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MUNICIPAL SERVICES IMPROVING PROJECT

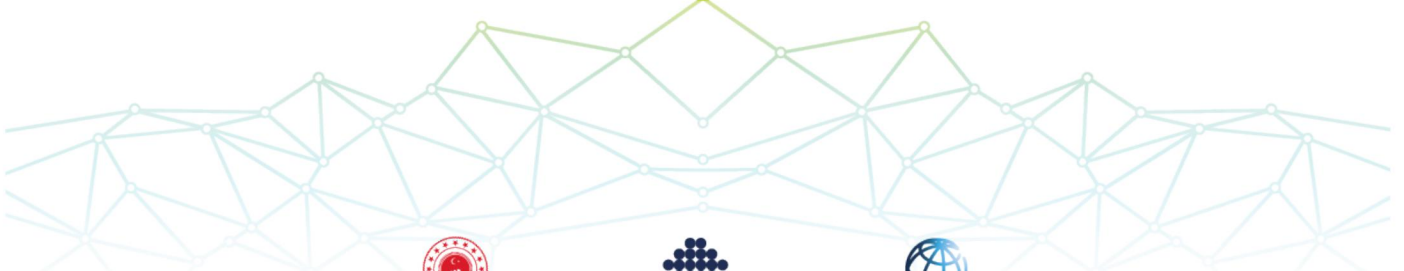


MSIP

Osmaniye (Centrum) Drinking Water and Wastewater Project

Final Environmental and Social
Management Plan

August 2021



T.C. ÇEVRE VE
ŞEHİRCİLİK BAKANLIđI



ILBANK
TÜRKİYE'NİN YAPICI GÜCÜ



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ABBREVIATIONS

ABPRS	Address Based Population Registration System
AoI	Area of Influence
AZE	Alliance for Zero Extinction
BP	Bank Policy
CIMER	Communication Centre of Presidency of Turkey
dBA	Decibels adjusted
DSI	General Directorate of State Hydraulic Works
EHS	Environmental, Health and Safety
EHSG	Environmental, Health and Safety Guidelines
ESF	Environmental and Social Framework
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESSs	Environmental and Social Standards
EU	European Union
FRIT	Facility for Refugees in Turkey
GHG	Green House Gas
GP	Good Practices
GM	Grievance Mechanism
IBA	Important Bird Area
IBRD	International Bank for Reconstruction and Development
IFC	International Finance Corporation
ILBANK	İller Bankası A.S.
IPCC	Intergovernmental Panel on Climate Change
KBA	Key Biodiversity Areas
MADAD Fund	The European Union's (EU) Regional Trust Fund
MSIP	Municipal Services Improvement Project
MoEU	Ministry of Environment and Urbanization
NGOs	Non-Governmental Organizations
NUTS	Nomenclature of Territorial Units for Statistics
OP	Operational Policies
PCM	Public Consultation Meeting
PID	Project Identification Document
PIU	Project Implementation Unit
PM₁₀	Particles with aerodynamic diameter smaller than 10µm
Project	Osmaniye (Centrum) Drinking Water and Wastewater Project
PS	Performance Standard
RAMEN	Regulation on the Assessment and Management of Environmental Noise
RF	Resettlement Framework



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RP	Resettlement Plan
SEF	Stakeholder Engagement Framework
SEP	Stakeholder Engagement Plan
SuTP	Syrians under Temporary Protection
ToR	Terms of Reference
TUBIVES	Turkey Plant Data Service
TurkStat	Turkish Statistical Institute
WBG	World Bank Group
WWTP	Wastewater Treatment Plant



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EXECUTIVE SUMMARY

İller Bankası A.Ş. (İLBANK) and World Bank (WB) have developed the Sustainable Cities Project (SCP) to establish a support mechanism for participating second level metropolitan municipalities to plan and invest in a sustainable future. The investments to be made within the scope of SCP will follow environmental legislation of Republic of Turkey as well as World Bank safeguard policies and standards.

Osmaniye Drinking Water and Wastewater Network Projects ("the Project") is one of the sub-projects covered under the Facility for Refugees in Turkey (FRIT) Municipal Services Improvement Project in Refugee Affected Areas. The FRIT is the answer to the European Union (EU) Member States' call for significant additional funding to support refugees in Turkey and manages a total of 6 billion Euros. The main focus areas of the support are humanitarian assistance, education, health, municipal infrastructure, and socio-economic support. The Project aims to improve municipal infrastructure services including drinking water and wastewater network in Osmaniye which is one of the most affected cities by Syrian Refugee influx in Turkey. The Municipal Services Improvement Project will be co-financed from the International Bank for Reconstruction and Development (IBRD) loan and EU FRIT grant. İller Bankası A.S. (İLBANK) is the Borrower for the IBRD loan and intermediary recipient of the grant, and the project implementing agency, serving as a Financial Intermediary (FI) to Osmaniye Municipality. Osmaniye Municipality will be responsible for the implementation of the Project at the local level.

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 World Bank Environmental and Social Framework (ESF), and the national legislation in force in Turkey. This ESMP is therefore prepared to set out site specific mitigation, monitoring and institutional measures to be taken during land preparation, construction and operation phases of the above-mentioned drinking water and wastewater network projects to eliminate adverse environmental and social impacts, offset or reduce them to acceptable levels. This report has been prepared by Encon Çevre Danışmanlık Ltd. Şti. (Encon) in the scope of the Environmental and Management Plan study conducted for Osmaniye (Centrum) Drinking Water and Wastewater Project (the Project). The Project area is located in the central district of Osmaniye province. The Project has two components;

- **Component 1- Osmaniye Drinking Water Network:** Construction of 598 km water distribution network pipes in the city center of Osmaniye including new pressure zones and flowmeter regions and five storage tanks.
- **Component 2 - Construction of Wastewater Network:** Construction of 402 km wastewater network lines including sewer connections and manholes.

Overall, the proposed project is environmentally and socially beneficial. The provision of safe drinking water facilities and sufficient and properly working wastewater collection system in the city will have several significant positive impacts on the livelihoods and the environment in Osmaniye including the followings:

- The construction of a new drinking water network lines will increase and sustain the provision of safe water and greater access to safe water for both locals and Syrians Under Temporary Protection (SuTP);
- Reduction in water losses will provide increase in water and energy efficiency and more effective use of water resources;



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- Replacing the pipes, of which materials are not suitable for the climatic and soil properties of the city, with the ones with suitable material will help to provide a sustainable drinking water system for the city;
- The construction of a new sewerage network will eliminate the environmental and sanitation risks resulting from the problems (infiltration, inflow and clogging) and insufficiency of the existing sewerage network of Osmaniye;
- It will ensure that adequate and effective municipal infrastructure services are provided to the public in compliance with the national/international standards;
- Wastewater and drinking water system management and operational skills of the staff of Osmaniye Municipality will be developed; and
- The quality of life will be increased by providing the people safe access to a well-established water and wastewater infrastructure services.

Environmental and Socio-Economic Conditions

The Project will be carried out within the urban area in Osmaniye District. The construction of the sewerage and drinking water networks do not require expropriation of any private land. The routes of the proposed sewerage and drinking water lines will pass under the public roads, which are under the responsibility of Osmaniye Municipality, and therefore neither land acquisition nor resettlement will be needed for the construction of the two network lines.

Osmaniye Center district is located in the 1st degree seismic zone. Therefore, earthquake risk has to be taken into consideration in each step of the Project. Osmaniye is situated in the Eastern Mediterranean Region, East of Çukurova on the fertile lands on the eastern side of the Ceyhan River. The province is rich in water resources. These water resources meet the water demand for irrigation of the lands on which various crops are harvested throughout the year.

The project area is located in Mediterranean Region and situated within Mediterranean Phytogeographical Region. Almost all Mediterranean plants are grown in Osmaniye. The project activities will be carried out within the residential area. Therefore, the anthropogenic effect in the project area is quite high.

With its population of 268,647 in 2019 (Address Based Population Registration System of Turkish Statistical Institute), Osmaniye central district constitutes 0.65% of Turkey's population. According to data from the Directorate General of Migration Management (DGMM) 47,128 SuTP are being hosted in Osmaniye as of 31 March 2021.

Osmaniye is located in the TR6 Region¹, one of the 26 NUTS (Nomenclature of Territorial Units for Statistics) II Level Regions of Turkey and in Hatay sub-region (TR63) together with the other Mediterranean cities of Hatay and Kahramanmaraş provinces. According to the "Socio-Economic Development Ranking Survey of Provinces and Regions -2017" which was published by the Ministry of Industry and Technology (MoIT), General Directorate of Development Agencies, Osmaniye was

¹ NUTS classification for Turkey 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 TR6 (at the first level), corresponds to Mediterranean region and NUTS-2 of TR6 (at the second level) corresponds to Antalya, Adana and Hatay sub-regions. At the NUTS-3, Hatay sub-region (TR63) is divided into three provinces as Hatay (TR 631), Kahramanmaraş (TR 632) and Osmaniye (TR 633).



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ranked as the 54th in Turkey in terms of socio-economic development. According to this index, Osmaniye is one of the 4th Level Advanced Provinces.

Existing Municipal Infrastructure System

Existing Water Supply and Distribution Systems

Water is supplied from three sources in Osmaniye city center: Zorkun Springs, Yeniköy Wells and Central Wells. There are eight reservoirs serving the city. Six of these reservoirs are in operation. There is one pumping station feeding the water distribution network system. The annual water amount supplied for the city is 27,120,960 m³/year in 2017. The existing water supply sources are not sufficient to meet the current demand of Osmaniye city centre. The existing water network of Osmaniye Centrum was constructed by ILBANK. The Municipality added some part of the network when needed. Because of the age and the characteristics of the pipes, the network system often gives breakdowns and difficulties in repair. The pressure boundaries formed in the existing system vary between 20-80 m, which creates dramatic pressure changes throughout the distribution network especially during the water cut-offs and resupplies. The water network system also suffers from a high level of water losses. The whole system urgently needs to be improved and additional water sources should be provided to meet the demand.

Existing Wastewater System

The existing sewerage system of Osmaniye Centrum was constructed in 1985 and consists of 340 km of pipes, of which diameters vary between 200-1000 mm. The pipe materials used in the system are concrete and reinforced concrete (RC). The system works as combined system since there is no separate stormwater collection system in the city. There are three pumping stations with capacities of 150 l/s, 108 l/s and 30 l/s. The pumping stations were constructed within the last two years and are in good condition. Due to the technology used in the construction, the existing concrete/RC pipes have problems at the connection points. Because of the soil characteristics, the pipes were damaged. Most of the pipes are full of groundwater and silts carried by groundwater due to the high groundwater level. This affects the effective operation of both the collection system and the WWTP.

Existing WWTP

The wastewater collected from the city by the sewerage system is transferred to the Osmaniye Wastewater Treatment Plant (WWTP) located in Nohuttepe village neighborhood, 5 km far from the city center. The WWTP was designed in two stages for the years of 2010 and 2030. The capacities of the plant are 45,000 for the first stage and 70,000 m³/day for the second stage. The trickling filter is used for the treatment in the plant. The treated effluent is discharged into Hamis Creek.

ESMP Content and Key Mitigation Measures

The ESMP has identified mitigation measures and monitoring activities to reduce and avoid impacts associated with the project. This ESMP defines:



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- Description of the potential environmental and social impacts,
- 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 mitigation, and
- Capacity building requirements.

Table 1. Summary of Mitigation Measures

Resource	Mitigation Measures
Soil Environment	Topsoil preservation and restoration Prevention of soil contamination Erosion control measures
Air Environment	Dust and exhaust emissions management Air quality monitoring
Noise	Regular maintenance of the construction machinery, equipment and vehicles Establishment of a robust grievance mechanism
Water Resources	Stormwater, Erosion, and Sediment Control Water Supply System Protection
Solid Waste	Adequate waste disposal facilities Designation of temporary storage areas
Traffic Circulation and Safety	Traffic Control and Scheduling Trainings for project personnel Usage of appropriate traffic signage Prevention storage of construction materials, equipment and machineries on traffic lanes Preparation of a Traffic Management Plan
Natural Habitats and Biodiversity	Pre-construction survey Re-vegetation, where possible Procedures for unexpected threatened species finds and fauna handling Measures to further avoid and minimize the construction footprint
Community and Occupational Health and Safety	Preparation of a Health and Safety Management Plan The Occupational Health and Safety trainings Ensuring usage of personal protective equipment Emergency Preparedness and Response Plan Necessary health and safety signs and traffic signs First aid and emergency response equipment Adequate OHS organizational structure
Labor Force	A grievance mechanism Non-discrimination and equal opportunity Preparation of information materials Managing and monitoring the performance of sub-contractors in relation to the requirements of child labor, unregistered employment and forced labor Proper adaptation of human rights policy and labor rights
Archaeological and Cultural Resources	Pre-Construction Surveys Worker Cultural Resources Sensitivity Training
Stakeholder Engagement	Establishment and Management a grievance mechanism Disclosure of ESMP and other relevant information Preparation of communication materials Ensure regular consultations with the local authorities and communities



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Resource	Mitigation Measures
Climate Change	Optimal utilization of the available construction equipment and materials Regular maintenance of construction vehicles and equipment Trainings for personnel regarding energy efficiency



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I. INTRODUCTION

I.1. Purpose

Osmaniye (Centrum) Drinking Water and Wastewater Project (“the Project”) is one of the sub-projects covered under the Facility for Refugees in Turkey (FRIT) Municipal Services Improvement Project in Refugee Affected Areas. The FRIT is the answer to the European Union (EU) Member States’ call for significant additional funding to support refugees in Turkey and manages a total of 6 billion Euros. The main focus areas of the support are humanitarian assistance, education, health, municipal infrastructure, and socio-economic support². The Project aims to improve municipal infrastructure services including drinking water network and wastewater network in Osmaniye, which is one of the most affected cities by the influx of Syrians Under Temporary Protection (SuTP) in Turkey. The Municipal Services Improvement Project will be co-financed from the International Bank for Reconstruction and Development (IBRD) loan and EU FRIT grant. İller Bankası A.S. (İLBANK) is the Borrower for the IBRD loan and intermediary recipient of the grant, and the project implementing agency, serving as a Financial Intermediary (FI) to Osmaniye Municipality. Osmaniye Municipality will be responsible for the implementation of the Project at the local level.

