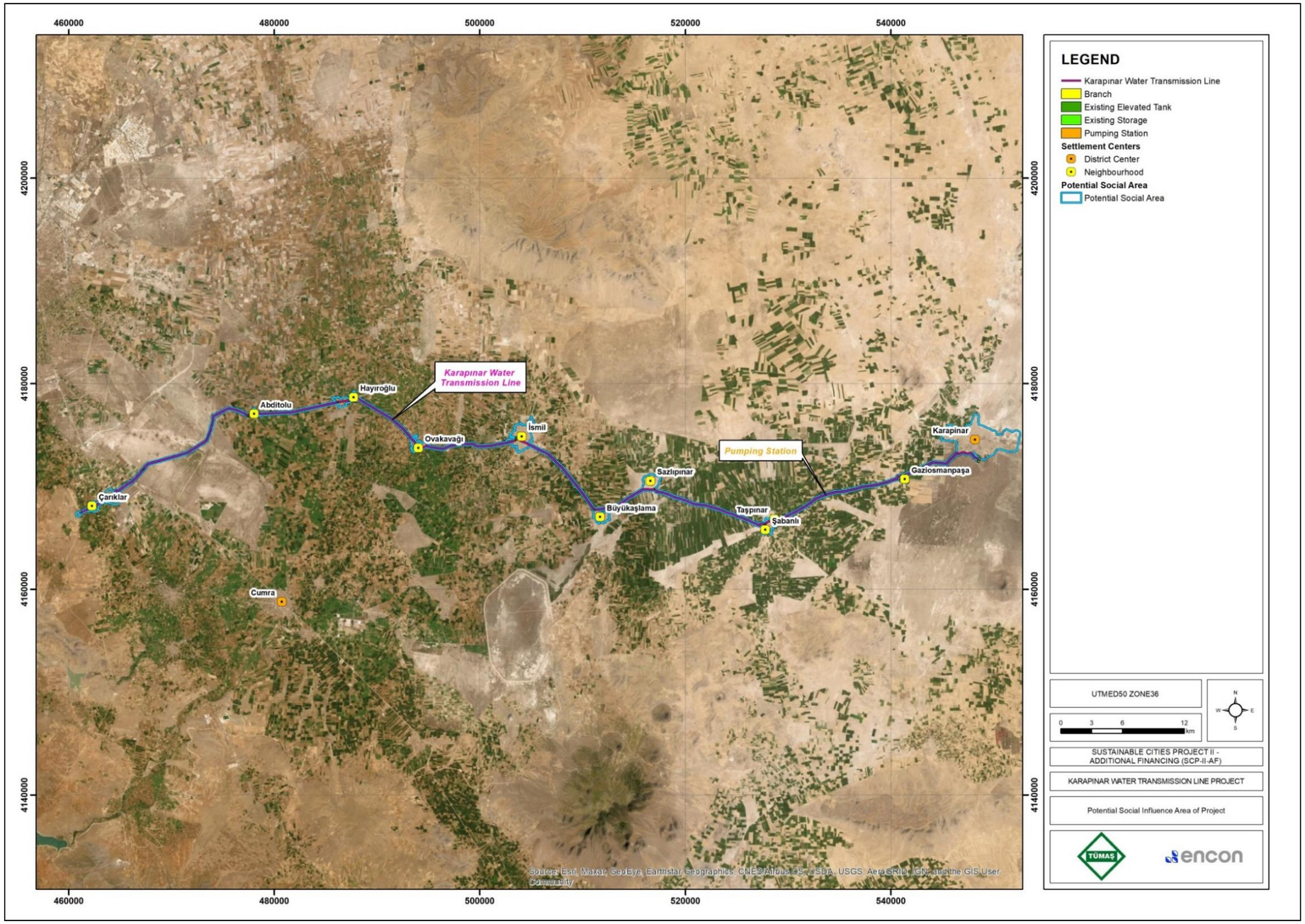

Figure V.2 Potential Social Influence Area of the Project

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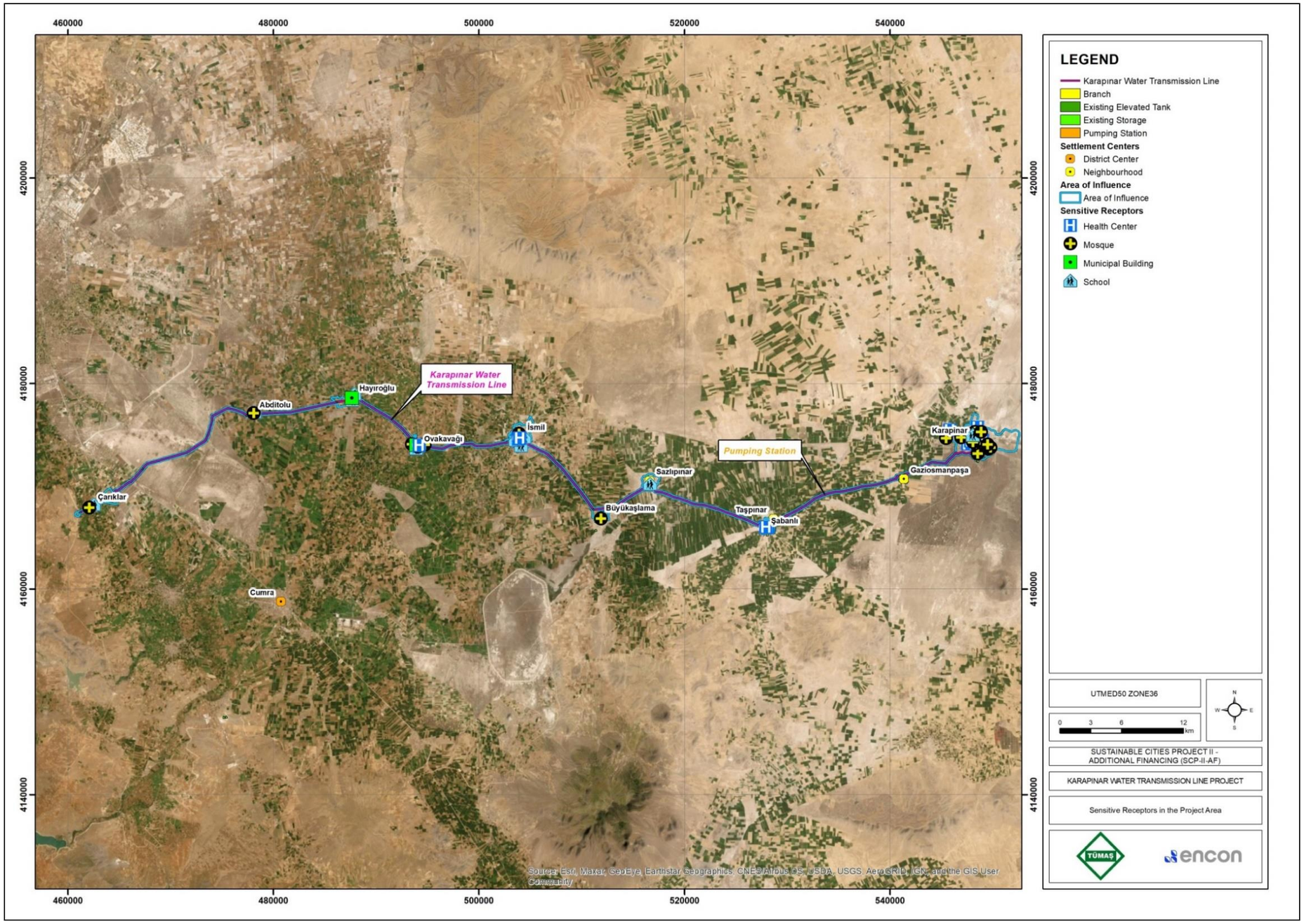


Figure V.3 Sensitive Receptors in the Project Area

V.4. Environmental Impacts (Physical and Biological Environment)

The Project would have environmental impacts during the construction and the operation phases. Potential impacts of the Project during the construction phase would be generally short term with low to medium magnitude that would be locally significant. These impacts would mostly be related to air quality, soil disturbance and contamination, traffic and noise and vibration.

During the operation phase, significant adverse environmental impacts are not expected. Maintenance and repair works of the water transmission line might have minor environmental impacts such as soil contamination and increased level of noise. These impacts will be local and short-term with low in significance.

Table V.5 provides a detailed overview of the identified impacts and their assessment as a result of the execution of the project activities in different project phases (construction and operation phases).

Table V.5 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			Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/project footprint	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
																		Negligible/ None	Negligible/ None	Negligible/ None	Negligible/ None
A. CONSTRUCTION PHASE																					
1. Air Quality																					
1	Increase in dust concentration		✓	✓			✓				✓				✓			**Medium**	**Low**	**Low**	**Low**
2	Increase in SO_2 PM, NO_x emission		✓	✓			✓				✓				✓			**Medium**	**Low**	**Low**	**Low**
3	Impact on human health		✓		✓			✓			✓					✓		**Medium**	**Negligible/ None**	**Negligible / None**	**Negligible/ None**
2. Soils and Contaminated Land																					
1	Contamination of soil		✓	✓			✓						✓			✓		**Medium**	**Low**	**Low**	**Low**
2	Loss of topsoil		✓	✓			✓							✓		✓		**Medium**	**Medium**	**Medium**	**Low**
3	Erosion potential		✓	✓			✓						✓			✓		**Low**	**Low**	**Low**	**Low**
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**	**Medium**	**Medium**	**Low**
2	Increase in vibration level		✓	✓			✓				✓				✓			**Medium**	**Low**	**Low**	**Negligible/ None**
5. Biological Environment																					

No	Environmental and Social Attributes	Impact															Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP
		Nature		Type			Extent/area				Duration				Likelihood of Occurrence						
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/project footprint	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
																		Negligible/ None	Negligible/ None	Negligible/ None	Negligible/ None
1	Disturbance on flora and fauna species		✓	✓			✓				✓					✓		**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	Storage and Usage of Chemicals		✓	✓			✓				✓				✓			**Medium**	**Medium**	**Medium**	**Low**
8.Climate Change																					
1	Contribution to climate change through greenhouse gas (GHG) emissions		✓	✓					✓		✓				✓			**Medium**	**Low**	**Low**	**Low**
9. Socioeconomic Environment																					
1	Job creation and local procurement	✓		✓				✓					✓		✓			**Positive**			
2	Infrastructure damage		✓	✓				✓			✓						✓	**Low**	**Low**	**Low**	**Low**
3	Impact on underground service utilities and services relocation		✓	✓				✓			✓					✓		**Medium**	**Low**	**Low**	**Low**
4	Impact on vulnerable/disadvantaged individuals/groups		✓	✓			✓				✓					✓		**Medium**	**Low**	**Low**	**Low**

No	Environmental and Social Attributes	Impact															Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP
		Nature		Type			Extent/area				Duration				Likelihood of Occurrence						
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/project footprint	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
																		Negligible/ None	Negligible/ None	Negligible/ None	Negligible/ None
10. Labor and Working Conditions																					
1	Working Conditions		✓	✓			✓				✓				✓			**Low**	**Low**	**Low**	**Low**
2	Protecting the work force		✓	✓				✓			✓				✓			**Low**	**Low**	**Low**	**Low**
3	Occupational health and safety		✓	✓			✓				✓				✓			**High**	**High**	**High**	**Low**
4	Workers Engaged by Third Parties and the supply chain		✓	✓			✓				✓				✓			**Medium**	**Low**	**Low**	**Low**
5	Labor Influx		✓	✓				✓			✓					✓		**Low**	**Low**	**Low**	**Negligible/ None**
11. Community Health and Safety																					
1	Project traffic and construction activities related risks		✓	✓				✓			✓					✓		**Low**	**Low**	**Low**	**Low**
2	Community encroachment		✓	✓			✓				✓						✓	**Low**	**Medium**	**Low**	**Negligible/ None**
3	General construction related impacts on community		✓	✓			✓						✓		✓			**Medium**	**Low**	**Low**	**Low**
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**
B. OPERATION PHASE																					
1. Air Quality																					

No	Environmental and Social Attributes	Impact																	
		Nature		Type			Extent/area				Duration				Likelihood of Occurrence			Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/project footprint	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
																		Negligible/ None	Negligible/ None	Negligible/ None	Negligible/ None
1	Air emissions from pumping station		✓	✓			✓				✓						✓	**Low**	**Low**	**Low**	**Negligible/ None**
2. Soils and Contaminated Land																					
1	Soil contamination		✓	✓			✓				✓						✓	**Medium**	**Low**	**Low**	**Negligible/ None**
3. Water Resources																					
1	Change in surface water quality		✓	✓				✓			✓						✓	**Low**	**Low**	**Low**	**Negligible/ None**
2	Change in groundwater quality		✓		✓			✓			✓						✓	**Low**	**Low**	**Low**	**Negligible/ None**
4. Noise and Vibration																					
1	Increase in Noise Level		✓	✓			✓							✓			✓	**Medium**	**Low**	**Low**	**Low**
5. Landscape and Visual (Aesthetics)																					
1	Existence of the pumping station		✓	✓			✓							✓		✓		**Low**	**Negligible/ None**	**Negligible/ None**	**Negligible/ None**
6. Wastes																					
1	Generation of different types of waste during maintenance and repair works		✓	✓			✓						✓			✓		**Medium**	**Low**	**Low**	**Low**
7. Climate Change																					
1	GHG emissions		✓	✓				✓			✓				✓			**Medium**	**Negligible/ None**	**Negligible/ None**	**Negligible/ None**
8. Socioeconomic Environment																					

No	Environmental and Social Attributes	Impact															Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without ESMP	Impact Significance with ESMP
		Nature		Type			Extent/area				Duration				Likelihood of Occurrence						
		Positive (+)	Negative (-)	Direct	Indirect	Cumulative	On-site/project footprint	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
																		Negligible/ None	Negligible/ None	Negligible/ None	Negligible/ None
1	Local procurement	✓		✓				✓					✓		✓			Positive			
2	Infrastructure damage		✓	✓				✓			✓					✓		**Low**	**Low**	**Low**	**Negligible/ None**
9. Labor and Working Conditions																					
1	Protecting the work force		✓	✓				✓			✓				✓			**Low**	**Low**	**Low**	**Low**
2	Occupational health and safety		✓	✓			✓				✓				✓			**High**	**High**	**High**	**Low**
3	Workers Engaged by Third Parties and the supply chain		✓	✓			✓				✓				✓			**Medium**	**Low**	**Low**	**Low**
4	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)		✓	✓				✓					✓			✓		**High**	**Medium**	**Medium**	**Low**
5	Working Conditions		✓	✓			✓						✓		✓			**High**	**Low**	**Medium**	**Low**

V.4.1. Air Quality

Standards and Limit Values

Standards for PM_{10} (particles with aerodynamic diameter smaller than 10 µm) are defined for particles which are respirable by humans and therefore, PM_{10} is the accepted measure of particles in atmosphere. In this context, both the Regulation on the Assessment and Management of Air Quality, and Industrial Air Pollution Control Regulation define the standards in terms of PM_{10}.

Regulation on the Assessment and Management of Air Quality (RAMAQ)

Long and short terms standards were specified for the harmonization of environmental regulations in the process of accession to the European Union. However, the regulation sets a transition period for the application of these limit values.

Industrial Air Pollution Control Regulation (IAPCR)

Industrial Air Pollution Control Regulation (IAPCR) aims to control emissions in form of smoke, dust, gas, vapor and aerosol which are released to the atmosphere as a result of activities of industrial plants and energy generation facilities, to protect human beings and the environment from pollution, and to manage and prevent negative impacts of air pollution which result in significant problems on public health.

Ambient air quality limit values for various pollutants defined in above-mentioned legislations are presented in Table V.6.

Table V.6 Ambient Air Quality Limit Values – Turkish Regulations

Parameter	Duration	Limit Value* (µg/m^3)
SO_2	Hourly (cannot be exceeded more than 24 times a year)	350
	24 hour	125
	Long term limit	60
	Annual and winter season (October 1 - March 31)	20
NO_2	Hourly (cannot be exceeded more than 18 times a year)	200
	Annual	40
Particulate Matter (PM 10)	24 hour (cannot be exceeded more than 35 times a year)	50
	Annual	40
CO	8 hour daily maximum	10.000
O_3	8 hour daily maximum	120
VOC**	Hourly	280
	24-hour	70

** Regulation on Assessment and Management of Air Quality*
*** Industrial Air Pollution Control Regulation*

In addition to Table V.6, the IAPCR defines limit values for the calculation of contribution to air pollution resulting from stack and non-stack sources. According to the provisions of the regulation, the amount of contribution to air pollution should be calculated to determine if the amount of emission exceeds these limits. These values are provided in Table V.7.

Table V.7. Emission Limits for Stack and Non-Stack Sources

Parameter	Mass Flow (kg/hour)	
	Stack	Non-Stack
Carbon monoxide (CO)	500	50
Nitrogen oxide (NO_x)	40	4
Sulphur Dioxide (SO_2)	60	6
Dust	10	1

In this context, amounts of emissions released as a result of the activities conducted in scope of the Project will be calculated and compared with the values provided above. If the calculated emissions exceed the limits defined in the regulation, air quality dispersion modelling studies need to be conducted and contribution of the emission to air pollution will be estimated.

WBG General EHS Guidelines

In addition to the Turkish legislations, the ambient air quality limit values stipulated in the WBG General EHS Guidelines shall be complied. As the WBG General EHS Guidelines – Environmental Air Emissions and Ambient Air Quality state that national legal standards must be followed, the standards set out in national legislation will be followed.

Within the scope of the construction activities, dust is expected to be generated. With proper control measures such as dust suppression, the generated dust amount is expected to be reduced effectively.

Construction Phase Impacts

The major impacts on air quality during the construction phase of the Project will be related with the material handling, vehicle movement, excavation and backfilling, compaction works and emissions from heavy construction machinery (trucks, excavators, etc.). Air pollution will be mainly dust emissions and exhaust emissions as well as GHG emissions. The sensitive receptors that will be exposed to these air emissions will be the local population who lives near the construction sites.

During the construction phase of the Project, impacts on air quality will be mainly due to dust emissions caused by:

- Dust emission during the site preparation, excavation, backfilling and compaction works performed for the construction of drinking water transmission line system;
- Dust emission due to the vehicle movement for transportation of various construction materials to the project site;
- Exhaust emissions originating from vehicles used in the construction activities; and
- GHG emissions generated from the vehicles and construction machinery in small amounts.

During the construction phase of the Project, there will be vehicle movement for transportation of various construction materials to the Project site. Impacts on air quality will be mainly due to dust emissions caused by the vehicle movement on unpaved roads and earthworks to be performed within the project area. In addition to the dust emissions, exhaust emissions will originate from vehicles used in construction activities. In order to determine dust and exhaust emissions during the construction

phase, the number of machinery and equipment to be used for the construction should be known. The machinery requirement of the Project is not determined by KOSKI yet and therefore, the construction machineries and equipment to be used during the construction phase is assumed based on the procedures to be followed during construction and engineering estimates and presented in Table V.8.

Table V.8 Indicative Construction Machinery and Equipment List

Construction Machinery/Equipment	Number
Dump Truck	6
Excavator	2
Loader	2
Mini Loader	2
Mobile Crane	2
Sprinkler	1
Grader	2

The amount of dust emission generated during the construction phase of the Project is calculated with the emission factors defined in Table 12.6 in Appendix-12 of IAPCR (see Table V.9). While uncontrolled emission is the emission before the mitigation measures, the controlled emission is the emission after the measures are taken.

Table V.9 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

According to the Project schedule, the construction activities are planned to last for 12 months (approximately 300 work days) and daily shifts will last for 8 hours. Earthworks consist of levelling, excavation, temporary storage, loading and transportation of excavated material. Excavation is planned to be conducted step by step. However, the worst case scenario is assumed in the calculations and all the activities are assumed to be conducted simultaneously. The information on the excavation works to be made on drinking water network is shown in Table V.10.

Table V.10 Information on the Excavation Works to be made on Drinking Water Network

Length (m)	Excavation Width (m)	Area (m^2)	Excavation Depth (m)	Volume (m^3)
101,350	1.20	121,620	2.30	279.726

Total Excavation Volume : 279,726 m^3

Density of Excavation Material	: 1.8 ton/m^3
Total Amount of Excavation	: 503,506.8 ton
Excavation Duration	: 300 days
Working Hours Per Day	: 8
Hourly Excavated Material Amount	: 209.8 ton/hour

Uncontrolled Dust Emissions:

Emission from excavation:

Excavation emission factor (uncontrolled): 0.025 kg/ton
Amount of PM_{10} emissions: 209.8 ton/hour * 0.025 kg/ton = 5.2 kg/hour

Loading emission factor (uncontrolled): 0.010 kg/ton
Amount of PM_{10} emissions: 209.8 ton/hour * 0.010 kg/ton = 2.1 kg/hour

Emission from transportation activities

Transportation emission factor (uncontrolled): 0.700 kg/km-vehicle
Amount of PM_{10} emissions: 101.35 km x 0.700 kg/km-vehicle x (1/300 days) x (1/8 hours) = 0.03 kg/hour

Total uncontrolled PM10 emissions

Total: 5.2 + 2.1 + 0.03 = 7.33 kg/hour

Controlled Dust Emissions:

Emission from excavation:

Excavation emission factor (controlled): 0.0125 kg/ton
Amount of PM_{10} emissions: 209.8 ton/hour * 0.0125 kg/ton = 2.62 kg/hour

Loading emission factor (controlled): 0.005 kg/ton
Amount of PM_{10} emissions: 209.8 ton/hour * 0.005 kg/ton = 1.05 kg/hour

Emission from transportation activities

Transportation emission factor (controlled): 0.350 kg/km-vehicle
Amount of PM_{10} emissions: 101.35 km x 0.35 kg/km-vehicle x (1/300 days) x (1/8 hours) = 0.015 kg/hour

Total: 2.62 + 1.05 + 0.015 + = 3.658 kg/hour

According to the calculations, the total amount of uncontrolled and controlled PM10 emissions are expected as 7.33 kg/hour and 3.658 kg/hour, respectively for whole drinking water transmission line. As stated above, these emission rates are calculated based on the worst-case scenario.

In addition to the dust emissions, there will be exhaust emissions of heavy construction machinery. Primary emissions from exhaust gases of vehicles are NO_2, CO, HC, SO_2 and PM. Emission characteristics depend on parameters such as; age of the vehicle, engine speed, working temperature, ambient temperature and pressure, type and quality of fuel. Emission factors developed by USEPA for gasoline and diesel fueled vehicles are presented in Table V.11.

Table V.11 Emission Factors (USEPA)

POLLUTANTS	EMISSIONS (g/km/vehicle)	
	Gasoline	Diesel Fuel
Nitrogen oxides (NO_x)	1.20	9.00
Carbon monoxide(CO)	39.0	15.0
Sulphur dioxide(SO_2)	0.08	1.50
Hydrocarbons (HC)	2.60	2.90
Particulate Matter (PM)	0.40	0.80

The indicative list of construction machinery to be used for the construction activities was previously presented in Table V.8. Exhaust emissions of the machinery are presented in Table V.12.

Table V.12 Expected Amounts of Exhaust Emissions (kg/h)

Emissions (kg/hour)				
NO_X	CO	SO_2	HC	PM
0.153	0.255	0.026	0.049	0.014

Emission calculations are based on the engine power of the vehicles, their number and daily working hours. According to IAPCR Annex-2 Table 2.1, limit values are not exceeded. Although no significant exhaust emission is expected during the construction phase, a set of mitigation measures that are presented in Section VI.1 will be implemented for further reduction of any related impacts on air environment.

These air quality impacts will be limited in terms of area and short-term since there will be a limited number of equipment and machinery operating on site. In addition, water transmission lines will mainly follow the cadastral roads and the construction will be performed gradually. Therefore, the receptors will be limited to the ones located in close proximity to the construction sites. The identified receptors within and in the vicinity of the project area are presented in Figure V.3. Their sensitivity is assessed as medium, especially the ones in populated areas (i.e. residential areas). Necessary mitigation measures described in the further sections of this report should be taken to not to have any negative impact on these receptors.

As a result, when the works to be carried out within the scope of construction activities and corresponding work load are taken into account, it can be concluded that due to limited number of construction machinery and vehicles, the impacts will be low in significance upon implementation of the mitigation measures and adherence to good construction methods.

The mitigation measures for the reduction and control of air emissions, which are given in Section VI.1 will be implemented during the construction phase in accordance with relevant Turkish

regulations and international standards. With the implementation of these mitigation measures, the air quality impacts will be low, short-term, local and low in significance.

Operation Phase

The operation phase of the Project is not expected to cause significant dust and exhaust emissions. The only operation that will potentially result in emissions is the operation of the pumping station, which is expected to be at a negligible level.

V.4.2. Soils and Contaminated Land

Construction Phase

The excavation of trenches for the water pipes will have some minor impacts on the soil environment. However, these impacts are localized and restricted to the construction sites. The potential impacts will consist of:

- Soil contamination risk due to leakage and spill of fuels, paints and oils that will be used for the construction machinery and equipment;
- 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 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,
- Piling of soil along public access routes, and
- Improper replacement of soil to its original position during filling process.

These impacts can be easily managed and mitigated to low in significance with the implementation of the mitigation measures given in Section VI.1.

Operation Phase

In the operation phase of the Project, the activities will have a limited physical interaction with the environment. No additional significant direct impacts on topography, soil and land use are anticipated under normal operating conditions. Impacts of operation phase of the Project are related with the risks that would arise during repair and maintenance works, such as spillage/leakage of oil, and chemicals to soil. Therefore, the impact significance is determined as low. With the implementation of mitigation measures, the residual impacts will be negligible in significance. The defined mitigation measures are presented in Section VI.1.

V.4.3. Water Resources

Water Supply during Construction Phase

During the construction phase, employees' needs and dust suppression will create water supply requirement. The water used for dust suppression and utility water will be supplied from the municipal network and/or by tankers. 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 0.23 m³ (TurkStat, 2018). Although the number

of personnel required is not determined yet, it is assumed as 100. Therefore, the daily water requirement of employees during the construction phase will be;

100 employees x 0.23 m³/employee.day=23 m³/day

Bottled water will be used for the drinking water needs of the personnel. The quality of drinking water that will be supplied to the Project shall be in compliance with the Regulation Concerning the Water Intended for Human Consumption together with the internationally accepted standards, such as World Health Organization (WHO) and WBG's General EHS Guidelines.

For the dust suppression water requirement of the Project Area during the construction phase of the Project, the calculation is made according to the equation provided in Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures. The required water is calculated as 0.092 L/m^2.

C=100-(0.8.p.d.t)/i

C= Average percentage of control efficiency
p= Average hourly daytime evaporation rate (inch)
d= Hourly daytime traffic rate (h-1)
t= Implementation timeframe
i= application density in l/m^2
e= Annual average evaporation (inch)

By using the equations above;

C= Calculation was made by assuming the average control efficiency percentage as 90%..

Monthly Maximum Open Surface Evaporation = 22 mm taken from the General Directorate Of Meteorology.

90 = 100 – (0.80 x (0.0049/25.4) x 22 x 16 x 17) / i

From here, i= 0.092 L/m^2 is found.

Water Supply during Operation Phase

During the operation phase of the Project, the water supply requirement will arise due to employee needs. The total amount of water required by employees is calculated as in the previous section. Although the number of personnel required is not determined yet, it is assumed as 10. Therefore, the daily water requirement of employees during the operation phase will be;

10 employees x 0.23 m³/employee.day=2.30 m³/day

In addition to the daily needs of the personnel, there will be operational water requirements, and these are presented together with the Project's water requirement according to its phases in Table V.13.

Table V.13. Water Requirement of the Project

Project Phase	Intended Use	Water Requirement		
		m^3/h	m^3/day	$m^3/year$
Construction	Drinking water / Tap water	0.96	23.00	8,395
Construction	Dust Suppression	1.25	10.00	3,650
Operation	Drinking water / Tap water	0.10	2.30	840

Construction Phase Impacts

It is anticipated that minor short-term negative impacts due to surface runoff, muddy water filling the excavation trenches, etc. would occur during construction.

Construction activities may also pose the potential for release of petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. All chemical storage containers, including diesel fuel, and hazardous liquid waste drums/containers should be placed so as to minimize the risk of soil and groundwater contamination during construction phase.

Water to be used in dust suppression during the construction phase of the Project will be absorbed by soil or lost by evaporation. Therefore, there will not be any surface runoff formation or wastewater generation due to watering for dust suppression.

For the employees, portable toilets will be installed at the construction site. The wastewater will be collected with the help of septic trucks and sent to the municipal wastewater treatment plant.

In the construction phase of the project, the surface water quality may also be affected by any spill/leakage situation since there are 21 river crossings in the transmission line route. The impact on the surface water resources will be direct and negative with short - term duration, local and negligible in significance when the mitigation measures are fully implemented.

In construction phase, impact on groundwater may be seen due to accidental oil leakages in the areas where the works with construction machinery are carried out as well as improper disposal of wastes. This may affect the groundwater quality in the project area, if necessary, mitigation measures are not taken. However, it is possible that the impacts will be negligible if the mitigation measures outlined in Section VI.1 are followed and good engineering practices are adopted.

Operation Phase Impacts

The project components do not expect to interfere with both surface water and groundwater bodies. Even there will be required repairing due to broken pipes, because the pipes are transferring clean drinking water, no adverse impact are expected. The only incident that will cause pollution of water resources is the accidental spill/leakage of fuel and oil from machinery during maintenance activities. As a result of these cases of accidents, the water quality will change adversely, however, due to the short duration and insignificant amount of leakage material during these accidents, these impacts can be easily managed.

To conclude, operation phase impacts of the Project is generally found to be negligible when mitigation measures are implemented. Otherwise, the impacts are expected to be low and short-term on water resources.

V.4.4. Noise and Vibration

Construction Phase Impacts

The project activities during 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 preparation of the site and the construction activities, pipe placement/ replacement, trench filling, paving and asphalting.

Construction of the drinking water transmission line will affect inhabitants living on the transmission line route, but this impact will be short-term and low in magnitude.

The noise level of the equipment and machinery will be kept to a minimum with proper mitigation measures such as use of silencers and with regular maintenance.

Vibration that will affect humans or the 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 of the Project, noise will be generated from pumping station equipment. The level of noise generated from the equipment is expected to be constant as all equipment will be in operation during the pumping operation hours (24 hours).

The noise will also be generated by repair and maintenance works. Vehicles and maintenance equipment and machinery will be used temporarily, and the number of vehicles will be limited during repair and maintenance works. Therefore, noise impact resulting from these works is not expected to be significant during the operation phase of the project.

The impact is assessed as direct and negative and permanent, local and low in significance.

V.4.5. Biological Environment

The potential impacts of the proposed construction activities for the Project on the biological environment are considered. Potential impacts will affect terrestrial and aquatic flora-fauna directly or indirectly. Therefore, impacts of the project activities can be further divided into the target group of biological elements as terrestrial and aquatic. Mitigation measures are to be taken in order to minimize these impacts are presented in Section VI.1.

The impact of project activities on ecological components is related to the magnitude of the impact and the vulnerability of the recipient. The sensitivity of terrestrial flora-fauna species was determined according to the matrix given in Table V.14. It is known that the features of each step in the systematic classification of species are different from each other. Accordingly, the effect levels will differ from species to species. Sensitivities of flora and fauna species determined within the project area are explained in detail in Section IV.2 Ecology and Biodiversity. Criteria for significance for ecological components are explained in the following topic.

Impact Assessment Criteria

The impact assessment criteria for the impacts on ecology and biodiversity were determined as high, moderate, or low, based on evaluating the magnitude of impact and sensitivity/value of the

receptors/resources. WB OP 4.04 definitions are used in habitat and species assessments. These definitions are explained step-by-step.