This Environmental and Social Management Plan (ESMP) has been prepared to assess and identify the potential environmental and social impacts and risks arising out of the development of the Project and recommend mitigation measures for significant adverse environmental and social impacts 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 implementation and operational phases of the Project and are effectively managed. The specific objectives are:

1. to conduct all project activities in accordance with the applicable national legislation and in compliance with the World Bank’s (WB) Environmental and Social Framework (ESF);
2. to identify mitigation measures by adopting the mitigation hierarchy, which covers anticipate and avoid, minimize, and, where residual impacts remain, compensate or offset risks and impacts;
3. to prevent or compensate any loss of the affected person;
4. to prevent environmental degradation as a result of either individual sub-projects or their cumulative effects;
5. to enhance positive environmental and social outcomes;
6. to ensure maximizing efficiency and minimizing costs in complying with environmental and social standards;
7. to act as an Action Plan in order to ensure that the project impact mitigation measures are properly implemented and monitored; and
8. to ensure that all stakeholders concerns are addressed.

This ESMP has been prepared consistent with the World Bank guidance specified in the World Bank Environmental and Social Framework (ESF) being effective as of October 1, 2018.

² https://ec.europa.eu/neighbourhood-enlargement/news_corner/migration_en



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I.2. Background

Turkey is one of the most affected countries by the influx of SuTP and hosts the largest SuTP among the countries neighboring Syria. Turkey opened its borders to Syrians in April 2011 and is currently home to 3.6 million refugees. The Syria crisis has resulted in a substantial increase in the population of many municipalities across Turkey, especially in the Southeastern region. Among them, Osmaniye hosts SuTP constituting 8.60% of its total population. According to data from the Directorate General of Migration Management (DGMM) 47,128 SuTP are being hosted in Osmaniye as of 31 March 2021. This situation has resulted in, among others, unprecedented demand for municipal wastewater and water services in the city. In order to bring solution to this situation, Osmaniye (Centrum) Drinking Water and Wastewater Project has been involved in the sub-projects to be financed under the FRIT Municipal Services Improvement Project in Refugee Affected Areas (the MSIP). One of the tasks under the scope of the Project is the preparation of an ESMP in accordance with the World Bank ESF, and the national legislation in force in Turkey. This ESMP is therefore prepared to set out site specific mitigation, monitoring and institutional measures to be taken during construction and operation phases of the above-mentioned Project to eliminate adverse environmental and social impacts, offset them or reduce them to acceptable levels.

I.3. Project Description

The Project will be performed in Osmaniye province located in the East-Mediterranean region of Turkey. As of March 2021, Turkey hosts over 3.6 million SuTP, which are mainly located in the Southeast Anatolia region of Turkey. Osmaniye hosts SuTP population of 47,128, which equals to 8.60% of its total population (Directorate General of Migration Management, March 2021).

The rapid and sudden increase in the population puts considerable pressure on the municipal infrastructure and services and brings an additional burden for the Osmaniye Municipality in terms of providing reliable services. In order to provide support to the Municipality for its municipal infrastructural services, Osmaniye (Centrum) Drinking Water and Wastewater Project was included in the sub-projects of the MSIP. The Project aims to meet the increased demand and improve public health and environment in Osmaniye through providing safe, reliable and sustainable drinking water and wastewater services.

The Project scope consists of the following two components:

- **Component 1- Osmaniye Drinking Water Network:** Construction of 598 km water distribution network pipes in the city center of Osmaniye including new pressure zones and flowmeter regions and five storage tanks.
- **Component 2 - Construction of Wastewater Network:** Construction of 402 km wastewater network lines including sewer connections and manholes.

The expected results from the project can be listed as below:

- The project will enable Osmaniye Municipality to provide a wastewater network system meeting the increased capacity in Osmaniye and thereby reduce risk to public health, environment, and natural sources;
- A new water distribution system in the city will ensure to supply safe and sufficient drinking water to the city; decrease the water losses; eliminate the contamination and health risks by replacing the cast iron and PVC pipes continuously creating problems



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and the AC pipes creating health concerns; and provide continuous and proper operation of the drinking water system;

- Project will provide contribution for Turkey to comply with the national and EU's regulatory requirements established for the drinking water;
- The project will lead to increasing the overall effectiveness and efficiency of the drinking water distribution system in Osmaniye;
- The health standards of the public will be improved through the implementation; and
- The project will increase access to improved water services for the people living in the city including the SuTP.

I.4. ESMP Contents

This ESMP have assesses the risk and impacts of the proposed project based on the available information; the type of the project, here is a wastewater and drinking water project; the specific context in which the proposed project will be developed and implemented; and the capacity and commitment of the Beneficiary (Osmaniye Municipality) together with the findings of the Project Identification Document (PID), the Environmental Impact Screening Report and the design reports.

The assessment of the risks and impacts were carried out in accordance with the World Bank ESF, and 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 Environmental and Social Standards (ESSs) comprised in the ESF, potential adverse environmental and social impacts 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 document that summarizes sub-project specific environmental and social measures and translates them into specific management actions. It will be reviewed and updated as the Project progresses through detailed design and construction, by taking into account the followings:

- changes on national legislation and international standards;
- changes on the project design parameters during the detailed design and tender document preparation stages (if any);
- monitoring results; and
- test and trial results performed during Project's operation phase;

It was developed based on the following source documents and information:

- Information provided by the Osmaniye Municipality;
- Findings of Site Visit performed on 18.02.2020;
- The requirements specified in the Terms of Reference (ToR) for the preparation of the Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plan (ESMP), and Ex-Post Social Audit;
- Project Identification Document (PID) prepared by Vadi Project in November 2019;
- Environmental Impact Screening report prepared by Vadi Project in February 2019;
- Preliminary Report for the Osmaniye Drinking Water Detailed Design prepared by Canalp Engineering approved by ILBANK in 20 May 2019;



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- Osmaniye Drinking Water Detailed Design Report prepared by Canalp Engineering and approved by ILBANK in 20 May 2019;
- Osmaniye Sewage Design Report;
- Environmental and social policies: The World Bank ESF and the national legislation; and
- The provisions of the environmental and social (E&S) documents including Environmental and Social Management Framework (ESMF), Resettlement Framework (RF), Stakeholder Engagement Framework (SEF) and Labor Management Procedure (LMP); and
- The Stakeholder Engagement Plan (SEP) for Osmaniye Municipality prepared by ILBANK, April 2020;

The content of this document is as follows:

- Chapter I: Introduction
This chapter introduces the context and the objective of the ESMP.
- Chapter II: Baseline Conditions
This chapter describes the baseline conditions in and around the proposed project area, including physical, biological and socio-economic conditions.
- Chapter III: Description of the Proposed Project
This chapter briefly describes the proposed project, the project related policies and legislations, the existing environmental and social condition of the project area and the existing situation related to the sewerage and drinking water network system in Osmaniye.
- Chapter IV: Legal Framework;
This chapter explains national and international legal requirements, and also identified environmental agreements that are relevant to the project.
- Chapter V: Environmental and Social Impacts of the Project
This chapter assesses the potential positive and negative impacts of the project.
- Chapter VI: Mitigation Management and Monitoring Plan
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 to strengthen the environmental and social management capacity of the Osmaniye Municipality.
- Chapter VIII: Public Participation
This chapter gives detailed information about the public meetings held, presents the public's comments and the results of the survey.



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II. BASELINE CONDITIONS

II.1. Physical Environment

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

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

II.1.1. Project Area

The project area is located in the central district of Osmaniye province. Having an area of 3,767 km², Osmaniye province is situated on eastern edge of Çukurova Plain in the east of Mediterranean Region of Turkey. It is surrounded by Gaziantep in the east, Hatay in the south, Adana in the west and Kahramanmaraş in the north. The province is divided into seven districts. The project area covers Osmaniye Centrum. Site location map of the Project is given in Figure II.1.

II.1.2. Land Use and Property

The latest Development Plan was prepared in the year of 2015 for an area of 5,600 ha. The residential area in the city spreads over an area of 815 ha. The city center is located on the southeast of D-400 State Highway which was passing through the northwest of residential area. The housing area is located close to the southeast of the residential area. The number of high-rise buildings is lower than low-rise ones due to the low-density residential development. Approximately 10% of the residential were declared as a slum prevention area.

The completion rate of sewerage system in the development plan of Osmaniye is 85-90%. In the new residential areas out of the development plan, studies for sewerage are ongoing.

The Project will be carried out within the urban area in Osmaniye as shown in the following Figure II.1. The construction of the sewerage and drinking water networks do not require expropriation of any private land. The routes of the proposed sewerage and drinking water lines will pass under the public roads, which are under the responsibility of Osmaniye Municipality, and therefore neither land acquisition nor resettlement will be needed for the construction of network lines. There are five reservoirs to be constructed in the scope of Component 1. For two of them, the lands, on which the existing reservoirs are located, will be used. However, the rest remaining three reservoirs will be constructed on the new lands, which are municipality-owned or state-owned.



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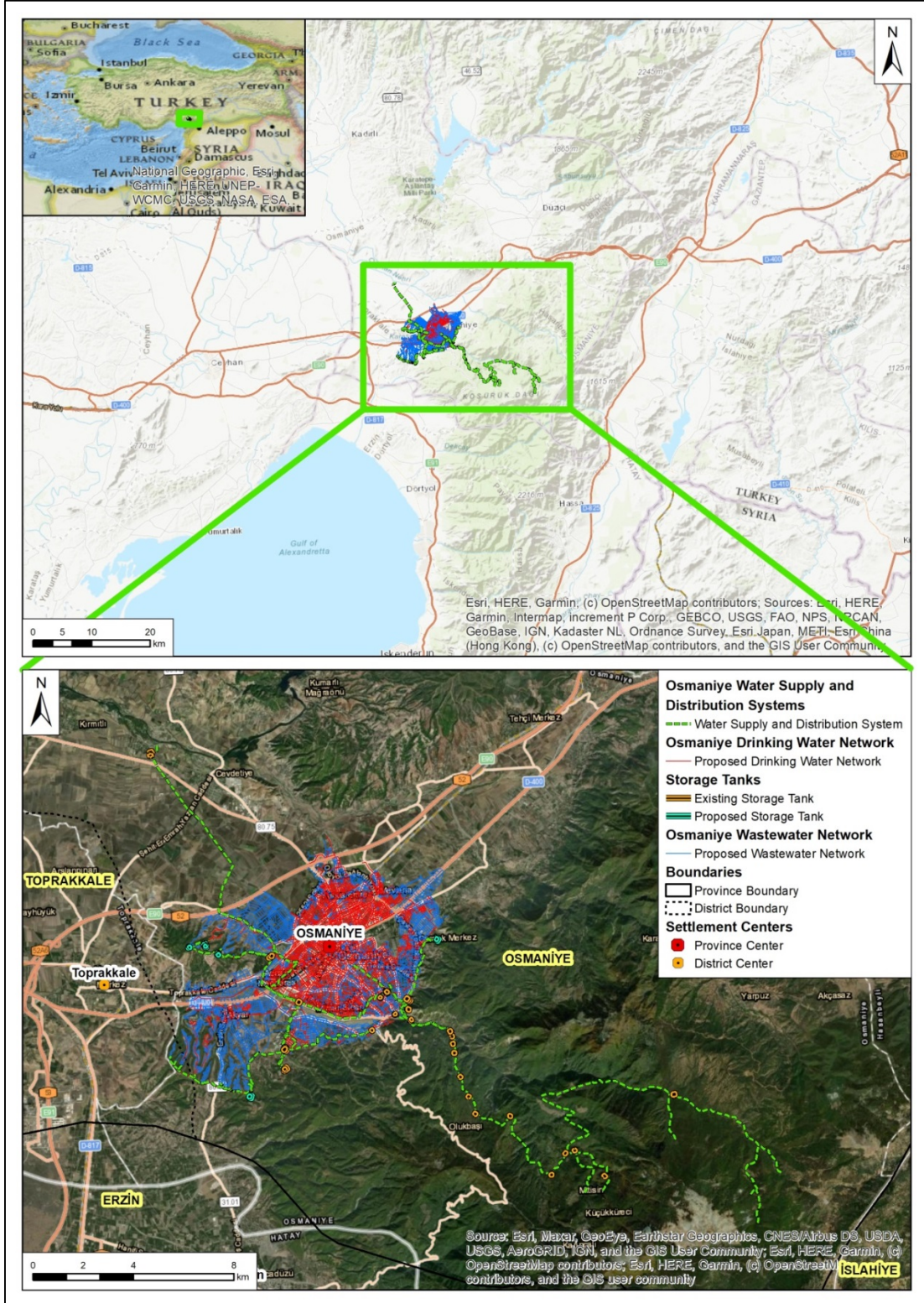


Figure II.1 Project Area



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II.1.3. Climate

Although the climate in Osmaniye differs between mountains and plains, it has the characteristics of the Mediterranean Climate. In general, summers are very hot and dry while the winters are mild and rainy.

The weather in valleys is influenced by the microclimatic climate conditions generating moisture similar to the Black sea climate. The forest cover affects the weather conditions by cooling the weather in summer and heating it in winter. Amanos Mountains extend parallel to the Mediterranean Sea and it causes short term rains. Although the high altitudes have snow in winter, rain is effective in lower altitudes.

The records taken from the Turkish State Meteorological Service show that annual average temperature is 18.5 °C. The highest temperature is recorded as 43.6 °C in August and the lowest temperature is recorded as –8.5°C in January. The tabular representation of the average, maximum, minimum temperature records are given in Table II.1.

Precipitation is higher in winter and fall than the other months and average annual precipitation is measured as 841.9 mm.

Table II.1. Osmaniye Meteorological Data (2019)

	January	February	March	April	May	June	July	August	September	October	November	December	Yearly
	Last Climate Period (1987-2019)												
Avg. Temperature (°C)	8.6	10.1	13.0	17.1	21.2	25.2	27.9	28.5	25.6	20.9	14.4	10.0	18.5
Highest Avg. Temperature (°C)	14.5	16.1	19.0	23.5	27.6	31.2	33.4	34.2	32.1	28.1	21.5	16.0	24.8
Lowest Avg. Temperature (°C)	3.5	4.6	7.2	10.9	14.8	18.9	22.4	23.1	19.3	14.3	8.1	4.9	12.7
Average Number of Rainy Days	9.4	9.1	10.6	9.8	7.3	3.3	1.5	1.2	3.3	6.7	6.7	9.1	78.0
Average Monthly Amount of Rain (mm)	107.5	101.6	120.5	83.8	72.2	41.4	19.2	10.6	35.7	72.2	95.1	95.1	854.9
	Measurement Period (1987-2019)												
Highest Temperature (°C)	23.7	28.0	32.0	36.5	41.7	42.6	42.8	43.6	41.2	38.4	31.0	29.0	43.6
Lowest Temperature (°C)	-8.5	-6.8	-4.0	0.1	4.6	11.5	15.0	15.0	7.8	4.1	-4.5	-5.4	-8.5

Source: General Directorate of Turkish State Meteorological Service

II.1.4. Geography and Topography

Osmaniye is located in the eastern part of the Mediterranean Region. Situated on the eastern edge of the Çukurova plain in the foothills of the Nur Mountains, it is a gateway between Anatolia and the Middle East.

The province surrounded by Gaziantep in the east, Hatay in the south, Adana in the west, and Kahramanmaraş in the north is located in the Northern sphere is located between 30° 52'-36° 42' east Meridians and 36° 57'-37° 45' north parallels. Located at 120 m above the sea level, Osmaniye's distance to the Mediterranean Sea is 20 km. The total area of the province is 3,320 km².



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Osmaniye is a unique place having various landforms. The land rises gradually from the south to the north and the east. In the western parts of the province, the plains of Çukurova extend towards the east in the western part of Osmaniye. In the south are Amanos Mountains (Gâvur Mountains) extending from Iskenderun Bay to the east, Taurus Mountains in the northwest and northeast direction, and Dumanlı and Düldül Mountains in the east. There is a slightly hilly terrain between the mountains and the plains. The plain land is mostly found in Merkez, Toprakkale, Kadirli and Düziçi districts. The highest mountains are Düldül Mountain and Turna Mountain having a height of 2,400 m and 2,285 m, respectively.

Different river routes and valleys, steep slopes, small islands formed by river bed variation, and alluvial fans in plain regions are the main morphological features of Osmaniye. The Province center is divided into north and south sections. In the north section, mesozoic limestone series were removed by the erosion down to the Paleozoic series and very deep valleys have been formed on this section. The whole high and barren north section contradicts the south section which is showing forestry characteristics particular to the Mediterranean climate and having soft reliefs of Miosen lands of Kadirli crest. In this section, signs of Anti Taurus structure lines can be seen. Young alluvial plains filling the Kadirli-Ceyhan basin collapse area have different altitudes up to 250 m. (Pamir and Tolun, 1975).

II.1.5. Natural Hazards and Seismicity

Natural Hazards

Landslides occur in Yarpuz, Kızılaç, Gökmustafalı and Bekdemir villages in Osmaniye City Center. Gökçayır and Kurtlar villages are also possible landslide areas. Besides, Yaylalık Village of Bahçe District was declared as a Disaster Exposed Area by the Decree of Council of Ministers due to the rock fall incident occurred in the area.

The potential water resources that cause flood in Osmaniye are Ceyhan River flowing from the north to the west of the Central district and the streams feeding the river. Endel (Koçyurdu), Hemite (Gökçedam), Sakarcalı, Selimiye, Orhaniye, Fakiuşağı villages located along the Ceyhan River and Merkez Baş Mahallesi, Develi, 7 Ocak Mahallesi, Cumhuriyet District, located around the Karadere Stream (Karaçay) passing through the Osmaniye Province Central District have previously been subject to flooding in the past years.

Seismicity

As seen from Figure II.2, Osmaniye Center district is located in the 1st degree seismic zone. Bahçe, Düziçi, Hasanbeyli and Toprakkale Districts are located in the 1st degree seismic zone, Kadirli in the 2nd degree seismic zone and Sumbas district in the 3rd degree seismic zone. According to the below Earthquake Regions of Turkey Map (Figure II.4) issued by Official gazette No. 30364 dated 18.03.2018, ground acceleration of Osmaniye province, including Osmaniye District is classified as between 0.2-0.3 g. Therefore, earthquake risk has to be taken into consideration in each step of the Project.



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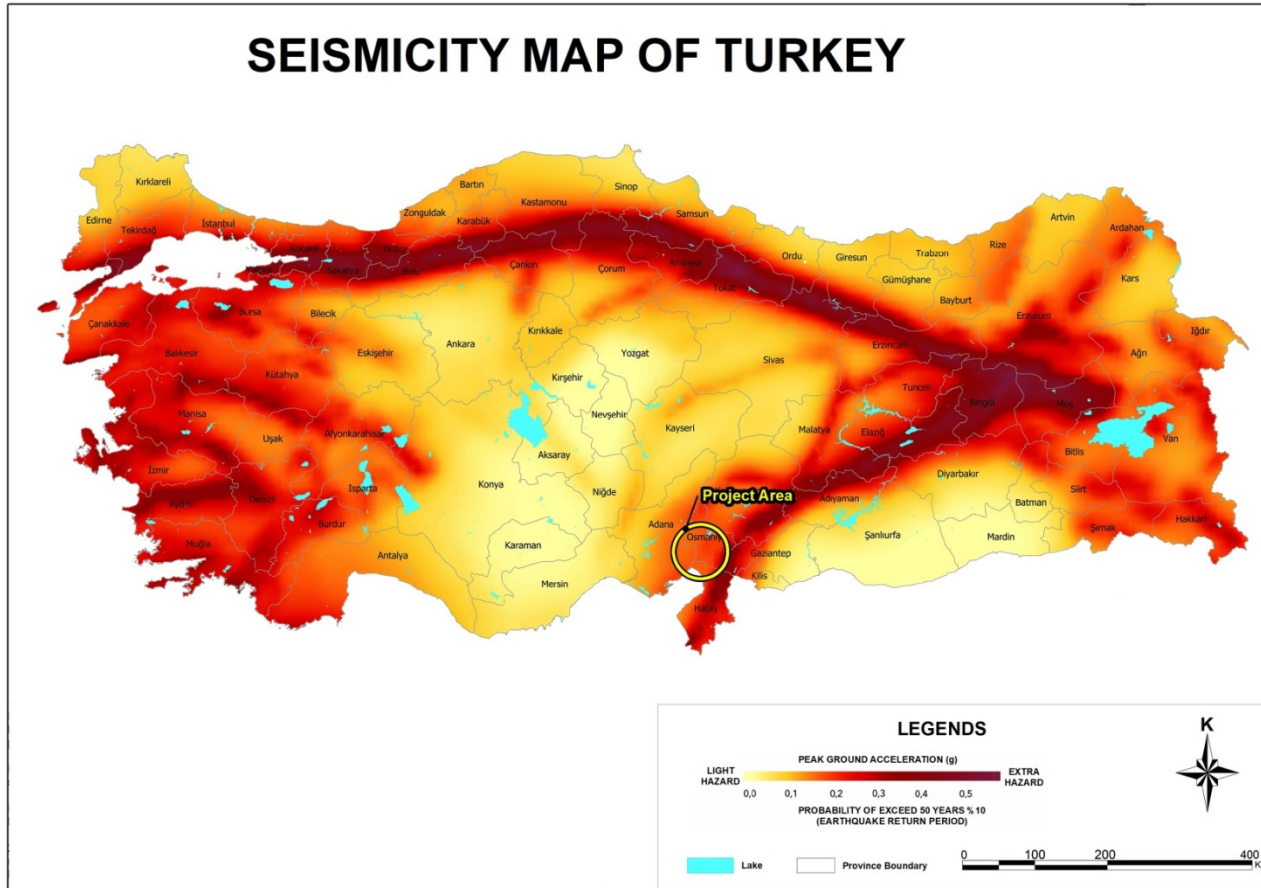


Figure II.4. Seismicity Map of Turkey



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II.1.6. Hydrogeology

Osmaniye is situated in the Eastern Mediterranean Region, East of Çukurova on the fertile lands on the eastern side of the Ceyhan River. The province is rich in water resources. These water resources meet the water demand for irrigation of the lands on which various crops are harvested throughout the year.

The most important rivers of the province are Karaçay Stream, Hamiş Creek and Ceyhan River. The main surface water resources of the province are given in the Table II.2.

Table II.2. Surface Water Sources in Osmaniye

Water Source	Average Annual Flowrate (m ³ /s)	Average Surface Water Potential (hm ³ /year)	Description
Ceyhan River	220	6,900	It arises from Nurhak Mountains and pours into the Mediterranean Sea after a flow of 510 km. Its length in the province of Osmaniye is 75 km. Aslantaş and Berke Dams were built on it.
Horu (Hamis) Creek	3.17	98.2	Hamis creek arises from Yerli Tepe and İnicirlikaya as two branches and has a length of 55 km. Although its initial name is Horu Stream, it later takes the name Hamis Stream. It joins the Ceyhan River in Cevdetiye Region.
Karacay Creek	2.39	74.8	It springs from Hamo and Hanife Cemetery hills. It joins the Ceyhan River after a 70 km flow. Its length within the provincial borders is 42 km.
Kalecik Stream	1.54	49.0	Kalecik Stream arises from Kocakuz and Ardıçlıkaya hills, which both lie within the provincial borders. After flowing 25 km, it joins Hamis Creek. Kalecik Dam was built on it.
Savrun Creek	7.95	308	Savrun Stream springs from Mozgaç Mountain Akgedik location. Its total length is 83 km and the length in the province is 65 km. It passes through the town of Kadirli and joins the Ceyhan River.
Kesik Suyu Creek	3.75	118	It arises from Ümbelo and Bozkoyak hills. Mehmetli Dam was built on it. Its total length is 23 km. It flows into the Ceyhan River.
Sabunsuyu Creek	5.24	164.8	It arises from Çakıroğlu Region and has a length of 43 km. Its length in the province is 23 km. It flows into the Ceyhan River.
Yarpuz Creek	1.66	52.2	It arises from the Topbarnaz hills and joins the Hamis Stream after a 30 km flow.
Keşiş Creek	10.3	325	47 km of the Creek, having a total length of 60 km passes through Osmaniye Province borders. Having an annual average flow of 347 hm ³ , the creek flows into Aslantaş dam.

Source: Osmaniye Province Development Plan, 2019-2023 and Osmaniye Province 1/100.000 scale Environmental Revision Plan, 2018

In addition to above mentioned surface water resources, there are three underground water resources located beneath the plains in central district, Düziçi and Kadirli. Gürdük Spring, where Karaçay was born, is the most important underground water source of the province. It is located between Zorkun Plateau of Middle Amanos and Cebel Subdistrict. A part of the source was taken into the Osmaniye Central District catchment to supply drinking water.

There are 15 dams and a pond serving as an irrigation source in Osmaniye. There is no natural lake in the province. The dams in the province are used for energy production as well as irrigation and flood protection. Berke Dam, built on the Ceyhan River, takes the first place among the hydroelectric power plants with an annual energy production of 1669 GWh. It is followed by Aslantaş dam with an annual energy production of 569 GWh.

The dams and the ponds in the Province are given in Table II.3.



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Table II.3. Dams and Ponds in Osmaniye

District	Dam/Pond	End year of Construction	Water Storage Capacity (hm ³)	Irrigated Area (ha)	Energy Production	
					Power	Annual Production (GWh)
Central District	Kalecik Dam	1986	32.50	5,757	-	-
Bahçe	Arıklıkış Pond	1998	2.20	268	-	-
Düziçi	Berke Dam	1999	427.00	-	510	1,668
Kadirli	Aslantaş Dam	1985	1,676.30	97,798	138	569
Sumbas	Mehmetli Dam	1971	106.20	10,645	546	1,681
Merkez	Bahçeköy Pond	2015	0.538	65	-	-
Merkez	Köyyeri Pond	2015	0.746	95	-	-
Total			2,245.224	118,798	-	-

Source: Osmaniye Province Development Plan, 2019-2023

II.1.7. Protected Areas

In order to identify and evaluate the protected areas within the Project Area and its immediate vicinity, desktop studies and literature researches were carried out by using the databases of the relevant institutions within the scope of the Project. For this purpose, sensitive area list available in Annex 5 of the EIA Regulation was used as reference. This list covers areas that need to be protected in accordance with international conventions that Turkey is contracting party and nationally declared protected areas.

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

- Database of the Ministry of Culture and Tourism, Adana Directorate of Cultural Heritage Preservation Regional Board (<https://korumakurullari.ktb.gov.tr/TR-132373/tasinmaz-kultur-varliklari.html>)
- Database of Ministry of Agricultural and Forestry, General Directorate of Nature Conservation and National Parks (<https://www.tarimorman.gov.tr/DKMP>)
- Database of Ministry of Culture and Tourism, General Directorate of Cultural Heritage and Museums (<http://kve.ulakbim.gov.tr>)
- Map of Prohibited and Open Hunting Areas in Osmaniye Province for years 2020-2021 (<https://avlakharitalari.tarimorman.gov.tr/AvlakHaritalari/80.jpg>)

Protected Areas in accordance with National Legislation

Areas required to be protected in accordance with the Turkish legislation 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.



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

- There is one Natural Park in Osmaniye Province. It is iftmazı Nature Park which is located approximately 5 km south of the Project Area.
- There is one National Park in Osmaniye Province. It is Karatepe-Aslantaş National Park and located 38 km north of the Project Area.
- There is no nature monument, Nature Conservation Area and Wetland, in Osmaniye Province.