According to WB OP 4.04, Annex A, Natural Habitats, Critical Natural habitats, Significance Conversion and Degradation defined as:

"*Natural habitats are land and water areas where (i) the ecosystems' biological communities are formed largely by native plant and animal species, and (ii) human activity has not essentially modified the area's primary ecological functions. All-natural habitats have important biological, social, economic, and existence values. Important natural habitats may occur in tropical humid, dry, and cloud forests; temperate and boreal forests; Mediterranean-type shrublands; natural arid and semi-arid lands; mangrove swamps, coastal marshes, and other wetlands; estuaries; seagrass beds; coral reefs; freshwater lakes and rivers; alpine and sub-alpine environments, including herb fields, grasslands, and paramos; and tropical and temperate grasslands.*"

"Critical Natural habitats: (i) existing protected areas and areas officially proposed by governments as protected areas (e.g., reserves that meet the criteria of the World Conservation Union [IUCN] classifications), areas initially recognized as protected by traditional local communities (e.g., sacred groves), and sites that maintain conditions vital for the viability of these protected areas (as determined by the environmental assessment process); or (ii) sites identified on supplementary lists prepared by the Bank or an authoritative source determined by the Regional Environment Sector Unit (RESU). "

Significance conversion: Such sites may include areas recognized by traditional local communities (e.g., sacred groves); areas with known high suitability for biodiversity conservation; and sites that are critical for rare, vulnerable, migratory, or endangered species.

Listings are based on systematic evaluations of such factors as species richness; the degree of endemism, rarity, and vulnerability of component species; representativeness; and integrity of ecosystem processes.

Significant conversion may include, for example, land clearing; replacement of natural vegetation (e.g., by crops or tree plantations); permanent flooding (e.g., by a reservoir); drainage, dredging, filling, or channelization of wetlands; or surface mining. In both terrestrial and aquatic ecosystems, conversion of natural habitats can occur as the result of severe pollution.

Conversion can result directly from the action of a project or through an indirect mechanism (e.g., through induced settlement along a road).

Degradation is a modification of a critical or another natural habitat that substantially reduces the habitat's ability to maintain viable populations of its native species."

Based on these criteria, sensitivity criteria for ecological components within the scope of the Project have been determined as given in Table V.14.

Table V.14. Criteria for Sensitivity/Value of Resource

Ecosystem Component	Sensitivity/Value Level		
	High	**Medium**	**Low**
Designed Areas	Internationally Recognized Areas (e.g. UNESCO Natural World Heritage Sites, UNESCO Man and the Biosphere Reserves, KBAs, and wetlands designated under the Convention on Wetlands of	Nationally designated areas.	N/A

Ecosystem Component	Sensitivity/Value Level		
	High	**Medium**	**Low**
	International Importance (the RAMSAR Convention))		
Habitats	Habitats are natural or critical natural habitat under the WB OP 4.04 definitions and or Habitats that trigger critical habitat under the following WBG/IFC PS6 Criteria: • Criterion 4: Highly threatened and/or unique; and/or ecosystems • Criterion 5: Key evolutionary processes • Habitats that support species of High sensitivity	Areas of habitat that represent >1% distribution within Türkiye or are threatened at a national level. Habitats that support species of Medium sensitivity.	Natural habitats that do not meet the criteria for either medium or high sensitivity. Habitats that support species of Low sensitivity.
Species	Species populations that trigger critical habitat under the following WBG/IFC PS6 Criteria: • Criterion 1: Critically Endangered (CR) and/or Endangered (EN) species; • Criterion 2: Endemic and/or restricted-range species; and/or • Criterion 3: Migratory and/or congregator species.	Nationally/regionally important concentrations of a Vulnerable (VU) species, or locally important concentrations of Critically Endangered (CR) and/or Endangered (EN) species. Locally important populations of endemic/range restricted species. Populations of migratory species that represent >1 % of the national (Turkish) population.	Locally important populations of Near Threatened (NT) or Vulnerable (VU) species, or locally important populations of species listed on Annexes to the Bern Convention.

Construction Phase Impacts on Ecology and Biodiversity

In the construction phase of the project, some direct or indirect impacts are expected to occur. The loss of habitat and biodiversity might concern the project area. However, most of the transmission line is planned within the existing roads, therefore, there will be no habitat or vegetation loss in these already altered areas. As for the areas, where the transmission line is not along the existing roads, steppe and ruderal vegetation is observed. There is no critical natural vegetation that harbors wildlife, so it is not expected that there will be any sensitive habitat and vegetation loss during the construction activities of the Project.

Another direct impact of the construction phase will be the vehicle traffic. The fauna species, which have limited mobility will be prone to fauna mortality.

Indirect impacts of construction include disturbance in terms of noise and visual nuisance, and pollution. Some of the secondary impacts have been identified as changes in soil and water quality composition, air quality (dust generation, etc.), waste generated due to project activities, and noise pollution that might impact species' behavior, especially that of fauna elements.

Internationally and Nationally Recognized Areas

There is no national or international protected area in or around the project area.

The 2,200 m of the transmission line is within the Karapinar Plain KBA/IBA and passes 600 m south of the Hotamış Marshes KBA/IBA, as shown in Figure IV.13.

Biodiversity elements triggering Karapinar Plain and Hotamis Marshes KBA/IBA criteria are given in Table V.15. The species triggering KBA were not identified in and around the project area with desktop and field studies (see Section IV.2.Ecology and Biodiversity).

Based on the assessments given in Table V.14, KBAs were considered as highly sensitive areas. Field studies were carried out on the line and around within the Karapinar Plain KBA/IBA area. The line will pass through the existing cadastral roads. The area affected by the construction of the line in the KBA consists of anthropogenic steppe and ruderal vegetation (see Figure V.4). It has been determined by literature and field studies that there are no protected species in this region, which has lost its natural characteristics in the current situation.

Table V.15.Biodiversity elements triggering Karapinar Plain and Hotamis Marshes KBA/IBA criteria

Karapinar Plain KBA/IBA		
CLASS	**SPECIES**	**IUCN**
Karapinar Plain KBA/IBA		
Aves	*Anser albifrons*	LC
	Charadrius leschenaultii	LC
	Tadorna ferruginea	LC
Hotamis Marshes KBA/IBA		
Aves	*Ardeola ralloides*	LC
	Aythya nyroca	NT
	Charadrius leschenaultii	LC
	Glareola pratincola	LC
	Himantopus himantopus	LC
	Ixobrychus minutus	LC
	Marmaronetta angustirostris	VU
	Netta rufina	LC
	Oxyura leucocephala	EN
	Phalacrocorax pygmeus	NT
	Platalea leucorodia	LC
	Plegadis falcinellus	LC
	Vanellus spinosus	LC

Figure V.4. Karapinar KBA/IBA area within the Transmission Line

As a result, the impact on the internationally recognized areas is assessed as negligible. 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 mitigation measures (see Table VI.1).

Construction Phase Impacts on Biodiversity

Terrestrial Flora

The significant impacts of the construction phase on the terrestrial flora would be habitat and vegetation loss or damage. The project area has 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.

Impacts of 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 VI.1, and after the construction activity is over, it is expected that the composition of the plant species will return to its original state in time.

According to the WB OP 4.04 "Natural habitat" definition, the project area does not have any sensitive natural habitat and wildlife. The impact on the biological environment during construction 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 low in significance.

Terrestrial Fauna

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 impacts will mainly consist of 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. The impact on the fauna species is assessed as direct and negative and low in significance.

According to the evaluations given in Table V.14 there are no sensitive flora and fauna species in and around the project area. In Table V.16 the impact of the project on terrestrial flora and fauna species is evaluated.

Table V.16. Assessment of Impacts on Terrestrial Habitats and Flora/Fauna

Affected Ecosystem Component	Source of Impact	Project Phase	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation
Terrestrial Habitats and Flora/Fauna	There will be a risk of damage to the fauna by the traffic Changes in the composition of soil and air (dust generation, etc.) quality Solid and hazardous wastes to be generated due to project activities Noise pollution that might impact species' behavior, especially that of fauna elements	Construction	Disturbance of fauna species in the vicinity of the Project area Loss of flora populations in the vicinity of the Project area	Negative	Low

Aquatic Environment

As a result of the field studies, it has been observed that the creeks passing over the line are dry, and no species that constitute aquatic biodiversity have been identified. The fish species found in the case of a seasonal flow in the creeks are given in Table IV.19. According to Table V.14 there are no sensitive aquatic species and habitats in and around the project area.

Any change in the aquatic environment will inevitably affect biodiversity, and these impacts can be reduced to a low level with the relevant mitigation measures. These effects are considered negligible. The measures that need to be taken against the impacts are presented in Section VI.1.

Operation Phase Impacts on Ecology and Biodiversity

No negative impact is expected on terrestrial and aquatic flora and fauna during the operation phase. The impact of the operation phase of the project on ecology and biodiversity has been determined as negligible. Following the construction phase, wildlife and biodiversity are anticipated to retain their former state.

V.4.6. Landscape and Visual Amenity (Aesthetics)

Construction Phase Impacts

Drinking water transmission line works will be performed in some neighborhoods of relevant districts and this will create nuisance for the people living or working nearby the sites. The landscape and visual impacts will result mostly from the dust to be generated, materials and excavated soils to be stored at the site and construction site formation in the residential areas. However, drinking water transmission line trenches will be backfilled following the pipe installations, so the effect would be short-term in nature. In order to mitigate the impacts, which are assessed to have medium significance, the transmission line construction works will be limited to the construction site boundaries, the construction sites will be formed in a proper manner, the construction activities will be finished in timely manner, the storage areas for the materials will be selected carefully and the stored materials will not be left for long periods on the storage areas.

These impacts can be sustained at a low level with the mitigation measures given in Section VI.1. Therefore, the significance of the impacts after implementation of these mitigation measures would be low.

Operational Phase Impacts

In operational phase, no impacts on landscape other than the pumping station building are expected. The aesthetics impacts will be mostly related to repair and maintenance works, which will be a short-term impact. During the maintenance works, as the works will be done in a limited area, landscape of the site will not be affected in a significant way. However, during maintenance works, the work area will be determined and limited to that area to minimize impacts on landscape.

Therefore, project impact on landscape during the operation phase is evaluated as negligible with the implementations detailed in Section VI.1.

V.4.7. Resources and 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 waste will be generated throughout the lifetime of the Project.

All the waste 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 in order to avoid impacts on soils, nearby water resources and flora and fauna elements. This section identifies the waste 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 waste 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 waste

Waste to be generated in the scope of the project activities will be managed in accordance with the waste management hierarchy as given in Figure V.5. 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 waste according to their type (hazardous, non-hazardous, recyclable, etc.), reuse of generated waste at site as much as possible, assessment of alternatives such as recycling and energy recovery for waste (where reuse is not possible) will be considered. The final step in the hierarchy of waste management involves the final disposal of waste in accordance with relevant regulations, where reuse, recycling and energy recovery options are not possible.

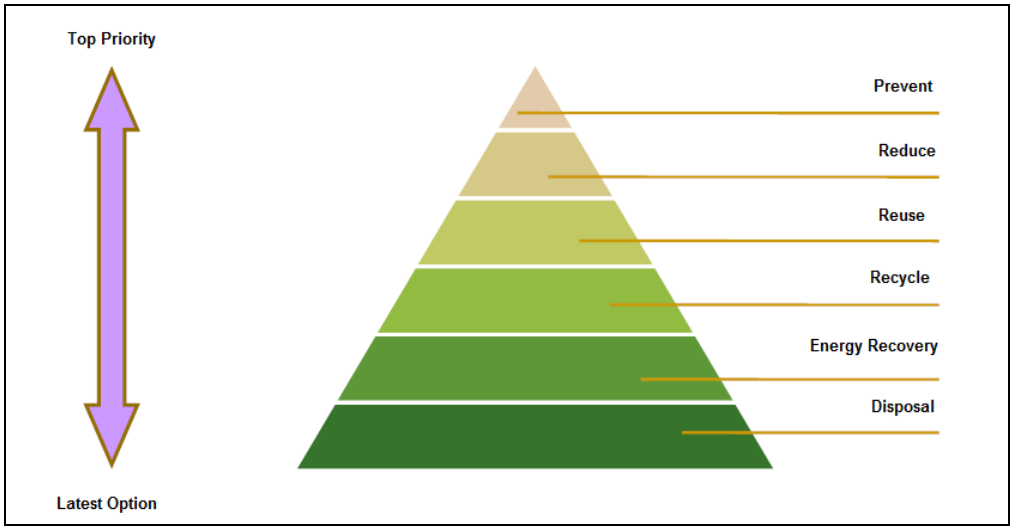


Figure V.5 Waste Management Hierarchy

Construction Phase Impacts

During construction phase of the Project, activities such as vegetation clearance, levelling, construction and installation of main operation and auxiliary units, procurement, transportation and assembly of units and equipment will be carried out. Solid waste types expected to be generated within the scope of these activities are; municipal wastes, packaging wastes of system equipment (e.g. wood, cardboard, plastic, etc.), hazardous wastes, special wastes, excavation and construction wastes (e.g. scrap metal, wood, concrete waste, etc.), and waste system equipment (panels, cables, electronic components). Hazardous and special wastes might contain chemical substances (e.g. paint, solvent) or packaging materials and cloths contaminated with oils, waste oils resulting from operation and maintenance of machinery and vehicles, solvents, accumulators, batteries, filters, machine parts.

Waste to be generated during the construction phase of the Project will be managed in accordance with the waste management hierarchy (avoidance, re-use, recycling and disposal). Contractors will take mitigation measures described in Section VI.1 but will not be limited to these measures.

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

Hazardous waste will be stored in special compartments in the Temporary Storage Area allocated for this purpose, in containers, separated from the non-hazardous waste. This area will have an impermeable base/ground and will be protected from the surface flows and rain. Additionally, necessary drainage for the area will be provided. Hazardous waste will be collected and disposed of by companies licensed by the MoEUCC.

Table V.17 lists the types of waste that can be generated during the construction phase of the Project and their waste codes according to the waste lists given in the annexes of the Waste Management Regulation

Table V.17 List of Possible Waste Types to be generated during Land Preparation and Construction Phase of the Project

Waste Code	Definition of Waste Code
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 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

Source: Annex-4 of Waste Management Regulation

Municipal wastes within the scope of the Waste Management Regulation are referred to as domestic wastes or commercial, industrial and institutional wastes similar to domestic wastes 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 wastes will be stored separately from hazardous wastes and recyclable wastes and will be collected regularly by Karapinar Municipality. Eregli Solid Waste Landfill Facility of Konya Metropolitan Municipality is located in Eregli. The infrastructure of the facility is sufficient for managing the waste produced in the project site.

In order to determine the amount of municipal waste to be generated at site, the average daily municipal waste per person is taken as 1.08 kg according to the municipal waste statistics of TurkStat in year 2014 (TurkStat, 2014). The estimated amount of municipal waste to be generated during the construction phase of the Project, based on the number of people working, is given below. This amount includes also separately collected fractions such as paper, cardboard, glass, metal, plastic, etc. together with biodegradable waste:

100-persons x 1.08 kg/person.day=108 kg/day

There will be no cafeteria in the construction site. Thus, there will be no food preparation related waste generation within the context of the Project. The food will be supplied through catering services.

The general composition of the municipal waste in Türkiye is as demonstrated in Figure V.6 according to the results of the solid waste composition determination study made within the scope of the Solid Waste Master Plan Project. 34% of municipal waste consists of kitchen waste. Separately collectable and recyclable fractions such as paper, cardboard, bulk cardboard, plastic, glass and metal constitute 25% of municipal waste.

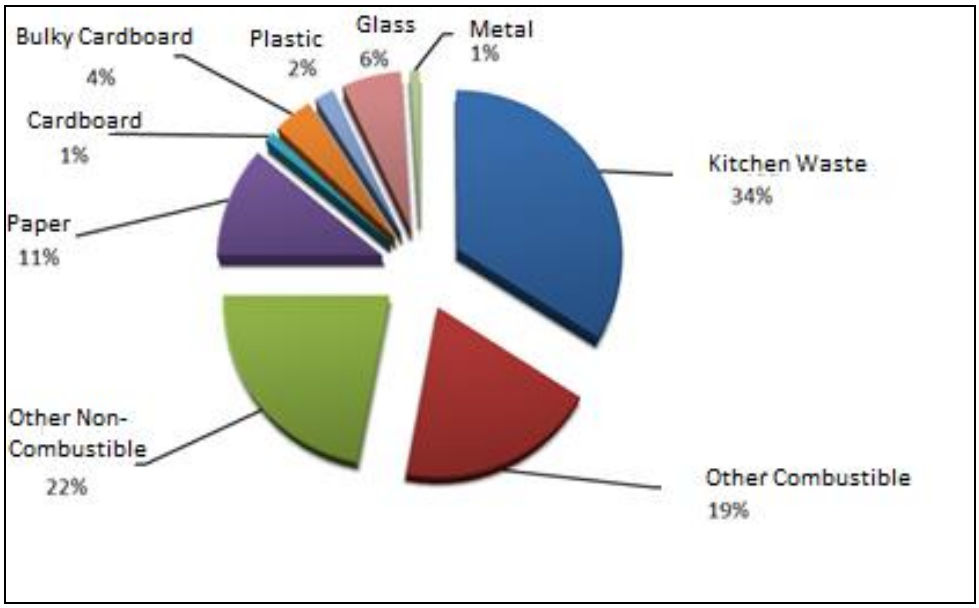


Figure V.6 Composition of Municipal Waste (*former Ministry of Science, Industry and Technology, 2014)*

Considering the information provided in Figure V.6, it is also valid for the municipal wastes to be generated within the scope of the Project. The only difference will be the kitchen waste percentages since there will be no kitchen/cafeteria in the Project. By reflecting this and the assumption of only 5% food waste, the composition of the municipal waste will be as follows:

- Food Waste : 5%
- Other Combustible : 27%
- Other Non-combustible : 31%
- Paper : 16%
- Cardboard : 2%
- Bulky Cardboard : 6%
- Plastic : 3%
- Glass : 8%
- Metal : 2%

Now, it can be said that approximately 5.4 kg of food waste and 40 kg of separately collectable and recyclable waste will be generated daily during the construction phase of the Project.

Waste vegetable oil will not be generated at the site during the construction activities as meals for the staff will be provided by catering companies. End-of-life tire generation and storage will not take place due to the fact that the tire changes of the construction machines and other vehicles to be used at this phase will be carried out at the facilities in the region providing service for this purpose. Besides, there will not be any significant amount of medical waste generation at site within the scope of the Project, as there will be no infirmary at the project site and Derebucak District State Hospital will be used for possible medical interventions in case of an incident during the activities. The negligible amount of medical waste generation might happen as a result of the first-aid applications and masks used within the scope of COVID-19 measures.

Vegetation clearing and levelling works will be carried out at certain locations in order to flatten the area during the construction phase of the Project. For all activities regarding excavation

storage, transport and reuse; provisions of Regulation on the Control of Excavation, Construction and Demolition Wastes will be complied with.

The construction machinery will require oil changes during the land preparation and construction phase of the Project, at least once in every two-month period of the phase. Oil changes of the construction machinery will be carried out at services licensed for the maintenance of the machinery. Thus, there will be no waste oil generation in the land preparation and construction phase of the Project.

The annual amount of waste battery per person in Türkiye is six and this value corresponds to 140 grams (*Ministry of Environment and Forestry, General Directorate of Environmental Management, 2009*). According to this, the annual waste battery production of 100 people to be employed during the construction phase of the Project is calculated as 14 kg.

No significant impact resulting from waste generation is expected due to the nature and scale of the Project. However, the potential impacts can be reduced to a low level with the mitigation measures given in Section VI.1. Therefore, the impact is assessed as direct and negative with short-term duration, local and low significance. However, mitigation measures will be proposed in the following sections in order to prevent and/or minimize likely impacts.

Operation Phase Impacts

In the operation phase, there might be waste generation resulting from damaged, malfunctioned or end-of-life equipment and material that could be replaced or controlled during maintenance and repair activities to be performed periodically or in case of a breakdown. Also, procurement of new equipment, pieces and others will also result in generation of packaging waste. Besides, personal protective equipment, clothes and rags used during maintenance and repair activities might result in a limited amount of waste generation. Eregli Solid Waste Landfill Facility of Konya Metropolitan Municipality is located in the Eregli district. The infrastructure of the facility is sufficient for managing the waste produced at the Project site.

10 workers are expected to be employed in the Project's operation phase. Therefore, municipal waste generation will be 13.5 kg/day and using the same approach as in land preparation and construction, the recyclable portion of the municipal waste and the amount of food waste will be 10 kg/day and 1.35 kg/day, respectively. Moreover, in addition to recycling municipal waste, recyclable waste such as packaging waste, paper, cardboard, plastic and scrap metals are expected to be taken into account.

In the operation phase of the Project, due to the oil change needs of equipment, there will be limited amount of waste oil generation.

Table V.18 lists the waste types and waste codes that may occur during the operational phase of the Project, according to the waste lists given in the Annex-4 of Waste Management Regulation.

Table V.18 List of Possible Waste Types to be Generated During Operation Phase

Waste Code	Definition of Waste Code
13	**Oil Wastes and Liquid Fuel Wastes (Excluding Edible Oils, 05 and 12)**
13 02	Waste Engine, Transmission and Lubrication Oils
13 03	Waste Insulation and Heat Conduction Oils

Waste Code	Definition of Waste Code
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
19	Waste from Waste Management Facilities, Offsite Wastewater Treatment Plants and Water Preparation Facilities for Human Consumption and Industrial Use
19 08	Wastewater Treatment Plant Wastes Not Described otherwise
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

The impact resulting from the generation of the waste is assessed as direct and negative with short-term duration, local and low in significance. However, mitigation measures proposed in Section VI.1 in order to prevent and/or minimize likely impacts will be implemented.

V.4.8. Climate Change

According to Intergovernmental Panel on Climate Change (IPCC) Guideline for National Greenhouse Gas Inventories, waste sector includes the following components:

- Solid waste disposal (4A)
- Biological treatment of solid waste (4B)
- Incineration and open burning of waste (4C)
- Wastewater treatment and discharge (4D)
- Other (4E) (IPCC, 2006)

The project is not a part of any of the above-listed components. In addition, the activities which are subject to greenhouse gas monitoring, reporting and verification are presented under heading “Activities subject to monitoring, reporting and verification of greenhouse gas emissions” in Annex-1 of the Regulation on Monitoring Greenhouse Gas Emissions (Official Gazette dated May 17, 2014 and numbered 29003), and none of the components of this Project are listed in Annex-1 of the Regulation.

Construction Phase Impacts

The Project’s contribution to climate change during the construction phase will be due to the emission of GHG. The majority of greenhouse gas emissions will be due to construction machinery/equipment usage. The major greenhouse gas emission will be CO_2 emissions resulting from the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of methane and nitrous oxide will also be emitted during fuel combustion. Therefore, these emissions will contribute to climate change.

The project's contribution to climate change through GHG emissions is assessed as a negative and direct impact. The impact's extent will be regional, and duration will be short-term. Although the sensitivity of the receptor is considered as medium, due to the usage of small number of construction machinery/equipment, the significance of the impact is considered as low. With the realization of proper mitigation measures proposed in Section VI.1 in Table VI.1, GHG emissions can be minimized.

Operation Phase Impacts

The project's contribution to the climate change during the operation phase will be similar to the contribution explained for the construction phase except the operation of less machinery/equipment usage and therefore significance of the impact will be negligible. In the operation phase, usage of fossil fuel burning equipment/machinery usage will be limited.

With the realization of proper mitigation measures, GHG emissions can be minimized and prevented from increasing.

V.4.9. Natural Hazards

The Project is not expected to have any impact on natural hazards like flood and seismicity during both construction and operation phases. The detailed baseline information of natural disasters is provided in Section IV.1.5.

V.5. Impacts on Socio-Economic Environment

Infrastructure projects have both negative and positive impacts from socio-economic standpoint. Increase in traffic due to construction works, operation of construction machinery, waste generation, and noise and dust emission generated by construction activities can be characterized as negative impacts; while employment and procurement opportunities can be described as positive impacts. Both positive and negative impacts are explained separately for construction and operation phases under this section.

During the construction phase, potential exposures may affect disadvantaged/ vulnerable individuals/groups and/or refugees within the project area, and direct stakeholders who are sensitive to the environmental and social impacts of the project and are expected to be more affected by these impacts. People living in the immediate vicinity of the project, businesses, vulnerable groups and refugees are the people who come to the project area daily for various reasons and who live in the vicinity of the area where the project will be implemented, may experience complaints such as dust, noise and traffic that may occur during different project phases.

V.5.1. Employment and Procurement Opportunities Created by the Project

Construction Phase Impacts

The workforce needed during the construction phase of the Project (100 employees) will be sourced locally, regionally and nationally. Most of the unskilled labor is expected to be provided locally. Skilled labor is expected to be provided nationally in case it cannot be provided locally and regionally. The general approach of construction companies operating in Türkiye is to employ labor from the local communities, primarily to reduce costs associated with travel and accommodation.

Employment of local people will provide significant benefits to those who are employed; however, this will be a minor portion of the entire population. The employment of individuals from local communities will however be beneficial as it is expected to lead to improved relationships between the Project and local communities.

Another benefit of the Project will be indirect employment opportunities and these will be associated with the project supply chain (goods and services) and spending of project employees in local communities.

Employment of non-locals, as well as the increase of incomes of local employees, may also bring in some minor benefits for local communities, associated with increased spending in the project area. Due to the fact that Karapinar Group districts are all small-scale residential areas and the planned transmission line is somewhat long, this positive impact is anticipated to be somewhat significant.

In addition to the employment opportunities, the Project will require certain services and goods. If it is possible and feasible to do so, selection of local procurement options will create minor positive impacts on regional level.

Before and during construction, the construction contractor and their subcontractors will provide clear information on the recruitment process, with particular emphasis on informing local communities of employment opportunities through different channels such as mukhtars and local associations.

Operation Phase Impacts

In the operation phase of the Project, 10 employees are expected to be employed. In order to avoid the negative impacts of the workforce influx, KOSKI will give priority to the local people.

KOSKI will take all necessary actions and measures for labor and employment to be in compliance with Turkish legislation, international standards and the requirements of this ESMP. KOSKI will aim at employing local workers to the extent possible, in order to increase the Project's local benefits. The recruitment processes will be transparent, public and non-discriminatory, providing equal opportunities with respect to ethnicity, religion, language, gender and sexuality.

V.5.2. Infrastructure and Services

Construction Phase Impacts

The transportation of the construction materials and products to the construction sites, vehicle movement during the construction activities and need to relocate services/utilities (and therefore dig up roads and access ways) will create temporary increase in traffic, mainly of heavy vehicles on the existing road network and pose a risk to pedestrians. The additional traffic can lead to delays in travel times and increased congestion, particularly in critical locations that are already subject to intense traffic.

Since the project component only consists of the construction of the drinking water transmission line and a pumping station, excess traffic load will be expected especially when lines are being constructed near the roads in the construction phase.

The construction works and waste disposal during the construction phase of the Project will be performed by contractors. Therefore, any damage to infrastructure will be repaired or

compensated by contractors promptly in accordance with the responsible authority, such as General Directorate of Highways (KGM) or KMM.

During the course of construction phase, grievance redress mechanism, which is detailed in Section VII.3, will be in effect to resolve the local community's nuisance and disturbance.

The project's impact on traffic during the construction is assessed as a negative and direct impact. The impact's extent will be local, and the duration will be short-term. Due to the usage of small number of construction machinery/equipment, the significance of the impact is considered as low.

Operation Phase Impacts

The traffic will only be affected during repair and maintenance works on the drinking water transmission lines in the operation phase activities. Similar to the impacts anticipated during construction phase, movement of heavy vehicles can contribute to deterioration of existing roads as well.

The project's impact on traffic during operation phases is assessed as a negative and direct impact. The impact's extent will be local, and the duration will be short-term. The sensitivity of the receptor is considered as low and due to the usage of small number of construction machinery/equipment, the significance of the impact is considered as negligible when necessary mitigation measures are implemented.

V.5.3. Archaeological and Cultural Heritage

Construction phase

No significant impacts on archaeological and cultural heritage are expected in the construction phase of the Project.

As required by Article 4 of Law on the Conservation of Cultural and Natural Properties (Law No. 2863), Chance Finds Procedure will be implemented during land preparation and construction works (see Annex-8). In this context, related Conservation Board or Museum Directorate will be informed latest in three (3) days in case of finding any movable or immovable cultural asset by chance during construction works. Construction works will be stopped immediately, related site will be secured by the Contractor and works will not proceed until official information is received. In case of result of any damage on protected areas or cultural assets due to the Project during the construction phase, the damage will be compensated by the Contractor.

The impact is assessed as direct and negative with short term duration, on-site and low significance.

Operation phase

No significant impacts on archaeological and cultural heritage are expected in the operation phase as there is no activity other than the maintenance/repair works, which will be limited.

V.6. Labor and Working Conditions

Although the number of personnel to be recruited is not yet decided, it is estimated 100 workers will be employed during construction and 10 personnel will be employed for operation phases. During the recruitment process, priority will be given to local people by KOSKI and contractors.

Overall, labor and working conditions for the construction and operation phase include the issues listed below:

- Working Conditions and Management of Worker Relationship,
- Protecting the Work Force,
- Occupational Health and Safety,
- Workers Engaged by Third Parties and the Supply Chain,
- Labor Influx.

Workforce will be provided with written contracts specifying working hours and other work conditions, be recruited with no discrimination based on gender/religion and ethnicity. In addition, workforce will be paid wages at least national minimum level.

Commitments on labor and working conditions are concluded with a range of mitigation measures for managing labor-related risks and impacts in Section VI.1.

V.6.1. Protecting the Work Force

KOSKI will ensure measures to prohibit child labor and forced labor. In this respect, children under 18 years of age will not be employed during the construction and operation stages. Contractors will develop an age verification system to ensure no one under 18 years old is involved in project activities.

All Turkish Laws and International Labor Organization Conventions (ILO) related to child labor, forced labor, discrimination, freedom of association and collective bargaining shall be complied with.

Türkiye is party to a multitude of ILO conventions, including but not limited to conventions on: equal treatment of employees, gender equality, child labor, forced labor, Occupational Health and Safety (OHS), right of association and minimum wage.

Stipulations of Ministry Circular on COVID-19 Measures to be taken at Construction Sites will be followed during all phases of the Project as long as the COVID-19 pandemic outbreak prevails.

V.6.2. Occupational Health and Safety and Working Conditions

The construction phase of the Project includes excavation, backfilling and the use of heavy-duty vehicles. As described in the WBG EHS Guidelines for Water and Sanitation, work at sanitation facilities is often physically demanding and may involve hazards such as open water, trenches, and slippery walkways, working at heights, working in confined spaces, energized circuits, and heavy equipment. Vehicular movements can cause accidents resulting in injuries and death. In addition, working in confined spaces can lead to various damages due to oxygen deficiency and risk of explosion. Relevant precautions in case of exposure to hazardous chemicals are described in Table VI.1 and Table VI.2.

Occupational Health and Safety (OHS) risk might arise due to risk of pollution, emission of dust and generation of noise during the site preparation and construction works as well. In addition, risks of GBV and sexual abuse, exploitation and harassment might arise. Training for labor force in these subjects will be provided. Also, training for employees regarding the Code of Conduct (see Annex 7) will be conducted.

OHS risks and impacts should also be managed and mitigated by OHS Management Plan and Risk Assessment (including Emergency Plans) to be prepared by the Contractor during construction and by the Project Owner during operation.

Within this regard, workers' exposure to work-related occupational health and safety risks is assessed as direct and negative with short term duration, local and high in significance. However, with the implementation of mitigation measures proposed in Section VI.1, these impacts/risks will be reduced to low in significance.

For the planned transmission line Project, there will be a labor camp site within the project area. It is planned to employ 100 people during the construction phase of the project. Workers will be recruited from local people and the labor camp site to be established for the workers will meet the standards for worker accommodation prepared by International Finance Corporation (IFC) and European Bank for Reconstruction and Development (EBRD) and approved by the WB[8]. On the other hand, it is planned to employ 10 people during the operation phase, accommodation will be provided for skilled workers. Since the number of employees in the operation phase is low, it will not have a negative impact on the region.

V.6.3. Workers Engaged by Third Parties and the Supply Chain

KOSKI has the adequate ability and capacity to manage the implementation of the project and in particular the E&S. Also, ESMS of KOSKI has available staff and capacity to ensure ESMP implementation.

KOSKI will ensure that Contractors are reputable and legitimate enterprises and have an appropriate ESMS that will allow them to operate in a manner consistent with the labor conditions provided by KOSKI.

KOSKI will monitor the performance of Contractors such that the human rights policy and labor rights of all workers are exercised properly and include suitable non-compliance measures in their contracts.

KOSKI will ensure that workers of Contractors have access to the overall grievance redress mechanism to be established for the laborers in the scope of the Project.

KOSKI will monitor its primary supply chain for safety issues related to supply chain workers, and where necessary KOSKI will introduce procedures and mitigation measures to ensure that suppliers are taking steps to prevent or to correct life-threatening situations.

In order to realize those, KOSKI will prepare a Contractor Management Plan before the construction phase and ensure its implementation.

V.6.4. Labor Influx

[8] https://documents1.worldbank.org/curated/en/604561468170043490/pdf/602530WP0worke10Box358316B01PUBLIC1.pdf

In case when personnel or material or services required for the works to be carried out in a construction project cannot be sourced from local sources, technical personnel with adequate capacity or materials that meet international standards must be brought from outside the project area. In such cases, suppliers, potential suppliers and potential job-seekers might move to the close vicinity of the project area to provide goods and services to the Project and create an influx in the region. In order to address this situation of workforce influx, which can be observed in any project, people who will work on the project or provide goods and services to the project should be settled quickly in the region.

As mentioned earlier, 100 employees in the construction phase and 10 employees in the operation phase are expected to be employed. Due to the technical nature of the Project, unskilled labor is expected to be provided locally and skilled labor is expected to be provided non-locally. In order to avoid the negative impacts of the workforce influx, KOSKI will give priority to the local people in recruitment and this will be added to the terms of the contracts of the Contractor and possible subcontractors in order to ensure this. In contract process, KOSKI will request the contractor to plan the workforce and request from the contractor to prepare a Workforce Management Plan prior to the recruitment process if the requirement for a workforce other than the one specified in this ESMP is of concern. KOSKI will evaluate and submit this plan to ILBANK for approval.

KOSKI and the Contractor shall ensure that code of conduct and public communication trainings are given to all employees as an orientation training to prevent a possible future dispute, unacceptable behaviors within the workplace (i.e. gender based violence (GBV), sexual harassment, sexual abuse etc.).

V.7. Community Health, Safety and Security

Construction Phase Impacts

The community health, safety and security impacts of the Project are mostly limited to the construction phase. In the construction phase, emissions of gaseous pollutants and fugitive dust from equipment and machinery used, noise generation, poor handling of wastes to be generated, requirement to shut down the existing water distribution network and/or specific sections for construction works and risks associated with community encroachment might create negative impacts on community health, safety and security. Impacts associated with emissions, noise and waste generation will be managed with the proper implementation of mitigation measures mentioned in Section VI.1.

Construction works will involve increased traffic of heavy vehicles and equipment at local level and traffic interruptions. Accidents and incidents could result from traffic operation while transporting equipment and materials to the construction sites as well as from truck and vehicle movements. The significance of the impact is considered low.

Moreover, the construction activities may prevent pedestrians from crossing through road closures. As a mitigation measure, the pedestrian crossings will be built at the most crowded streets. The significance of the impact is considered as medium before the implementation of the mitigation measures and it will decrease to a low significance level.

The road closures and deterioration in the road structure may serve as a barrier to the daily activities of persons with disabilities and vulnerable/disadvantaged individuals/groups. The information about these people in the project area is given in Section IV.3.2. Also, construction works not properly managed pose a hazard for many disabled people and particularly blind and partially sighted pedestrians. Impacts on disabled people and vulnerable groups will be managed with the proper implementation of mitigation measures mentioned in Section VI.1.

The construction waste will be managed as defined in the Resources and Wastes section in order to minimize the negative effects on community health, safety and security.

In addition, it will be ensured that situations such as water and energy cuts do not occur during the construction period. However, in the event of a possible occurrence, necessary mitigation methods will be applied to minimize the impact.

Another risk would be community encroachment to the active worksites. The risks associated with this issue would be easily mitigated to negligible significance through implementation of mitigation measures presented in Section VI.1.

Operation Phase Impacts

Similar to the impacts during the construction phase, improper handling of waste would create negative impacts on community health and safety. The significance of the impact would be low. In the operation phase of the project, there would be times that the pumping station needs shutdown due to planned or unplanned maintenance works maintenance or any other foreseen or unforeseen challenges, and the water supply will be stopped due to broken pipes and their repairing processes.

Similar to the construction phase, community encroachment/trespassing to the active worksites is also a risk in operation phase. The risks associated with this issue would be easily mitigated to negligible significance through the implementation of mitigation measures presented in Section VI.1.

VI. MITIGATION AND MONITORING PLANS

The purpose of the Mitigation and Monitoring Plans is to apply mitigation measures to reduce the identified impacts of the Project, describe the roles of the participating parties and key personnel responsible for the implementation of the mitigation measures, and identify procedures to ensure that the mitigation measures are implemented adequately during all phases of the Project through the monitoring plan.

In the following sections, the potential project impacts and associated management and/or mitigation measures are described and the key monitoring requirements and responsibilities for implementation are given in detail.

VI.1. Mitigation Plan

Impact mitigation measures and activities are developed for all phases of the Project below in compliance with the national legislation as well as international standards. Within this regard, the most stringent among national legislation and WB standards and the most up-to-date legislation will be complied with. Impact mitigation management plan is presented in Table VI.1 and Table VI.2 for land preparation and construction, and operation phases, respectively.

Table VI.1. Mitigation Plan for the Land Preparation and Construction Phase Impacts of the Project

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Physical Environment						
Air Quality	Increase in dust concentration and impact on human health	Adverse	Low	KOSKI will ensure that contractor will prepare and implement a Dust Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) 30 days prior to commencement of the works and the training regarding this plan will be provided to the employees: • Regular watering of the work area will be carried out, particularly in spring and summer, to reduce the impacts of dust-causing activities such as excavation and backfilling of trenches; • When the wind speed is above 20 km/hour the digging and excavation will not be carried out or only small areas will be excavated and covered and compacted immediately after work is completed or additional measures such as use of dust curtains will be taken; • Inner roads will be covered with materials to prevent dust and these roads will be kept clean; • 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; • Daily backfilling, bedding and covering materials will be stored at temporary storage areas. In order to prevent the materials moving with the help of wind moistening and compacting of the materials will be carried out; • Loading/unloading will be carried out carefully without throwing/scattering; • Proper covering of trucks will be done that carry dusty materials; • Excavated materials will be covered with nylon canvas, etc. during transportation; • The drop height of potentially dust generating materials will be kept as low as possible; • 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; • Any damage caused by insufficient or lack of dust suppression (transportation of dust to agricultural lands, wind borne dust deposits etc.) measures will be compensated by the Contractor; • Compliance with the air emission limit values stipulated in national legislation and WBG General EHS Guidelines will be ensured; and • 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, etc., if deemed necessary, considering both national and WBG EHS Guidelines limit values.	Included in construction costs	Contractor KOSKI/ Project Implementation Unit (PIU) Supervision Consultant
	Increase in SO_2 PM, NO_x emission and impact on human health	Adverse	Low	• Exhaust systems of the vehicles (daily and periodically) will be controlled regularly. Daily maintenance will be carried out in each shift; and working time of each vehicle will be registered by the operator in order to follow the total working hours for periodic maintenances. Periodic maintenances will be conducted at every 50, 250, 500, 1000, 2000 working hours. Maintenance forms will be filled regularly; • All vehicles to be used in transportation activities will be issued an emission control stamp which is renewed every year by measuring the emissions from the exhausts; • Vehicles that can provide European Euro VI standards will be selected; • Modern equipment and tools that can provide Exhaust Gas Emission Control Regulation and Exhaust Gas Emission Measurement Devices Inspection Regulation standards, will be selected before the construction activities; • Idling of vehicles and machinery will be avoided; • Provisions of the Regulation on Exhaust Gas Emission Control will be complied during land preparation and construction phase of the Project; and • Relevant provisions of the Industrial Air Pollution Control Regulation and Regulation on the Assessment and Management of Air Quality will be complied with to minimize air emissions sourced from construction machinery and trucks and compliance with WBG General EHS Guidelines will be ensured.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Soils and Contaminated Land	Loss of topsoil	Adverse	Medium	• A Soil Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor 30 days prior to commencement of the works and the employees will be trained on the Plan ; • Although transmission line will mainly follow existing roads, for the pasture areas following measures will be taken: ○ Topsoil will be stripped to a sufficient depth (minimum 30 cm) prior to the start of construction activities; ○ The slope of the temporary top soil storage area will be less than 5%; ○ To prevent wind and water erosion, topsoil stripping will not be done earlier than required; and ○ The disturbed areas and soil piles will be kept moist to prevent wind erosion of the soil. • At the end of construction phase, the stored topsoil will be used for backfilling; • The stripped topsoil will not be used for agribusiness; and • The provisions of the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes shall be complied during land preparation and construction phase of the Project and excess excavation material will be re-used as appropriate or disposed of in existing licensed excavation waste storage sites; and • The contractor will take additional mitigation measures, such as soil sampling, in case of a requirement revealed by the monitoring and/or any complaint..	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Contamination of soil	Adverse	Low	• Amount of soil that could be subject to contamination will be minimized by ensuring the use of only the designated worksites and routes for the construction machinery and equipment and field personnel; • Machinery and equipment will be checked regularly for leaking oil and fuel; • In an event of an accident, leak or spill, necessary repair works and/or replacement of parts will be performed promptly in accordance with the standards; • The fuel required for the construction equipment and vehicles to be used within the site during the construction phase will be supplied primarily from the nearest station; if deemed necessary, fuels that may be stored at the site will be stored in the areas where necessary impermeability precautions (including secondary containment) are taken; • Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources will be complied; and • Wastes and wastewater (rainfall filled in trenches) to be generated during the land preparation and construction phases of the Project will be stored and disposed of in a controlled manner in accordance with the Waste Management Regulation and Water Pollution Control Regulation and in line with the management practices described in this report.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Erosion potential	Adverse	Low	The Contractor will take necessary precautions to minimize the erosion risk as described here but will not be limited to. • Construction activities (especially excavation works) will be undertaken in dry weather condition as much as possible; • Stripping of topsoil will not be conducted earlier than required to prevent the erosion of soil (wind and water); • Circulation of heavy machinery to minimal areas will be limited; • Works will be planned in a way to avoid opening up new parts before closing the parts completed as much as possible; • The disturbed areas and soil stockpiles will be kept moist to avoid wind erosion of soil and stockpile height of topsoil does not exceed 2m maximum; • Topography will be restored for slope stabilization immediately after the completion of construction at each location; and • By establishing a suitable drainage system in the field, the potential impact of surface runoff will be minimized. In this context, drainage channels will be constructed in accordance with the topographical conditions of the site.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Water Resources	Change in surface water and groundwater quality	Adverse	Low	• KOSKI will ensure that contractor will prepare and implement a Water Resources Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific). The Water Resources Management Plan will be prepared by the Contractor 30 days prior to commencement of the works and the employees will be trained on the plan; • KOSKI will ensure that contractor will prepare and implement a Pollution Prevention Plan that is in line with OP 4.01 and WBG EHS Guidelines (both general and sectorial) 30 days prior to commencement of the works and the employees will be trained on the plan; • In case the excavated trenches are filled with surface water, groundwater or rainfall, the muddy water in these channels will be discharged, and the water to be discharged will not be directly discharged to the receiving environment. These waters will be discharged to the receiving environment after eliminating the sand and sludge by settling ponds that will be formed at discharge points; • Discharge of wastewater, residues or other waste into groundwater or into surface water will be avoided. Portable toilets will be supplied for the workers at the construction sites. The wastewater generated in the construction sites will be connected to the existing sewage network or where the connection is not possible it will be collected into the impervious septic tanks and then discharged into the nearest sewage network by vacuum trucks; • Surface runoff due to watering for dust suppression activities will be prevented; • The water to be used for dust suppression will be followed in m^3; • The wastewater arising from cleaning or washing vehicles and construction equipment will be collected in tanks and disposed of via the septic trucks; • Silt fences will be used at the 21 river crossings in project area; • The drinking water transmission line will be constructed as suspended pipe passing over the stream bed without concreting to avoid any damage. • Construction activities may pose the potential for accidental release/leakages of petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. All chemical storage containers, including diesel fuel, and hazardous liquid waste drums/containers will be placed in designated storage areas with their secondary containment so as to minimize the risk of soil, surface water and groundwater contamination during construction; • Spill kits will always be available on construction sites; and • The discharges resulting from the hydro testing and pressure testing will not be directly discharged to the environment. These will be collected in impermeable containers and will be disposed by transporting to the nearest WWTP or to an active sewer network.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
Noise and Vibration	Increased in noise level	Adverse	Medium	A Noise Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor 30 days prior to commencement of the works and the employees will be trained on the plan. • The machinery and equipment to be used during the land preparation and construction activities will not be operated at the same point/location but homogeneously distributed in the site; • Within the scope of the project, attention will be given to the selection of equipment with low noise level; • Construction works will be performed between 07:00 - 19:00 hours. Unless absolutely necessary, no construction activities will be done at night. In case night operations are deemed necessary and the noise levels would be high, public will be informed one (1) week in advance; • All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic; • Since part of the construction will be carried out within the residential area, there might be sensitive receptors (hospitals, schools, elderly housing, etc.) in the vicinity of the construction sites that could be impacted by an increased noise level. The contractor will identify these sensitive receptors and will take additional precautions (noise barriers, etc.) in those areas as necessary. The construction will be implemented as fast as possible in the areas, where the sensitive receptors are located; • Robust grievance redress mechanism (See Section VII.3) will be established to manage noise related grievances; and • All construction activities will be carried out in compliance with the noise limits set out in the Regulation on Environmental Noise Control (RENC)and noise limits of WBG and the contractor will take additional mitigation measures in case of a requirement revealed by the monitoring.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Increased in and vibration level	Adverse	Low			

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Wastes	Improper waste management	Adverse	Low	A Waste Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor 30 days prior to commencement of the works to ensure that: • Wastes to be generated within the scope of the Project will be managed in accordance with the waste management hierarchy; • Some amount of hazardous or special wastes likely to be generated (e.g. filters and protective clothes, rags, packages contaminated with chemical substances such as paint/solvent or oils) within the scope of the Project will be stored in special compartments in the Temporary Storage Area allocated for this purpose, in containers, separated from the each other as hazardous wastes having different waste codes and non- hazardous wastes. This area will have an impermeable base/ground and will be protected from the surface flows and rain. Additionally, necessary drainage for the area will be provided in order to collect the spilled liquid materials to the blind hole for any incident. • Hazardous or non-hazardous inscription, waste code, stored waste amount and storage date will be indicated/labeled on wastes temporary stored by classifying according to their properties. The reaction of wastes with each other will be prevented by the measures taken in the Temporary Storage Area; • Waste recycling, transport and disposal will be carried out by means of licensed companies and/or Karapinar Group Municipalities; • Adequate waste disposal facilities will be provided. Collection of all solid waste from generation points and safe transportation to a collection point will be ensured; • Packaging materials (such as sacks, pallets, parcels, plastic coatings) from the products used at the head office and work sites shall be collected separately according to the provisions of the "Regulations for Control of Packaging Wastes"; • Incineration or burying of wastes by any means at site and/or dumping of wastes to nearby roads or water resources will not be in question; • Training will be provided to the employees regarding waste management practices; by PIU. • All kinds of implementations that may threaten personnel or public health will be avoided in all activities involving collection, temporary storage, transport and disposal of wastes throughout the Project; • Personal hygiene material/equipment wastes (such as single use masks, gloves) will be collected, temporary stored, transported and delivered to waste processing facilities in accordance with the Circular 2020/12 of MoEUCC on COVID-19 Measures in the Management of Personal Hygiene Equipment Wastes; • Excavation material will be piled next to the trench until they are reused as backfilling. This material will not be stored next to the trench for more than one week. The remaining waste excavation material will be kept in temporary storage containers. Temporary storage containers will be yellow colored, and type of the waste materials will be indicated on the containers. Domestic and hazardous wastes will not be disposed in these temporary containers. The containers filled with excavation waste will be disposed of in consultation with the related municipality. The transportation of such wastes will be provided by licensed transport vehicles; • During the storage of the excavation material, security precautions will be taken to prevent visual disturbances and accidents resulting from the excavated materials such as covering the excavation piles, and placement of safety signs etc.; • Disposal of excavation material will be carried out in compliance with the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes. • Waste oils originating from machinery and vehicles will be stored in impervious tanks and containers that would be situated on impervious foundation in accordance with the “Regulation on Control of Waste Oils”. Tanks and containers will be equipped with apparatus that would prevent over filling and will be filled till the designated level mark. Tanks and containers will have a red color and must be labelled as “waste oil”. Disposal of waste oils will be controlled by the KOSKI; and • Waste batteries from construction site and accumulators from vehicles will be disposed 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 designated collection sites, if there is one in the region. If not, used batteries will be transferred to MNC Aku Metal Nakliye Kuyumculuk in Ankara by licensed transportation companies.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
Storage and Usage of Chemicals	Spill/Leakage Incident	Adverse	Low	• Provision of the Regulation on Safety Data Sheets Regarding Harmful Substances and Mixtures will be complied; • Provision of the Regulation on the Preparing and Distributing Safety Data Sheets Regarding Dangerous Materials and Preparations will be complied; • All chemical storage containers, including diesel fuel, and hazardous liquid waste drums/containers will be placed in designated storage areas with their secondary containment so as to minimize the risk of soil, surface water and groundwater contamination during construction; and • Spill kits will always be available on construction sites.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
Climate Change	Contribution to climate change through GHG emissions	Adverse	Low	• Optimal utilization of the available construction equipment and materials in such a way that reduces greenhouse gas emissions; • Speed restrictions will be adopted by construction vehicles and equipment to optimize fuel efficiency; • Regular maintenance of construction vehicles and equipment will be applied; • Energy uses associated with construction vehicles and equipment will be monitored; and • Trainings will be performed on project personnel regarding energy efficiency by PIU with support of the Technical Assistance team after signing the works contract. Until the construction phase is completed, refresher trainings will be done.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Biological Environment						
Biological Environment	Disturbance on flora and fauna species	Adverse	Low	• 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; • Camps will be located at sufficient distance from IBA borders to avoid non-essential impacts. • Vegetation clearing within the site boundary will be avoided unless it is absolutely necessary; • Clearing mature trees will be avoided; • If there is a nest of bird species, the nest should be marked with a safety strip about 3 meters in diameter and an expert ornithologist should be informed; • Project workers will not be allowed to bring any live animals or plants into the construction site to avoid the risk of pest/invasive species establishing in the project area; • Construction work will be done gradually so that it will have enough time to escape for possible fauna species to be found; and • Revegetation of cleared areas will be ensured where possible; • Silt fences will be used at the 21 river crossings in Project Area; • The drinking water transmission line will be constructed as suspended pipe passing over the stream bed without concreting to avoid any damage.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
Socio-Economic Environment						
Socioeconomic Environment	Job creation and local procurement	Positive	-	To avoid negative impacts: • KOSKI will take all necessary actions and measures for labor and employment to be in compliance with Turkish Labor Law and international standards. KOSKI will aim at employing local workers to the extent possible, in order to increase the Project's local benefits. The recruitment processes will be transparent, public and non-discriminatory, providing equal opportunities with respect to ethnicity, religion, language, gender and sexuality. • The construction contractor and their subcontractors will provide clear information on the recruitment process, with particular emphasis on informing local communities, especially the Karapinar Group Districts, of employment opportunities through different channels such as mukhtars and local associations.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Infrastructure Damage	Adverse	Low	The construction works during the construction phase and waste disposal during the construction phase of the Project will be performed by Contractors. Therefore, any damage to infrastructure will be repaired or compensated by Contractors promptly in accordance with the responsible authority, such as KGM and KMM. KOSKI will closely monitor such issues.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Impact on underground service utilities and services relocation	Adverse	Low	• Plans from the Municipality showing the location of underground service utilities (power, telecom, other) will be obtained and residents and/or landowners will be consulted on the relocation of utilities prior to commencing excavation operation; • The relevant permits, protocols will be granted for other 3rd party crossings such as underground electricity cables etc. during construction stage. • A team/teams to accompany the excavation team will be provided from the related utility authority; and • The construction activities will be performed in a way not to give any damage to the utilities located in the working area.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Impact on vulnerable/ disadvantaged groups	Adverse	Medium	• Late afternoon meetings will be preferred for parents with young children. • Women only consultations will be preferred for women headed households. • KOSKI will ensure that transportation services to activities will be provided for elderly people and households with low or no income. • KOSKI will ensure that patient care assistance during engagement activities will be provided for households with person in need of nursing. • Refugees will be visited with translator and civil society representative.	Included in construction cost	Contractor KOSKI /PIU Supervision Consultant

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Community Health and Safety	Project traffic and construction activities related risks	Adverse	Low	• A Community Health, Safety, and Security Management Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor 30 days prior to commencement of the works and the employees will be trained; • A Traffic Management Plan (TMP) that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be developed to minimize potential traffic related impacts on the residential areas located in close vicinity of the project area. The TMP will be prepared by the Contractor 30 days prior to commencement of the works and the employees will be trained. The TMP should include details about the following; - construction plan by phases, - beginning and duration of works, - overview of the existing conditions near the construction sites, - identification of affected areas, - mitigation measures, - traffic diversion plans, including zones of entry and exit, routes for towing of material, turnaround points, parking areas, zones of interlocking with other traffic roads etc., - routes/temporary passages for pedestrians and vehicles, - traffic controls for each expected intervention, including illustrations of barriers, paths, signalization plan, warning signs etc., - requirements for special vehicles, for example, those of large dimensions, - construction works paths (access, ramps, loading, unloading), - connection roads for supply vehicles and storage of material, - expected interaction of pedestrians and vehicles, - roles and responsibilities of persons on construction site regarding traffic management, and - instructions on the procedures regarding traffic control, including urgent situations. • The appropriate signage will be determined based on the Regulation on Traffic Signs. Prior to construction activities, the Contractor will install all signs, barriers and control devices needed to ensure the safe use of the roads by traffic and pedestrians; • Traffic has to be regulated in a way that will guarantee traffic safety and minimum traffic flow disruptions. When road closures, traffic diversions, are necessary, official permits will be obtained from the Konya Provincial Police Department Traffic Control Branch Office and the route & duration of disruption will be determined. Advance notification will be provided to local people to be affected from blockages and diversions; • Alternative routes will be determined and transportation will be programmed according to intensity of traffic; • Sufficient and appropriate road crossing points and facilities will be ensured for pedestrians; • All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic; • Project personnel will be trained for safe driving by OHS Expert before the construction starts; • Buses will be organized for worker transportation where possible to avoid additional traffic pressure; • Storage of construction materials, equipment and machineries on traffic lanes will be prevented; and • Traffic activities of the Project will be scheduled to avoid peak hours on local roads if feasible.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Community encroachment	Adverse	Low	• A Community Health, Safety, and Security Management Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor 30 days prior to commencement of the works and the employees will be trained; • Security Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be developed by KOSKI or security services provider before the construction phase. KOSKI and contractor will ensure that the plan is actively implemented; • Persons and/or organizations with the necessary permits will be assigned to ensure the security of the project area (e.g. private security companies/officials). These persons and/or organizations shall regularly monitor the work areas and surroundings. The special security applications and officials' authorities within the scope of the project shall comply with the provisions of the Regulation on the Implementation of the Law on Private Security Services and the Law on Private Security Services; and • Entry of staff and third parties into the working site will be carried out in a controlled manner.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	Adverse	Medium	• Contractor Code of Conduct developed, incorporated into workers' contracts, and training and socialization on it provided to workers • Mandatory and regular training for workers on required lawful conduct in local community and legal consequences for failure to comply with laws; • Commitment / policy to cooperate with law enforcement agencies investigating perpetrators of gender-based violence; • Creation of partnership with local civil society organization to report workers' misconduct and complaints/reports on gender-based violence or harassment through the GM; • Provision of opportunities for workers to regularly return to their families; • Provision of opportunities for workers to take advantage of entertainment opportunities away from rural local communities	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
	General construction related impacts on community	Adverse	Low	• A Community Health, Safety, and Security Management Plan that is in line with WB OP 4.01 and WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor prior to the construction and the employees will be trained on this management plan; • Plans from the Municipality showing the location of underground service utilities (power, telecom, other) will be obtained and residents and/or landowners will be consulted on the relocation of utilities prior to commencing excavation activities; • The relevant permits, protocols will be granted for other 3rd party crossings such as underground electricity cables etc. during construction phase; and • The construction activities will be performed in a way not to give any damage to the utilities located in the working area.	Included in construction costs	Contractor
Landscape and Visual (Aesthetics)	Impairment of quality of life due to the overall presence of annoying construction works and activities and altered landscape	Adverse	Medium	• The construction works will be limited to day time only unless it is necessary; and • The construction plan will be disclosed to the public through the KOSKI's website.	No costs involved	Contractor KOSKI/PIU Supervision Consultant
Archaeological and Cultural Heritage	Chance Finds	Adverse	Low	• Chance Finds Procedure prepared by the E&S Consultant and provided in Annex-8 will be complied with and training of workers/employees will be performed on cultural heritage issues. • As required by Article 4 of Law on the Conservation of Cultural and Natural Properties (Law No. 2863), chance finds procedure will be implemented during land preparation and construction works. In this content: - Construction works will be stopped immediately in case of finding any movable or immovable cultural asset by chance. - The site will be secured. - Related Conservation Board or Museum Directorate will be informed latest in three days. - Works will not proceed until official information is received. - Trainings will be performed for project personnel regarding chance finds procedure that will be prepared prior to the construction activities.	No costs involved	Contractor
Labor and Working Conditions						

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Labor Force	Working Conditions	Adverse	Low	• KOSKI will ensure that contractor will prepare and implement a Workforce Management Plan that is in line with the WB OP 4.01 and WBG EHS Guidelines (both general and sector specific). The Plan will be prepared by the Contractor 30 days prior to commencement of the works and the employees will be trained; • Construction contractors of the Project will give induction training to employees covering the subjects; fair treatment; non-discrimination and equal opportunities of workers; establishing, maintaining and improving a sound worker-management relationship; compliance with national labor and employment laws; code of conduct; protecting and promoting the safety and health of workers, especially by promoting safe and healthy working conditions; preventing the use of forced labor and child labor (as defined by the WB and Turkish legislation); induction training for employees by PIU with support of the Technical Assistance team regarding to code of conduct, EHS and WB requirements etc., and Grievance Redress Mechanism (GRM) for workers. The training will be given after signing the works contracts; • Workers will be issued written contracts that is clear and understandable, detailing job description, working hours, wages, rights and duties, code of conduct, etc. and regarding their rights under national labor law; including collective agreements, their rights related to hours of work, wages, overtime, compensation, and benefits as of startup of working relationship and when any material changes occur • Workers will not be discouraged from electing worker representatives, forming or joining workers' organizations of their choosing, or from bargaining collectively, and will not discriminate or retaliate against workers who participate, or seek to participate, in such organizations and collective bargaining; • Particular concern will be paid on principles of non-discrimination and equal opportunity. In this respect, employment decisions (i.e. recruitment and hiring, compensation, wages and benefits, working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices) will not be made on the basis of personal characteristics unrelated to job requirements. Wages, work hours and other benefits will be per the Turkish Labor Law; • A grievance redress mechanism as defined in Section VII.3 and also in SEP of the Project will be implemented to raise workplace concerns. The workers will be informed about the grievance redress mechanism at the time of recruitment and make it easily accessible to them; and • If an employee faces Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) issue s/he can either apply to a higher level superior or directly go to police station, as stipulated in the national referral system of the country for dealing such cases. The content and procedures of the project's GRM will also have a reporting line on such cases in regard to SEA/SH issues and will be handled under full confidentiality. The GRM focal point receiving the SEA/SH related grievance should direct this to national referral systems immediately and record that this has been directed, as set out in the GRM Procedure of ILBANK. All details of the complainant of the sensitive case will be kept strictly confidential.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Protecting the Workforce	Adverse	Low	• Employment of child labor and forced labor will be prohibited; • Contractors will be required to have age verification system, ensuring no one under 18 years old are involved in works; and • Stipulations of Ministry Circular on COVID-19 Measures to be taken at Construction Sites will be followed.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
	Occupational Health and Safety (OHS)	Adverse	High	• Project and site-specific OHS Management Plan based on construction site OHS risk assessment and that will also cover measures to address COVID-19 and/or any other pandemic/communicable disease risk, which will be in line with the WBG EHS Guidelines (both general and sector specific) will be prepared by Construction Contractor 30 days prior to commencement of the works and the employees will be trained; • An Emergency Preparedness and Response Plan based on construction site OHS risk assessment and covering also the issues about the contagious diseases as well as COVID-19 pandemic will be prepared by Construction Contractor 30 days prior to commencement of the works and the employees will be trained; • Guidance, directives and recommendations of Ministry of Health, Ministry of Family, Labor and Social Services, World Health Organization and the World Bank shall be followed and all relevant necessary measures shall be taken, both for occupational health and safety of employees and for workplaces, in case of an outbreak of any other pandemic/communicable disease including COVID-19; • Relevant procedures such as Confined Space Entry Procedure, Working at Height Procedure, etc. will be prepared in accordance with applicable national requirements and internationally accepted standards; • In order to minimize the risks and hazards that may arise (e.g. natural disasters, accidents, equipment malfunctions etc.) on human health and safety, safe working environments in the working sites will be established and physical hazards and risks will be prevented; • The Contractor will formally agree that all work will be carried out in a safe and disciplined manner and is designed to minimize risks on neighboring residents and environment; • The relevant plans and procedures required by Turkish legislation will be prepared and the Contractor will comply with these OHS measures and practices; • Employees will be informed about the hazards that may cause from their work and thus a safer work environment will be created; • OHS trainings will be given to employees by OHS Experts before the construction starts. In this context, a training program will be prepared, training records will be kept and evaluation activities will be carried out after the trainings; • Personal protective equipment (PPE) will be provided to all employees and necessary training will be given for their use; • Work areas will be equipped with warning signs in accordance with the quality and potential risks of the work to be performed in that area; • Smoking in areas where there is a risk of combustion/ explosion will be prohibited. All employees must have knowledge of what to do in the event of a fire; • Project staff will include first aid trained personnel. In case of emergency where an intervention is required, personnel will be sent to the nearest health center by appropriate means. • The Contractor will apply the sufficiency of the technical requirement of the machinery, equipment, and tools to be used in the activities; • Moving parts of machinery and equipment will be equipped with appropriate protective systems (e.g. metal shields etc.), minimizing the risk of injury or damage to the person using the machine or equipment; • Personal factors that may create and control risks during activities (e.g. long hair, jewelry and accessory use, clothing etc.) will be removed from the site by the rules brought by the Contractor. Project staff will be informed about the relevant regulations within the scope of the training program; • Drivers and operators will be trained to comply with traffic rules and to control the vehicles and equipment they use against risks and hazards originating from vehicle traffic by OHS Experts before the construction starts. Required traffic signs will be placed in the project site and its surroundings. Machine operators and other employees will be informed and alerted about the relevant signs; • Areas where excavation work is to be carried out will not be accessible other than the authorized personnel. The loading and unloading activities shall be carried out together with the persons to oversee the personnel to carry out the activity; • Access of the visitors, local people and animals to the area will be controlled; • If a trench needed to be left open for night, the sufficient illumination of the area shall be ensured by the Contractor and necessary signs shall be placed and the area shall be enclosed with barriers; • An adequate OHS organizational structure will be defined, as defined by the local legislation and for 100 workers necessary number of OHS officers should be assigned to be at the site during working hours. Project are classified as “lightly hazardous” workplaces according to Communiqué on Occupational Health and Safety Hazard Classes List. The contractor will assign at least one A-Class OHS Expert to the Project and the expert(s) will be supervised by KOSKI’s OHS Experts; • A risk assessment will be done before commencing the works and personnel will be trained regarding the risks; • OHS Personnel will daily inspect the site and if any additional risk is observed relevant plans and trainings will be renewed; and • In case of any significant environmental or social incident (e.g. lost time incidents, fatalities, environmental spills etc.), the Contractor will notify KOSKI about the occurrence of the incident in 3 business days and KOSKI will immediately inform ILBANK and the World Bank. A detailed incident investigation report, including the root-cause analysis, precautions and compensation measures taken will be submitted to KOSKI, ILBANK and the World Bank in 30 business days after the incident.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