In addition to those protected areas listed above, there is a wetland area formed by the Kastabala Valley Key Biodiversity Area and the Ceyhan River. In this wetland area, there are 250 bird species identified so far.

Wildlife Protection Areas, Wildlife Development Areas and Wild Animal Nestling Areas determined in accordance with the Land Hunting Law

Map of prohibited and open hunting areas for years 2020-2021, prepared by Ministry of Agricultural and Forestry, General Directorate of Nature Conservation and National Parks, is presented in Figure II.5. As could be seen from the map, there is one Wildlife Development Area (WDA) in Osmaniye. Osmaniye Zorkun Plateau WDA is located about 21 km southeast of the Project Area. There are various hunting areas in the Province (see Figure II.5).

Areas defined as Cultural Property, Natural Property, Protected Site and Protected Area according to 2863 numbered Law on Protection of Cultural and Natural Properties dated July 21 1983, 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.

Archaeological protected areas around the Project Area are given in the below list.

- Hierapolis Kastabala (Castabala), 1st and 3rd Degree Archaeological Site
- Karataşlı Tumulus, 1st Degree Archaeological Site
- ardak Village Gökdere Locality, Necropolis Area, 1st and 3rd Degree Archaeological Site
- Akyar Village Topraktaştepe Locality, Akyar Necropolis Area, 1st Degree Archaeological Site
- Cevdetiye Village, Kamışlı Tumulus, 1st Degree Archaeological Site
- Yaveriye Village, Örenşehir Ruins, 1st Degree Archaeological Site
- Dumlupınar District, Yapılıpınar Tumulus, 1st Degree Archaeological Site
- Kazmaca Village, Aleçik Ruins, 1st Degree Archaeological Site
- Kırmıtlı Town, Kırmıtlı Tumulus, 1st Degree Archaeological Site
- Tatarlı Village, Şemsi Tumulus, 1st Degree Archaeological Site
- ardak Village, ardak Necropolis Area, 1st and 3rd Degree Archaeological Site
- Kırmacılı Village Tülücüler District, Vayvaytepe Necropolis Area, 1st and 3rd Degree Archaeological Site
- Köyyeri Village, Köyyeri 3rd Degree Archaeological Site
- Gebeli District Gebeli (Kötü Castle) and Necropolis Area, 1st Degree Archaeological Site



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- Konuralp Town Yörükleritepe Locality, Yörükler Tepe Necropolis Area
- Gökçedam Village, Hamidiye Mountain, 1st and 3rd Degree Archaeological Site
- Zorkun Plateau, Karacalar Village, Sarıseki Locality, Archaeological Settlement and Necropolis Area 1st Degree Archaeological Site
- Akyar Village, Akyar Necropolis Area and Yılanlıtepe Ancient Settlement 1st and 3rd Degree Archaeological Site
- Fakiuşađı Village, Fakiuşađı Ancient Settlement 1st and 3rd Degree Archaeological Site
- Fakiuşađı Village, Fakiuşađı Necropolis Area, 1st Degree Archaeological Site
- Kırmıtlı Town, Yanıkçiftlik Tumulus, 1st Degree Archaeological Site
- Harnupburnu District. Harnupburnu Cemetery and Archaeological Site, 1st degree Archaeological Site
- Köyveri Village, Köyiçi Lovcality, Köyveri Necropolis Area, 2nd degree Archaeological Site
- Dereobası Village Archaeological Site
- Kırmacılı Village Archaeological Site
- Çardak Village, 1st degree Archaeological Site
- Kırmacılı Village, 1st degree Archaeological Site

Among above listed archaeological sites, Kastabala is one of the most important ancient cities in Cukurova Region. It is located 12 km away from the Osmaniye city center.

In order to identify the cultural assets and protection areas in the vicinity of the Project Area, the database of cultural heritage of Turkey (<http://kve.ulakbim.gov.tr>) has been queried. As the project area is located the central district of Osmaniye, cultural assets have been searched in the Central District. The identified immovable cultural assets are listed in Table II.4.

Table II.4. Inventory of Immovable Cultural Assets in Osmaniye District

Asset Subtype	Number in Osmaniye Central District
Archeological Protection Area	4
Military	3
Other	2
Religious	5
Natural Assets	1
Folk Culture	126
Administrative	4
Ruins	10
Cultural	5
Graveyards	7
Civil Architecture Sample	3
Total	170



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Aquaculture Production and Breeding Sites within the scope of Aquaculture Law

Kastabala Valley Wetland Area located between the Central and Düziçi Districts, along the Ceyhan River was declared as a key biodiversity area. Ceyhan River is also important inland water in Osmaniye. There are also two ponds (Bahçeköy and Köyyeri) and a dam (Kalecik Dam) in the Central District of Osmaniye.

In order to protect the resources of fisheries in a sustainable manner, during the certain periods of each year, hunting is prohibited in these water resources in accordance with the provisions of "the Communiqués Regarding the Commercial and Amateur Fishery Fishing".

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

Karatepe Aslantaş Natural Protected Area, located within the boundaries of Kadırlı and Düziçi districts of Osmaniye, has been designated as a "Sensitive Area to be Protected" by the Ministry of Environment and Urbanization General Directorate of Protection of Natural Assets. It is located 38 km north of the Project Area.

Areas defined in Pasture Law

The Project Area is not located in pasture land which is subjected to 4342 numbered Pasture Law.

Areas designated in accordance with the Regulation of the Wetland Conservation

There is neither any wetland area protected under RAMSAR Convention, or wetland with national importance and wetland with local Importance in Osmaniye Province.

Other Protected/Restricted Areas

In addition to presented information above, the areas listed below (also listed in Annex 5 of the EIA Regulation) do not exist in the Project Area:

- Areas defined in the 17th, 18th, 19th, and 20th Articles in the Water Pollution Control Regulation
- Protected areas within the scope of Bosphorus Law
- Forest Areas within the scope of Forest Law
- Areas subject to construction ban in accordance with the Coastal Law
- Areas designated in accordance with the Law on the Vaccination of Pesticides and Improvement of Olive Cultivation
- Areas subjected to construction ban and areas of which their present characteristics should be protected according to Approved Environment Plans (areas of which their natural characteristics should be protected, biogenetic reserve areas, geothermal areas, etc.)



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- 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
- 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
- Lakes, rivers, groundwater operation sites
- Areas important for endemic species that is endangered or potentially endangered or important for scientific researches, biosphere reserve, biotopes, biogenetic reserve areas, areas have unique characteristics for geologic and geomorphologic formations

Protected Areas in accordance with International Conventions

Areas required to be protected in accordance with the international conventions to which Turkey 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.

Other Protected/Restricted Areas

There are no areas within the context of below mentioned protected/restricted areas;

- Mediterranean Monk Seal Living and Reproduction Areas, I. and II. Conservation Zones defined in Important Sea Turtle Reproduction Areas from the protected areas in accordance with the Convention for the Protection of the Wildlife and Habitats of Europe (BERN Convention)
- Areas protected under the Convention on the Protection of the Mediterranean from Pollution (Barcelona Convention)
- Areas designated as Special Protection Area in Turkey in accordance with the Protocol on the Protection of Special Protection Areas in the Mediterranean
- Fields on the list of 100 Coastal Historic Sites with Joint Prevention in the Mediterranean published by the selected United Nations Environment Program in accordance with the Geneva Declaration
- The coastal areas that are the living and feeding environment of Native Species of Hazardous Dangers to the Mediterranean included in 17th Article of the Geneva Declaration
- Cultural, historical and natural areas that are protected by the Ministry of Culture under Cultural Heritage and Natural Heritage status according to the 1st and 2nd articles of the Convention for the Protection of the World's Cultural and Natural Heritage
- Protected areas in accordance with the Convention for the Protection of Wetlands with International Importance as Particularly Water Birds Living Environment (RAMSAR Convention)
- European Landscape Contract



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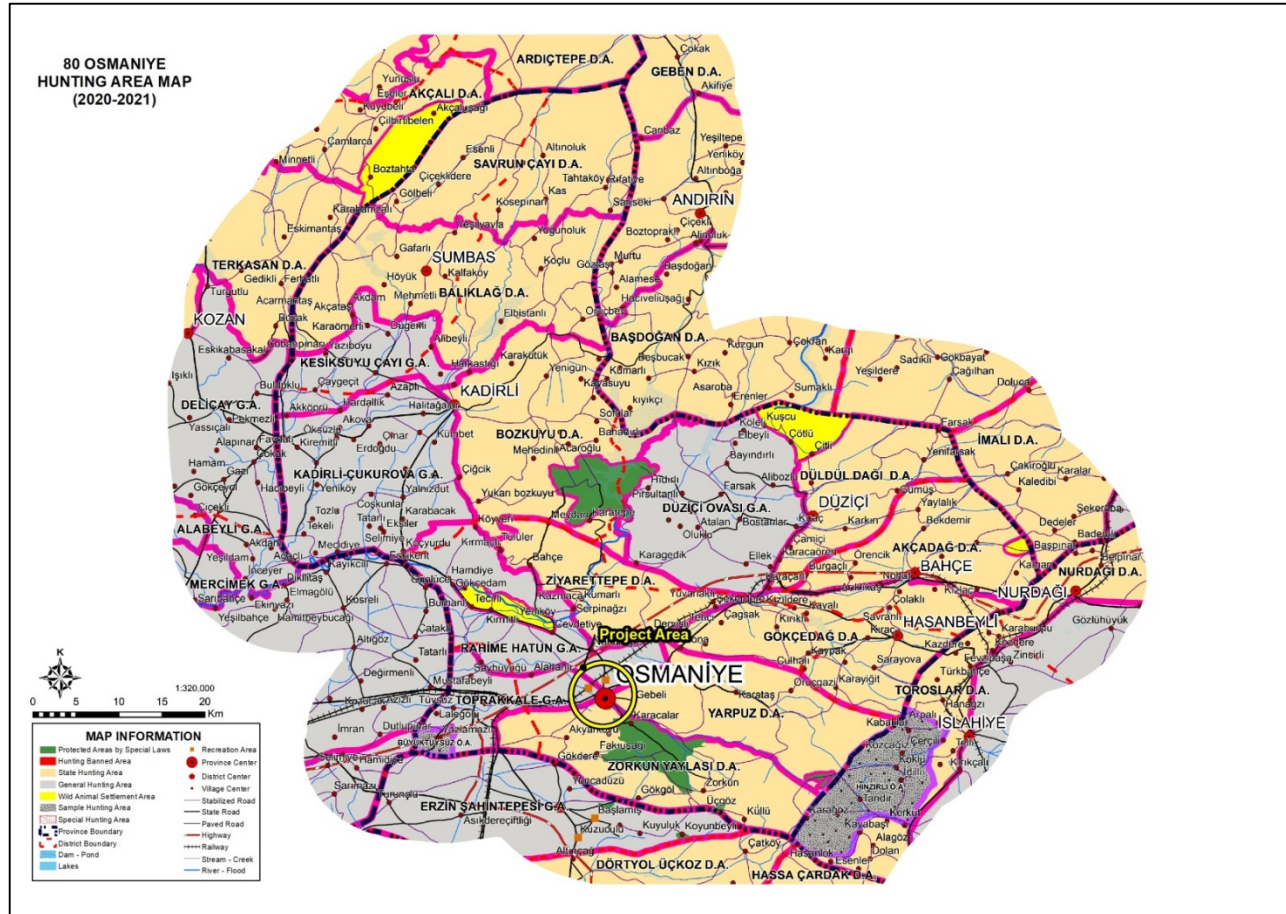
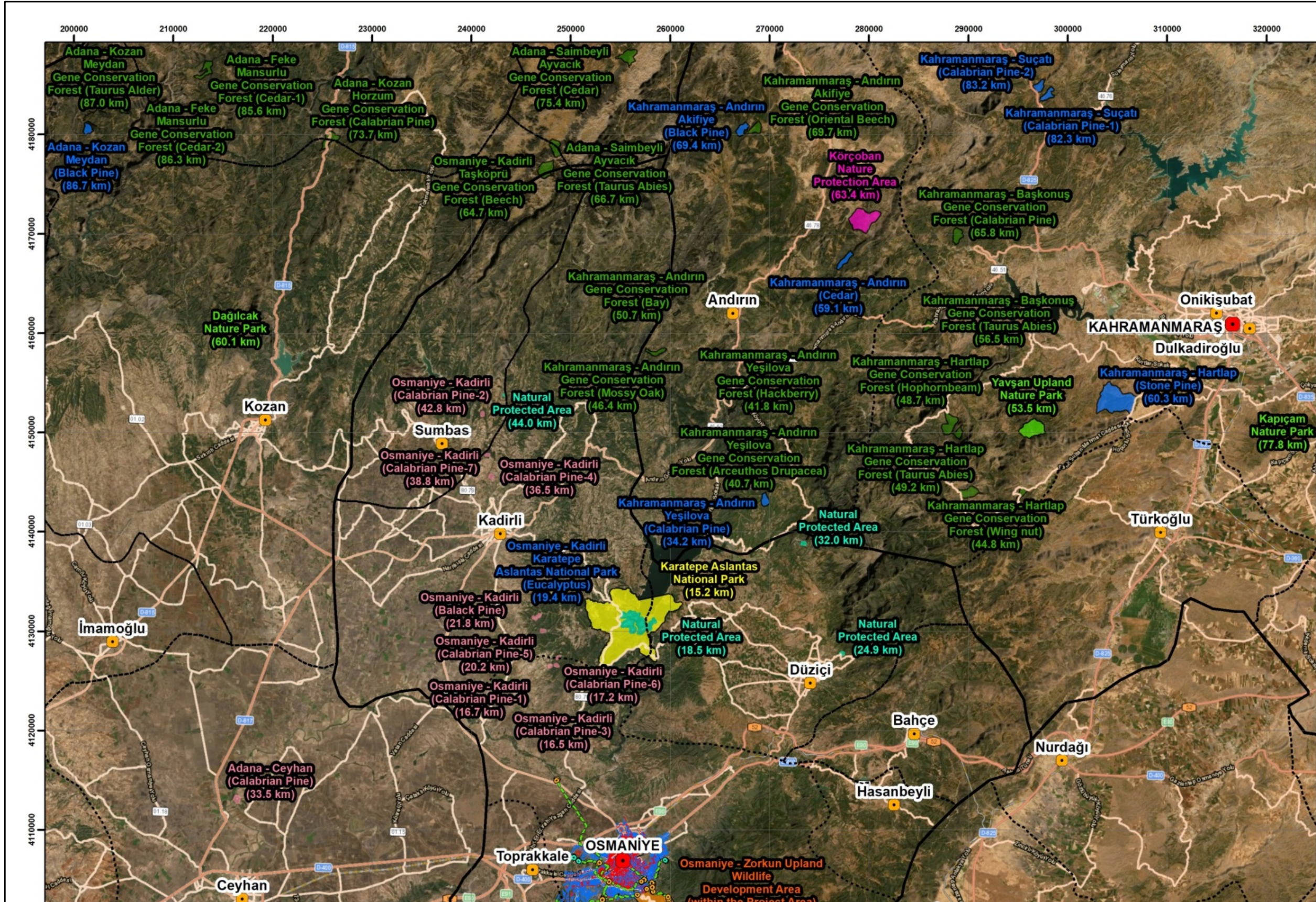


Figure II.5. Prohibited and Open Hunting Areas in Osmaniye (2020-2021)



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II.1.8. Air Quality

In Osmaniye, there is one air quality monitoring station belonging to the MoEU. The station is located in the central district and monitors only PM₁₀ and SO₂ parameters. The monthly average concentrations for these parameters measured between 01.01.2019 and 31.07.2020 are presented in Table II.5 below. As seen from the table, the monthly PM₁₀ concentrations are higher in the cold seasons than in the warm seasons. Table II.6 gives the average daily PM₁₀ and SO₂ concentrations measured between January 2019 and July 2020. As seen from the table, while average daily PM₁₀ concentrations are a little higher than the regulatory limit value, average daily SO₂ concentration is in compliance with the Regulation on the Assessment and Management of Air Quality limit value.

Table II.5. Air Quality Parameters measured in Osmaniye Air Quality Monitoring Station

Measurement Location: Osmaniye	Average Monthly Concentrations	
	SO ₂ (µg/m ³)	PM ₁₀ (µg/m ³)
January 2019	8.30	91.86
February 2019	16.97	64.08
March 2019	11.51	51.73
April 2019	5.76	46.33
May 2019	6.02	50.13
June 2019	3.16	47.27
July 2019	2.05	48.49
August 2019	1.93	54.8
September 2019	1.92	51.05
October 2019	4.79	55.59
November 2019	4.76	62.39
December 2019	6.54	75.20
January 2020	6.43	78.67
February 2020	5.32	56.10
March 2020	3.30	37.68
April 2020	3.35	34.44
May 2020	3.4	31.65
June 2020	3.56	32.65
July 2020	3.97	49.2

Source: https://sim.csb.gov.tr/STN/STN_Report/StationDataDownloadNew

Table II.6. Average Daily PM₁₀ and SO₂ Concentrations measured between 01.01.2019 and 31.07.2020 in Osmaniye

Measurement Location	PM ₁₀		SO ₂	
	Daily Average (µg/m ³)	Limit Value (µg/m ³)	Daily Average (µg/m ³)	Limit Value (µg/m ³)
Osmaniye	54.73	50	5.49	125

Source: https://sim.csb.gov.tr/STN/STN_Report/StationDataDownloadNew



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II.1.9. Noise Level

Noise pollution becomes a serious environmental problem in Osmaniye. The main reason for the noise pollution is that D400 highway passes through the city center and there is a large number of motorcycles.

Since the drinking water and sewerage network system will be constructed in the city center, where there are numerous noise sources, no measurement was conducted in the scope of this ESMP. The following data presented in Table II.7 are taken from a study which is made by Osmaniye Provincial Directorate of Environment and Urbanization investigating the noise levels in the city center. In the study, eight different points were chosen by the authorities of the Directorate, that is found suitable for their locations, for noise measurement in order to determine the noise levels at these points.

Table II.7. Receptors with high noise levels in Osmaniye City Center

Receptor	Noise Level (dBA)
Municipality	80-85
Big Mosque	75-85
Tenekeçiler Compound	85-100
D400 Highway	75-90
Dr. Ahmet Alkan Street	80-95
Ataturk Street	75-80
Train Station	80-90
Bus Terminal	75-90

Source: *Environmental Problems Resulting from the Use of Urban Land in Osmaniye*, Sütçüimam University, Doç Dr. Mehmet TIRAŞ, 2008

According to the measurement results, the noise levels at the measurement points are above the noise limit (65 dBA) set out in the Regulation on the Assessment and Management of Environmental Noise.

II.2. Ecology and Biodiversity

In the scope of ESMP studies, biological environment was investigated including habitat structures of the Project area, protected areas and key biodiversity areas (KBA). For this purpose, desktop studies were carried out. The related literature and previous studies have been reviewed and the general biological characteristics of the region have been revealed.

The project area is located within the borders of the central district in Osmaniye Province. As mentioned in the previous sections, the project consists of two components, the drinking water and sewerage networks.

Although the climate in Osmaniye differs in highlands and plains; it shows mild characteristics of Mediterranean climate. Summers are hot and dry; winters are mild and rainy in general. The average annual temperature is 18.5 °C. The province does not have a homogenous climate. The climate conditions in terms of temperature and precipitation vary in short distances with the effect of elevation.



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The project area is located in the Mediterranean Region and situated within the Mediterranean Phytogeographical Region as seen in Figure II.7. Amanos Mountains and Toros Mountains have great endemic plant diversity with their flora and fauna. Almost all Mediterranean plants are grown in Osmaniye, where Mediterranean climate prevails. Forests and scrubs cover about 42% of province stand out with rich flora. Some plants, which are not found anywhere else in the world (Krokos, Cukurova Orchid, Cukurova violet) grow only in this region. Suitability of natural flora allows cultivation of medicinal aromatic plants.



Figure II.7. Phytogeographical Regions of Turkey

II.2.1. Flora

There are three major type vegetation zones in Osmaniye.

Maquis Zone: Red pine (*Pinus brutia*), which reaches up to 700-800 meters, is a secondary vegetation zone formed by the destruction of forests occurred due to the expansion of agricultural and residential areas. The dominant plant species are *Quercus coccifera*, *Myrtus communis*, *Phillyrea latifolia*, *Pistacia terebinthus*, *Calicotome villosa*, *Erica manipuliflora*, *Cotinus coggyria*, *Cistus* ssp., *Smilax aspera*, *Clematis cirrhosa* and *Cercis siliquastrum*.

Forest Zone: It starts from 120 meters in places where the forest is not destroyed and from the end of the maquis zone in places where the forest is destroyed and ends at the upper limit of the forest (1900 m). Red pine forests are located in low parts (up to 110 meters). After red pine, in the larch (*Pinus nigra*), oak (*Quercus cerris*) and beech (*Fagus orientalis*) section, beech, oak, larch, cedar and fir often form mixed stands.

Above Forest Zone: These are the regions that start from the end of the forest border (1900 m), called flat and bare areas, where trees and shrubs cannot live due to extreme climatic conditions. In these, ground cover dwarf shrubs (*Acantholimon libanoticum*, *Astragalus* ssp., *Asphodeline globifera*, *asphodelus aestivus*) and alpine meadows are common species.

According to the records of Turkey Plant Data Service (TUBIVES) there are 443 taxa in Osmaniye. Among them, 108 taxa are endemic.



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Table II.8. Endemic Flora Species in Osmaniye

Family	Species
Ranunculaceae	Helleborus vesicarius
Papaveraceae	Hypecoum trullatum Corydalis tauricola
Brassicaceae	Thlaspi elegans Ricotia carnosula
Caryophyllaceae	Arenaria kotschyana subsp. kotschyana Arenaria acerosa Arenaria drypidea Minuartia tchihatchewii Thurya capitata Phryna ortegioides Silene inclinata
Illecebraceae	Herniaria amoena
Guttiferae	Hypericum monadenum
Malvaceae	Alcea apterocarpa
Geraniaceae	Erodium absinthoides subsp. haradjianii
Aceraceae	cer monspessulanum subsp. Oksalianum
Asteraceae	Galatella amani Anthemis arenicola var. arenicola Anthemis pungens Anthemis tinctoria var. virescens Leucocyclus formosus subsp. amanicus Tanacetum densum subsp. amani Tanacetum haradjianii Carduus nutans subsp. falcato-incurvus Centaurea lycopifolia Centaurea antitauri Centaurea amanicola Centaurea ptosimopappa Centaurea solstitialis subsp. carneola Centaurea calcitrapa subsp. cilicica Scorzonera lacera
Campanulaceae	Campanula haradjianii
Primulaceae	Cyclamen pseud-ibericum
Boraginaceae	Paracaryum amani Onosma inexpectatum Onosma trapezunteum Alkanna kotschyana
Scrophulariaceae	Verbascum meinckeanum Verbascum eleonora Verbascum barbeyi Verbascum amanum Verbascum pterocladum Chaenorhinum litorale subsp. pterosporum
Fabaceae	Astragalus distinctissimus Astragalus angustiflorus subsp. amanus Astragalus plumosus var. akardaghicus Astragalus thiebautii Astragalus barbeyanus Astragalus commagenicus Astragalus schottianus Astragalus vaginans Astragalus schizopterus Astragalus campylosema subsp. champylosema Astragalus melanocephalus Glycyrrhiza flavescens Cicer floribundum Lathyrus laxiflorus subsp. angustifolius Trifolium roussaeanum



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Family	Species
	Trigonella kotschy Trigonella rigida Dorycnium pentaphyllum subsp. haussknechtii Coronilla grandiflora Onobrychis sulphurea var. pallida
Rosaceae	Potentilla calycina Alchemilla sciadiophylla Alchemilla buseriana
Crassulaceae	Rosularia sempervivum subsp. amanensis
Apiaceae	Scaligeria capillifolia Kundmannia syriaca Johrenia berytea Ferula tenuissima Ferula amanicola
Dipsacaceae	Scabiosa kurdica
Lamiaceae	Scutellaria glaphyrostachys Phlomis linearis Lamium garganicum subsp. nepetifolium Ballota saxatilis subsp. brachyodonta Stachys amanica Stachys sparsipilosa Nepeta italica subsp. rigidula Nepeta caesarea Origanum amanum Satureja amani Micromeria cremnophila subsp. amana Salvia aucheri var. aucheri Salvia pilifera
Aristolochiaceae	Aristolochia brevibrabis
Euphorbiaceae	Euphorbia rhytidospema Euphorbia djimilensis
Betulaceae	Alnus orientalis var. pubescens
Rubiaceae	Asperula cymulosa Galium scabrifolium Galium setuliferum Galium shepardii Galium parvulum Cruciata mixta
Liliaceae	Allium gayi Allium flavum subsp. tauricum var. pilosum Allium phaneranthrum subsp. deciduum Allium karamanoglui Fritillaria alfredae subsp. glaucoviridis Fritillaria elwesii
Iridaceae	Crocus danfordiae Crocus adanensis Crocus leichtlinii Gladiolus anatolicus
Cyperaceae	Carex divulsa subsp. coriogyne

Source: Turkey Plant Data Service (TUBIVES)

II.2.2. Fauna

Amanos Mountains has been described as one of the richest faunistic regions in Turkey. It is rich in wildlife. In addition to mammals such as roe deer, wolves, jackals, wild boars, foxes, hyenas, rabbits, hedgehogs; raptors such as vulture, eagles and birds such as cranes, partridges and quail live in the region.



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As a result of the researches and investigations carried out by Dođa Derneđi and by the non-governmental organizations (NGOs), 195 migratory and native bird species have been identified in the area. Among these species, it has been determined that endangered birds such as Pied Kingfisher, Izmir Kingfisher, and Night Heron, which are of international importance, live and breed in this area. Since Osmaniye is located on bird migration routes, the number of species changes from year to year.

Table II.9. Fish Species in Osmaniye

Fish Species in Fresh Waters	
Silurus glanis	Wels catfish
Cyprinus carpio linnaeus	lack Sea chub
Cyprinus carpio royal	Royal carp
Lenciscus	Common dace
Anguilla anguilla	European eel
Barbus capito	Bulatmai barbel
Stizostedion lucioperca	Zander
Salmo trutta	Sea trout
Clarias gariepinus	African sharptooth catfish
Perca fluviatilis	Pike perch
Cyprinus carpio	Common carp
Varichorinus tinca	Anatolian khramulya
Mesogobius batrachocephalusa	Knout goby

Source: *Osmaniye Nature Tourism Master Plan, 2013-2023*

Table II.10. Other Vertebrates (Inland and coastal)

Frogs	
Rana catesbeiana	American bullfrog
Rana avvalis	Moor frog
Rana dalmatina	Agile frog
Pelobates fuscus	Common spadefoot toad
Rana ridibunda	Marsh frog
Other Vertebrates (Inland and coastal)	
Emys orbicularis	European pond turtle
Mauremy orbicularis	European march terrapin
Elaphe quatuorlineata	Four-lined snake

Source: *Osmaniye Nature Tourism Master Plan, 2013-2023*



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Table II.11. Terrestrial Vertebrates

Frogs	
Bombina bombina	European fire-bellied toad
Bombina variegata	Yellow-bellied toad
Alytes obstetricians	Common midwife toad
Bufo viridis	European green toad
Rana pipiens	Northern leopard frog
Hyla arborea	European tree frog
Bufo calimata	Natterjack toad
Reptiles	
Testudo hermanni	Hermann's tortoise
Testudo graeca	Greek tortoise
Chamaeleo chamaeleon	Common chameleon
Algyroides marchi	Spanish keeled lizard
Lacerta lepida	Ocellated lizard
Lacerta parva	Dwarf lizard
Lacerta simonyi	Giant Lizards
Lacerta trilineata	Green Lizard
Podarcis muralis	Wall lizard
Vipera ammodytes	Horned viper
Vipera xanthina	Mountain viper
Vipera lebetina	Blunt Nose Viper
Mammals	
Felis chaus	Jungle cat
Canis aureus	Golden jackal
Mustela nivalis	Least weasel
Mustela putorius	Polecat
Sciurus anomalus	Caucasian squirrel
Martes foina	House marten
Martes martes	Pine Marten
Citellus citellus	Ground squirrel
Sus scrofa	Wild boar
Herpestes ichneumon	Egyptian mongoose/ ichneumon
Hyaena hyaena	Striped hyena
Cricetus cricetus	Black-bellied hamster
Desmana pyrenaica	Mole
Vulpes vulpes	Red fox
Microchiroptera	Microbats
Lepus europaeus	Brown hare
Capreolus capreolus	Western roe deer
Canis lupus	Gray wolf

Source: *Osmaniye Nature Tourism Master Plan, 2013-2023*



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Korkut Ata Butterfly Observation Association has observed 176 butterfly species including the species of Little Brownfish (*Hyponephele lycaon*), Little Bouncy Fairy (*Coenonympha pamphilus*), Yellow Spotted Zippo (*Thymelicus acteon*), Mesopotamian Kolotis (*Colotis fausta*) in Osmaniye.