LAND PREPARATION AND CONSTRUCTION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
	Workers Engaged by Third Parties and the Supply Chain	Adverse	Low	• KOSKI will prepare a Contractor Management Plan before involvement of contractors and ensure its implementation; • Contractors will be reputable and legitimate enterprises and have an appropriate ESMS that will allow them to operate in a manner consistent with the labor conditions requirements; • KOSKI will monitor its primary supply chain for safety issues related to supply chain workers, and where necessary KOSKI will introduce procedures and mitigation measures to ensure that suppliers are taking steps to prevent or to correct life-threatening situations; • The performance of Contractors will be monitored such that human rights policy and labor rights of all workers are exercised properly and non-compliance measures will be included in their contracts; and • The workers of Contractors will have access to the overall grievance redress mechanism to be established for the Project.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant
	Labor influx	Adverse	Low	• In case personnel or material or services required for the works to be carried out in a construction project cannot be sourced from local sources; technical personnel with adequate capacity or materials that meet international standards must be brought from outside the project area; • People who will work on the project or provide goods and services to the project should be settled quickly in the region. In such a case, people who settle in the area due the project may have a negative impact on the local population (especially if the area is rural, remote and small) but employment will be provided by the local people and • The Municipality and the Contractor shall ensure that code of conduct and public communication trainings are given to all employees as an orientation training to prevent a possible future dispute.	Included in construction costs	Contractor KOSKI/PIU Supervision Consultant

Table VI.2.Mitigation Plan for the Operation Phase Impacts of the Project

OPERATION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Physical Environment						
Air quality	Air emissions from pumping station	Adverse	Low	• Effective management and operation of pumping station will be ensured with effective maintenance and rapid response to emergencies; • A regular record of equipment maintenance and control form will be kept; • Air quality measurement will be carried out by an authorized environmental laboratory in case of any complaint.	Included in the operation costs	KOSKI/PIU
Soils and Contaminated Land	Soil contamination	Adverse	Low	• The staff will be trained in proper management of liquid waste to avoid soil contamination during maintenance and repair works; • The amount of soil that could be subject to contamination will be minimized by ensuring the use of only the designated worksites and routes for the machinery and equipment and field personnel during maintenance and repair works; • Machinery and equipment will be checked regularly for leaking oil and fuel; • In the event of an accident, leak or spill, necessary repair works and/or replacement of parts will be performed promptly in accordance with the standards; • Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources will be complied with and • Wastes and wastewater (rainfall filled in trenches) to be generated during the during maintenance and repair works will be stored and disposed of in a controlled manner in accordance with the relevant regulations and in line with the management practices described in this report. Thus, it will not be possible for the waste and wastewater to be generated in the project area to interact with the soil environment and cause any impacts.	Included in the operation costs	KOSKI/PIU
Water Resources	Changes in surface water and groundwater quality	Adverse	Low	• Machinery and equipment will be checked regularly for leaking oil and fuel; to prevent pollution of near surface water and groundwater resources during operation and maintenance activities. • Broken pipes and other repairs will be undertaken without delay; • Pumping station will be adequately maintained; • Overflows will be prevented by automation systems; and • A leak detection and repair program should be implemented (including records of past leaks and unaccounted for water to identify potential problem areas) • Leak rate of the pipelines will not exceed 20% as per Regulation on Drinking and Water Supply and Distribution Systems.	Included in the operation costs Included in the operation costs	KOSKI/PIU KOSKI/PIU
Noise	Increase in noise levels	Adverse	Low	• The noise impact resulting from vehicles, and maintenance equipment and machinery will be temporary and is not expected to be significant. The number of vehicles will be limited during operation and maintenance. The staff will use ear protection. During the maintenance activities, necessary measures, such as installing acoustic screens will be taken to minimize noise near noise-sensitive areas, if needed; • Regular maintenance of all mechanical equipment that may cause noise will be carried out; • The oil levels of the equipment and their equipment such as silencers, etc. will be checked 4 times a year; • There are no sensitive receptors (hospitals, schools, elderly housing etc.) in the vicinity of the pumping station that could be impacted by an increased noise level; and • Relevant provisions and limit values of Regulation on Environmental Noise Control (RENC) and WBG General EHS Guidelines and Sectoral Guidelines will be complied with during the operation phase.	Included in the operation costs	KOSKI/PIU
Wastes	Generation of different types of waste during operation and maintenance works	Adverse	Low	• Strict waste disposal policy will be applied, and waste produced will be managed in accordance with the waste management hierarchy; • Generated domestic solid wastes will be stored in containers and collected daily by the related municipality; • Training to the employees regarding waste management practices will be provided; • All kinds of implementations that may threaten personnel or public health will be avoided in all activities involving collection, temporary storage, transport and disposal of wastes; • Excavation material during pipe replacement etc. will be piled next to the trench until they are reused as backfilling. The remaining waste excavation material will be stored in temporary storage containers. The containers filled with excavation waste will be disposed of in consultation with the related municipality. The transportation of such waste will be provided by licensed transport vehicles; • Waste batteries from construction sites and accumulators from vehicles will be disposed of in compliance with the consumer responsibilities specified in Article 13 of the "Regulation on Control of Used Batteries and Accumulators". Accordingly, used batteries will be collected separately (from municipal wastes) and transferred to the designated collection sites, if there is one in the region. If not, used batteries will be transferred to MNC Aku Metal Nakliye Kuyumculuk in Ankara by licensed transportation companies; and • Hazardous waste (paint, waste oil etc.) will be stored temporarily in an area to be designated by the KOSKI. Waste oils originating from machinery and vehicles will be stored in impervious tanks and containers that would be situated on impervious foundation in accordance with the “Regulation on Control of Waste Oils”. Tanks and containers will be equipped with apparatus that would prevent over filling and will be filled till the designated level mark. Tanks and containers will have a red color and must be labelled as “waste oil”. Disposal of waste oils will be controlled by the KOSKI.	Included in the operation costs	KOSKI/PIU

OPERATION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
Climate Change	Greenhouse gas emissions	Adverse	Negligible	• Optimal utilization of the available equipment and materials during maintenance activities in such a way that reduces greenhouse gas emissions; • Regular maintenance of vehicles and equipment will be applied; • Energy uses associated with vehicles and equipment will be monitored; and • Trainings will be conducted for project personnel regarding energy efficiency.	Included in operation costs	KOSKI/PIU
Socio-Economic Environment						
Socio-economic Environment	Local procurement	Positive	-	To avoid negative impacts, KOSKI will take all necessary actions and measures for labor and employment to be in compliance with Turkish Labor Law and international standards. KOSKI will aim at employing local workers to the extent possible, in order to increase the Project's local benefits. The recruitment processes will be transparent, public and non-discriminatory, providing equal opportunities with respect to ethnicity, religion, language, gender and sexuality.	Included in the operation costs	KOSKI/PIU
	Infrastructure damage	Adverse	Low	Any damage to infrastructure will be repaired or compensated by contractors promptly in accordance with the responsible authority, such as KGM and KMM. KOSKI will closely monitor such issues.	Included in the operation costs	KOSKI/PIU
Landscape and Visual (Aesthetics)	Existence of the pumping station	Adverse	Negligible	• The pumping station area will be fenced; and • KOSKI will plant trees around the pumping station.	Included in the operation costs	KOSKI/PIU
Labor and Working Conditions						
Labor Force	Working Conditions	Adverse	Low	• Workers will be issued written contracts that is clear and understandable, detailing job description, working hours, wages, rights and duties, code of conduct, etc. and regarding their rights under national labor law; including collective agreements, their rights related to hours of work, wages, overtime, compensation, and benefits as of startup of working relationship and when any material changes occur; • Workers will not be discouraged from electing worker representatives, forming or joining workers' organizations of their choosing, or from bargaining collectively, and will not discriminate or retaliate against workers who participate, or seek to participate, in such organizations and collective bargaining; • Particular concern will be paid to principles of non-discrimination and equal opportunity. In this respect, employment decisions (i.e. recruitment and hiring, compensation, wages and benefits, working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices) will not be made on the basis of personal characteristics unrelated to job requirements. Wages, work hours and other benefits will be per the Turkish Labor Law; • A grievance redress mechanism for workers will be established to raise workplace concerns. The workers will be informed about the grievance redress mechanism at the time of recruitment and make it easily accessible to them; • A Code of Conduct will be prepared by KOSKI and implemented for all employees; and • If an employee faces Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) and/or Gender Based Violence (GBV) issue s/he can either apply to a higher level superior or directly go to police station, as stipulated in the national referral system of the country for dealing such cases. The content and procedures of the project's GRM will also have a reporting line on such cases in regard to SEA/SH and GBV issues and will be handled under full confidentiality. The GRM focal point receiving the SEA/SH related grievance should direct this to national referral systems immediately and record that this has been directed, as set out in the GRM Procedure of ILBANK. All details of the complainant of the sensitive case will be kept strictly confidential.	Included in the operation costs	KOSKI/PIU
	Protecting the Workforce	Adverse	Low	• Minimum legal labor standards will be met (child/forced labor, anti-discrimination, working hours, minimum wages) as per ILO regulations • Unregistered employment, employment of child labor and forced labor will be prohibited. • KOSKI will be required to have an age verification system, ensuring no one under 18 years old is involved in work. • Stipulations of Ministry Circular on COVID-19 Measures to be taken at Construction Sites will be followed.	Included in the operation costs	KOSKI/PIU

OPERATION PHASE						
Issue	**Potential Impact**	**Type of Impact**	**Impact Significance Before Mitigation**	**Mitigation Measures**	**Cost**	**Responsible Party**
	Occupational Health and Safety	Adverse	High	• PPE will be provided for the workers according to the nature of work to be performed. The necessary training will be carried out for their use; • Smoking will be prohibited where the risks of combustion/explosion is high. All the workers will be informed about the action plan in case of fire; • All equipment will be operated in proper working order; • Procedures approved by the KOSKI in the maintenance and repair activities and the requirements of the technical specifications of the supplier companies will be complied with; • The necessary health and safety signs and traffic signs will be placed around the project site. Employees will be informed and alerted about the subject matter markings; • Trainings will be given to employees and operational and maintenance personnel within the scope of the Regulation on Procedures and Principles of Occupational Health and Safety Trainings and measurement and evaluation activities will be carried out after the trainings; • After the pumping station is completed, necessary electrical tests will be carried out to check that the electrical connections and other related equipment are made properly before the station is taken into operation; • Upon completion of the project, KOSKI will prepare a new emergency preparedness and response plan; • Implement fire and explosion prevention measures; • When installing or repairing mains adjacent to roadways, implement procedures and traffic controls, such as: o Establishment of work zones so as to separate workers from traffic and from equipment as much as possible; o Reduction of allowed vehicle speeds in work zones; o Use of high-visibility safety apparel for workers in the vicinity of traffic; and o For night work, provision of proper illumination for the work space, while controlling glare so as not to blind workers and passing motorists. • KOSKI will prepare a Confined Space Entry Procedure that is consistent with applicable national requirements and internationally accepted standards; • KOSKI will distribute sufficient number of appropriate personal protective equipment (including, for example, self-contained breathing apparatus, personal gas detection equipment regarding chemical exposure and hazardous atmospheres, rubber gloves and waterproof shoes for field workers) and training on its proper use and maintenance; • KOSKI will ensure the compliance of all the activities within the project area with national standards and WBG EHS Guidelines; • In case of any significant environmental or social incident (e.g. lost time incidents, fatalities, environmental spills etc.) KOSKI will immediately inform ILBANK and the World Bank. A detailed incident investigation report, including the root-cause analysis, precautions and compensation measures taken will be submitted to ILBANK and the World Bank in 30 business days after the incident; and • Stipulations of Ministry Circular on COVID-19 Measures to be taken at Construction Sites will be followed.	Included in the operation costs	KOSKI/PIU
	Workers Engaged by Third Parties and the Supply Chain	Adverse	Low	• If any, Contractors (food, security, maintenance, etc.) will be reputable and legitimate enterprises and have an appropriate ESMS that will allow them to operate in a manner consistent with the labor conditions requirements; • The performance of Contractors will be monitored such that human rights policy and labor rights of all workers are exercised properly, and non-compliance measures will be included in their contracts; and • The workers of Contractors will have access to the overall grievance redress mechanism to be established for the Project.	Included in the operation costs	KOSKI/PIU
	Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	Adverse	Medium	• Contractor Code of Conduct developed, incorporated into workers' contracts, and training and socialization on it provided to workers • Mandatory and regular training for workers on required lawful conduct in local community and legal consequences for failure to comply with laws; • Commitment / policy to cooperate with law enforcement agencies investigating perpetrators of gender-based violence; • Creation of partnership with local civil society organization to report workers' misconduct and complaints/reports on gender-based violence or harassment through the GRM; • Provision of opportunities for workers to regularly return to their families; • Provision of opportunities for workers to take advantage of entertainment opportunities away from rural local communities	Included in operation costs	KOSKI/PIU

VI.2. Monitoring Plan

In order to ensure the continuity and effectiveness of the implementation of mitigation management strategies defined, monitoring plays a key role. The main objective of the Monitoring Plan is to provide a basis for tracking and assessing the implementation of the prescribed measures and requirements of this ESMP.

Information collected with the monitoring can be used to improve management plans during all phases of the Project. While impact assessment attempts to encompass all relevant potential impacts to identify their significance and include appropriate responses for these impacts, unanticipated impacts may still arise, which can be managed or mitigated before they become a problem using the information obtained through monitoring. Therefore, monitoring will ensure the successful implementation of the mitigation/management plans and optimize environmental protection through good practice at each and every stage of the Project.

Consequently, monitoring studies will provide implementation of impact mitigation measures and optimization of environmental protection by using best practices at the all stages of the Project.

Some of the monitoring parameters are determined in the scope of engineering design studies. Monitoring studies will ensure the accordance with the relevant legislation, contract necessities and implementation of impact mitigation measures.

Monitoring activities are submitted in tabular form in Table VI.3 and Table VI.4 for land preparation and construction, and operation phases, respectively.

Table VI.3. Monitoring Plan for the Land Preparation and Construction Phase of the Project

LAND PREPARATION AND CONTRUCTION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
Physical Environment									
Soils and contaminated land	Work sites and storage areas	Upon an incident	Soil quality, including, pH, heavy metals, phosphorus, nitrogen, Na, Ca, salts, PAHs Amount of contaminated soil	Sampling and analysis 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 WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Number of spill responses • 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	Supervision Consultant Contractor KOSKI/PIU
		Monthly starting from the initialization of land preparation and construction phase	Number of oil/fuel and chemical leakages/spills	Environmental incident registry					
		Upon grievance	Contaminated soil amount and quality	Sampling and analysis					
Storage and usage of chemicals	Entire project site and chemical storage locations	Once in a week starting from the initialization of construction phase	Conditions of the storage area Number of leaks, spills, etc.	Visual observation Site inspections Environmental incident registry	No chemical spill incident	Regulation on Safety Data Sheets Regarding Harmful Substances and Mixtures Regulation on the Preparing and Distributing Safety Data Sheets Regarding Dangerous Materials and Preparations WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Hazardous materials and chemicals inventory • Number of reported leakages and spills • Storage conditions of chemicals and hazardous material • Floors of the chemical and hazardous material storage areas • Material Safety Data Sheets (MSDSs) of all chemicals listed in the inventory • Written training records covering the chemicals and hazardous materials management issues • Labels of the hazardous materials	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Storage and use of excavation waste	Construction site and storage areas	Once in a week starting from the initialization of 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	Proper management of excavation wastes No loss of topsoil	Regulation of the Control of Excavation Soil and Construction and Demolition Waste WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Excavation amount • Reused excavation amount • Amount of excavated material that is sent to final disposal and disposal mechanism • ESMR findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Damage to existing underground public utility cables and pipes	Work sites (excavated areas)	Upon grievance At the time of excavation	Complaints to Utility Service Providers Number of damages	Grievance Registration Visual Observation Damage Records	No damage to existing underground utility cables and pipes	-	• Service and utility location plans • Relocation plans agreed with the utility service providers and public • Grievance Records • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU

LAND PREPARATION AND CONTRUCTION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
Air quality	Nearest sensitive receptors Work sites	Upon grievance Monthly from the initialization of land preparation and construction phase Visually on the basis of irritation of breathing system, complaints of the population in the vicinity	Settled dust, PM_{10} and $PM_{2.5}$ Records of maintenance for all machinery and equipment Number of complaints Maintenance and exhaust decal records of all machinery and equipment	Sampling/ In-situ measurement by an authorized environmental laboratory Records of maintenance for all machinery and equipment	No grievance is received regarding noise Regular maintenance activities are carried out	Regulation on the Assessment and Management of Air Quality Industrial Air Pollution Control Regulation WBG General EHS Guidelines WB OP 4.01	• ESMR Findings • Air quality grievance records • Air quality (PM_{10}/$PM_{2.5}$) measurement results • Exhaust emission decal follow-up	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Water resources	At related water resources (river crossings, wells, fountains, etc.) Construction site	In case of a major spill In case of a leak/spill reaching water bodies Prior to the initialization of the construction activities	Surface water / groundwater quality analysis and measurements that include spill-related pollutants Groundwater level The discharge from hydro testing / pressure testing.	Sampling and in situ / laboratory measurements Spill notices/correspondences to authorities in case of major spills Visual observation if the groundwater is being evacuated from the working area Laboratory analysis to determine the qualities.	Prevention of water quality deterioration compared to current surface water and groundwater quality	Water Pollution Control Regulation Surface Water Quality Regulation Regulation on the Protection of Groundwater Against Pollution and Degradation WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Visual observations • Amount of wastewater generated • ESMR Findings • Laboratory analysis	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Noise and vibration	Nearest sensitive receptors Work sites	Quarterly starting from the initialization of construction phase Upon grievance	Noise Levels Number of complaints	At least 24-hr noise measurements via an authorized environmental laboratory Grievance Registration	Not exceeding the limit values defined in Regulation on Environmental Noise Control (RENC) No noise related grievance received	Regulation on Environmental Noise Control (RENC) WBG General EHS Guidelines WB OP 4.01	• Noise level measurement results • Construction machinery and equipment maintenance log • Noise grievance records • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Resources and Wastes	Construction site, storage areas, and administration office	Once in a month starting from the initialization of construction phase	Amount of waste generated per type	Visual inspection regarding proper collection and temporary storage of waste and records kept regarding their coordinated recycle / disposal via licensed firms Waste records Site inspections Disposal truck register	Minimizing the amount of waste to be sent for disposal and implementing waste management hierarchy	Waste Management Regulation Zero Waste Regulation WBG General EHS Guidelines WB OP 4.01	• 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	Supervision Consultant Contractor KOSKI/PIU

LAND PREPARATION AND CONTRUCTION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
	Administration office	Quarterly during the construction phase	Types and amounts of materials/resources used	Material/resource procurement / consumption records	Use of recycled materials whenever possible	WB Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Types and amounts of materials used • Annual GHG emission contribution of the Project		
		Annually starting from the initialization of construction phase	Annual GHG emission contribution of the Project	GHG emission estimation calculations	Not exceeding 1,000 t CO_2 eq.				
Biological Environment									
Biological environment	Work sites	Monthly starting from the initialization of construction phase	Number of incidents with fauna mortality	Incident records	No incidents involving fauna species	WB Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Site Inspections • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Socio-Economic Environment									
Job creation and local procurement	Administration office	Quarterly during construction phase	Number of persons employed 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 construction cost	Supervision Consultant Contractor KOSKI/PIU
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 construction cost	Supervision Consultant Contractor KOSKI/PIU
External and Internal Grievances (to be recorded separately)	Administration office	Upon grievance starting from the initialization of the Project	Number of received grievances Number of open and closed grievances Average grievance response and closure time Identification of grievance channels Nature of grievances recorded, addressed and analyzed	Grievance records (grievance log, received grievance forms, etc.)	Reasonable level of grievances received and resolved within existing service standards to the overall satisfaction of the complainant Number of repetitive grievances	WB Safeguard Policies	• Grievance Records • Presence of mukhtar as representative • ESMR Findings • Social security records	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Traffic	Administration office	Monthly during construction phase In case of any incident/accident, complaints of the population in the vicinity	Number of grievances	Grievance records	Limited number of external complaints resolved quickly, adequately and fairly to the complainant's satisfaction	Highway Traffic Law	• Number of reported traffic accidents • Vehicle maintenance log • Condition of traffic signs • Training records • Grievance records	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
			Number of road traffic accidents	Accident records	No accidents occurred				
			Number of drivers trained	Training records	100% of the drivers are trained				

LAND PREPARATION AND CONTRUCTION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
Community encroachment /trespassing	Administration office	Weekly during the construction phase	Number of trespassing incidents cases	Security reports Visitor logs	No trespassing	Law on Private Security Services	• Security reports • Visitor logs	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
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 in health and safety problems	Regulations on Traffic Signs	• Incident records • Condition of traffic signs • Grievance records	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
General construction related impacts on community	Administration office	Upon grievances and events starting from the initialization of the Project	Number of grievances	Grievance records Conflicts with security personnel and workers of the Project	Limited number of grievances, resolved satisfactorily within the stipulated time	Law on Private Security Services	• Security reports • Grievance records	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Chance finds	On and around the working location	Daily basis starting from the initialization of construction phase	Number of chance finds	Visual observation Official notification to authorities	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	Supervision Consultant Contractor KOSKI/PIU
Labor and Working Conditions									
Working conditions	Administration office	Weekly during construction phase	Workers' grievances	Grievance records	Managing provisions given in ESMP properly.	WB Safeguard Policies	• Workers' Grievance Records • Presence of union or workers' representative • ESMR Findings • Labor/social security records	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
Occupational health and safety	Construction sites	Daily basis starting from the initialization of land preparation and construction phase	Number of incidents, accidents/Injuries	Incident records	No OHS incidents occurred	Occupational Health and Safety Law WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Incident Records • Number of nonconformities • Training records training materials (participant list, presentation etc.) • Work Permits • ESMR Findings • H&S reports • H&S meetings • Emergency drills • OHS Implementations (internal & external audits) • OHS Practices (Use of PPE etc.)	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
			Incident investigation	Incident investigation records					
			Period of disease occurrence	Disease follow-up register	No infectious disease recorded				
		Monthly during the construction phase	Number of personnel who are infected with an infectious disease	Training records	No infectious disease occurred				
		Annually during the construction phase	Training requirements	Annual Environmental, Social Health, and Safety (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				
Protecting the workforce	Administration office	Before each recruitment	Age of candidate employee	Age verification with National ID	Prohibit child labor	Labor Law	• No child and forced labor	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU
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 Safeguard Policies	• Contractor / Sub-contractor Agreements • Grievance Records • ESMR Findings	Included in construction cost	Supervision Consultant Contractor KOSKI/PIU

LAND PREPARATION AND CONTRUCTION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
Gender Based Violence (GBV), Sexual Exploitation Abuse / Sexual Harassment (SEA/SH)	Administration office	Quarterly Upon relevant grievances	GBV and SEA/SH related incidents	Document review Review of grievance logs	No GBV related issues.	Labor Law WBG General EHS Guidelines WB Good Practice Note Addressing SEA/SH WB OP 4.01	Document review Review of grievance logs • GBV incidents	Included in construction cost	Contractor KOSKI/PIU

Table VI.4. Monitoring Plan for the Operation Phase of the Project

OPERATION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
Physical Environment									
Contamination of Soil	Storage areas Work sites (excavated areas for maintenance and repair)	Upon an accident Daily basis starting from the initialization of the operation phase of the Project	Number of spills/leaks Amount of contaminated soil	Sampling and in situ / Laboratory Measurement Visual observation Environmental incident registry	No soil contamination resulting from Project Activities	Regulation on the Control Soil Pollution and Sites Contaminated by the Point Source WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• 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	KOSKI/PIU
Water quality	At related water resources (river crossings, wells, fountains, etc.)	In case of a major spill In case of a leak/spill reaching water bodies	Surface water / groundwater quality analysis and measurements that include spill-related pollutants	Sampling and in situ / laboratory measurements 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 Surface Water Quality Regulation Regulation on the Protection of Groundwater Against Pollution and Degradation WBG General EHS Guidelines WBG EHS Guideline for Water and Sanitation WB OP 4.01	• Visual observations • ESMR Findings • Laboratory analysis	Included in operation cost	KOSKI/PIU
Noise	Nearest sensitive receptor	Upon grievance	Noise level	At least 24-hr noise measurements by an authorized environmental laboratory	No noise related grievance received	Regulation on Environmental Noise Control (RENC)	• Noise level measurement results • Noise grievance records • ESMR Findings	Included in operation cost	KOSKI/PIU
Air Quality	Pumping Station	Quarterly starting from the initialization of construction phase Upon grievance	Settled dust, PM_{10} and $PM_{2.5}$	Sampling/analysis by an authorized environmental laboratory	Below the regulatory limit values defined in Industrial Air Pollution Control Regulation No air quality related grievance received	Regulation on the Assessment and Management of Air Quality Industrial Air Pollution Control Regulation WBG General EHS Guidelines WB OP 4.01	Visual observations ESMR Findings Air quality grievance records • Air quality (PM_{10}/$PM_{2.5}$) measurement results	100 € for one measurement 1000€ for one day site visit personnel expenses	Contractor KOSKI/PIU

OPERATION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
Resources and Wastes	Storage areas and administration office	Weekly basis starting from the initialization of the operation phase of the Project	Type and amount of waste generated	Visual observation Waste Records Site inspections Disposal truck register	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 operation cost	KOSKI/PIU
	Administration office	Annually starting from the initialization of operation phase	Energy efficiency	Energy efficiency assessment	Reducing energy consumption by 10% by the end of the first year of operation phase	WB Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Annual energy consumption • Annual GHG contribution of the area	Included in operation cost	KOSKI/PIU
			GHG emission contribution	GHG emission estimation calculations	Achieving neutral carbon emission levels within the Project's lifetime				
Socio-Economic Environment									
Local procurement	Administration office	Annually during operation phase	Number of persons employed from the local community	Employment records	50% of the employees are local people	Labor Law	• Information disclosure records • Stakeholder engagement records • Employee records • Local employment/ procurement ratio	Included in operation cost	KOSKI/PIU
Infrastructure Damage	Administration office	Monthly during operation phase	Number of cases and amount of compensation paid	Incident records Receipts of compensation payments	No infrastructure cases	Criminal Law	• Grievance Records • Official correspondence • ESMR Findings	Included in operation cost	KOSKI/PIU
External and Internal Grievances (to be recorded separately)	Administration office	Monthly during operation phase	Number 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.)	Reasonable level of grievances received and resolved within existing service standards to the overall satisfaction of the complainant	WB Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Grievance Records • Presence of mukhtar as representative • ESMR Findings • Social security records	Included in operation cost	KOSKI/PIU
Labor and Working Conditions									
Working conditions	Administration office	Weekly during operation phase	Workers' grievances	Grievance records	Managing provisions given in ESMP properly.	WB Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Workers' Grievance Records • Presence of union or workers' representative • ESMR Findings • Labor/social security records	Included in operation cost	KOSKI/PIU
Occupational health and safety	Administration office	Daily basis starting from the initialization of operation phase	Number of incidents	Incident records	No OHS incidents occurred	Occupational Health and Safety Law WBG General EHS Guidelines	• Incident Records • Number of nonconformities • Training records • Work Permits • ESMR Findings	Included in operation cost	KOSKI/PIU
			Incident investigation	Incident investigation records					
			Period of disease occurrence	Disease follow-up register	No infectious disease is recorded				

OPERATION PHASE									
Issue	**Monitoring Location**	**Timing / Frequency of Monitoring**	**Parameters Monitored**	**Monitoring Method**	**Target/ threshold values**	**Legal Requirements for monitoring**	**Key Performance Indicators**	**Cost**	**Responsible Party**
		Monthly during the operation phase	Number of personnel who are infected with an infectious disease	Training records	No infectious disease is occurred	WBG EHS Guideline for Water and Sanitation WB OP 4.01	• H&S reports • H&S meetings • Emergency drills		
		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	Prohibit child labor	Labor Law	• No child and forced labor	Included in operation cost	KOSKI/PIU
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 Safeguard Policies WBG General EHS Guidelines WB OP 4.01	• Sub-contractor Agreements • Grievance Records • ESMR Findings	Included in operation cost	KOSKI/PIU

VII. INSTITUTIONAL ARRANGEMENTS AND CAPACITY BUILDING

The main responsible organization for the implementation of this ESMP is KOSKI. KOSKI has the adequate ability and capacity to manage the implementation of the project and in particular the E&S. Environmental and Social Management System (ESMS) of KOSKI covering all phases of the Project and consisting of management plans on different subjects has available staff and capacity to ensure ESMP implementation. A PIU will be established to carry out operational and administrative tasks. The PIU staff will be the KOSKI's own staff and has previous OP Project experience. Besides, in different phases of the Project, various parties (contractors, Construction Supervision Team, ILBANK, etc.) will take responsibility for various works in the scope of the ESMP. All mentioned works will be coordinated by the KOSKI. Mitigation management and monitoring tables, which are given in this ESMP, summarize the relevant responsibilities.

In that scope, it is suggested to add below mentioned liabilities to tender documents of any possible contractor(s):

- Technical characteristics of the ESMP,
- Environmental, social, and health and safety liabilities,
- Other environmental and social issues that can show-up.

VII.1. Environmental and Social Management Structure

As the potential impacts and impact levels of the Project vary according to different phases of the Project (land preparation, construction and operation) environmental and social management of the Project are assessed separately. ESMP consists of three main components in that scope, which are as follows:

- Mitigation Plan,
- Monitoring Plan,
- Monitoring Report.

The graphical representation of the environmental and social management structure is given in Figure VII.1.

Figure VII.1. Environmental and Social Management Structure

VII.2. Roles and Responsibilities

The Project will be financed by the World Bank. ILBANK is the Borrower of the loan, serving as a Financial Intermediary to KOSKI. KOSKI will be responsible for the implementation of the Project at the local level.

WB is the financing institution and its monitoring is part of WB's internal control system, not a part of the project implementation.

The final ESMP will be made available to public in both KOSKI's and ILBANK's web site prior to any activity on site. ILBANK Project Management Unit (PMU) will include an environmental specialist and a social specialist to supervise the implementation of the ESMP. The specialist will supervise the implementation of the ESMP by KOSKI and document performance, recommendations and any further actions required. He/she will provide guidance to KOSKI officials on World Bank procedures, consultation and disclosure requirements. In addition, KOSKI will inform ILBANK and WB about the project changes or unforeseen circumstances in the approved project documents.

For the tender process, KOSKI is responsible to tender all the project works and consultancy services. KOSKI will prepare the tender documents and process the bidding. The WB Procurement Regulations and Public Procurement Law will be applied during the tender process. Implementing of an appropriate application of the environmental and social safeguard policies during whole process is supervised and monitored by ILBANK. In addition, WB has a responsibility of reviewing of incoming reports to see the Bank standards are in progress.

KOSKI 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, KOSKI holds ultimate responsibility for the environmental and social performance of the overall Project, including the performance of its contractors and any other contractors. A Project Implementation Unit (PIU) will be established to carry out operational and administrative tasks. The PIU staff will be the KOSKI's own staff.

The KOSKI's environmental engineer, who will act as the Environmental Manager of this Project, will oversee the implementation of the ESMP and monitoring progress. The responsible parties for the monitoring progress are contractor, supervision consultant and KOSKI/PIU during construction phase, while only KOSKI/PIU is responsible for monitoring progress during operation phase of Project. Potential impacts of Project will be assessed by analyzing relevant parameters in determined periods in the scope of Monitoring Plan. The analyses of parameters will be done by different ways such as sampling, visual observations, site inspections, maintenance records, grievance records etc. The parameters, analysis location, analysis method, analysis time and analysis cost were indicated in Table VI.3 and Table VI.4 in detail. Depending on the monitoring plan, Contractor will prepare monthly Environmental and Social Monitoring Reports (ESMRs) to be submitted to KOSKI; KOSKI will review and submit the ESMRs quarterly to ILBANK. The environmental engineer/expert, one Social Expert and an OHS Expert will be supported by environmental consultants, when necessary. Environmental engineer/expert will appoint a representative on the site to lead the development of this ESMP, and its onsite implementation.

In addition, KOSKI's social expert will act as the Social Affairs Manager of this Project and will manage the social issues outlined in this ESMP and its monitoring progress. The social expert will also manage the grievance redress mechanism and stakeholder engagement.

The roles and responsibilities of KOSKI are given in

Table VII.1..