Protected Areas and Internationally Recognized Areas within the Region of the Project

Area

The map showing the national protected areas and internationally recognized areas in the project area or its immediate surroundings can be seen in Figure II.8. Turkey's KBAs have been identified on a national scale by Dođa Derneđi (the Nature Society of Turkey) in collaboration with the Ministry of Agriculture and Forestry (former Ministry of Environment and Forestry), Birdlife International and Royal Society for the Protection of Birds. As can be seen on the map, the nearest national protected areas to the project area are Kabala Valley and Amanos Mountains. Kastabala Valley is the valley that runs along Ceyhan River from the south of Aslantaş Dam to Kırmitlı town of Osmaniye. The closest point of the Kastabala Valley KBA to the Project Area is approximately 6 km. A part of Amanos Mountain Key Biodiversity Areas (KBA) stays within the borders of the Osmaniye Central District, so it also stays within the border of the Project Area.

The Alliance for Zero Extinction (AZE), established in 2004 and comprising 88 biodiversity conservation NGOs, is dedicated to the identification and safeguard of all KBAs holding effectively the entire global population of at least one Critically Endangered or Endangered species. In Turkey, there are three AZE sites have been determined. The closest one to the Project area is Bolkar Mountains with a distance of approximately 112 km (Figure II.9). Since Bolkar Mountains AZE is quite far away from the project area and it will not get affected from the Project activities.

There are 184 Important Bird Areas (IBAs) in Turkey according to the Bird Life International Data Zone. 21 of them are classified as IBAs in danger. As can be seen on the map presented in Figure II.10 , the nearest IBA area to the project area is Amanos Mountains. Amanos Mountains and its extensions are located within the boundaries of the boundaries of the Central District of Osmaniye (Figure II.10).

In addition to the above mentioned IBAs, KBAs and AZEs, there is a bird paradise, namely Kırmitlı Bird Paradise located within the boundaries of Kastabala Valley KBA. Having a distance of 15 km to the project area, there are 250 bird species that have been identified so far in Kırmitlı Bird Paradise.

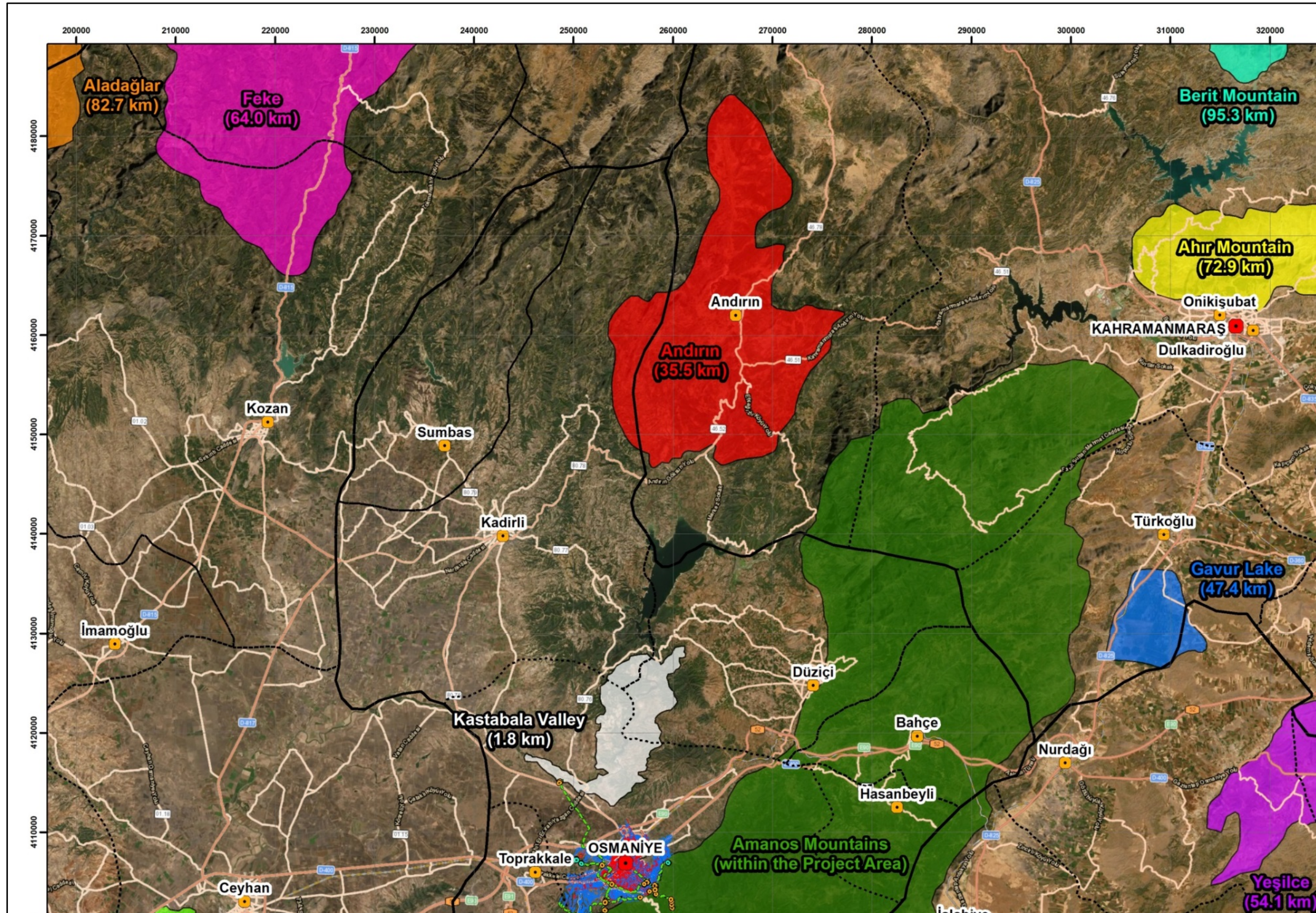
These areas are wild and natural areas with high biodiversity value. The project area is located in the central district of Osmaniye and the project activities will be carried out within the residential area. The project area covering the Amanos Mountains is relatively poor in terms of biodiversity. Therefore, the project area is not considered to reflect the characteristics of the protected areas.

The project area is located in the central district of Osmaniye and the project activities will be carried out within the residential area. Therefore, the anthropogenic effect in the project area is quite high.

Fauna species has been decreased both due to lack of suitable habitats and anthropogenic (human effect) impacts in the project area.

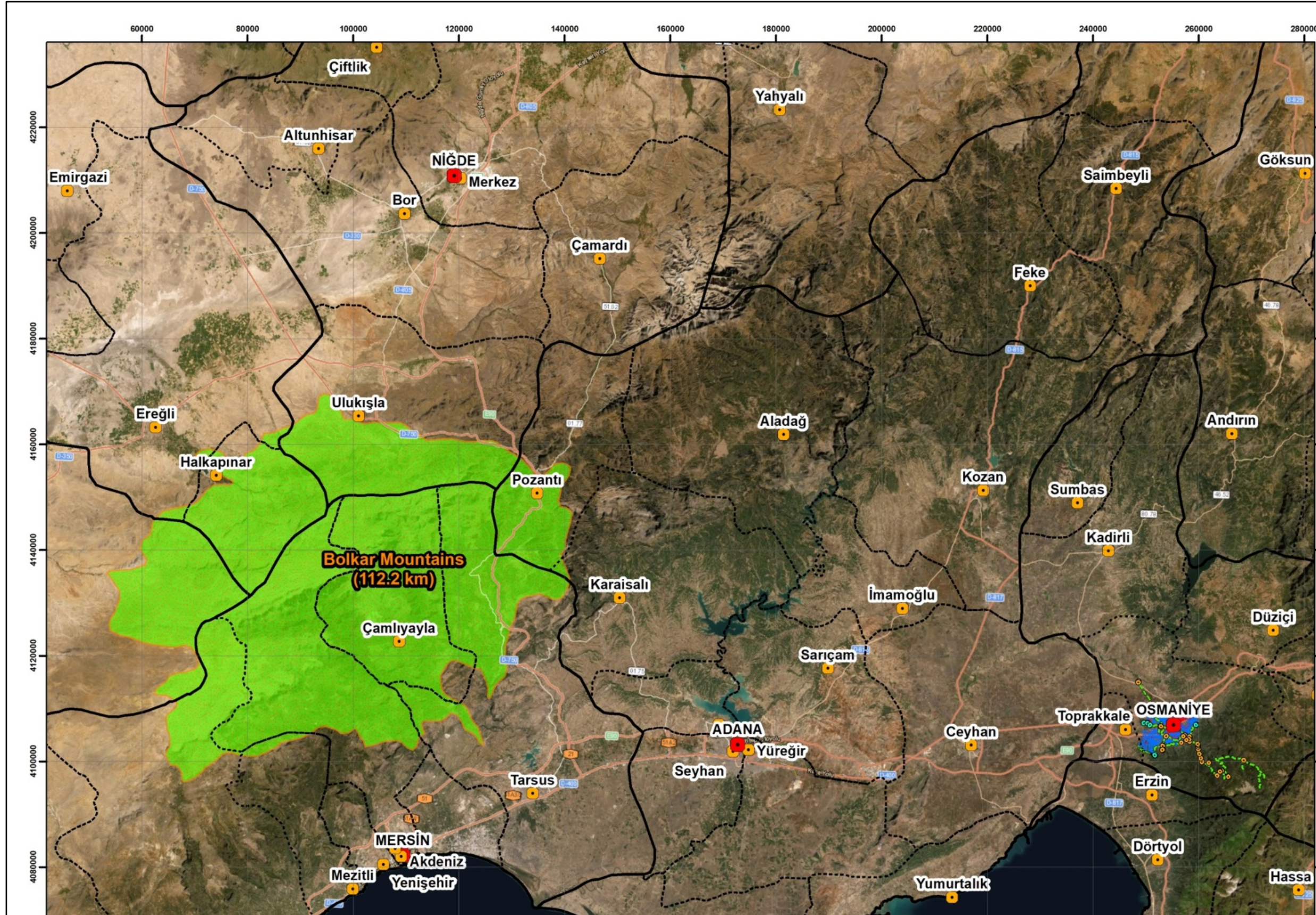


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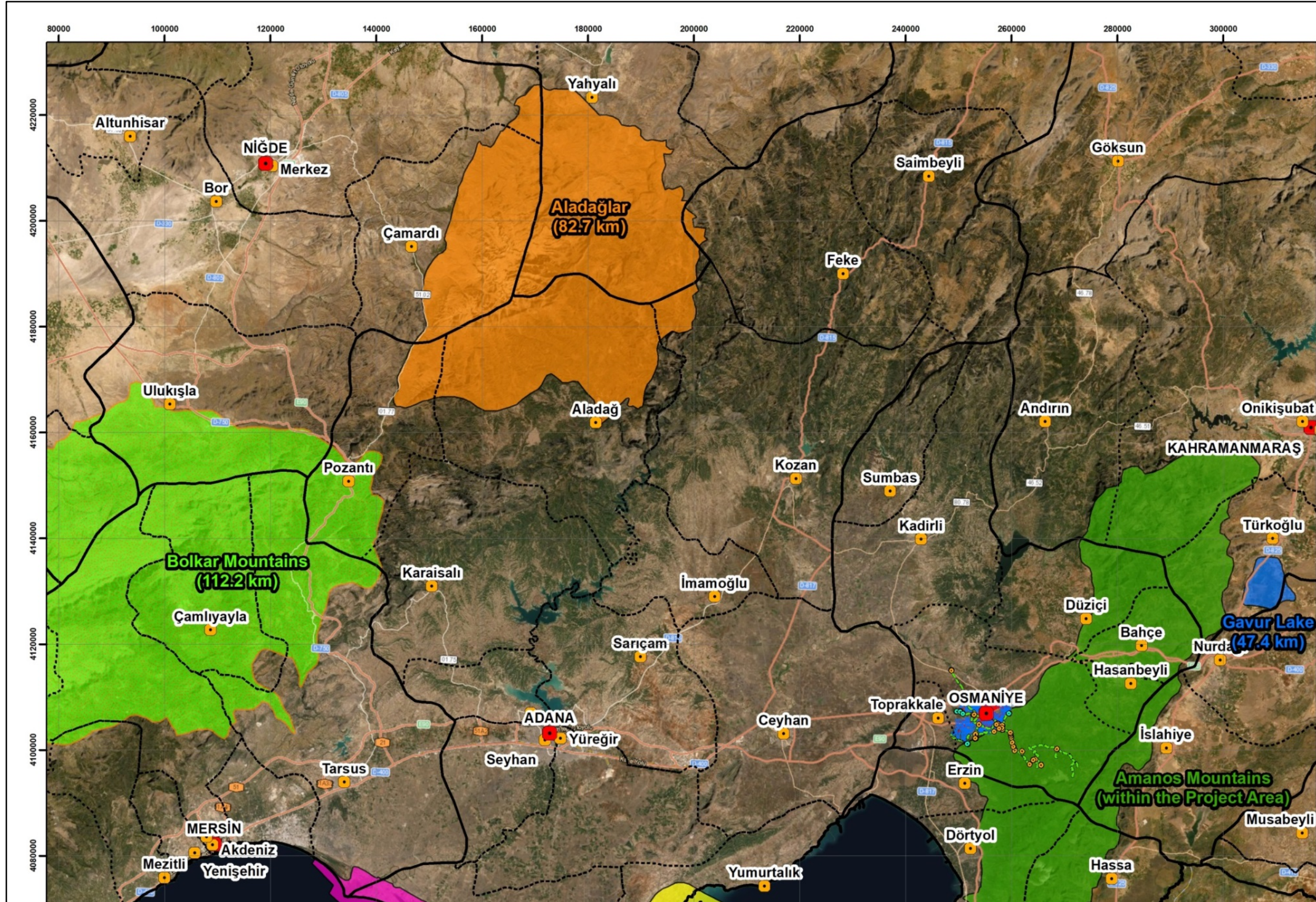


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II.3. Socio-Economic Environment

In this section, information regarding the economic activities and demographic features of Osmaniye province and Central district are presented to the extent possible.

Osmaniye ranks 40th province of Turkey in terms of total population, as of 2019 with its population of 538,759. Population density (number of people per square kilometer) is 172.46 people/km². It is higher than the average of Turkey (108.05 people/km²) (TurkStat, 2019).

II.3.1. Population

Osmaniye province is divided into seven districts, namely Bahçe, Düziçi, Hasanbeyli, Kadirli, Osmaniye, Sumbas, and Toprakkale.

According to the 2019 census results obtained from Address Based Population Registration System, (ABPRS), population of the Central district, where project area is located, is 268,467. With this population, Central District has highest population in the province. The population distribution of Osmaniye and the population of the districts are given in Table II.12.

Table II.12. Population of Osmaniye Districts

District	Male		Female		Total	Male (%)	Female (%)
	Village	City	Village	City			
Bahçe	3,532	7628	3396	7599	22155	50.4%	49.6%
Düziçi	15487	26786	15162	26698	84133	50.2%	49.8%
Hasanbeyli	1210	1254	1114	1204	4782	51.5%	48.5%
Kadirli	15346	47312	14869	47556	125083	50.1%	49.9%
Merkez	15875	118799	15296	118677	268647	50.1%	49.9%
Sumbas	6066	1024	5743	1007	13840	51.2%	48.8%
Toprakkale	6418	5505	2910	5286	20119	59.3%	40.7%

Source: TurkStat, 2019

Osmaniye Central District population census results performed by Turkish Statistical Institute (TurkStat) between 1965 and 2000 with traditional census method (by physical counting of individuals living in houses) and the census results between 2007 and 2019 with address based population registration system are given in the Table II.13.

Table II.13. Census Results for Osmaniye Centrum (Central District)

TurkStat –Traditional Census Results								
Year	1965	1970	1975	1980	1985	1990	2000	
Capita	34,027	46,355	61,581	84,212	103,824	122,307	173,977	
TurkStat – Address Based Population Registration System Results								
Year	2007	2008	2009	2010	2011	2012	2013	2014
Capita	180,447	189,112	194,339	198,836	204,057	209,255	213,045	218,531



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Year	2015	2016	2017	2018	2019			
Capita	223,987	229,406	233,242	264,373	268,647			

Source: TurkStat, 2019

As seen from Table II.13, the population increased from 264,373 in 2018 to 268,647 in 2019 with an annual population growth rate of 1.62%.

With its population of 268,647 in 2019 (ABPRS, TurkStat), Osmaniye central district constitutes 0.65% of Turkey's population (83,154,997). The population increased by 1.62% since 2018 which is higher than the annual population growth rate of Turkey (1.38%). Figure II.11 below shows the annual population growth rate of Osmaniye Central District within last 10 years period. As seen from the Figure II.11, Osmaniye have seen continuous decline in its population growth rate until 2018. In 2019, the population growth rate increased from 0.48 to 1.62%. With increase in the annual population growth rate, the population density increased as well. The population density of the central district is 313 in 2019, which is higher than both Osmaniye province (172.46) and Turkey (108.05).

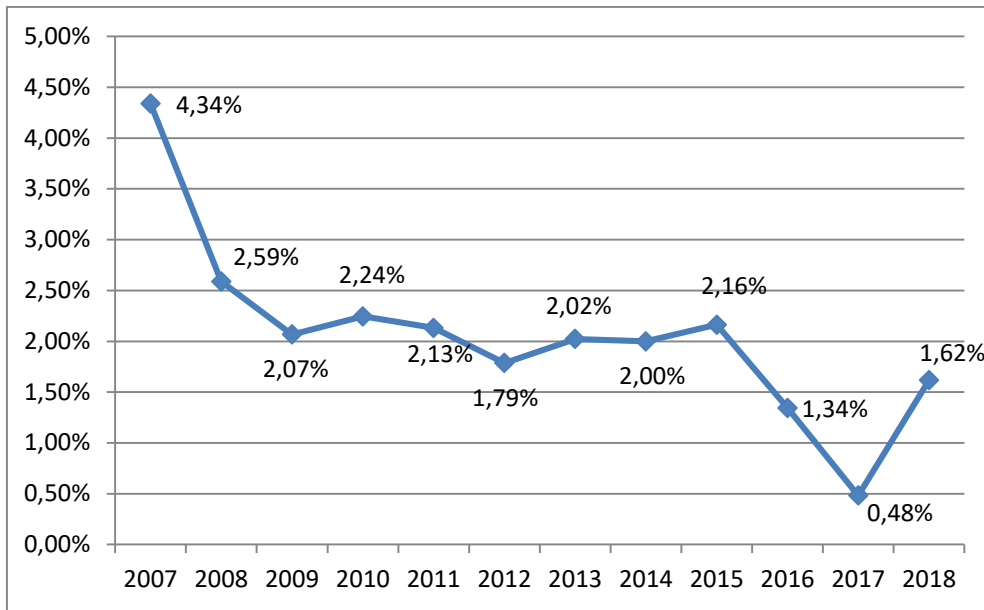


Figure II.11. Population Growth Rate

Age and gender distribution of the population is presented in Table II.12 and Figure II.12 in Osmaniye Central district. As seen from the figure, the age distribution of Osmaniye is balanced and the age group of "5-9" and "10-14" has the highest ratio within the population, showing the same population aging trend of Turkey. The active population involved 10-59 age range constitutes 60.6% of the total population in the district.



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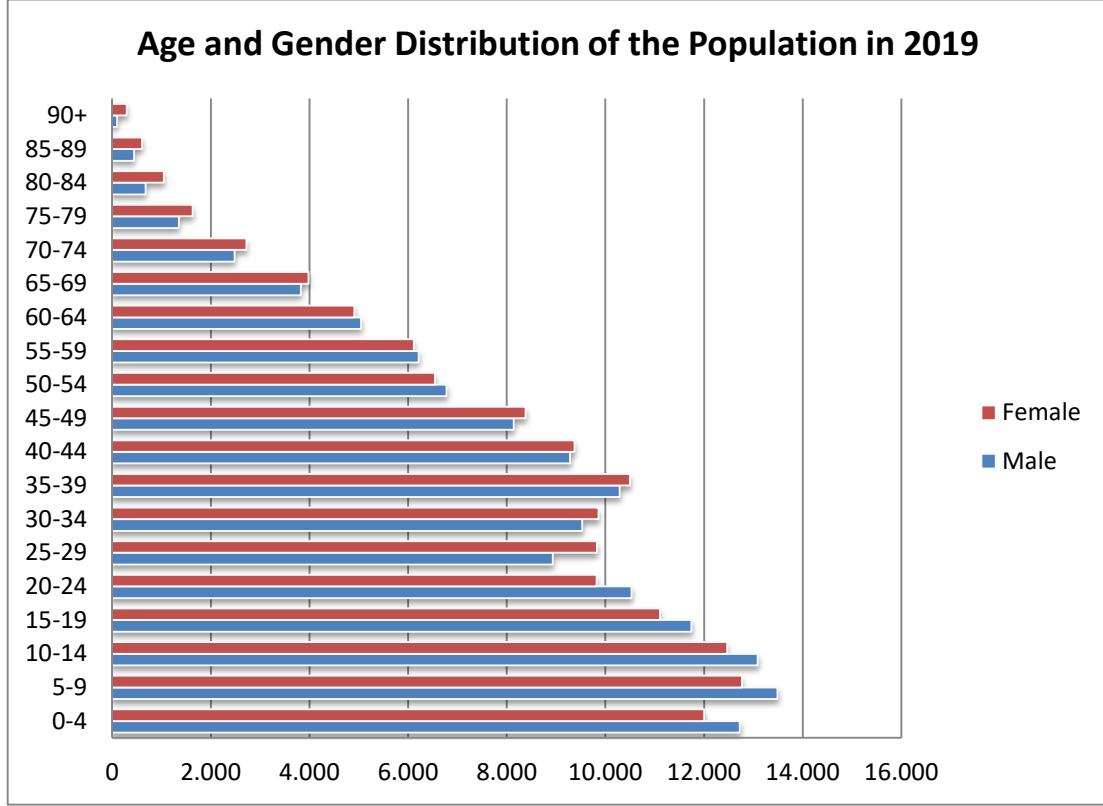


Figure II.12. Age and Gender Distribution of the Population in 2019

The population distribution in settlements close to the Project area is presented in Table II.14.

Table II.14. Population Distribution in Settlements Close to the Project Area

Settlements (Central District)	Population	Percentage
Adnan Menderes	7,791	3.28
Ahmet Yesevi	1,783	0.75
Alibekirli	5,081	2.14
Alibeyli	4,586	1.93
Baş	4,227	1.78
Cumhuriyet	9,364	3.94
Dr. İhsan Göknel	3,217	1.35
Dumlupınar	3,915	1.65
Esenevler	8,772	3.70
Fatih	3,342	1.41
Fakıuşağı	11,352	4.78
Gebeli	5,666	2.39
Hacıosmanlı	3,999	1.68
Haraz	2,937	1.24



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Settlements (Central District)	Population	Percentage
İstiklal	6,093	2.57
Eyüp Sultan	10,445	4.40
Karaçay	7,005	2.95
Kazım Karabekir	5,515	2.32
Kurtuluş	6,527	2.75
Mehmet Akif Ersoy	13,691	5.77
Mareşal Fevzi Çakmak	13,790	5.81
Mimar Sinan	14,025	5.91
Mevlana	5,677	2.39
Rahime Hatun	12,799	5.39
Raufbey	14,969	6.30
Rızaiye	6,076	2.56
Selimiye	4,251	1.79
Şirinevler	1,739	0.73
Ulaşlı	4,473	1.88
Yaverpaşa	1,174	0.49
Yediocak	9,504	4.00
Yeni	4,284	1.80
Yeşilyurt	3,072	1.29
Yıldırım Beyazıt	7,508	3.16
Yunus Emre	6,240	2.63
Vatan	2,587	1.09
Total	237,476	100.00

Source: TurkStat, 2019

By considering the numbers of people and their percentage in Table II.14, it is observed that some streets such as Cumhuriyet, Fakiuşađı, Mehmet Akif Ersoy, Mareşal Fevzi Çakmak, Mimar Sinan, Rahime Hatun, Raufbey and Yediocak constitute the major part of the total population of the streets being close to the Project area.

Syrian Refugee Population

Osmaniye hosts SuTP constituting 8.60% of its total population. According to data from the Directorate General of Migration Management (DGMM) 47,128 SuTP are being hosted in Osmaniye as of 31 March 2021.

II.3.2. Socio-Economic Characteristic

Osmaniye is a small province located on the eastern edge of the Çukurova plain, on the foothills of Nur Mountains. Its location at the crossroads of important roads and railways, which connects Europe to the Middle East and at the junction, where electricity, natural gas and oil pipelines pass in East Mediterranean, gives the city importance.



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

Osmaniye takes place in TR6 Region³, one of the 26 NUTS 2 Level Regions of Turkey and in Hatay sub-region (TR63) together with the other Mediterranean cities of Hatay and Kahramanmaraş provinces as seen in Figure II.13.

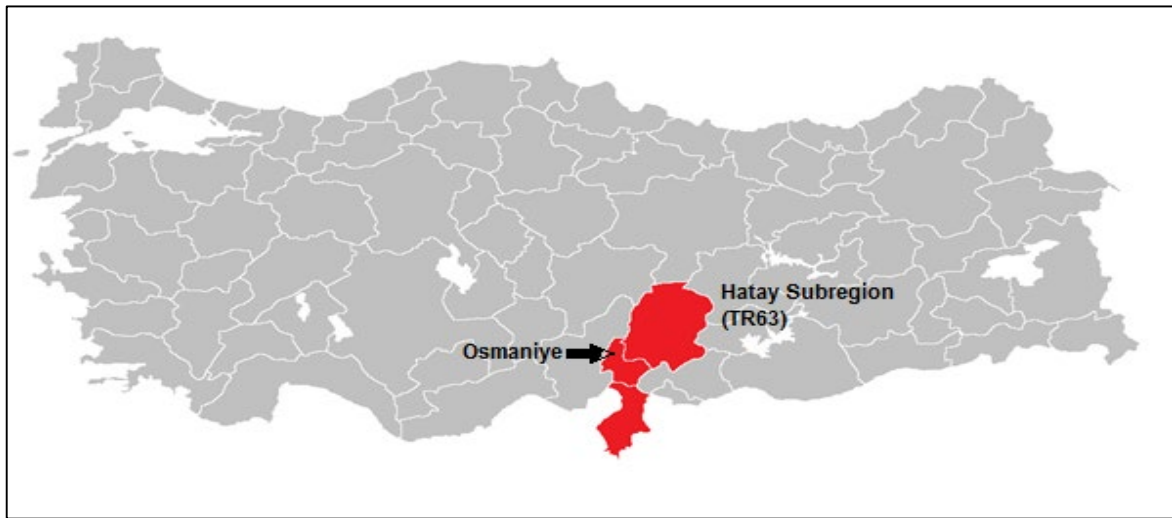


Figure II.13. Hatay Subregion (TR63)

TR63 Region has a strategic position at national and international scale due to its geographical location and socioeconomic structure. Having a total area of 23,607 km², TR63 Region comprises 3% of Turkey's total area.