Table VII.1 Structure of KOSKI/PIU

Occupation	**Number**
Mechanical Engineer	1
Civil Engineer	1

Moreover, KOSKI will be responsible for the incident and accident reporting and iforming the necessary institutions (WB, ILBANK etc.), as per the provisions explained below:

- WB and ILBANK will be promptly notified of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers including but not limited to; incidents and accidents encountered during construction works, environmental spills, etc.
- Sufficient detail will be provided regarding the incident or accident, findings of the Root Cause Analysis (RCA), indicating immediate measures or corrective actions taken or that are planned to be taken to address it, compensation paid, and any information provided by any contractor and supervision consultant, as appropriate. It will be ensured that the incident report is in line with the World Bank's Environment and Social Incidence Response Toolkit. Subsequently, as per the Bank's request, a report on the incident or accident and proposed measures to prevent its recurrence will be prepared.
- Therefore, KOSKI will report details of any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills etc.) within 3 business days and

submit an incident report, including RCA, precautions and compensation measures taken within 30 business days. ILBANK will forward the incident report to the WB immediately upon receipt from KOSKI. The monitoring and supervision of mitigation measures implementations will also be Contractor's responsibility during construction phase of the project for mentioned parameters as given in detail in Section VI.2. Therefore, KOSKI and the Contractor will be in cooperation.

- Prompt notification of accidents and incidents will remain inclusive under the contractor's ESMP.

TUMAS & ENCON Joint Venture, who prepared this ESMP and the SEP for the Project, is the E&S Consultant and will provide necessary information to the Project Owner and is responsible for the realization of the stakeholder consultation meeting to be held for the stakeholders and Non-Governmental Organizations (NGOs) within the scope of ESMP and finalization of this ESMP and the SEP as per the concerns/opinions of the stakeholders of the Project.

The Supervision Consultant, who will be selected by tender process to be opened by KOSKI and approved by ILBANK, will have at least one Environmental Expert, one Social Expert and one full time Occupational Health and Safety Expert in its team. If necessary the number of experts will be increased by the decision of ILBANK. Supervision Consultant will oversee the supervision of construction and/or rehabilitation works and installation of equipment. The respective experts will be responsible for identification and management of environmental, social and occupational health and safety (OHS) related risks and will ensure initiation corrective actions where necessary. The job description given to Supervision Consultant and the required number/qualification of personnel will be determined by the joint efforts of PIU and contractor. Supervision Consultant will oversee the supervision of construction and/or rehabilitation works and installation of equipment. The respective experts will be responsible for identification and management of environmental, social and occupational health and safety related risks and will ensure initiation corrective actions where necessary and report to ILBANK and KOSKI on a timely manner. The experts will also monitor and evaluate the performance of the services provided by the Contractor. In addition to these roles and responsibilities, Supervision Consultant is responsible for controlling whether the necessary training is given to the personnel, who will work during the construction phase. Also, managing the GRM and monitoring regularly the reporting of complaints to the Project Owner is another responsibility of Supervision Consultant. Monitoring and auditing the consultation process will be carried out by Supervision Consultant to ensure that it is managed through safe and effective channels, considering the relevant national and local regulations as well as the health-related recommendations and guidelines of national and international health authorities due to the Covid-19 outbreak. Necessary arrangements will be made according to the "Interim Advice for IFC Clients on Safe Stakeholder Engagement in The Context of Covid-19" published by the IFC on May 15, 2020. In this respect, stakeholder engagement activities will be carried out. Supervision Consultant will take part in stakeholder engagement activities.

The Contractor will construct the project in line with the approved design documents and will be the responsible body to implement and apply the mitigation measures given in this ESMP during construction phase. The Contractor will adhere its responsibilities specified in this ESMP and ensure that it is aware of its duties and responsibilities within this ESMP for compliance with national regulation and WB Safeguard Policies. The Contractor will employ a full time OHS specialist and a full time environmental and social expert, who will instruct and consult the workers on compliant working structure and implementation of ESMP (including grievance redress mechanism and the applicable stakeholder engagement activities detailed in project SEP). Furthermore, a competent Environmental, Social Health, and Safety (ESHS) manager of contractor will monitor implementation of measures given in the mitigation plan. The prompt notification of any accident or incident within the scope of construction works in line with the above-described provisions is the responsibility of the Contractor. The Contractor will keep an incident register at the construction site throughout the construction and

defects liability period. In addition, the Contractor will be responsible for the preparation and submission of the regular monthly ESMRs on the environmental, social and OHS issues of the Project during the construction phase.

Repair and maintenance will be the responsibility of the Contractor throughout the one-year Defects Liability Period (DLP). After that, the maintenance, repair and operational activities will be performed by the KOSKI.

VII.3. Grievance Redress Mechanism

In accordance with WB OP 4.01, a grievance redress mechanism (GRM) will be established by which people who deem that they have been adversely affected by the Project during planning, construction or operation can bring grievances to the Project for consideration and, if required, resolution. A specific project grievance redress mechanism is beneficial in addressing community and individual concerns and complaints before they escalate beyond control. The purpose of this mechanism is to establish a system for handling, evaluation and resolution of all kinds of grievances, concerns, queries and proposals of the project affected groups and other stakeholders, such as construction workers, regarding the project activities (mainly construction). During the project implementation process, grievances will be addressed at mainly two levels; (i) local (site) level at Construction Contractor/Operator, and (ii) provincial level at the KOSKI/PIU (involving also KOSKI and ILBANK). In other words, there will two (2) different GRMs for laborers and general public.

Managing grievances, including avoiding and minimizing them as well as effective handling, is an integral part of a sound stakeholder engagement strategy. Experience shows that significant numbers of grievances arise from misunderstandings, and that such grievances can be avoided, or their numbers reduced, through proactive and consistent engagement with communities. Engagement also helps anticipate and review community concerns to prevent them from escalating into grievances. A project-specific GRM is beneficial in addressing community and individual concerns and complaints before they escalate beyond control.

Within the scope of the project, the principle of the GRM is being legitimate, accessible, predictable, equitable, rights-based, transparent, anonymity and non-retaliation.

A GRM has been established by KOSKI in case of failure to fulfill ESMS principles, standards and procedures in line with the international requirements. Grievance redress mechanism aims to assure people or communities who suffer or fear adverse effects of project that they will be heard and assisted with effective and timely resolution. The most important point in the grievance redress mechanism is to ensure that all complaints are effectively received, recorded, resolved and responded to by the PIU on a predetermined timetable and according to their content, and to ensure that the corrective / regulatory action to be taken is acceptable to both parties.

KOSKI will establish GRMs for the use of external and internal stakeholders, as detailed in the project-specific Stakeholder Engagement Plan (SEP) that is prepared and presented by TUMAS – ENCON Joint Venture, the E&S Consultant. It should be noted that the workers' grievances will be addressed through separate channels. GRM is accessible to all beneficiaries of ILBANK internationally funded projects, host communities or anyone who is affected by or is likely to affect the projects in question and who wishes to provide feedback or complaints and receive a response.

Under the PMU of the ILBANK Department of International Relations, the GRM Team was created with the assistance of expert/technical experts and technical group managers.

The responsibilities of the technical group manager are to ensure the implementation of the

indicated procedures and to lead the grievance closure process when multi-dimensional work is needed.

The responsibilities of the ILBANK PMU's social expert is to ensure that the complaint management system is efficiently working, that investigation and resolution of reported complaints are conducted in a timely and acceptable manner in accordance with this Procedure, that the complaints register database is up-to-date, and to support the ethics committee in investigating grievances in case of sensitive complaints, and to implement corrective actions to close out the complaints.

For a Project that ILBANK will fund through international financial institutions, a Project Implementation Unit (PIU) will be set up at the level of municipalities or utilities. Each PIU shall have a unique GRM, as specified in the Project's Stakeholder Engagement Plan. Municipalities and utilities will designate a focal point to execute GRM.

KOSKI/PIU and the Contractors are responsible for implementing and maintaining the GRM during the construction activities, where KOSKI is responsible for both the construction and operation phases. The PIU of KOSKI, together with contractors and supervision consultant, has to ensure that grievance redress mechanism is implemented effectively. A Social Affairs Manager (the social expert of KOSKI) will be appointed by KOSKI. Additionally, to facilitate communication with women during the grievance process, one of the PIU members assigned responsible for the GRM will be a woman.

Monthly summaries regarding the grievances, queries, and related incidents together with the implementation status of corrective/preventive actions will be prepared by the Contractor throughout the construction phase and by KOSKI during the operation phase. These summaries will be incorporated into monthly ESMRs, which will be prepared by the Contractor in construction phase of the project, to be submitted to the Municipality. Also, the Contractor should convey the grievances immediately to the Project Owner besides summarizing them in Monthly ESMRs. The monthly summaries/reports will be a mean to assess both the number and nature of complaints (if any), along with KOSKI's and contractor/s' ability to address complaints in a timely and effective manner. As for the incidents, the Contractor is responsible for immediate notification of the contingencies such as environmental, social and labor issues or accidents, incidents or loss of time to the Project Owner and keeping an event log on site throughout the lifetime of the Project.

Monthly ESMRs will be prepared by the Contractor to be submitted to KOSKI. Quarterly ESMRs and semiannual Project Progress reports will be prepared by KOSKI, to be submitted to ILBANK together with the Grievance Register. Semiannual ESMRs and Project Progress reports will be prepared by ILBANK to be submitted to WB. These reports will include a summary of the Project's performance on management of health, safety, environment and social issues, grievance redress mechanism and stakeholder engagement activities conducted during the specified period. All the work done for the effective implementation of the GRM will be documented by use of the forms and logs in the project-specific SEP and will be evaluated and reported according to the determined KPI targets. It is also should be noted that the personal information of the complainant having used the GRM will remain confidential and will never be shared in these reports.

KOSKI will ensure that an internal GRM for the Project employees will be available to both direct and contracted workers to allow them to raise their workplace related concerns and grievances. KOSKI will also assess grievance(s) and suggest solutions for employees of contractors and subcontractors to establish an internal GRM, which is easily accessible for all workers. In addition, the logs of workers' GRM will be separate from GRM for general public.

The formal internal and external GRM procedures to be prepared by KOSKI will focus on both stakeholders and public. According to the SEP prepared for the Project, all complaints received are collected in the PIU (Project Implementation Unit) complaints mechanism section, which consists of the staff of KOSKI. Afterwards, received complaints are recorded in the database and stored by

KOSKI. In the scope of GRM, workers' and stakeholders' grievance will be logged separately. Then, PIU GRM Officer communicates with the person who made the complaint, in order to confirm that the complaint is delivered in two (2) working days by telephone or e-mail. After that, he/she prepares the draft response and submits it to the Project Management approval. Following the response, the Grievance Form is updated according to the outcome of the process and the complainant gets the result within ten (10) working days. Complaints will be followed and recorded according to the grievance process which are determined in GRM described in the project-specific SEP. At the end, KOSKI should inform the statistics of the complaints to ILBANK. Complaints / feedback received will be resolved within a certain time period as specified in the national law.

Graphic related to the grievance process are also presented in the Figure VII.2.

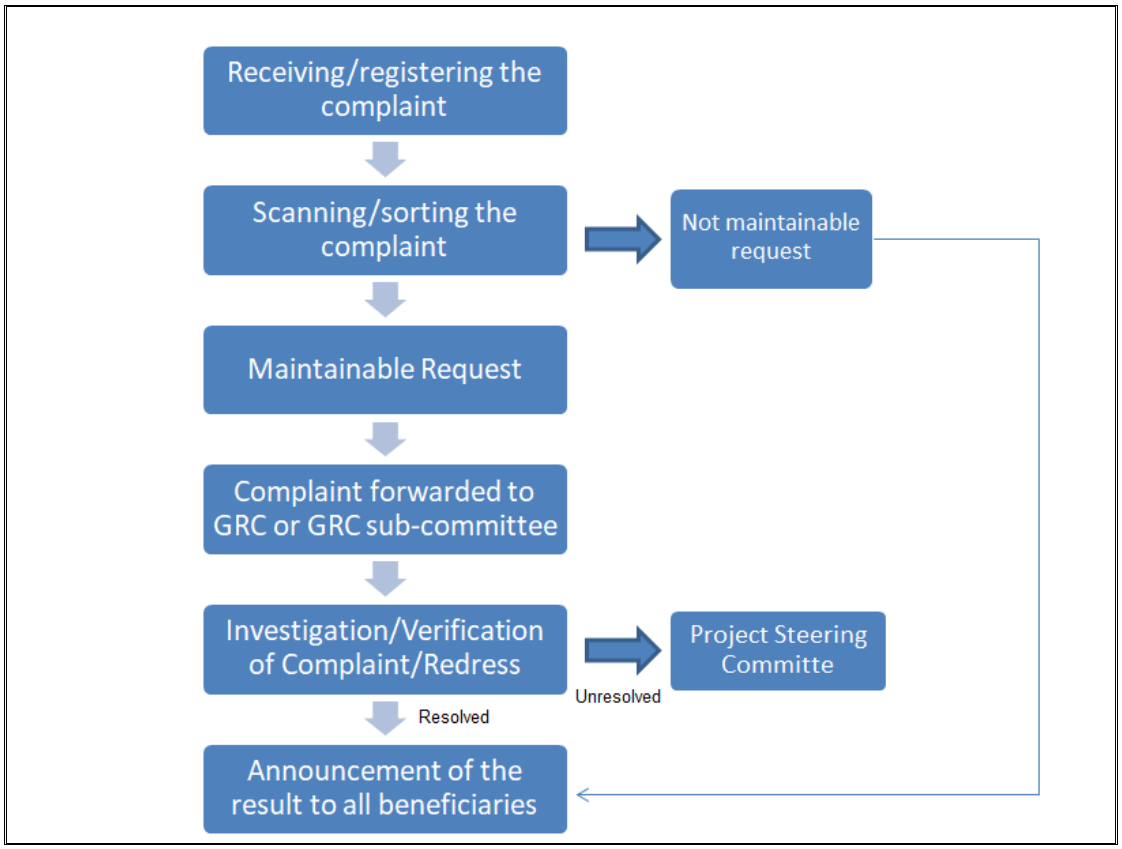


Figure VII.2 GRM Graph

The step-by-step grievance process to be adopted is summarized in the following bullets. Sample Grievance and Grievance Closeout Forms of KOSKI is presented in Annex-5. Also, the sample grievance register table is given in Table VII.2.

- **Submission of a complaint:** Receiving the grievance by any communication channel (KOSKI's website or e-mail, hotline) explained below.
- **Registration of complaint:** Registering/recording through making an entry in the register table and filling the Grievance Form.
- **Forwarding of complaint:** The complaint is forwarded to the relevant persons (site manager on construction sites and experts of the PIU) responsible for handling the complaint in not later than three working days upon receiving the complaint.

- **Evaluation of a complaint:** Evaluating the complaints within ten (10) working days and determining whether the complaint meets the admissibility criteria. If the complaint is not valid, providing relevant explanation to the complainant.
- **Response for a complaint**: If the complaint is valid, identifying and taking corrective measures for resolving the complaint by KOSKI in not later than fifteen (15) working days upon receiving. If resolving the complaint would take longer, a partial response could be provided to the complainant and fill the Grievance Closeout Form.
- **Recording the result of a complaint:** Recording the result of the complaint in register Table VII.2.
- **Right to appeal:** If the complaint cannot be resolved with the existing process, applicants can always apply to relevant legal institutions.

Table VII.2 Sample Grievance Register

Date of Grievance	Name of the Complainant	Subject of Grievance	Responsible Party	Corrective Action	State of Grievance Closure	Date of Closure	Remarks

Currently, KOSKI uses a hotline “185” which is accessible 24/7 for any emergencies, and communication link[9] through the official website of KOSKI, which also enables people to follow up their complaints. The project specific grievance redress mechanism will be adopted and used by KOSKI/PIU during both the construction and operation phases of the Project. All grievances related to the Project will be evaluated and responded to.

Apart from the means of GRM presented by KOSKI, all internal and external stakeholders will also have the opportunity to benefit from other grievance redress mechanisms if not satisfied with the solutions offered by the Project's GRM or have requests for a higher-level explanation through the following communication tools:

- Website : https://www.ilbank.gov.tr/form/bilgiedinmeuluslararasi
- E-mail: bilguidb@ilbank.gov.tr and etikuidb@ilbank.gov.tr
- Phone number: +90 312-508 79 79
- Address for Official Letter: ILBANK Department of International Relations, GRM Team (letters must be marked as personal or confidential) Emniyet Mahallesi Hipodrom Caddesi No:9/21 Yenimahalle /ANKARA

The Presidency’s Communication Centre (CIMER) provides a centralized complaint system for Turkish citizens, legal persons and foreigners. All internal and external stakeholders will also have the opportunity to benefit from CIMER. Individual applications can be carried out at the community relations desks at governorates, ministries and district governorates through the following communication tools.

- www.cimer.gov.tr

- Call Centre:150
- Phone number: +90 312 525 55 55
- Fax number: +90 0312 473 64 94
- Address for Official Letter: Republic of Türkiye, Directorate of Communications Kizilirmak Mahallesi Mevlana Bulvari No:144 CANKAYA/ANKARA
- Individual applications: Community relations desks at governorates, ministries, and district governorates
- Mail addressed to Republic of Türkiye, Directorate of Communications: cumhurbaskanligi@tccb.gov.tr

The Foreigners Communication Center (YIMER) provides a centralized complaint system for foreigners. Foreign internal and external stakeholders will have the opportunity to benefit from YIMER. Individual applications can be carried out at the Republic of Türkiye General Directorate of Migration Management through the following communication tools.

- www.yimer.gov.tr
- Call Centre: 157
- Phone number: +90 312 5157 11 22
- Fax number: +90 0312 920 06 09
- Address for Official Letter: Republic of Türkiye General Directorate of Migration Management, Camlica Mahallesi 122. Sokak No: 4 Yenimahalle /ANKARA
- Individual applications: Republic of Türkiye General Directorate of Migration Management.
- Mail addressed to Republic of Türkiye, Directorate of Communications

Any grievance and feedback lodged/conveyed through CIMER and/or YIMER related to the Project are received by Department for Planning and Coordination under the General Directorate of ILBANK. If the grievance and/or feedback is related with Department of International Relations, Department for Planning and Coordination will forward the complaint to the GRM Team with ensuring its anonymity and confidentiality by observing the requirements stipulated by the Law on the Protection of Personal Data (Law No. 6698, 2016). The complaints will be recorded by the GRM Team in the GRM database and managed as per GRM Procedures to timely inform the project on taking corrective actions. Both CIMER and YIMER will complement GRM throughout the project life.

If the complaint cannot be resolved with the existing process, applicants can always apply to relevant legal institutions. Such institutions can be summarized as follows:

- Civil Courts of First Instance,
- Administrative Courts,
- Commercial Courts and First Instance,
- Labor Courts, and
- Ombudsman (https://ebasvuru.ombudsman.gov.tr/)

Furthermore, communities and individuals, who believe that they are adversely affected by a WB supported project, may submit complaints to the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. The details are provided in the project-specific SEP.

Certain complaints warrant urgent action, and the regular GRM procedure may be inappropriate or too slow to prevent an issue from escalating. A separate fast-tracked channel within

the existing GRM, including guidance on the circumstances under which it should be employed, can help ensure that high-priority complaints are dealt with in a timely manner. In the case of complaints alleging serious harm or risk of harm, and/or serious rights violations, the GRM's standard operating procedures will call for a fast-track response, whether by the GRM or by immediate referral to another office or organization and immediate notification to the complainant of that referral.

Furthermore, the project GRM will include a channel to receive and address confidential complaints related with Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) and Gender Based Violence (GBV) with special measures in place. If an employee faces insults, ethnic discriminations or SEA/SH issue, s/he can either apply to a higher level superior or directly go to police station, as stipulated in the national referral system of the country for dealing such cases. The content and procedures of the project's GRM will also have a reporting line on such cases in regard to SEA/SH issues and will be handled under full confidentiality. The GRM focal point receiving the SEA/SH related grievance should direct this to national referral systems immediately and record that this has been directed, as set out in the GRM Procedure of ILBANK. All details of the complainant of the sensitive case will be kept strictly confidential.

Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns.

Project affected communities and individuals may submit their complaint to the Bank's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond.[10]

VII.4. Capacity Building and Training

One of the main necessities of the ESMP is trainings for the Project Owner's and contractor's top-level management and employees.

Necessary training will be given to the personnel immediately upon the recruitment process, which will be also refreshed during the work period and will be performed at a number of levels. Training will cover workers' rights, contract requirements, Code of Conduct, grievance redress mechanism and contact channels. Compliance with the rules of code of conduct, including awareness of and rules relating to gender-based violence, sexual harassment, sexual exploitation and abuse, which are included in the trainings to be provided, will be in the contract articles of the personnel. Some short-term training is required for the Environment Manager, 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 through 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 examined, and likely solutions provided to the PIU.

The mentioned training will take place in maximum two (2) days. This period will be determined by taking into account 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 PIU is also

[10] For information on how to submit complaints to the Bank's corporate Grievance Redress Service (GRS), please visit: http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

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 should be performed at the end of the training given to the personnel. This is intended 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 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 regarding Code of Conduct, GBV & SEA/SH, Grievance Redress Mechanism, EHS and WB Requirements, and
- First-Aid, Emergency Preparedness and Covid-19 Measures

Environmental and Social Trainings

Environmental and Social Trainings will cover the waste management, energy efficiency, waste that causes environmental pollution, hazardous waste management, traffic management, infectious diseases and grievance redress mechanism. Environmental and social trainings will be given to the appointed staff and workers of the Contractor by ILBANK before the construction starts. The planned training is expected to take four (4) hours. The training will be refreshed as the work site changes and/or workers change.

Chance Find Procedure Training

Chance Find Procedure (see Annex-8) training will cover the actions required if previously unknown heritage resources, particularly archaeological resources, during the project construction. The training will be given to the appointed staff and workers of the Contractor by ILBANK before the construction starts. The planned training is expected to take two (2) hours. The training will be refreshed as the work site changes and/or workers change.

Occupational Health and Safety Training

OHS Training will cover the work-site accidents and their causes in construction works, special working subjects according to the teams, technical subjects such as the correct use of hand tools and equipment. Also, the training will focus on information on labor legislation, legal rights and responsibilities of employees, workplace order, legal consequences arising from work accident and occupational disease. The training will be given to the workers of the Contractor by ILBANK before the construction starts. The planned training is expected to take two (2) hours. The training will be refreshed as the work site changes and/or workers change.

Induction Training

Induction Training will cover the current risks and potentially dangerous areas, emergency action and safety practices related to the site. The training will be given to the workers of the

Contractor by ILBANK two months before the construction starts. The planned training is expected to take two (2) hours. The training will be refreshed as the work site changes. Also, when a new worker arrives, the training will be repeated for that worker.

First Aid and Emergency Preparedness Training

The subjects of the First Aid and Emergency Preparedness Training will be defined by the relevant educational institutions. The training will be given to the appointed staff and workers of the Contractor before the construction starts. The planned training is expected to take 16 hours. The training will be refreshed as the work site changes and/or workers change.

Table VII.3 provides examples of the basic training for the ESMP implementation. The training programs will be developed annually and delivered by the PIU.

Table VII.3 Proposed Training Program

Module 1	
Training course	Environmental and social supervision, monitoring and reporting
Participants	Environmental staff, technical staff and administrative staff of the PIU
Time	Soon after the project effectiveness but at least one (1) month before the construction of the contract. The follow-up training will be scheduled as needed.
Duration	Two (2) days of training twice a year to be repeated on a yearly basis until the end of the DLP.
Content of the Training	General environmental and social management relating to the Project Requirements on environmental and social monitoring Monitoring and implementation of mitigation measures Guide and supervise contractor in implementation of the ESMP Documentation and reporting Code of conduct SEA/SH and GBV training/ awareness Risk response and control Other areas to be determined
Trainer	Environmental and Social Consultant or ILBANK
Module 2	
Training course	Implementation of mitigation measures
Participants	Contractor, related authorities: On-site construction management staffs, environmental staffs of contractor, related authorities
Time	After signing the works contract
Duration	Two (2) days of training twice a year to be repeated on a yearly basis depending on needs.
Content of the Training	Overview of potential impacts and mitigation measures

Module 1	
	Requirements of environmental monitoring Occupational Health and Safety Training Role and responsibilities of the contractor Content and methods of implementation of environmental mitigation measures Response and risk control Preparation and submission of report Risk response and control Other areas to be determined
Trainer	PIU with support of the ILBANK

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

- Purpose of ESMP regarding the Project activities,
- Requirements in management plans and monitoring activities to be performed within the scope of this plan,
- Understanding of the sensitive environmental and social receptors within the project area and its vicinity, and
- Awareness-raising about the potential risk and impacts from the project activities,
- Grievance redress mechanism developed within the scope of the project, grievance redress mechanism officer and employee rights,
- Community health and safety risks and measures,
- OHS, first aid, emergency preparedness,
- Covid-19 related measures and protection measures,
- Code of conduct and clothing,
- Communication with the local community,
- Code of conduct training, including gender-based violence, sexual harassment, sexual exploitation and abuse,
- Traffic and road safety principles, and
- Training aiming at the sorting, storage and environmental planning of waste.

VII.5. Environmental and Social Monitoring Report

Environmental and Social Monitoring Report (ESMR) is an important tool to record ESMP's monitoring activities.

The results of technical assessments of relevant issues given in Table VI.3 and Table VI.4will be presented in ESMRs. The results shall be compared with the national legislative requirements and WBG General EHS Guidelines. The results of the visual observations together with the key issues observed will be submitted in written form. ESMRs will focus on the negative findings as well as the good practices. The negative findings will be supported with photographical evidence. For each negative observation, a corrective action will be suggested with a reasonable due date. Any analysis/sampling/measurement report will be given as an annex of the ESMR together with the relevant assessment and necessary remediation activities. The findings of the ESMRs will keep this ESMP as a living document; thus, the ESMP will be reviewed and revised by the environmental and social unit of the KOSKI according to these findings, if necessary, to do so.

In that scope, Contractor will prepare monthly ESMRs to be submitted to KOSKI and KOSKI's

PIU will produce quarterly ESMRs for all sub-project sites and monitor quality of reporting throughout the duration of works and reporting requirements will be included in bidding documents of the contractors. KOSKI will be submitting these reports to ILBANK together with the Grievance Register. Also, ILBANK will prepare and submit regular ESMRs (semi-annually) on the environmental, social, health and safety performance of the Project, including but not limited to the implementation of the ESMP, status of preparation and implementation of E&S documents required under the ESMP, stakeholder engagement activities, performance of the grievance redress mechanism(s) to the WB together with Project Progress Reports.

The reports will be prepared in both Turkish and English, and annual ESMRs will be disclosed through KOSKI's website and at least Turkish versions will be made physically available at mukhtar offices at Karapinar Group Districts.

VIII. CONSULTATIONS WITH AFFECTED GROUPS AND NON-GOVERNMENTAL ORGANIZATIONS

The E&S Consultant is prepared the Draft ESMP in compliance with the stipulated standards. The Draft ESMP was subject to stakeholder consultation process aiming to inform the public and to receive comments, questions and concerns of the project-affected groups and local NGOs (see Table VIII.1) in line with the procedure stipulated by the international requirements. In this regard the non-technical summary of the Draft ESMP was disclosed before and during the stakeholder consultation meeting.

In the meeting the E&S Consultant made a presentation that provided information on the project description, its potential environmental and social impacts and risks and then comments and expectations of the stakeholders was received through a questions and answers session. Also, a Sample Consultation Form provided in Annex-6 was filled by the E&S consultant during the meeting. The inputs of the public hearing and discussions were taken into account and addressed in this ESMP and the SEP were revised accordingly. The consultation activities were presented considering the content provided in “Annex 3: Table of Contents for the Public Consultation Documentation” of ESMF prepared by ILBANK for SCP-II AF.

All of the required COVID-19 measures will be in place during the organization and execution of the stakeholder engagement activities including the stakeholder consultation meeting. In the scope of health and safety risks associated with the project activities, the number of personnel, who are infected with a contagious disease, including COVID-19 will be monitored. According to Interim Advice for IFC Clients on Safe Stakeholder Engagement in the Context of COVID-19 and “Guidance to COVID-19 Outbreak Management and Working” prepared by the Ministry of Health, to make public participation happen safely in terms of COVID-19, virtual, remote and safe engagement approaches such as online communication tools and audio options will be considered.

VIII.1. Identification of Consultation Participants

In order to develop an effective consultation process, it is necessary to identify stakeholders and determine who is likely to be affected (both directly and indirectly) by the Project (“affected parties”); who may have an interest in the Project (“interested parties”); and have the potential to influence project outcomes or operations. In addition, it is also essential to identify individuals and groups that may be differentially affected by the Project because of their disadvantaged or vulnerable status in order to construct an effective consultation process. For this purpose, a SEP has been prepared by E&S Consultant. In this Plan, individuals/groups and institutions that will be affected or can be affected by this project have been identified.

The persons and institutions that are affected or likely to be affected by the Project provided in Table VIII.1 are expected to attend the stakeholder consultation meetings. In this framework, the points taken into account in the determination of the stakeholder consultation meeting participants, who will be affected or have the potential to be affected by the Project are as follows:

- The impact area of Project
  - Living in residential areas close to the project area,
  - Being affected by problems such as noise and dust that may arise during the construction phase of the Project,
- The nature of impact
  - According to the nature of the impact, local/national government types, NGOs, academic institutions, and research institutions that may be related to this impact issue.

It should be noted that the presented project-affected groups and local NGOs list provides the most prominent stakeholders and that organizations or groups which are not listed, and wish to be informed about the Project, can make contact ILBANK and/or KOSKI to provide their contact information. The identified potential stakeholders are listed in Table VIII.1.

Table VIII.1 List of Potential Stakeholders

Level	Category	Organization / Entity
Internal	Project Parties	ILBANK
		KOSKI
		Contractor/s
		Sub-contractor/s
		Project personnel
International	International Institutions/Lenders	World Bank
National	Ministries and Relevant Central Authorities	Ministry of Environment, Urbanization and Climate Change
		Ministry of Agriculture and Forestry
		Ministry of Health
		Ministry of Energy and Natural Resources
		Ministry of Foreign Affairs
		Ministry of Labor and Social Security
		General Directorate of Environmental Management
		General Directorate of State Hydraulic Works (DSİ)
		General Directorate of Water Management
		Ministry of Interior Disaster and Emergency Management Presidency (AFAD)
	NGOs	Chamber of Urban Planners
		Chamber of Environmental Engineers
		Chamber of Agricultural Engineers
		Environment Foundation of Türkiye
		Environment Protection Foundation of Türkiye
		Nature Association
		Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection of Natural Habitats (TEMA)
		Waste and Environmental Management Association (TAYCED)
		Foundation for the Protection and Promotion of the Environment and Cultural Heritage (CEKUL)
		WWF Türkiye
Local	Governmental / Local Authorities and Agencies	Governorship of Konya
		Konya Metropolitan Municipality
		Konya Regional Directorate of Cultural Heritage Preservation Board
		Konya Provincial Directorate of Environment, Urbanization and Climate Change
		Konya Provincial Directorate of Agriculture and Forestry
		Konya Provincial Directorate of Health
		Karapinar Municipality
		Cumra Municipality
		Meram Municipality

Level	Category	Organization / Entity
		Karatay Municipality
		District Governor of Karapınar
		District Governor of Meram
		District Governor of Karatay
		District Governor of Cumra
		Karapinar Social Assistance and Solidarity Foundation
		Meram Social Assistance and Solidarity Foundation
		Cumra Social Assistance and Solidarity Foundation
		Karatay Social Assistance and Solidarity Foundation
		Provincial AFAD offices
	NGOs	Related local NGOs (if any)
	Residential Areas/Local Communities/Potentially Project Affected People	Akcayazı Neighborhood
		Hotamıs Neighborhood
		Sazlipinar Neighborhood
		Buyukaslama Neighborhood
		Karkin Neighborhood
		Abditolu Neighborhood
		Ismil Neighborhood
		Ovakavagi Neighborhood
		Hayiroglu Neighborhood
		Bakirtolu Neighborhood
		Sakyatan Neighborhood
		Satir Neighborhood
		Kasinhani Neighborhood
		Boruktolu Neighborhood
		Cariklar Neighborhood
		İcericumra Neighborhood
		Gaziosmanpasa Neighborhood
	Business Enterprises	Related business enterprises within the Project Impact Area (if any)
	Universities	Selcuk University
		Necmettin Erbakan University
		Konya Technical University
		KTO Karatay University
		Konya Food and Agriculture University

Information obtained from formal/informal interviews with representatives/key informants of neighborhoods within the project area are used to identify vulnerable/disadvantaged individuals/ groups. In addition, the guidance of the official authorities and public institutions in the region has helped identify possible vulnerable/disadvantaged individuals/groups. In the scope of this project, children, the elderly, and the disabled people, who live close to the project area and live in areas where noise and dust problems are likely to occur during the construction phase of the Project, are considered as vulnerable/disadvantaged individuals/groups. However, the details of vulnerable/disadvantaged individuals/ groups have been identified in the SEP as one of the key components of the plan.

VIII.2. Stakeholder Consultation

The stakeholder consultation meeting of the Project was held on 19th of December 2023. KOSKI Karapinar Branch Office Service Building was selected by KOSKI as the meeting venue, which is located at the Karapinar District of Konya Province. The meeting venue had enough capacity and facilities to ensure comfortable and efficient communication during the event.

Prior to stakeholder consultation meeting, several information dissemination methods were used to inform the related public authorities (including provincial governorates, district governorates, municipality mayors, etc.), mukhtars and local people, and local media agencies and wider public including Non-Governmental Organizations (NGOs), etc. During the announcement process of the stakeholder consultation meeting, initially announcements were published in local newspapers on December 07, 2023 and official website of KOSKI on November 31, 2023. Advertisement on newspaper and KOSKI official website to announce the meeting is given in Annex-9. In addition, before the commencement of meeting, project information brochures were distributed to the participants and maps of the Project were also made available for them. The brochure is provided in Annex-10.

The meeting was held with the participation of the local people together with the representatives of KOSKI (Project Beneficiary and Executing Organization), and ENCON (the E&S Consultant). The photographs from meeting are presented in Annex-10.

The meeting started with an introduction and explanation of the purpose and scope of the meeting and followed by a presentation by ENCON and a final discussion session where questions, concerns and suggestions of the participants were received. The presentation used during the meeting is provided in Annex-11. The main topics covered in the presentations were as follows:

- What is the Project?
- Who are the Project Main Executive Body, the Project Beneficiary and Executing Organization and the Project Sponsors?
- What are the Anticipated Benefits of the Project?
- What is the Environmental and Social Impact Assessment Studies?
- Stakeholder Engagement: How to Participate into the Process?
- Discussion (Questions and Answers) Session

Large-scale (A1 size) maps showing the Project areas were provided for the public.

A total of 11 people participated in the meeting for the Project. List of participants to the SCM are presented Annex-12 of this document. The meeting lasted for about one hour. The questions, issues, concerns and suggestions raised by the participants during the SCM were categorized and a summary of the SCM findings is provided in Table VIII.2.

Table VIII.2 Summary of Stakeholder Consultation Meeting Findings

Party who Raised the Question/ Issue/Concern/ Suggestion	Question/Issue/Concern/ Suggestion Raised	Response of Project Sponsors/ Environmental Consultant
Participant 1*	When will the project start and how long will it last?	It was informed that the construction phase will begin after the tender for the project is completed, that the construction is expected to start in April and that the construction is expected to last 12 months.

Party who Raised the Question/ Issue/Concern/ Suggestion	Question/Issue/Concern/ Suggestion Raised	Response of Project Sponsors/ Environmental Consultant
Participant 2*	Where is the water source?	It was informed that Göksu River water will be used as a water source through the Blue Tunnel project.
Participant 3*	Which settlements will be supplied with water with this project?	It was informed that with this project, water will be supplied to Karatay, Çumra and Meram districts.
Participant 4*	What is the quality of the water to be supplied?	It was informed that the water of the Göksu River, where the water will be supplied, is spring water and has a higher quality than groundwater. It was also stated that the water will be purified in the Select Drinking Water Treatment Facility and drinkable quality water will be obtained.
Participant 5*	What is done when archaeological remains are found during studies?	It was informed that the Chance Find Procedure will be applied, the work will be stopped immediately, the nearest local administration and the Museum Directorate will be informed, and when the work starts again, the work will be carried out in company with the relevant authorities.
Participant 6*	Will there be employees in the pumping station during the operation phase?	It was informed that a small number of personnel and a SCADA system would be used in the enterprise.

**The participation's name is not given because of the Law on Protection of Personal Data.*

VIII.3. Consultation Documentation

In the scope of stakeholder consultations with the project affected groups and non-governmental organizations, it is required to hold one (1) stakeholder consultation meeting as per WB OP 4.01. This process was carried out by following the steps below, which will be also applicable for the future meetings.

Place and Date of Consultation Meetings

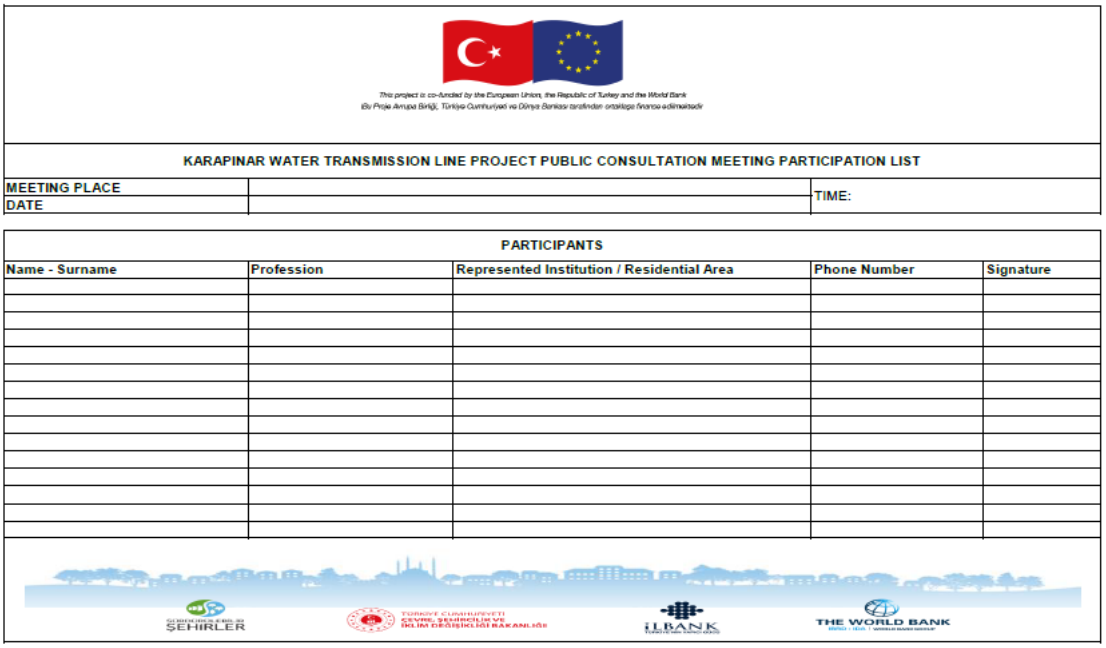
When the date and place of the stakeholder consultation meeting are clarified, the common pactice of the Project is to announce the date and place through the local media, Notice Board of the KOSKI, in public places such as mosques, schools, mukhtars' offices, etc. and an information text sent to the neighborhood mukhtars. The announcement methods preferred for the stakeholder consultation meeting held on 19th of December 2023 are provided in Table VIII.3 and this sample table will also be used for the future meetings.

Table VIII.3 Details of Stakeholder Consultation Meeting

No	Location	Date	Notes
1	Karapinar District	19.12.2023	Announcement of stakeholder consultation has been published in media (local and/or national newspaper) Announcement has been placed at the Notice Board and website of KOSKI, mukhtar office, local mosques and schools. Non-technical Summary of the Draft ESMP Report has been disclosed

Details on Participants

Information on the participants of the stakeholder consultation meetings are recorded via a "participant list" filled in by the attendees during the meeting. The participation list format is given in Figure VIII.1.



KARAPINAR WATER TRANSMISSION LINE PROJECT PUBLIC CONSULTATION MEETING PARTICIPATION LIST

MEETING PLACE		TIME:
DATE		

PARTICIPANTS

Name - Surname	Profession	Represented Institution / Residential Area	Phone Number	Signature

Figure VIII.1 Participation List of Consultation Meetings

The list of participants and/or other forms that were include personal information such as duties, e-mail addresses, signature, contact numbers, etc. of the participants were kept in the records and were shared in the project documents (i.e. ESMP and SEP for the 1st stakeholder consultation meeting, while ESMRs for the future meetings) after the respective lines containing personal data are blurred considering “The Law on The Protection of Personal Data”. Moreover, the screenshots of the newspaper ads, full minutes of the meeting and all materials/documents/ forms related with the consultation activities were provided as an annex to this ESMP and the SEP.

Meeting Program

The program and the scope of the meetings to be held with the participation of the relevant beneficiaries and stakeholders, local people and non-governmental organizations will be decided in due course of the project implementation. The presentation, which was demonstrated and explained to the people at the stakeholder consultation meeting and brochures, were prepared by TUMAS & ENCON Joint Venture, the E&S Consultant. In addition, during the meeting, large-scale (in A1 format) map showing the project areas and brochures were provided for the participants.

Summary Meeting Reports

KOSKİ will be responsible for recording the minutes of the meeting and providing the details

of the meetings in the ESMRs. For the stakeholder consultation meeting held on 19th of December 2023, this ESMP and SEP are updated to include the minutes and details of the meeting, including the photographs, if any, screenshots of the newspaper ads, participants list, brochures, full minutes of the meeting as an appendix, etc.

Questions, issues, concerns and suggestions raised by the participants during the stakeholder consultation meeting will be categorized and a summary of the meeting findings will be prepared as provided in Section VIII.2.

After the stakeholder consultation meeting on draft ESMP, this ESMP is finalized, incorporating the results of the public/stakeholder consultation and the final ESMP will be published by ILBANK/KOSKI and on WB website.

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    -

ANNEXES

ANNEX-1- CONTRIBUTORS

Name-Surname	Profession
Dr. Ibrahim Haluk CERIBASI	Environmental Engineer
Dr. Okan BILKAY	Mechanical Engineer
Tolga BALTA	Environmental Engineer
Huseyin TEKIN	Environmental Engineer
Sumeyra CAKIR	Biologist
Nazan Duygu YIGITER	Urban Planner, MSc.
Baris USLU	Hydrogeology Engineer
Dilan ELVEREN	Sociologist
Asli KARABACAK	Environmental Engineer, MSc.
Dicle AGIS	Environmental Engineer
Reyyan KARAHAN	Environmental Engineer
Serkan KUCUKUNSAL	Environmental Engineer, MSc.

ANNEX-2- LAND USE PERMITS

T.C.
TARIM VE ORMAN BAKANLIĞI
Tarımsal Araştırmalar ve Politikalar Genel Müdürlüğü
Konya Toprak Su ve Çölleşme ile Mücadele Araştırma Enstitüsü Müdürlüğü

Sayı :98620309-622.02-E.1975993
Konu :Karapınar ilçesi içme suyu hattı

16.07.2020

KONYA SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜNE

İlgi : Tarımsal Araştırmalar ve Politikalar Genel Müdürlüğü (İdari İşler Çalışma Grubu)'nün 13.07.2020 tarihli ve 79765350-622.02-E.1952353 sayılı yazısı.

Genel Müdürlüğünüzün 01.07.2020 tarih ve 98067411-000-6662 sayılı yazısıyla müdürlüğümüze bağlı Karapınar işletmesinden içme suyu isale hattının geçmesi için izin istenilmişti.

Genel Müdürlüğümüzün ilgide kayıtlı yazısı ile; isale hattı geçmesine, arazi bütünlüğünü bozmayacak ve arge çalışmalarına zarar vermeyecek koşuluyla izin verilmiştir.

Gereğini arz ederim.

Mehmet Ali DÜNDAR
Enstitü Müdürü

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

Evrak Doğrulama Kodu : JCWOVJOQ Evrak Takip Adresi: https://www.turkiye.gov.tr/tarim-ve-orman-bakanligi-ebys

Yaylapınar Süleymaniye Mah. Özbayram Sok. No:46 PK:42151
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Tel: (0332) 359 66 12 Faks: (0332) 359 66 34
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Bilgi için:Necati ŞİMŞEKLİ
Mühendis
Telefon No:(332) 755 67 74

ANNEX-3-EIA EXEMPTION DECISION

124

000375

T.C.
KONYA VALİLİĞİ
Çevre ve Şehircilik İl Müdürlüğü

Sayı : E-47342952-220.03-336728
Konu : ÇED Muafiyeti (KOSKİ-İsale Hattı)

22.02.2021

KONYA SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜNE
(Yatırım ve İnşaat Dairesi Başkanlığı)

İlgi : a) 18/02/2021 tarihli ve 98067411-000-2616 sayılı yazınız.
b) 22/02/2021 tarihli ve 135965 Referans No'lu Başvuru.

Konya İli Karapınar İlçe merkezi ve Akçayazı, Hotamış, Sazlıpınar Mahalleleri, Çumra İlçesine bağlı B.Aşlama, Karkın, Abditolu Mahalleleri, Karatay İlçesine bağlı İsmil, Ovakavağı, Hayıroğlu, Bakırtolu, Sakyatan, Şatır Mahalleleri, Meram İlçesine bağlı Kaşınhanı, Boruktolu, Çarıklar Mahalleleri, Ahırlı İlçe merkezi ve Akkise, Aliçerçi, Bademli, Balıklava, Büyüköz, Çiftlik, Küçüköz, Erdoğan, Karacakuyu, Kayacık Mahalleleri, Seydişehir İlçesine bağlı Aşağıkaraören, Başkaraören, Ortakaraaören Mahalleleri, Yalıhüyük İlçe merkezi ve Arasöğüt, Saray Mahallelerinde Konya Su ve Kanalizasyon İdaresi Genel Müdürlüğü tarafından yapılması planlanan "Karapınar ve Suğla Grubu İçme Suyu Temini İsale Hattı" projesi, 25/11/2014 tarih ve 29186 sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren ÇED Yönetmeliği Listelerinde yer almadığından kapsam dışı olarak değerlendirilmiştir.

Ancak, planlanan yatırım ile ilgili olarak, 5491 sayılı kanunla değişik 2872 sayılı Çevre Kanunu ile bu Kanuna istinaden çıkarılan Yönetmeliklerin ilgili hükümlerine uyulması ve diğer mer'i mevzuat çerçevesinde öngörülen gerekli izinlerin alınması, ekolojik dengenin bozulmamasına, çevrenin korunmasına ve geliştirilmesine yönelik tedbirlere riayet edilmesi hususunda;

Gereğini rica ederim.

Özgür SOMUNCU
Vali a.
İl Müdür Yardımcısı

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Belge Doğrulama Kodu : FMIGSFAW Belge Doğrulama Adresi: https://www.turkiye.gov.tr/cevre-ve-sehircilik-bakanligi

Horozluhan Mh. Abdulbasri Sk.No:2 Selçuklu/KONYA
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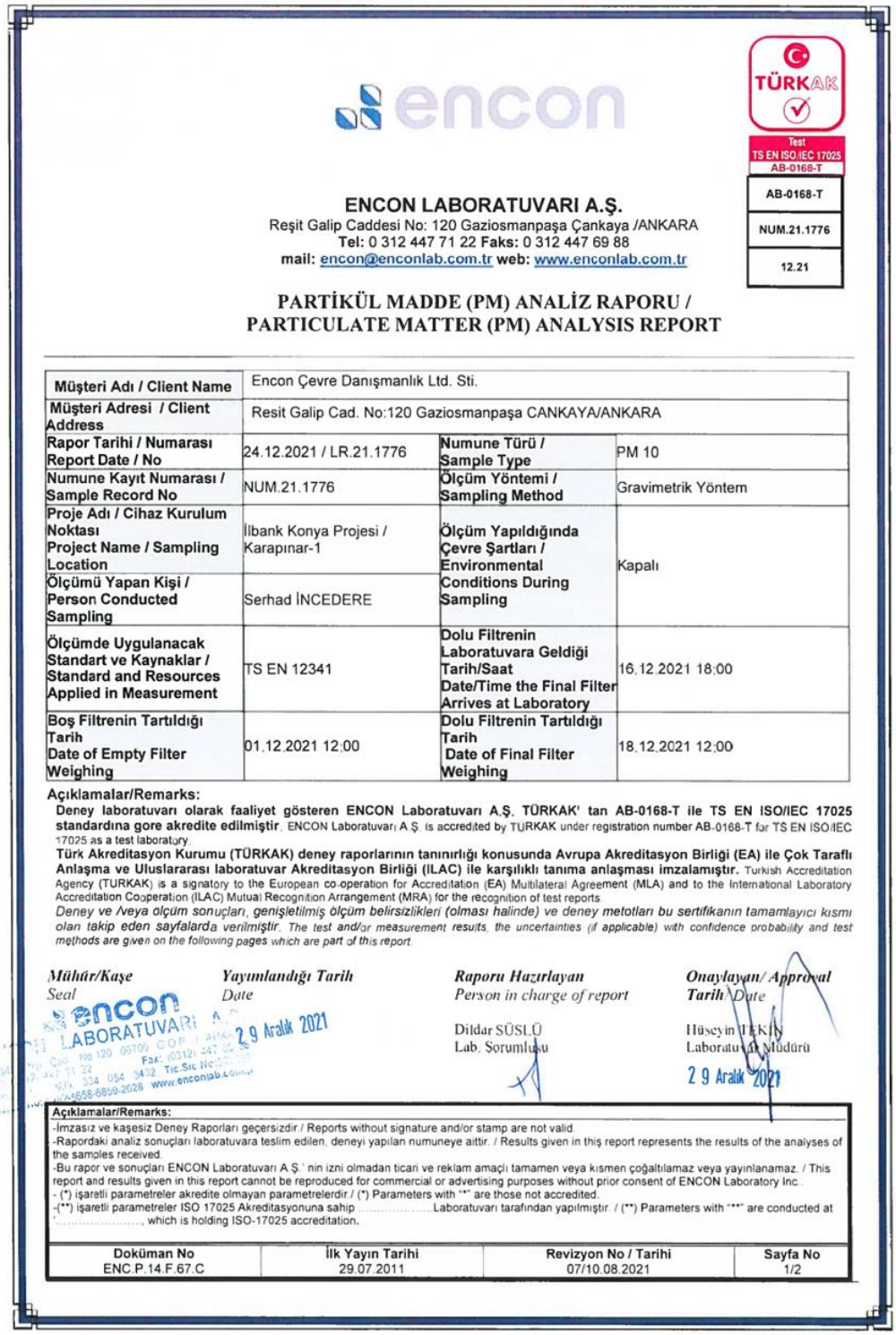
Bilgi için:Tuba KALKAN GÜRCAN
Mühendis
Telefon No:(332) 224 56 00-5758

ANNEX-4-LABORATORY RESULTS



encon

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

AB-0168-T
NUM.21.1776
12.21

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

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

Müşteri Adı / Client Name	Encon Çevre Danışmanlık Ltd. Sti.		
Müşteri Adresi / Client Address	Resit Galip Cad. No:120 Gaziosmanpaşa CANKAYA/ANKARA		
Rapor Tarihi / Numarası Report Date / No	24.12.2021 / LR.21.1776	**Numune Türü / Sample Type**	PM 10
Numune Kayıt Numarası / Sample Record No	NUM.21.1776	**Ölçüm Yöntemi / Sampling Method**	Gravimetrik Yöntem
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	İlbank Konya Projesi / Karapınar-1	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Kapalı
Ölçümü Yapan Kişi / Person Conducted Sampling	Serhad İNCEDERE		
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	**Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat Date/Time the Final Filter Arrives at Laboratory**	16.12.2021 18:00
Boş Filtrenin Tartıldığı Tarih Date of Empty Filter Weighing	01.12.2021 12:00	**Dolu Filtrenin Tartıldığı Tarih Date of Final Filter Weighing**	18.12.2021 12:00

Açıklamalar/Remarks:
Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore 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.
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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.

Mühür/Kaşe *Seal*	*Yayımlandığı Tarih* *Date*	*Raporu Hazırlayan* *Person in charge of report*	*Onaylayan/ Approval* *Tarih Date*
encon LABORATUVARI	29 Aralık 2021	Dildar SÜSLÜ Lab. Sorumlusu	Hüseyin ÜRKİN Laboratuvar Müdürü 29 Aralık 2021

Açıklamalar/Remarks:
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Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	07/10.08.2021	1/2

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TÜRKAK
Test
TS EN ISO/IEC 17025
AB-0168-T
AB-0168-T
NUM.21.1776
12.21

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

Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	Cihaz Adı / Device Name		Marka / Model Brand / Model		Seri No / Serial No	
	GC Model Tartım Cihazı		Sartorius/GC		18805603	
	PM10 Örnekleme Cihazı		GmbH MCZ		LVS-1-1203-085	
	Sıcaklık ve Nem Veri Toplayıcı Cihazı		CEM (DT-172 Model)		9115542	
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	**Filtrenin Boş Ağırlığı (g) Empty Weight of Filter**	**Filtrenin Dolu Ağırlığı (g) Final Weight of Filter**	**Filtrenin Takılma Tarihi Date of Filter Set**	**Filtrenin Çıkarılma Tarihi Date of Filter Take off**	**Geçen Hava Miktarı (m^3) Amount of air passes (m^3)**	**PM10 Sonuç /Result ($\mu g/m^3$)**
533461/4169495	0.12723	0.12987	13.12.2021	14.12.2021	49.30	53.55

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.
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TÜRKAK
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AB-0168-T
NUM.21.1777
12.21

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

Müşteri Adı / Client Name	Encon Çevre Danışmanlık Ltd. Sti.		
Müşteri Adresi / Client Address	Resit Galip Cad. No:120 Gaziosmanpaşa CANKAYA/ANKARA		
Rapor Tarihi / Numarası Report Date / No	24.12.2021 / LR.21.1777	**Numune Türü / Sample Type**	PM 2.5
Numune Kayıt Numarası / Sample Record No	NUM.21.1777	**Ölçüm Yöntemi / Sampling Method**	Gravimetrik Yöntem
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	İlbank Konya Projesi / Karapınar-1	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Kapalı
Ölçümü Yapan Kişi / Person Conducted Sampling	Serhad İNCEDERE		
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	**Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat Date/Time the Final Filter Arrives at Laboratory**	16.12.2021 18:00
Boş Filtrenin Tartıldığı Tarih Date of Empty Filter Weighing	01.12.2021 12:00	**Dolu Filtrenin Tartıldığı Tarih Date of Final Filter Weighing**	18.12.2021 12:00

Açıklamalar/Remarks:

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TURKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a test laboratory

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Mühür/Kaşe *Seal*	*Yayımlandığı Tarih* *Date*	*Raporu Hazırlayan* *Person in charge of report*	*Onaylayan/ Approval* *Tarih/ Date*
ENCON LABORATUVARI A.Ş. Reşit Galip Cad. No:120 06700 G.O.P. Çankaya/ANKARA Tel: (0312) 447 71 22 Fax: (0312) 447 69 88 Cumhuriyet V.D. 334 051 3432 Tic.Sic.No:[illegible] Mersis No: 4282-5658-0859-2628 www.enconlab.com.tr	29 Aralık 2021	Dildar SÜSLÜ Lab. Sorumlusu	Hüseyin TEKİN Laboratuvar Müdürü 29 Aralık 2021

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

Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	Cihaz Adı / Device Name	Marka / Model Brand / Model	Seri No / Serial No
	GC Model Tartım Cihazı	Sartorius/GC	18805603
	PM10 Örnekleme Cihazı	Leckel	LVS3-2796105
	Sıcaklık ve Nem Veri Toplayıcı Cihazı	CEM (DT-172 Model)	9115542

Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	Filtrenin Boş Ağırlığı (g) Empty Weight of Filter	Filtrenin Dolu Ağırlığı (g) Final Weight of Filter	Filtrenin Takılma Tarihi Date of Filter Set	Filtrenin Çıkarılma Tarihi Date of Filter Take off	Geçen Hava Miktarı (m^3) Amount of air passes (m^3)	PM10 Sonuç /Result ($\mu g/m^3$)
533461/4169495	0.12810	0.12987	13.12.2021	14.12.2021	41.81	42.33

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
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TÜRKAK
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AB-0168-T
NUM.21.1778
12.21

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

Müşteri Adı / Client Name	Encon Çevre Danışmanlık Ltd. Sti.		
Müşteri Adresi / Client Address	Resit Galip Cad. No:120 Gaziosmanpaşa CANKAYA/ANKARA		
Rapor Tarihi / Numarası Report Date / No	24.12.2021 / LR.21.1778	**Numune Türü / Sample Type**	PM 10
Numune Kayıt Numarası / Sample Record No	NUM.21.1778	**Ölçüm Yöntemi / Sampling Method**	Gravimetrik Yöntem
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	İlbank Konya Projesi / Karapınar-2	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Kapalı
Ölçümü Yapan Kişi / Person Conducted Sampling	Serhad İNCEDERE		
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	**Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat Date/Time the Final Filter Arrives at Laboratory**	16.12.2021 18:00
Boş Filtrenin Tartıldığı Tarih Date of Empty Filter Weighing	01.12.2021 12:00	**Dolu Filtrenin Tartıldığı Tarih Date of Final Filter Weighing**	18.12.2021 12:00

Açıklamalar/Remarks:

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TURKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a test laboratory.

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Mühür/Kaşe *Seal*	*Yayımlandığı Tarih* *Date*	*Raporu Hazırlayan* *Person in charge of report*	*Onaylayan/ Approval* *Tarih / Date*
encon LABORATUVARI A.Ş.	29 Aralık 2021	Dildar SÜSLÜ Lab. Sorumlusu	Hüseyin TENİN Laboratuvar Müdürü 29 Aralık 2021

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Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	07/10.08.2021	1/2

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NUM.21.1778
12.21

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

Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	Cihaz Adı / Device Name	Marka / Model Brand / Model	Seri No / Serial No
	GC Model Tartım Cihazı	Sartorius/GC	18805603
	PM10 Örnekleme Cihazı	GmbH MCZ	LVS-1-1203-085
	Sıcaklık ve Nem Veri Toplayıcı Cihazı	CEM (DT-172 Model)	9115542

Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	Filtrenin Boş Ağırlığı (g) Empty Weight of Filter	Filtrenin Dolu Ağırlığı (g) Final Weight of Filter	Filtrenin Takılma Tarihi Date of Filter Set	Filtrenin Çıkarılma Tarihi Date of Filter Take off	Geçen Hava Miktarı (m^3) Amount of air passes (m^3)	PM10 Sonuç /Result ($\mu g/m^3$)
461099/4167293	0.12652	0.12790	14.12.2021	15.12.2021	50.06	27.57

ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
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Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	07/10.08.2021	2/2

This project is co-funded by the European Union, the Republic of Turkey and the World Bank
Bu Proje Avrupa Birliği, Türkiye Cumhuriyeti ve Dünya Bankası tarafından ortaklaşa finanse edilmektedir

ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

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

AB-0168-T
NUM.21.1779
12.21

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

Müşteri Adı / Client Name	Encon Çevre Danışmanlık Ltd. Sti.		
Müşteri Adresi / Client Address	Resit Galip Cad. No:120 Gaziosmanpaşa CANKAYA/ANKARA		
Rapor Tarihi / Numarası Report Date / No	24.12.2021 / LR.21.1779	**Numune Türü / Sample Type**	PM 2.5
Numune Kayıt Numarası / Sample Record No	NUM.21.1779	**Ölçüm Yöntemi / Sampling Method**	Gravimetrik Yöntem
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	İlbank Konya Projesi / Karapınar-2	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Kapalı
Ölçümü Yapan Kişi / Person Conducted Sampling	Serhad İNCEDERE		
Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement	TS EN 12341	**Dolu Filtrenin Laboratuvara Geldiği Tarih/Saat Date/Time the Final Filter Arrives at Laboratory**	16.12.2021 18:00
Boş Filtrenin Tartıldığı Tarih Date of Empty Filter Weighing	01.12.2021 12:00	**Dolu Filtrenin Tartıldığı Tarih Date of Final Filter Weighing**	18.12.2021 12:00

Açıklamalar/Remarks:

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore 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.

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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.

Mühür/Kaşe Seal	*Yayımlandığı Tarih Date*	*Raporu Hazırlayan Person in charge of report*	*Onaylayan/Approval Tarih Date*
encon LABORATUVARI A.Ş.	29 Aralık 2021	Dildar SÜSLÜ Lab. Sorumlusu	Hüseyin TEKİN Laboratuvar Müdürü 29 Aralık 2021

Açıklamalar/Remarks:

-İmzasız ve kaşesiz Deney Raporları geçersizdir / Reports without signature and/or stamp 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.
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TÜRKAK
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AB-0168-T
NUM.21.1779
12.21

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

Deneyde Kullanılacak Cihaz ve Malzeme Bilgileri / Device and Equipment Name Used in Analysis	Cihaz Adı / Device Name	Marka / Model Brand / Model	Seri No / Serial No
	GC Model Tartım Cihazı	Sartorius/GC	18805603
	PM10 Örnekleme Cihazı	Leckel	LVS3-2796105
	Sıcaklık ve Nem Veri Toplayıcı Cihazı	CEM (DT-172 Model)	9115542

Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	Filtrenin Boş Ağırlığı (g) Empty Weight of Filter	Filtrenin Dolu Ağırlığı (g) Final Weight of Filter	Filtrenin Takılma Tarihi Date of Filter Set	Filtrenin Çıkarılma Tarihi Date of Filter Take off	Geçen Hava Miktarı (m^3) Amount of air passes (m^3)	PM10 Sonuç /Result ($\mu g/m^3$)
461099/4167293	0.12907	0.12993	14.12.2021	15.12.2021	49.85	17.25

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.
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Doküman No	İlk Yayın Tarihi	Revizyon No / Tarihi	Sayfa No
ENC.P.14.F.67.C	29.07.2011	07/10.08.2021	2/2

SÜRDÜRÜLEBİLİR ŞEHİRLER
TÜRKİYE CUMHURİYETİ ÇEVRE, ŞEHİRCİLİK VE İKLİM DEĞİŞİKLİĞİ BAKANLIĞI
İLBANK TÜRKİYE'NİN YAPICI GÜCÜ
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TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T
LR.21.1765
12.21

DENEY RAPORU / TEST REPORT

Müşteri Adı / Adresi Client Name / Address	Encon Cevre Danısmanlık Ltd. Sti. Resit Galip Cad. No:120 Gaziosmanpasa CANKAYA/ANKARA
Rapor Tarihi / Sayfa Sayısı Report Date / Number of Pages	29.12.2021 / 2
Numune Kayıt No Sample Record Number	NUM.21.1765
Numuneyi Alan Kurum / Kuruluş Sampler Institution / Company	ENCON Laboratuvarı A.Ş.
Numune Alınan Yer Sampling Location	Konya
Numune Türü / Numune İşareti Sample Type / Sample Sign	Yeraltı Suyu / Karapınar -1
Numunenin Alınış Şekli Sampling Type	Anlık Numune
Numuneyi Alan Person Conducted Sampling	Serhad Incedere
Numune Alma / Kabul Tarihi Sampling Date / Date of Samples Received	15.12.2021 / 16.12.2021
Numunenin Teslim Koşulları Delivery Conditions of the Sample	Mühürsüz , Cam Sise, Plastik Sise
Numune Alımında Çevre Şartları Environmental Conditions During Sampling	Açık
Açıklamalar Remarks	Müşteri talebi üzerine özel istek numunesi olarak çalışılmıştır. Bu rapor çevre mevzuatına ilişkin resmi işlemlerde kullanılamaz.
Deneyin Yapıldığı Tarih Date of Test	16.12.2021 - 28.12.2021

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TURKAK under registration number AB-0168-T for TS EN ISO/IEC 17025 as a test laboratory.

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Mühür/Kaşe *Seal*	*Yayımlandığı Tarih* *Date*	*Raporu Hazırlayan* *Person in charge of report*	*Onaylayan/ Approval* *Tarih/ Date*
encon LABORATUVARI A.Ş. Reşit Galip Cad. No:120 06700 G.O.P. Tel: 0 312 447 71 22 Fax: (0312) 447 69 88 Çankaya V.D. 334 054 3482 Tic.Sic.No: 428256586859628 www.enconlab.com	29 Aralık 2021	Dildar SÜSLÜ Lab. Sorumlusu	Hüseyin TEKİN Laboratuvar Müdürü 29 Aralık 2021

Açıklamalar/Remarks:
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TÜRKAK Test TS EN ISO/IEC 17025 AB-0168-T

AB-0168-T
LR.21.1765
12.21

DENEY RAPORU / TEST REPORT

Parametre Parameter	Birim Unit	Analiz Sonucu Test Result	Analiz Metodu Method of Analysis
Amonyum	mg/L	<0.02	SM 4500-NH3 B SM 4500-NH3 F
Arsenik	µg/L	20.58	EPA 200.7
Civa	µg/L	<1.0	EPA 200.7
İletkenlik	µS/cm	890.0	S.M. 2510_B
Kadmiyum	µg/L	<5.0	EPA 200.7
Klorür	mg/L	22.28	S.M. 4110-B
Kurşun	µg/L	<5.0	EPA 200.7
Nitrat	mg/L	1.8711	S.M. 4110-B
Nitrit	mg/L	0.069	S.M. 4500-NO2_B
Sülfat	mg/L	74.87	S.M. 4110-B
Tetrakloroetilen(*)	µg/L	<0.2	EPA 5030 C-EPA 8260 D GC MS Metot
Toplam Fosfor	mg/L	0.10	S.M. 4500-P B S.M. 4500 P-E
Toplam Pestisit(*)	µg/L	<0.1	İşletme İçi Metot (EPA 538), ENC.LABTL.LCP.176, 5990-4253EN Agilent Application Notes
Trikloroetilen(*)	µg/L	<0.2	EPA 5030 C-EPA 8260 D GC MS Metot
Tuzluluk	‰	0.44	S.M. 2520-B

Su numunesi TS EN ISO 5667-6, TS ISO 5667-4, TS ISO 5667-11, atıksu numunesi TS ISO 5667-10, deniz suyu numunesi TS ISO 5667-9, çamur numunesi TS EN ISO 5667-13, katı atık numunesi TS 12090, toprak numunesi TS 9923 ve sediment numunesi TS 9547 ISO 5667-12 standartlarına gore alınmaktadır.
ENCON Laboratuvarı A.Ş. tarafından alınmayan numuneler için belirtilen ölçüm belirsizliği değerlerine numune almadan kaynaklanan belirsizlik değerleri dahil edilmemektedir.
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Water Samples are sampled according to the standards of TS EN ISO 5667-6, TS ISO 5667-4, TS ISO 5667-11, whereas wastewater, sea water, sludge, solid, soil and sediment samples are sampled according to the standard of TS ISO 5667-10, TS ISO 5667-9, TS EN ISO 5667-13, TS 12090, TS 9923 and TS 9547 ISO 5667-12, respectively.
For the samples not taken by the ENCON laboratory Inc., uncertainty values indicated do not cover the uncertainties arising from the sampling.
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GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

Müşteri Adı / Client Name	Encon Çevre Danışmanlık Ltd. Sti.		
Müşteri Adresi /Client Address	Resit Galip Cad. No:120 Gaziosmanpaşa CANKAYA/ANKARA		
Rapor Tarihi / Numarası Report Date / No	24.12.2021 / LR.21.1780	**Numune Türü / Sample Type**	Gürültü
Numune Kayıt Numarası / Sample Record No	NUM.21.1780	**Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement**	TS ISO 1996-2
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	533461/4169495	**Ölçüm Tarihi / Sampling Date**	13-14/12/2021
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	İlbank Konya Projesi / Karapınar-1	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Kapalı
Numune Kabul Tarihi Date of Samples Received	16.12.2021	**Örneklemeyi Yapan Personel Kurum /Kişi Person /Firm Conducted Sampling**	Serhad İNCEDERE

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ENCON LABORATUVARI A.Ş.	29 Aralık 2021	Dildar SÜSLÜ Lab. Sorumlusu	Hüseyin TEKİN Laboratuvar Müdürü 29 Aralık 2021

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GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	ÇEVRESEL GÜRÜLTÜNÜN DEĞERLENDIRILMESI VE YÖNETIMI YÖNETMELİĞİ TABLO 5
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-19:00)	dBA	54.7	70.0
Eşdeğer Gürültü *L_{Eq} Akşam (19:00-23:00)	dBA	50.3	65.0
Eşdeğer Gürültü *L_{Eq} Gece (23:00-07:00)	dBA	52.7	60.0

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	IFC Tablo 1.7.1
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-22:00)	dBA	54.0	55.0
Eşdeğer Gürültü *L_{Eq} Gece (22:00-07:00)	dBA	52.6	45.0

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ENCON LABORATUVARI A.Ş.
Reşit Galip Caddesi No: 120 Gaziosmanpaşa Çankaya /ANKARA
Tel: 0 312 447 71 22 **Faks:** 0 312 447 69 88
mail: encon@enconlab.com.tr **web:** www.enconlab.com.tr

GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

Müşteri Adı / Client Name	Encon Çevre Danışmanlık Ltd. Sti.		
Müşteri Adresi /Client Address	Resit Galip Cad. No:120 Gaziosmanpaşa CANKAYA/ANKARA		
Rapor Tarihi / Numarası Report Date / No	24.12.2021 / LR.21.1781	**Numune Türü / Sample Type**	Gürültü
Numune Kayıt Numarası / Sample Record No	NUM.21.1781	**Ölçümde Uygulanacak Standart ve Kaynaklar / Standard and Resources Applied in Measurement**	TS ISO 1996-2
Ölçümün Yapıldığı Yerin Koordinatları / Coordinates of Sampling Location	461099/4167293	**Ölçüm Tarihi / Sampling Date**	14-15/12/2021
Proje Adı / Cihaz Kurulum Noktası Project Name / Sampling Location	İlbank Konya Projesi / Karapınar-2	**Ölçüm Yapıldığında Çevre Şartları / Environmental Conditions During Sampling**	Kapalı
Numune Kabul Tarihi Date of Samples Received	16.12.2021	**Örneklemeyi Yapan Personel Kurum /Kişi Person /Firm Conducted Sampling**	Serhad İNCEDERE

Deney laboratuvarı olarak faaliyet gösteren ENCON Laboratuvarı A.Ş. TÜRKAK' tan AB-0168-T ile TS EN ISO/IEC 17025 standardına gore akredite edilmiştir. ENCON Laboratuvarı A.Ş. is accredited by TURKAK 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 (TURKAK) 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.

Mühür/Kaşe *Seal*	*Yayımlandığı Tarih* *Date*	*Raporu Hazırlayan* *Person in charge of report*	*Onaylayan/ Approval*
encon LABORATUVARI A.Ş.	29 Aralık 2021	Dildar SÜSLÜ Lab. Sorumlusu	**Tarih** / Date Hüseyin TEKİN Laboratuvar Müdürü 29 Aralık 2021

Açıklamalar/Remarks:
-İmzasız ve kaşesiz Deney Raporları geçersizdir / Reports without signature and/or stamp are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen deneyi yapılan numuneye aittir. / Results given in thiş 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.
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This project is co-funded by the European Union, the Republic of Turkey and the World Bank
Bu Proje Avrupa Birliği, Türkiye Cumhuriyeti ve Dünya Bankası tarafından ortaklaşa finanse edilmektedir

ENCON LABORATUVARI A.Ş.
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GÜRÜLTÜ ÖLÇÜM RAPORU / NOISE REPORT

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	ÇEVRESEL GÜRÜLTÜNÜN DEĞERLENDIRILMESI VE YÖNETIMI YÖNETMELİĞİ TABLO 5
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-19:00)	dBA	50.7	70.0
Eşdeğer Gürültü *L_{Eq} Akşam (19:00-23:00)	dBA	53.7	65.0
Eşdeğer Gürültü *L_{Eq} Gece (23:00-07:00)	dBA	45.7	60.0

PARAMETRE	BİRİM	ÖLÇÜM/ ANALİZ SONUCU	IFC Tablo 1.7.1
Eşdeğer Gürültü *L_{Eq} Gündüz (07:00-22:00)	dBA	51.9	55.0
Eşdeğer Gürültü *L_{Eq} Gece (22:00-07:00)	dBA	45.7	45.0

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:
-İmzasız ve kaşesiz Deney Raporları geçersizdir / Reports without signature and/or stamp are not valid.
-Rapordaki analiz sonuçları laboratuvara teslim edilen, deneyi yapılan numuneye aittir. / Results given in thiş report represents the results of the analyses of the samples received.
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ANNEX-5 SAMPLE GRIEVANCE AND GRIEVANCE CLOSE-OUT FORMS

KOSKİ	**KONYA METROPOLITAN MUNICIPALITY / GENERAL DIRECTORATE OF WATER AND SEWERAGE ADMINISTRATION** **Karapinar Water Transmission Line Project** **GRIEVANCE FORM**

Person Filling out the Form:	Date and time:
Meeting Agenda:	Reference No:
1. INFORMATION ABOUT THE COMPLAINANT	
Name Surname:	**Means of Complaint:**
TR Identification number:	Phone / Toll Free Hotline ☐
Phone:	Face to Face Meeting ☐
Address:	Website / E-Mail ☐
E-Mail:	Other (Explain) ☐

Stakeholder Type				
Public Institution ☐	PAP ☐	Private Enterprise ☐	Professional Chamber ☐	NGO ☐
Interest Groups ☐	Industry Associations ☐	Labor Unions ☐	Media ☐	University ☐

2. DETAILED INFORMATION ON THE COMPLAINT	
Explanation of the complaint:	
Action requested by the complainant:	

Registrant Name Surname/ Signature

Complainant Name Surname / Signature

	KONYA METROPOLITAN MUNICIPALITY / GENERAL DIRECTORATE OF WATER AND SEWERAGE ADMINISTRATION **Karapinar Water Transmission Line Project**
	GRIEVANCE CLOSEOUT FORM

Reference No:	
1. IDENTIFICATION OF CORRECTIVE ACTION	
1	
2	
3	
4	
5	
Responsible Departments	
2. TERMINATION OF COMPLAINT	
This section will be filled and signed by the complainant in the event that the complaint specified in the "Grievance Register Form" is resolved.	

Grievance Closeout Date:

Name-Surname/Signature of the Person Closing Complaint:

:

...../……/…….

Name-Surname/Signature of Complainant

ANNEX-6- SAMPLE CONSULTATION FORM

	KONYA METROPOLITAN MUNICIPALITY / GENERAL DIRECTORATE OF WATER AND SEWERAGE ADMINISTRATION **Karapinar Water Transmission Line Project**
	CONSULTATION FORM

Person Filling out the Form:	Date and time:
Meeting Agenda:	Consultation Registration:

1. CONSULTATION INFORMATION

Interviewed Institution:	Communication Type
Name-Surname of the Interviewee:	Phone / Hotline ☐
Phone:	Face to Face Meeting ☐
Address:	Website / E-mail ☐
E-Mail:	Other (Explain) ☐

Stakeholder Type

Public Institution ☐	PAP ☐	Private Enterprise ☐	Professional Chamber ☐	NGO ☐
Interest Groups ☐	Industry Associations ☐	Labor Unions ☐	Media ☐	University ☐

2. CONSULTATION DETAILS

Questions about the project:	
Project concerns/feedback:	
Responses to the views expressed above:	

Recorded by
Name-Last Name/Signature

Complainant
Name-Last Name/Signature

ANNEX-7- CODE OF CONDUCT

A minimum requirement for the Code of Conduct has been established taking into account the problems, impacts and mitigation measures identified in the following:

-

- Project reports e.g. ESIA/ESMP
- Any particular GBV/SEA requirements
- Consent/permit conditions (regulatory authority conditions attached to any permits or approvals for the project)
- Required standards including World Bank Group EHS Guidelines
- Relevant international conventions, standards or treaties, etc., national, legal and/or regulatory requirements and standards (where these represent higher standards than the WBG EHS Guidelines)
- Relevant standards e.g. Workers' Accommodation: Process and Standards (IFC and EBRD)
- Relevant sector standards e.g. workers' accommodation
- Grievance redress mechanisms.

In accordance with the contract, the Contractor is obliged to implement the measures covering the environmental and social risks related to the Construction Works, including sexual exploitation, abuse and harassment.

This Code of Conduct is also included in the solution measures for environmental and social risks related to Construction Works. This set of rules applies to all employees on the Construction Site and other locations where work is carried out. The Code of Conduct is also binding on the personnel of each subcontractor and each employee who assists in the performance of the works. All of the above-mentioned employees will be referred to as "Contractor's Personnel", and compliance with the Code of Conduct will be mandatory for all of them.

This Code of Conduct defines the required behavior expected from all Contractor's Personnel. Dangerous, unpleasant, harassment/abuse or violent behavior will never be allowed in our work environment. Everyone is free to openly share their thoughts and concerns without fear of retaliation.

The behaviors expected from the Contractor's Personnel are as follows:

- Performing their duties with due competence and care,
- Complying with this Code of Conduct and all applicable laws, regulations and other requirements, including protecting the health, safety and well-being of the local community (including vulnerable and disadvantaged groups), the Consultant's Experts, the Client's personnel, and the Contractor's personnel, including sub-contractors and day workers,
- Ensuring that the machinery, equipment and processes used by each employee in the work area are safe and do not pose a risk to health, using of necessary personal protective equipment, taking necessary precautions in the use of chemical, physical and biological substances, and following appropriate emergency application procedures,
- Reporting workstations that are considered unhealthy and unsafe, and staying away from areas where human life is considered to be at serious danger,
- Respecting other people and not discriminating against certain groups such as women, people with disabilities, migrant workers and children,
- Avoiding Sexual Harassment[11]

[11] *Any unwelcome sexual advances, request for sexual favors, and other verbal or physical conduct of a sexual nature.*

- Avoiding Sexual Abuse[12]
- Avoiding Sexual Exploitation[13]
- Protecting of children, ensuring their safety in Project Areas and prohibiting sexual activity or abuse, or otherwise unacceptable behavior towards them,
- Participating in relevant trainings on issues such as health and safety, Sexual Exploitation, Abuse and Sexual harassment related to the environmental and social aspects of the Convention,
- Respecting reasonable work instructions and ensuring protection and proper use of property,
- Complying with sanitation requirements,
- Avoiding conflicts of interest such that benefits, contracts, or employment, or any sort of preferential treatment or favors, are not provided to any person with whom there is a financial, family, or personal connection,
- Reporting a violation of this Code of Conduct,
- Non-retaliation against personnel who report violations of the Code.

Examples of Sexual Harassment

- One Contractor's Personnel making positive or negative comments about the appearance and sexual attractiveness of another Contractor Personnel.
- A Contractor's or Employer's Personnel contacting physically another Contractor's Personnel.
- A Contractor Personnel telling another Contractor's Personnel that they can get a salary increase or promotion if they send him/her nude photos.

Examples of Sexual Exploitation and Abuse

- A Contractor's Personnel telling a community member that he or she can get a job on the work site in exchange for sexual intercourse (e.g. kitchen and cleaning jobs).
- A Contractor's Personnel rapes or otherwise sexually assaults a member of the community.
- A Contractor's Personnel preventing access to the Site if the sexual desire of a person is not met.
- A Contractor's Personnel telling a person applying for a job under the Contract that they will only be given employment in exchange for sexual intercourse.

Violation of this Code of Conduct by the Contractor's Personnel may have serious consequences and may result in the termination of the contract and the transfer of the matter to the legal authorities.

[12] *Actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions.*

[13] *Any actual or attempted abuse of a position of vulnerability, differential power or trust for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another.*

ANNEX-8- CHANCE FIND PROCEDURE

1. Introduction

The Municipality is responsible for avoiding or mitigating any potential impacts of the Activities on the physical or cultural resources. It is anticipated that the project sites are selected such that there would not be any overlapping with archaeological and heritage sites/assets within the project impact area. However, there is still a possibility of encountering some unknown archaeological sites and cultural heritage assets as a Chance Find during project activities. A Chance Find means potential cultural heritage objects, features or sites that are identified outside of a formal site reconnaissance, normally as a result of construction monitoring. Thus, this document aims to outline the procedure and respective responsibilities in relation to the management of Chance Finds during construction works.

2. Roles and Responsibilities

The Municipality and all the contractors are responsible for complying with the procedure during the project construction activities. In this regard, the Municipality would be providing training to their and the contractors' employees involved in supervision and construction works regarding the procedure. Mainly a Chance Find could be encountered during the pre-construction and ground disturbance (e.g., excavation and levelling) activities. Thus, the procedure has to be implemented day to day at this stage.

3. Chance Find Process and Procedure

The step by step process and procedure to be followed upon a Chance Find discovery is provided below:

Step 1 - After the discovery of a Chance Find:

- All work must cease at the location where discovery is made.
- A temporary buffer zone around the Chance Find will be established.
- The contractor contacts the Municipality and the relevant Governmental Archaeological Museum in the Province is informedimmediately.
- The Chance Find location is secured through flagging or no-entry signs, etc.
- The Chance Find should not be moved, removed or further disturbed.

Step 2 – Recording

- The Chance Find Form Part A is filled in by the contractor and sent to the Municipality and a copy is filed for records.

Step 3 – Contact with local authority

- The contractor notifies the relevant Governmental Archaeological Museum in the Province for the Chance Find.

Step 4 – Authority's decision

The relevant Museum decides on the following path of actions for chance find area:

Step 4.A - No significance to site or finding

- The Museum declares that the site/finding is considered to be of no significance.
- The contractor informs the Municipality.
- The contractor records the decision on Part B of the Chance Find Form and sends a copy to the Municipality.
- A copy of the Chance Find Form Part B is kept for records.
- No further actions are required.
- This step closes out the Chance Find procedure.
- Construction activities may resume.

Step 4.B – Significance of the site

- The Museum declares that the site/finding is considered to be of significance.
- The Museum decides on further actions and informs the contractor and the contractor informs the Municipality.
- The contractor records the decision on Part B of the Chance Find form.
- Proceed to Step 5.

Step 5 – Site investigation

Step 5.A - After field investigation the Museum declares the site/finding has minor significance

- The contractor informs the Municipality.
- The contractor records the decision on Part C of the Chance Find form and sends a copy to the Municipality
- A copy of the Chance Find Form Part B is kept for records.
- No further actions are required.
- This step closes out the Chance Find procedure.
- Construction activities may resume.

Step 5.B - After field investigation the Museum declares the site/finding has moderate significance

- Further studies such as test pit/salvage excavations or remote sensing investigation are to be completed.
- The Museum provides instructions, and/or supervision for the studies.
- The contractor informs the Municipality.
- The Municipality provides an archaeological work team of qualified archaeologist and

workers to work under the supervision of the Museum.

- After the excavation is completed, the team provides a report to the Museum directorate.
- The Museum directorate reports the study outcomes to the relevant Regional Preservation Board of Cultural Assets.
- The relevant Regional Preservation Board of Cultural Assets officially confirms completion of recovery and informs the Municipality.
- The contractor records the decision on Part C of the Chance Find Form and sends a copy to the Municipality.
- A copy of the Chance Find Form Part B is kept for records.
- No further actions are required.
- This step closes out the Chance Find procedure.
- Construction activities may resume.

Step 5.C - After field investigation the Museum declares the site/finding has major significance

- Salvage excavation is to be completed.
- The site is to be treated according to Law on the Protection of Cultural and Natural Assets Law (No. 2863 dated 21.07.1983).
- The Museum provides instructions, and/or supervision for test pit/salvage archaeological excavation.
- The contractor informs the Municipality.
- The Municipality provides an archaeological work team of qualified archaeologist and workers to work under the supervision of the Museum.
- Once the excavation is completed, salvage excavation team provides a report to Museum directorate.
- The relevant Regional Preservation Board of Cultural Assets officially confirms completion of recovery and informs the Municipality.
- The site will be officially recorded and protected according to Turkish regulations.
- The contractor records the decision on Part C of the Chance Find Form and sends a copy to the Municipality.
- A copy of the Chance Find Form Part B is kept for records.
- No further actions are required.
- This step closes out the Chance Find procedure.
- Construction activities may resume or further actions need to be taken.

It is important to note that in case human remains are found, all project team and the local authorities will be immediately notified.

4. Monitoring and Reporting

The contractor will monitor all construction or other ground disturbance activities for evidence of presence of cultural heritage items. Chance Finds will be recorded on the Chance Find Report Form (see Annex-8.1). All Chance Find Report Forms will be kept in hard copy at the site and will also be scanned and saved electronically. Any Chance Find will be recorded in the Chance Find Register (see

Annex-8.2).

Annex 8.1 Chance Find Report Form

PART A			
Project Location (Province):	District: Neighborhood:	Date:	Form No:
Name of person reporting Chance Find:			
Was work stopped in the immediate vicinity of the Chance Find? ☐ Yes ☐ No			
Was a buffer zone created to protect the Chance Find? ☐ Yes ☐ No			
NOTIFICATION			
Municipality contacted ☐ Yes ☐ No			
CHANCE FIND DETAILS			
GPS coordinates		Photo record ☐ Yes ☐ No If not, explain why: Other records ☐ Yes ☐ No Specify (drawings, videos, etc.):	
Description of Chance Find:			
Description of site/finding and other specifications of site/finding (e.g. surface sediment type, ground surface visibility, etc.):			

Annex 8.2 Chance Find Register

Date of Find	Summary of Chance Find	Name of Authority Notified	Action Taken	Chance Find Form Completed	Status Open or Closed	Remarks

ANNEX-9: NEWSPAPER ANNOUNCEMENT

KARAPINAR SU İLETİM HATTI PROJESİ PAYDAŞ KATILIM TOPLANTISINA DAVET

Konya Su ve Kanalizasyon İdaresi Genel Müdürlüğü ve İller Bankası A.Ş. tarafından Dünya Bankası finansmanı ile yürütülecek olan "Sürdürülebilir Şehirler Projesi-II Ek Finansman (SŞP-II-EF)" kapsamında Konya ili, Karapınar İlçesi sınırları içinde yapılması planlanan Karapınar Su İletim Hattı Projesi için yürütülen çevresel ve sosyal çalışmalar kapsamında halkı bilgilendirmek, halkın görüş ve önerilerini almak, inşaat ve işletme dönemlerinde halk ile işbirliği tesis etmek üzere İdare tarafından planlanan ve aşağıda detayları verilen "Paydaş Katılım Toplantısı" düzenlenecektir.

Halkımıza saygı ile duyurulur.

Toplantı Yerleri ve Tarihleri

BAĞLI İLİ/ İLÇESİ	YER	TARİH	SAAT
Karapınar / KONYA	KOSKİ Karapınar Şube Müdürlüğü Hizmet Binası: Kale Mahallesi, Gülbahçe Caddesi, No:3/F, Karapınar/Konya	19.12.2023	11:00

Proje Sahibi : Konya Su ve Kanalizasyon İdaresi Genel Müdürlüğü
Telefon : 0 332 221 61 00
E – posta : koski@hs03.kep.tr koski@hs01.kep.tr

ÇSYP Raporu Hazırlayan Kuruluş :
ENCON Çevre Danışmanlık Ltd. Şti
Telefon : +90 (312) 447 71 23

BASIN: 1945911

This project is co-funded by the European Union, the Republic of Turkey and the World Bank
Bu Proje Avrupa Birliği, Türkiye Cumhuriyeti ve Dünya Bankası tarafından ortaklaşa finanse edilmektedir

T.C.
KONYA 14. ASLİYE CEZA MAHKEMESİ
İLAN

Dosya No : 13011820-2022/770-Ceza Dava Dosyası
KARAR NO : 2023/580
Kamu Yararına Tahsis Edilmiş Eşya Hakkında Hırsızlık suçundan sanık Ömer ÇETİNKAYA hakkında açılan davanın yapılan yargılaması sonunda sanığın ilanen tebliğine karar verilmiş olmakla; Mahkememize ait yukarıda esas ve karar numarası yazılı 12/06/2023 tarihli karar ile Abdullah ve Şükran oğlu, 15/06/2001 doğumlu, sanık Ömer ÇETİNKAYA'ye Kamu Yararına Tahsis Edilmiş Eşya Hakkında Hırsızlık suçundan 1 yıl 3 ay hapis cezası karar verildiği, söz konusu kararın bildirmiş olduğu adres itibariyle kendisine tebliğ edilemediği, bildirmiş olduğu herhangi bir yurt dışı adresinin de bulunmadığı, gerekçeli kararın sanığa tebliğ edilme imkanının bulunmadığı, Türkiye adresi itibariyle de tebliğ imkansızlığının söz konusu olduğu anlaşılmakla;
7201 Sayılı Tebligat Kanununun 29. Maddesine göre ilgilinin bilgisine en emin bir şekilde ulaşılabileceği gazetede ilanen tebliğine, ilan tarihinden itibaren 15 gün sonra tebliğ edilmiş sayılmasına, 7 gün içinde Mahkememize veya sanığın bulunduğu yer Nöbetçi Asliye Ceza Mahkemesine verilecek bir dilekçe veya tutanağa geçirilmek koşuluyla zabıt katibine beyanla ya da verilecek bir dilekçe ile istinaf talebinde bulunabileceği hususu ilanen tebliğ olunur. 01.12.2023

Resmi İlanlar www.ilan.gov.tr'de — Basın-1945232

KARAPINAR SU İLETİM HATTI PROJESİ
HALKIN KATILIMI TOPLANTISINA DAVET

Konya Su ve Kanalizasyon İdaresi Genel Müdürlüğü ve İller Bankası A.Ş. tarafından Dünya Bankası finansmanı ile yürütülecek olan "Sürdürülebilir Şehirler Projesi-II Ek Finansman (SŞP-II-EF)" kapsamında Konya İli, Karapınar İlçesi sınırları içinde yapılması planlanan Karapınar Su İletim Hattı Projesi için yürütülen çevresel ve sosyal çalışmalar kapsamında halkı bilgilendirmek, halkın görüş ve önerilerini almak, inşaat ve işletme dönemlerinde halk ile işbirliği tesis etmek üzere İdare tarafından planlanan ve aşağıda detayları verilen "Halkın Katılımı Toplantısı" düzenlenecektir.
Halkımıza saygı ile duyurulur.

Toplantı Yerleri ve Tarihleri

BAĞLI İL/İLÇESİ	YER	TARİH	SAAT
Karapınar/KONYA	KOSKİ Karapınar Şube Müdürlüğü Hizmet Binası: Kale Mahallesi. Gübahçe Caddesi, No:3/F, Karapınar/Konya	19.12.2023	11:00

Proje Sahibi : Konya Su ve Kanalizasyon İdaresi Genel Müdürlüğü
Telefon : 0 332 221 61 00
E – posta : koski@hs03.kep.tr koski@hs01.kep.tr
ÇSYP Raporu
Hazırlayan Kuruluş : ENCON Çevre Danışmanlık Ltd. Şti
Telefon : +90 (312) 447 71 23

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MERAM BELEDİYE BAŞKANLIĞINDAN
İLAN

Meram İlçesi Hadimi Mahallesi 40394 ada 1 nolu parselin bulunduğu bölgede (M731 nolu düzenleme sahası), 3194 sayılı İmar Kanunu'nun 18. maddesi gereğince arazi ve arsa düzenlemesi Meram Belediye Encümeni'nin 01/11/2023 tarih ve 1830 sayılı kararı, Büyükşehir Belediye Encümeni'nin 21/11/2023 tarih ve 717 sayılı kararı ile onanmış olup, Belediye binasının 2. Kat ilan panosunda 07/12/2023 tarihinden itibaren 1(bir) ay süre ile askıya çıkarılmıştır. İlan olunur.

Resmi İlanlar www.ilan.gov.tr'de — Basın-1945573

MERAM BELEDİYE BAŞKANLIĞINDAN
İLAN

Meram İlçesi Yaka Mahallesi 705 ada 1, 2, 3, 4, 5, 6, 8, 10, 11, 12, 13, 14, 16, 20, 21 ve 22 nolu parsellerin bulunduğu bölgede (M715 nolu düzenleme sahası), 3194 sayılı İmar Kanunu'nun 18. maddesi gereğince arazi ve arsa düzenlemesi Meram Belediye Encümeni'nin 01/11/2023 tarih ve 1827 sayılı kararı, Büyükşehir Belediye Encümeni'nin 14/11/2023 tarih ve 705 sayılı kararı ile onanmış olup, Belediye binasının 2. Kat ilan panosunda 07/12/2023 tarihinden itibaren 1(bir) ay süre ile askıya çıkarılmıştır. İlan olunur.

Resmi İlanlar www.ilan.gov.tr'de — Basın-1945583

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Yürü, iyilik et; zaman iyiliği tanır. Hz. Mevlana

Vuslat Vakti
7-17 Aralık 2023
Mevlâna Kültür Merkezi

Türkiye Yüzyılı
750. Vuslat

Torku
Doğal olarak bizden

Sebi Arus
Mevlana'nın 750. Vuslat Yıldönümü

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0332 233 12 41

VUSLAT VAKTİ

HZ. MEVLANA'NIN 750. VUSLAT YILDÖNÜMÜ ULUSLARARASI ANMA TÖRENLERİ "750. VUSLAT YÜRÜYÜŞÜ" İLE BAŞLAYACAK

07-17 Aralık 2023 tarihleri arasında düzenlenecek Hz. Mevlana'nın 750. Vuslat Yıldönümü Uluslararası Anma Törenleri arasında düzenlenecek törenlerin bu yılki teması "Vuslat Vakti" olacak. Törenler bugün 14.00'te Mevlana Caddesi'nde gerçekleştirilecek "750. Vuslat Yürüyüşü" ile start alacak. Yürüyüşün ardından Mevlana Meydanı'nda Nevbe Konseri düzenlenecek. Akşam da ilk Şeb-i Aşk'ın Şerif programı icra edilecek.

HER AKŞAM SEMA

Kültür ve Turizm Bakanlığı, Konya Valiliği ve Konya Büyükşehir Belediye Başkanlığı tarafından oluşturulan programa göre Mevlana Kültür Merkezi Sema Salonu'nda 7-17 Aralık'ta her akşam saat 20.00'de, ayrıca ek olarak hafta sonları 9, 10, 16 ve 17 Aralık'ta da saat 14.00'te sema programı yapılacak. İrfani müziğin dünyaca ünlü sanatçısı Alireza Ghorbani de törenler kapsamında konser verecek. 7'de

3-0
KONYASPOR RAHAT TURLADI
Spor'da

KARATAY'A 'TABİAT MEKTEBİ' GELİYOR

Karatay Belediyesi tarafından Şehir Parkı içerisinde kurulan Karatay Tabiat Mektebi'nin yapımı tamamlandı. 6'da

MESNEVİ'NİN TIPKISI

Hz. Mevlana Celaleddin-i Rumi'nin sevgi, hoşgörü ve barışa ilham kaynağı olarak görülen eseri Mesnevi'nin tıpkıbasımı yapıldı. 4'te

86 BİN ÖĞRENCİ ECDADA GİTTİ

Konya Büyükşehir Belediyesi'nin "Atabey Gençliği Ecdadın İzinde" sloganıyla düzenlediği gümbürlük İstanbul tarih gezilerine bu yıl 86 bin öğrenci katıldı. 6'da

SELÇUKLU 2. EL PAZARI HİZMETTE

Selçuklu Belediyesi tarafından Yazır Kapalı Pazar alanına kurulan Selçuklu 2. El Pazarı'nın resmi açılışı yapıldı. 5'te

KELEBEKLER 'VUSLAT'A HAZIR

Konya Tropikal Kelebek Bahçesi, Hz. Mevlana'nın 750. Vuslat Yıldönümü Uluslararası Anma Törenlerinde 30 bin kelebek ile ziyaretçilerini bekliyor. 4'te

ELİF
Geleceğin yatırımlarını bugünden şekillendiriyoruz!
444 76 94

NE DEMİŞTİK?
S. BÜYÜKSAKARYA • 4'TE

"GERÇEKTEN ÖZGÜR MÜSÜNÜZ?"
MUSTAFA BAHAR • 8'DA

EN BÜYÜK UZAKLIK
MUHAMMET TAVAŞ • 7'DE

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ANNEX-10: PHOTOS AND BROCHURES OF STAKEHOLDER CONSULTATION MEETING

Karapınar Su İletim Hattı Projesi, Türkiye'deki şehirlerde sürdürülebilir kalkınmayı desteklemek için Sürdürülebilir Şehirler Projesi-II - Ek Finansman (SŞP-II-EF) kapsamında yer alan alt projelerden biridir. SŞP-II-EF, özellikle afetlere ve iklim değişikliğinin hafifletilmesine ve risklere karşı şehir direncine ilişkin proje yaklaşımlarını geliştirmeyi amaçlamaktadır.

Dünya Bankası (DB) tarafından finanse edilen proje, İller Bankası A.Ş. aracılığı ile KOSKİ tarafından yürütülecektir.

Proje, 101,35 km'lik içmesuyu isale hattının inşası ile Karapınar Grup Mahallelerinde güvenli, yeterli ve sürdürülebilir içme suyu sağlanmasını amaçlamaktadır.

Proje kapsamında içme suyu Mavi Tünel Projesi'nden temin edilecek ve bir terfi merkezi vasıtasıyla mevcut Karapınar Su Deposuna iletilecektir. Mevcut durumda içme suyu sisteminin yetersiz kalması, ekonomik ömrünü doldurmuş olması ve pahalı işletme maliyetlerine yol açması, güvenilir hizmet sunumu açısından KOSKİ'ye ek yük getirmektedir.

Bu kapsamda Proje, 2055 hedef yılı ile Karapınar Grubu İlçelerine güvenilir ve sürdürülebilir içme suyu sağlanması için 101,35 km'lik içme suyu iletim hattı ve pompa istasyonu inşaatı ile KOSKİ'nin güvenilir hizmet sunmaya devam etmesini sağlayacaktır.

2

Proje ile hizmet verilmesi öngörülen nüfus yaklaşık 95.900 kişidir. Proje alanı, Türkiye'nin İç Anadolu Bölgesi'nde yer alan Konya İli Karapınar Grubu'nda (Karapınar, Karatay, Çumra ve Meram İlçeleri) yer almaktadır. (Bkz: Şekil 1).

Projenin beklenen sonuçları aşağıdaki gibidir:

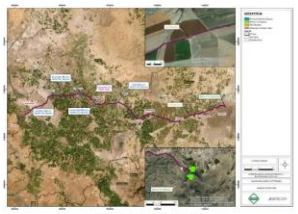
- Proje, KOSKİ'nin Karapınar Grubu ilçelerine güvenli ve yeterli içme suyu sağlayacaktır.
- Proje, Türkiye'nin içme suyu için oluşturulan ulusal ve AB düzenleyici gereksinimlerine uyum sağlamasına katkı sağlayacaktır.
- Proje, proje alanında yaşayan insanların iyileştirilmiş su hizmetlerine erişimini artıracaktır.

Projenin inşaatının on iki (12) ayda tamamlanması planlanmaktadır.

İnşaat ve işletme aşamalarında istihdam edilecek toplam işçi sayısı kesin olmamakla birlikte, inşaat ve işletme aşamalarında sırasıyla 100 ve 10 olarak öngörülmektedir. **Projenin işe alım sürecinde yerel halka öncelik verilecektir.**

Proje, ulusal mevzuatın yanı sıra DB Koruma Politikaları, yönergeler, standartlar ve en iyi uygulama belgeleri de dahil olmak üzere ulusal ve uluslararası standartlarla uyumlu olacaktır.

3



Şekil 1: Proje Alanı

Beklenen etkilerin yönetimi için bir Çevresel ve Sosyal Yönetim Planı (ÇSYP) geliştirilmiştir.

ÇSYP, Projenin geliştirilmesinden kaynaklanan olası çevresel ve sosyal etki ve riskleri belirlemek ve önemli olumsuz çevresel etkiler için etki azaltma önlemleri önermek amacıyla hazırlanmıştır.

Ayrıca ÇSYP kapsamında uygulanacak **izleme ve denetim faaliyetleri** de tanımlanmıştır. ÇSYP çalışmaları kapsamında toprak ve hava ortamları, gürültü, su kaynakları, atıklar, trafik üzerinde oluşabilecek etkiler belirlenmiş ve ilgili etki azaltma önlemleri belirtilmiştir.

İzleme gereklilikleri de ÇSYP kapsamındaki izleme tablolarında tanımlanarak sunulmuştur.

4

Buna göre projenin inşaat aşamasında, üst toprak kaybı, toprak kirliliği, toz emisyonları, kimyasalların depolanması ve kullanımı, gürültü, sızıntı, su kirliliği, atık üretimi, halk sağlığı ve güvenliği ve iş sağlığı ve güvenliği, işletme aşamasında ise atıklar, gürültü, geçim kaynakları, şikâyetler, paydaş katılımı, iş sağlığı ve güvenliği ve işgücü gibi parametreler **ÇSYP'de belirlenen şartlara uygun olarak izlenecektir**.

Bu Çevresel ve Sosyal Yönetim Planı (ÇSYP)'nin uygulanmasından sorumlu ana kurum, projenin inşaatından ve işletme aşamalarından da sorumlu olan Konya Su ve Kanalizasyon İdaresi (KOSKİ)'dir. Ayrıca, projenin farklı aşamalarında çeşitli taraflar (Yükleniciler, Proje Uygulama Birimi, İLBANK, vb.) ÇSYP kapsamında çeşitli konularda sorumluluk alacaklardır. Sözü edilen tüm çalışmalar KOSKİ tarafından koordine edilecektir.

Proje dokümanları ayrıca KOSKİ'nin internet sitesi üzerinden yayınlanmıştır ve talep edilmesi halinde bu dokümanlar KOSKİ tarafından paylaşılacaktır.

Konya halkının hem inşaat hem de işletme aşamasında Proje ile ilgili endişelerini, görüşlerini, şikâyetlerini ve önerilerini almak adına bir **Şikâyet Giderme Mekanizması** kurulmuştur.

Bu mekanizma aracılığıyla iletilen şikâyetler, hızlı ve hassas bir şekilde ele alınacaktır.

5

Şikâyet Giderme Mekanizması'nın kurulmasından ve uygulanmasından sorumlu kurum KOSKİ olacaktır. Bu kapsamda proje ile ilgili beklenti, görüş, öneri ve şikâyetlerin paylaşılması için aşağıda verilen iletişim kanalları da ayrıca kullanılabilecektir:

- **Paydaş Katılım Toplantıları**
- **KOSKİ Telefon: 185**
- **KOSKİ Faks: 0 332 221 61 00**
- **E-mail: koski@hs03.kep.tr**
  koski@hs01.kep.tr
- **Web Sitesi:**
  https://www.koski.gov.tr/sayfa/bize-yazin

Tüm iç ve dış paydaşlar, projeyle ilgili şikâyetlerini ve geri bildirimlerini doğrudan devlet yetkililerine iletmek için alternatif ve iyi bilinen bir kanal olarak tüm proje paydaşlarının erişimine açık olan ve ülke çapında kullanılan Cumhurbaşkanlığı İletişim Merkezi (CİMER) gibi diğer şikâyet giderme mekanizmalarından da yararlanma hakkına sahip olacaktır.

CİMER iletişim bilgileri;

- **CİMER Web Sitesi: www.cimer.gov.tr**
- **CİMER Çağrı merkezi:150**
- **CİMER Telefon: +90 312 525 55 55**
- **CİMER Faks: +90 312 473 64 94**
- **CİMER Resmi Yazı Adresi: TC İletişim Başkanlığı Kızılırmak Mah. Mevlana Bulvarı No:144 ÇANKAYA/ANKARA**
- **Bireysel başvurular için valilikler, bakanlıklar ve kaymakamlıklardaki halkla ilişkiler masaları ile görüşünüz.**

6

SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ-II
EK FİNANSMAN

KARAPINAR SU İLETİM HATTI PROJESİ

BİLGİLENDİRME BROŞÜRÜ

ARALIK 2023

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KOSKİ
TÜMAŞ
encon

1

Figure A10.2. SCM Photos

ANNEX-11: PRESENTATION DEMONSTRATED DURING STAKEHOLDER CONSULTATION MEETING

SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ – II
EK FİNANSMAN

KARAPINAR SU İLETİM HATTI PROJESİ

PAYDAŞ KATILIM TOPLANTISI

BİLGİLENDİRME SUNUMU

ARALIK 2023

KAPSAM/GÜNDEM

KARAPINAR SU İLETİM HATTI PROJESİ

- ❑ Proje finansörü, aracısı ve yürütücüsü kimdir?
- ❑ Proje'nin beklenen faydaları nelerdir?
- ❑ Çevresel ve Sosyal Çalışmalar nedir?
  - ➢ Olası çevresel ve sosyal etkiler
  - ➢ Etki azaltıcı önlemler ve yönetim stratejileri
- ❑ Paydaş Katılımı: Sürece nasıl dahil olabilirsiniz?
- ❑ Sorular ve Cevaplar (Proje ile ilgili soru, beklenti, görüş ve öneriler)

PROJE FİNANSÖRÜ KİMDİR?
PROJE ARACISI KİMDİR?
PROJE YÜRÜTÜCÜSÜ KİMDİR?

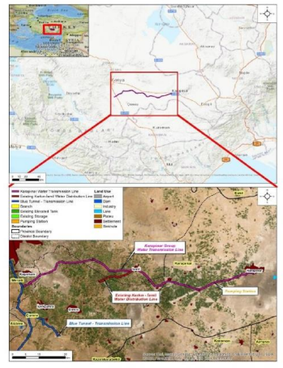
PROJENİN FİNANSÖRÜ: DÜNYA BANKASI

PROJENİN ARACISI: İLLER BANKASI ANONİM ŞİRKETİ GENEL MÜDÜRLÜĞÜ

PROJENİN YÜRÜTÜCÜSÜ: KONYA BÜYÜKŞEHİR BELEDİYESİ SU VE KANALİZASYON İDARESİ GENEL MÜDÜRLÜĞÜ (KOSKİ)

PROJENİN YERİ

- ❖ Proje, Konya İli Karapınar Grubu'nda (Karapınar, Karatay, Çumra ve Meram İlçeleri) yer almaktadır. Karapınar ilçesi, Konya il merkezinin 94 kilometre doğusunda yer almaktadır.
- ❖ Proje ile Karapınar Grubu İlçelerine güvenilir ve sürdürülebilir içme suyu sağlanması ve 101,35 km'lik içme suyu iletim hattı ve pompa istasyonu inşaatı ile KOSKİ'nin güvenilir hizmet sunma konusundaki ek yükünün kaldırılması hedeflenmektedir.



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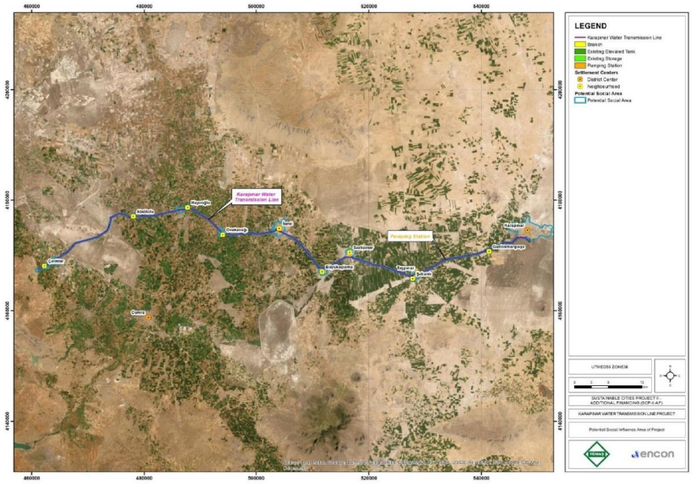


PROJENİN AMACI ve FAYDALARI

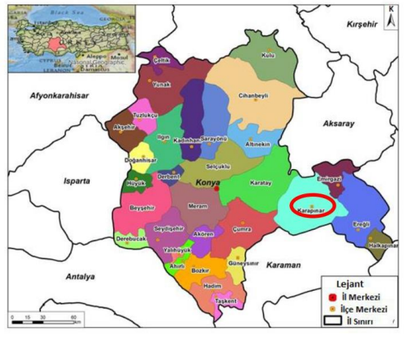
- Mevcut durumda içme suyu sisteminin yetersiz, eskimiş olması ve pahalı işletme maliyetlerine yol açması, güvenilir hizmet sunumu açısından KOSKİ'ye ek yük getirmektedir. Bu sorunu çözmek için Karapınar Su İletim Hattı Projesi SŞP-II EF'nin alt projeleri arasına dahil edilmiştir.
- Proje, 101,35 km'lik içme suyu isale hattı ve terfi istasyonu inşaatı ile Karapınar Grup Mahallelerinde güvenli, güvenilir ve sürdürülebilir içme suyu sağlanmasını ve güvenilir hizmet sunumu açısından KOSKİ'nin üzerindeki ek yükün kaldırılmasını amaçlamaktadır.
- Proje, Türkiye'nin içmesuyu sektöründe ulusal ve uluslararası kalite standartlarına uyum çabalarına katkı sağlayacaktır.
- Projenin uygulanmasıyla, halkın sağlık standartları iyileştirilecektir.

PROJE ÖZELLİKLERİ

- Proje kapsamında içme suyu Mavi Tünel Projesi'nden temin edilecek ve pompa istasyonu ile mevcut Karapınar su deposuna iletilecektir.
- Mevcut durumda içmesuyu sisteminin yetersiz, eskimiş olması ve pahalı işletme maliyetlerine yol açması, güvenilir hizmet sunumu açısından KOSKİ'ye ek yük getirmektedir.
- Proje, 2055 hedef yılı ile Karapınar Grubu İlçelerine güvenilir ve sürdürülebilir içme suyu sağlanması ve 101,35 km'lik içme suyu iletim hattı ve pompa istasyonu inşaatı ile KOSKİ'nin güvenilir hizmet sunma konusundaki ek yükünün kaldırılması hedeflenmektedir.
- Proje ile hizmet verilmesi öngörülen nüfus yaklaşık 95.900 kişidir.
- Projenin personel ihtiyaçları henüz kesinleşmemiş olmakla beraber işe alım sürecinde yerel halka öncelik verilecektir.
- Projenin inşaat faaliyetlerinin 12 ay süreceği öngörülmektedir.

PROJE ÖZELLİKLERİ

- 101,35 km'lik içme suyu isale hattının inşası için özel parsellerin kamulaştırılması öngörülmemektedir.
- İletim hatları ağırlıklı olarak kadastro yollarını takip edecek, ancak hatların bir kısmı kamu idaresinin sorumluluğunda olan arazilerden veya mera arazilerinden geçecektir. Bu kapsamda hatların bir kısmı Konya Toprak Su ve Çölleşme ile Mücadele Araştırma Enstitüsü Müdürlüğü'ne ait araziden geçecek olup, ilgili izinler KOSKİ tarafından alınmıştır.



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ÇEVRESEL VE SOSYAL ÇALIŞMALARIN KAPSAMI

FİZİKSEL ve BİYOLOJİK ÇEVRE | **SOSYO-EKONOMİK ÇEVRE** | **KÜLTÜREL MİRAS**

Etki Kaynağı Faaliyetler/Durumlar	İlgili Çevresel ve Sosyal Unsurlar
• Tesviye, Kazı ve Dolgu • Malzeme Temini ve Taşınması • Atık Oluşumu • İstihdam • İşletme sırasında oluşabilecek teknik hatalar	• Toprak Ortamı • Su Kaynakları • Biyolojik Ortam • Hava Kalitesi • Gürültü • Koku • Trafik • Atık Yönetimi • Kültürel Miras • Sosyo-ekonomik Çevre • Toplum Sağlığı ve Güvenliği • İş ve Çalışma Koşulları

TOPRAK ORTAMI

Olası Etkiler

- Üst toprak kaybı
- İnşaat makine ve ekipmanlarında kullanılacak yakıt, boya ve yağların sızması ve dökülmesi nedeniyle toprak kirlenmesi riski
- Proje kapsamında oluşacak katı veya sıvı atıkların kontrolsüz depolanması veya bertaraf edilmesi durumunda oluşabilecek toprak kirliliği
- Erozyon riski

Alınacak Önlemler

- ✓ Sadece belirlenen çalışma sahaları ve güzergahları kullanılarak kirlenmeye maruz kalacak toprak miktarı minimuma indirgenecektir.
- ✓ Şantiyede kullanılacak iş makinesi ve araçlar için gerekli olan yakıt, öncelikle en yakın istasyondan sağlanacak; gerekli görülmesi halinde sahada depolanabilecek yakıtlar, gerekli sızdırmazlık önlemlerinin alındığı alanlarda depolanacaktır.
- ✓ Erozyona sebep olmamak için bitkisel toprağın sıyrılması olması gerekenden erken yapılmayacaktır ve sıyrılan toprak uygun koşullarda (çevre düzenlemesi vs.) yeniden kullanılmak üzere depolanacaktır.

SU KAYNAKLARI

Olası Etkiler

- İnşaat aşamasında, çalışanların günlük ihtiyaçları su temini gereksinimini yaratacaktır.
- Projenin inşaat aşamasında toz bastırma için su kullanılacaktır.

Alınacak Önlemler

- ✓ Boruların ve pompaların bakım ve onarım işleri geciktirilmeden yapılacaktır.
- ✓ Toz bastırma faaliyetleri için sulamaya bağlı yüzey akışı önlenecektir.
- ✓ İnşaat çalışmalarında oluşacak atıksu, su kaynaklarına deşarj edilmeyecektir.

KARASAL BİYOÇEŞİTLİLİK

Olası Etkiler

- Flora - fauna türleri üzerindeki olası riskler

Alınacak Önlemler

- ✓ Proje alanı içerisinde korunan ve hassas ekosistemler veya türlerin olması öngörülmemektedir.
- ✓ Çalışma alanı sınırları içerisinde gerekli görülmedikçe bitki örtüsü temizliği yapılmayacaktır. Bitki örtüsü temizliği yapılan yerlerde mümkün olduğunca tekrar bitkilendirme yapılacaktır.
- ✓ Arazi hazırlığı aşamasından önce, inşaat faaliyetlerinin yapılacağı bölge önceden belirlenecek ve bu sınırların dışına çıkılmayacaktır.

HAVA KALİTESİ VE GÜRÜLTÜ

Olası Etkiler

- Projenin inşaat aşamasında hava kalitesi üzerindeki başlıca etkiler, malzeme taşıma, araç hareketi ve ağır iş makinelerinden (kamyonlar, ekskavatörler, vb.) kaynaklanan emisyonlardan kaynaklı etkiler olacaktır. Hava kirliliği esas olarak toz emisyonları ve egzoz emisyonları ile sera gazı emisyonları kaynaklı olacaktır.
- Sahanın hazırlanması ve inşaat faaliyetleri için kullanılacak ulaşım araçları, makineler ve dış mekan ekipmanları tarafından gürültü oluşması beklenmektedir.

Alınacak Önlemler

- ✓ İnşaat sahalarında hayat şartlarını olumsuz etkileyecek kadar toz oluşumu olması durumunda sulama yapılarak toz bastırılacaktır.
- ✓ İhtiyaç durumunda inşaat alanında gürültü bariyerleri kullanılarak gürültü azaltımı sağlanacaktır.
- ✓ İnşaat araçlarının şantiyeye girmeyi beklerken veya şantiyede beklerken motorlarını çalışır durumda tutmalarına izin verilmeyecektir.
- ✓ Proje kapsamında mümkün mertebe gürültü seviyesi düşük ekipman seçimine özen gösterilecektir.
- ✓ İnşaat faaliyetleri mümkün olduğunca gündüz saatlerinde yapılacaktır.

TRAFİK

Olası Etkiler

- Şehir içinde ve tesis çevresinde gerçekleştirilecek inşaat faaliyetleri dolasıyla trafiğin artması ve aksaması

Alınacak Önlemler

- ✓ Trafik Yönetim Planı hazırlanacak ve trafiği etkileyebilecek tüm faaliyetler bu plana göre yapılacaktır.
- ✓ Trafik, trafik güvenliğini ve trafik akışındaki aksamaları minimuma indirecek şekilde düzenlenecektir.
- ✓ Yolların kapatılması gerekiyorsa resmi izinler alınacak ve aksaklığın güzergahı ve süresi önceden belirlenecektir.
- ✓ Alternatif güzergahlar belirlenecek ve ulaşım trafiğin yoğunluğuna göre programlanacaktır.
- ✓ Gerekli trafik levhaları ve bariyerler yüklenici tarafından konulacaktır.
- ✓ Şikayet mekanizması kurulacak ve işletilecektir.

ATIK OLUŞUMU

Atık Üretecek Olası Kaynaklar

- İnşaatta çalışacak personel kaynaklı katı atık oluşumu
- Ahşap, kağıt, karton, plastik vb. ambalaj atıkları
- Proje'nin inşaat ve işletme aşamaları kapsamında oluşabilecek tehlikeli ve özel atıklar, kontamine kaplar, bez ve giderler, atık pil ve akümülatörler, atık yağlar vb.
- Hafriyat ve inşaat atıkları

Alınacak Önlemler

- ✓ Proje kapsamında oluşacak atıklar atık yönetimi hiyerarşisine göre yönetilecektir.
- ✓ Atıklar çok bekletilmeden bertaraf edilecektir.
- ✓ Geri dönüştürülemeyen ve değerlendirilemeyen katı atıklar şantiye sahasındaki çöp konteynırlarında toplanacak ve belediye tarafından uzaklaştırılacaktır. Atıkların sahada yakılması veya gömülmesi söz konusu olmayacaktır.
- ✓ Atık oluşumu, depolanması ve bertarafı ile ilgili kayıtlar tutulacaktır. Geçici depolanan atıklar özelliklerine göre sınıflandırılacaktır.

SOSYO-EKONOMİ

Olası Etkiler

- Projenin inşaat aşamasında toz, gürültü, ulaşımın aksaması gibi hususlar söz konusu olabilir.
- Proje kapsamında çalıştırılacak iş gücünün; çalışma şartları, haklarının korunması, iş sağlığı ve güvenliği gibi konular üzerindeki olası etkileri olabilir.

Alınacak Önlemler

- ✓ Çalışanların ulusal iş hukuku kapsamındaki haklarıyla ilgili açık ve anlaşılır bir şekilde bilgilendirilmesi
- ✓ İş Sağlığı ve Güvenliği kapsamında inşaat aşamasında çalışanlara ve operasyon ve bakım personeline eğitimler verilmesi
- ✓ Çalışanların ve üçüncü kişilerin, proje ile ilgili alanlara girişinin kontrollü bir şekilde sağlanması, Proje alanının güvenliğini sağlamak için gerekli izinlere sahip kişilerin veya kuruluş görevlilerinin alana erişime izin verilmesi
- ✓ Tüm ekipmanın uygun çalışma düzeninde çalıştırılması
- ✓ Şikayet mekanizmasının kurulması ve işletilmesi

ARKEOLOJİ VE KÜLTÜREL MİRAS

Olası Etkiler

- İnşaat aşamasında bilinmeyen arkeolojik yerleri ve kalıntıları keşfetme ve bunlara verilecek olası zararlar
- İnşaat aşamasında bulunan arkeolojik yerlerin ve kalıntıların değerli olduğunu fark edemeden önemli kültürel değerlerin kaybedilmesi

Alınacak Önlemler

- ✓ Kültürel mirasın korunmasının önemi ve Proje'nin kültürel miras kaynaklarına olan etkilerini önleme, en aza indirme veya hafifletme taahhütleri konusunda farkındalıklarını artırmak için tüm Proje personeli ve Taşeronlara eğitim verilecektir. Eğitim KOSKİ/PUB Ç&S Uzmanı tarafından yürütülecektir.
- ✓ Yüklenici ve Taşeronlarla yapılan sözleşmelerde inşaat süresince inşaat kaynaklı zararların karşılanmasına yönelik hükümler yer alacaktır.
- ✓ Yüklenicinin Proje alanında yapacağı işler sırasında herhangi bir taşınır veya taşınmaz kültür varlığı ile karşılaşması durumunda, Yüklenici tüm işleri durdurmalı, 2863 sayılı Kanun'un 4. maddesi uyarınca KOSKİ tarafından en yakın Mahalli İdare veya Müze Müdürlüğü'ne haber vermeli ve bundan sonra ilgili makamdan gelecek talimatlara uymalıdır.

PAYDAŞ KATILIMI: SÜRECE NASIL DAHİL OLABİLİRSİNİZ?

Görüş ve Şikayet Bildirme Mekanizması

Proje kapsamında bir Şikayet Mekanizması kurulacak ve herkes tarafından erişilebilir olacaktır.

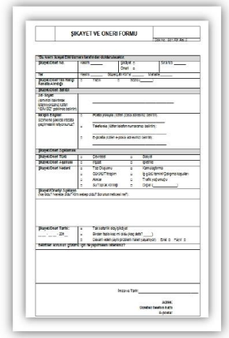
Proje ile ilgili beklentilerinizi, görüşlerinizi, önerilerinizi ve şikayetlerinizi;

- **Paydaş Katılım Toplantıları sırasında,**
- **KOSKİ internet sitesini kullanarak,**
- **Şikayet Mekanizmasını kullanarak,**
- **Alo 153 ve Alo 185 Acil Yardım Hattı aracılığıyla,**
- **Cumhurbaşkanlığı İletişim Merkezi (CİMER) aracılığıyla,**
- **KOSKİ proje temsilcisi aracılığıyla iletebilirsiniz.**

Telefon: 0332 221 61 00

Adres: İhsaniye Mh. Kazım Karabekir Cd. No :56 42060 Selçuklu/Konya

E-mail: koski@hs01.kep.tr, koski@hs03.kep.tr



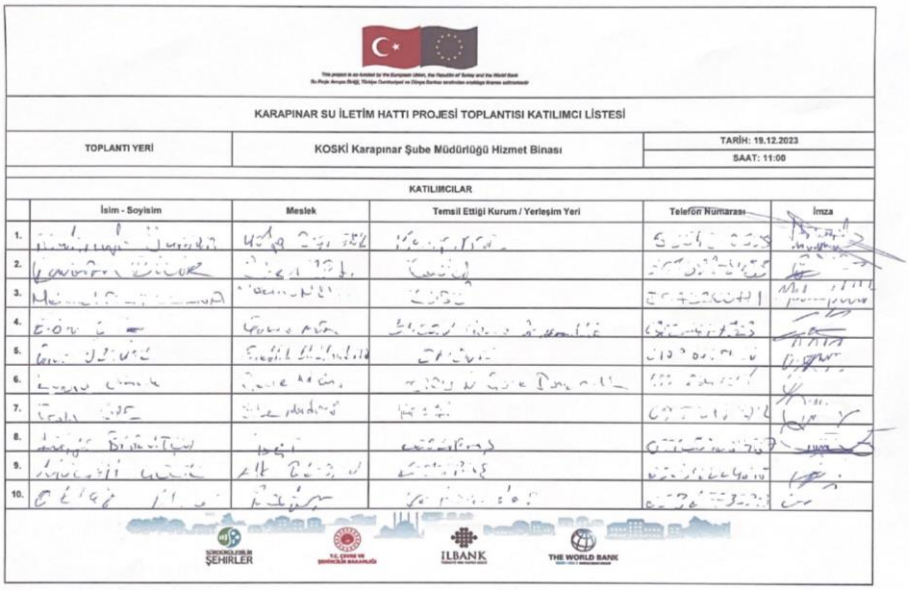
- **Bu toplantıda sunacağınız görüş, öneri ve şikayetleriniz kayıt altına alınarak nihai raporda ilgili paydaşların (KOSKİ, İLBANK, DB) bilgisine sunulacaktır.**

SÜRDÜRÜLEBİLİR ŞEHİRLER PROJESİ – II
EK FİNANSMAN

KARAPINAR SU İLETİM HATTI PROJESİ

KATILIMINIZ VE İLGİNİZ İÇİN TEŞEKKÜR EDERİZ!
SORULAR, YORUMLAR VE GÖRÜŞLER ?

ANNEX-12:PARTICIPATION LIST OF STAKEHOLDER CONSULTATION MEETING



KARAPINAR SU İLETİM HATTI PROJESİ TOPLANTISI KATILIMCI LİSTESİ

TOPLANTI YERİ	KOSKİ Karapınar Şube Müdürlüğü Hizmet Binası	TARİH: 19.12.2023 SAAT: 11:00

KATILIMCILAR

	İsim - Soyisim	Meslek	Temsil Ettiği Kurum / Yerleşim Yeri	Telefon Numarası	İmza
1.					
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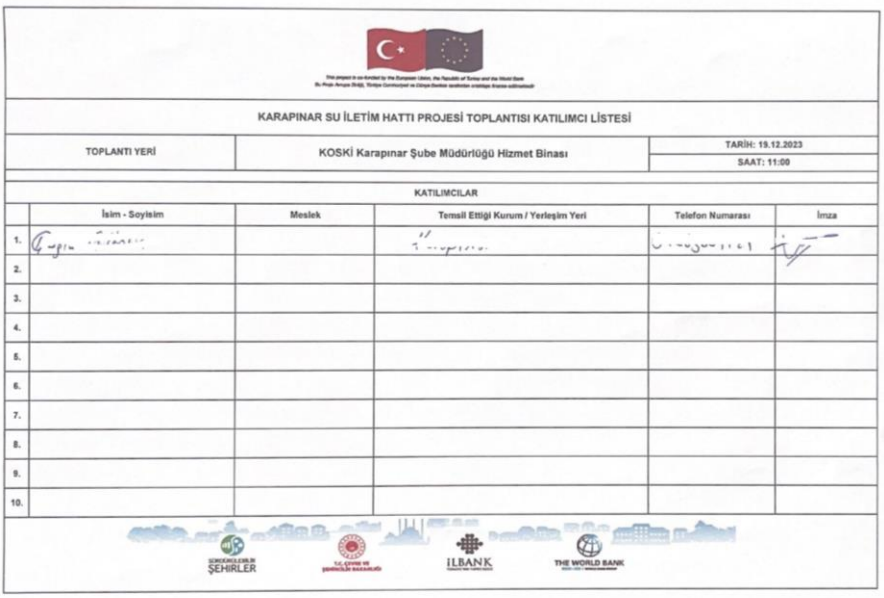

KARAPINAR SU İLETİM HATTI PROJESİ TOPLANTISI KATILIMCI LİSTESİ

TOPLANTI YERİ	KOSKİ Karapınar Şube Müdürlüğü Hizmet Binası	TARİH: 19.12.2023 SAAT: 11:00

KATILIMCILAR

	İsim - Soyisim	Meslek	Temsil Ettiği Kurum / Yerleşim Yeri	Telefon Numarası	İmza
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ANNEX-13: MINUTES OF STAKEHOLDER CONSULTATION MEETING

MINUTES OF STAKEHOLDER PARTICIPATION MEETING					
Subject of Meeting:	SCP-II AF Karapinar Water Transmission Line Project Stakeholder Participation Meeting				
Place/Date of Meeting:	KOSKI Karapinar Branch Directorate Service Building			19.12.2023 – 11:00	
Participants:		**Name-Surname**	**Occupation**	**Represented Institution / Place of Residence**	**Telephone**
	1	Mahmut			
	2	Ramazan			
	3	Mehmet Akif			
	4	Ersin			
	5	Lutfi			
	6	Mucahit			
	7	Oktay			
	8	Tolga			
	9	Ebru			
	10	Onur			
	11	Kubra			

1

No	Issues Discussed
1	The meeting was opened and the presentation related to the Project to be implemented and the work to be done within this scope was made by Ms. Kubra Cibuk, the representative of Tumas - Encon Joint Venture, the Environmental and Social Consultant. Afterwards, a question and answer session was held. There were six questions. The questions and answers are provided below.
2	A participant asked the question "When will the project start and how long will it last?" Mr. Ramazan Bilir stated that the construction phase will start after the tender for the project is completed; the construction is expected to start in April and will last for 12 months.
3	A participant asked the question "Where is the source of water?" Mr. Ramazan Bilir informed that the Goksu River water will be used as the water source through the Blue Tunnel project.
4	A participant asked the question "Which settlements will be supplied with water by this project?" Mr. Ramazan Bilir informed that water will be supplied to Karatay, Cumra and Meram districts with this project.
5	A participant asked the question "What is the quality of the water to be supplied?" Mr. Ramazan Bilir informed that the water of the Goksu River, from which the water will be supplied, is spring water and is of better quality than groundwater. It was also stated that the water will be treated in the Secme Drinking Water Treatment Plant and drinking water will be obtained.
6	A participant asked the question "What will be done when archaeological remains are found during the works?" Mr. Ramazan Bilir informed that the Chance Find Procedure will be applied, the works will be stopped immediately and the nearest local administration and the Museum Directorate will be informed, and when the works resume, the works will be carried out in the presence of the relevant authorities.
7	A participant asked the question "Will there be employees at the pumping station during the operation phase?" Mr. Ramazan Bilir informed that a small number of personnel and SCADA system will be used in the operation.
8	The meeting was finished at 11:45.

2