TR6 Region ranks 3rd and TR63 sub-region ranks 8th in NUTS 2 in terms of the total population; Osmaniye constitutes 17.4% of the TR63 population according to 2018 population census results.

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, Osmaniye was ranked as 54th while Osmaniye Central District was ranked as 190th in Turkey in terms of socio-economic development. According to this index, Osmaniye is one of the 4th Level Advanced Provinces.

³ NUTS classification for Turkey 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 TR6 (at the first level), corresponds to Mediterranean region and NUTS-2 of TR6 (at the second level) corresponds to Antalya, Adana and Hatay sub-regions. At the NUTS-3, Hatay sub-region (TR63) is divided into three provinces as Hatay (TR 631), Kahramanmaraş (TR 632) and Osmaniye (TR 633).



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Table II.15 Indicators for Development Level of Osmaniye Province

Parameters	Value
Socio-economic development ranking (Ministry of Development, 2011)	54 th
Annual population growth rate (TurkStat, 2019)	8.1 ‰
GDP per capita (TurkStat, 2018)	6,235 \$
Total exportation (TurkStat, 2019)	305 million \$
Total importation (TurkStat, 2019)	582 million \$
Total cultivated agricultural area (TurkStat, 2019)	103.531 ha
Total number of literate persons, 6+ (TurkStat, 2019)	483,922
Number of primary school (TurkStat, 2019)	174
Number of middle school (TurkStat, 2019)	128
High School Graduation Rate, 15+ (TurkStat, 2019)	25.97%
University Graduation Rate, 15+ (TurkStat, 2019)	15.14%
Number of Hospital (TurkStat, 2018)	10
Number of Hospital Bed (TurkStat, 2018)	1295
Forest Area / Total Area Ratio (General Directorate of Forestry)	47.89%
Total number of tourists overnight stays in certified accommodations (TurkStat, 2019)	120,702
Net Migration Rate	-6.17‰

Source: TurkStat, Ministry of Development and General Directorate of Forestry

According to this index, Osmaniye Central District is one of the districts having 2nd Development Level. Table II.16 shows socio-economic development ranking of the districts of Osmaniye on provincial basis.

Table II.16. Socio-Economic Development Ranking of Districts on Provincial Basis

District	Overall Ranking	Ranking within the Province	Development Level
Merkez	190	1	2
Kadirli	356	2	3
Toprakkale	372	3	3
Düziçi	497	4	4
Bahçe	522	5	4
Hasanbeyli	721	6	5
Sumbas	894	7	6

Source: SEGE, 2017

Agriculture and Livestock

Osmaniye is located within the boundaries of Çukurova having fertile soils. The province's geographical location provides the city being an important agricultural center in Turkey. Therefore, agriculture is one of the main economic activities in the Province. Peanut, wheat, soy, corn, sunflower, olive and cotton are among the main agricultural products grown in Osmaniye. Peanut is one of the most important agricultural products and has become the symbol of Osmaniye. 27.4% of Turkey's peanut production is carried out in the Province.



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Olive and olive oil production also plays an important role in the province economy. Osmaniye ranks 7th in Turkey with its olive oil production. According to the records of Osmaniye Directorate of Provincial Agriculture and Forestry, there are 12 olive oil and six fermented and brine plants in the province.

There are 29,313.8 ha of agricultural land in the Central District.

Livestock, trading, textile and metal industry are also among the important economic activities carried out in the Province.

According to the data from Osmaniye Provincial Directorate of the Ministry of Agriculture and Forestry, Osmaniye has a total of about 65,000 cattle, 529 buffalo, and 200,000 laying hens. Total manure obtained from these animals annually is 656,000 tons. The province has an annual potential biogas production of 11 million m³ from the available amount of the manure.

Industry

In recent years, industrial investments in various sectors have been improved in Osmaniye. Among them the iron and steel sector has gained an important place in the city's industrial development. In Osmaniye, 51 of 358 registered companies are active in the metal industry (Osmaniye Industry and Technology Provincial Directorate Briefing, 2018).

Energy and Natural Resources

Osmaniye has a very advantageous position in terms of renewable energy sources due to the hours of sunshine and wind energy potential. Wind power plants in Osmaniye have been actively operating since 2009.

The Mediterranean Region ranks second after the Southeastern Anatolia in terms of solar energy potential. The average solar radiation value of Osmaniye province is between 1,650 – 1,900 kWh/m²/year. Turkey's annual average total insolation duration is 2,640 hours (7.2 hours per day) while Osmaniye's total annual average sunshine time is 2,861 hours (7.8 hours per day), which is above Turkey's annual average value.

There are 1,800 tons iron reserves in the Yuntmağara deposit in the Central District, 7,618 tons in the Kokarca deposit, and 5,625 tons in the Kızılyüce deposit.

Education

The literacy rate is 95.31% in 2018 in Osmaniye. Primary education (primary, middle and secondary school) schooling rate is 95.13% from 2012 upwards.

The only university serving in the field of higher education in Osmaniye is Osmaniye Korkut Ata University. Being a state university, it was founded in 2007. There are 12,607 students studying at the university, which includes six faculties, two institutes, four colleges and five vocational colleges. There are total of 403 academic staff, including 15 professors, 19 associate professors and 86 assistant professors constituting 0.27% of the academic staff throughout the country.



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Health

According to the data obtained from the Osmaniye Provincial Directorate of Health (<https://osmaniyeism.saglik.gov.tr/>), there are total of 10 hospitals in the province, four of which are state and six are private. Public hospitals are located in the Central, Kadirli, Düziçi and Bahçe (inactive) districts, while four of the private hospitals are located in the Center, and one is in the districts of Kadirli and Düziçi.

According to data obtained from Ministry of Health (Health Statistics Yearbook, 2017), in Osmaniye Province, there are 10 hospitals having a total bed capacity of 1,270 in 2017.

The number of physicians per thousand people is one in Osmaniye according to the 2018 data of TurkStat. Osmaniye remains under Turkey and TR63 Region in terms of average number of beds per hundred thousand people and average number of physicians per thousand people.

Osmaniye State Hospital is located in the Central district of the province. According to data obtained from Osmaniye State Hospital (<https://osmaniyedh.saglik.gov.tr/>), it is a hospital with a capacity of 400 beds. There are also four private hospitals in the district. The total bed capacity of the private hospitals is 240 beds.

II.3.3. Transportation

Osmaniye is located at the junction of Adana, Gaziantep and Hatay highways providing a gate from the Southeastern Anatolia to Mediterranean. Transportation is provided mainly by highways in the city. The highway D-400 provides connection to Adana. The Mersin-Adana- Gaziantep Highways pass through Osmaniye.

Osmaniye is located within the boundaries of the 5th Regional Directorate of General Directorate of Highways and has a total road network of 363 km, of which 212 km is provincial roads, 71 km is state roads and 80 km is highway. The road distances to some of the cities are given in Table II.17.

Table II.17. Road Distances of Osmaniye to Some Important Cities

City Center	Distance (km)
Ankara	576
Istanbul	1,025
İzmir	986
Adana	86
Kahramanmaraş	100
Gaziantep	120
Hatay	128

Source: General Directorate of Highways Web Site

The closest airport, Adana Sakirpasa Airport, is 90 km away from the city center. The Port Iskenderun is located 79 km distance from the city.



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The proximity of İskenderun Port and the railway that connects Southeast-East Anatolia to the west provide advantages for the city in terms of transportation.

The railway line was extended to Osmaniye in 1912. The province is at the railway connection point of Kahramanmaraş, Gaziantep and Eastern Anatolia of Adana and Mersin provinces. Railway length passing through the province is 74 km in total.

II.4. Existing Infrastructure

II.4.1. Existing Water Supply and Distribution Systems

Water is supplied from 3 sources in Osmaniye city centre: Zorkun Springs, Yeniköy Wells and Central Wells.

Zorkun Spring and Transmission Lines: Zorkun Spring is the first source supplying water to the city. It was constructed in 2003. The maximum water supply capacity of the source is 928 l/s and the minimum capacity is 400 l/s. The total length of the gravity transmission line is around 45 km. There are 11 collection chambers, each having a capacity of 50 m³. The pipe materials used in the transmission line are PE and stainless steel.

Yeniköy Wells: There are 10 wells opened between 1995-1998 in the Yeniköy Well area. One of the wells supplies water to Cevdetiye Municipality and one is closed. 8 wells located in this source zone are currently in operation to supply water to the city with a capacity of 520 l/s.

The water extracted from these wells is collected in a storage tank and then pumped to the city reservoir via a pumping station. There are six pumps in the pumping station each having a capacity of 90 l/s. Maximum water amount pumped to the city system is 360 l/s because of decrease in water level in the wells and problems in using five main pumps at the same time. The minimum water amount pumped to the city is around 180 l/s seasonally.

Central Wells: There are seven wells (Güneysu, Biberciler, Avşarlar-1, Avşarlar-2, Alicikler, Zeytinlik and State Hospital wells) in the central well source zone with a total capacity of 270 l/s. These wells were opened to provide additional water source in order to be used during the spring when the flowrates decrease seasonally.

These wells are located in the city and have contamination risk. Therefore, they are only used if there is a deficiency in the water supply system to supply the required water to the city.

The annual water amounts supplied for the city are given in Table II.18.

Table II.18. Water Supplied in the Years between 2012 and 2017

Year	2012	2013	2014	2015	2016	2017
Annual Water Production (m ³ /year)	25,386,480	25,638,768	26,395,632	26,647,920	26,805,600	27,120,960

Source: • Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document

Reservoirs: There are eight reservoirs serving to the city. Six of these reservoirs are in operation. The details of the reservoirs are given in the Table II.19.



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Table II.19. Characteristics of the Reservoirs

Reservoir No	V (m ³)	Inlet Pipe Elevation (m)	Outlet Pipe Elevation (m)	Situation	Type
Karaçay DM1	2,500	230.00	225.80	In use- has structural problems	Prismatic-Built in
Mezarlık DM2	1,500	269.00	265.00	In use-good condition	Prismatic-Built in
Altınlıtarla DM3	10,000	206.75	202.25	In use-good condition	Cylindrical-Built in
Alibekirli DM4	10,000	179.00	174.50	In use-good condition	Cylindrical-Built in
Fakıuşağı DM5	10,000	179.00	173.50	In use-good condition	Cylindrical-Built in
Kılıçarslan DM6	1,500	206.75	202.50	Not in use- old with structural problems	Prismatic-Built in
Muhtarlık DM7	2,000	179.00	175.00	Not in use- old with structural problems	Prismatic-Built in

Source: *Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document*

The existing water supply sources are not sufficient to meet the current demand of Osmaniye city centre. The whole system urgently needs to be improved and additional water sources should be provided to meet the demand. The water intake of the Zorkun spring source and most of its pipeline cannot be maintained regularly because of the topographical conditions. On the other side, the Yeniköy well system has deficiencies at the main pumping station and on a 20 km section of the pipeline. The amount of water supplied from these sources varies a lot because of the climatic conditions and seasonal changes. According to the data received from Osmaniye Municipality, it is estimated that there is a need for 800 l/s of additional water supply to meet the current water demand of the city. However, the existing water sources can only supply an average of 700 l/s and supply a minimum of 380 l/s seasonally. The Municipality currently covers this additional need from the wells. Nevertheless, water cannot be supplied continuously from these wells because of the seasonal water level changes in the groundwater. On the other hand, according to the information received from the Municipality, State Hydraulic Works (DSİ) is unwilling to use these wells for the water supply needs of the city, as the groundwater capacity decreases around the region.

To meet the demand needed, it has been decided to use Aslantaş Dam and the regulators located below the dam as a potential water source. For this purpose, the necessary application has already been made and DSİ informed the Municipality that 786 l/s flow between Aslantaş Dam and Cevdetiye regulator has been allocated for the city.

Pumping Stations: There is one pumping station feeding the water distribution network system. Information about the pumping station is given the Table II.20.

Table II.20. Characteristics of the Pumping Station

Pumps	Q	Hm	Nm	Quantity
	10 l/s	150 m	22 kW	1+1
Pumping Main	L	Ø	Material	PN
	2,500 m	180 mm	PE100	10

Source: *Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document*

Network: The existing water network of Osmaniye Centrum was constructed by ILBANK. The Municipality added some part of the network when needed. There is no digital data of the network and the operation depends on the staff experience and knowledge. The system includes cast iron



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(diameter: Ø80 mm- Ø250 mm, total length: 4,431 m), AC pipes (diameter: Ø100 mm- Ø1000 mm, total length: 117,476 m), PVC pipes (diameter: Ø80 mm- Ø250 mm, total length: 219,365 m) and HDPE pipes (diameter: Ø125 mm, total length: 50,294 m).

Because of the age and the characteristics of the pipes, the network system often gives breakdowns and difficulties in repair. The cast iron water pipes have been damaged because of the corrosion resulted from the soil and groundwater properties and therefore continuously are having problems. The AC pipes used in the system pose a health risk and are very difficult to maintain due to the difficulties to find spare parts, as these pipes are not being used for water networks anymore. Therefore, the repairing time of any breakdown needs more time than expected. This situation causes frequent water cut-offs and poses a secondary contamination risk in the system.

The PVC pipes have problems mainly at connection points due to the non-welded joint technology used for PVC pipes in the years they were installed. Because of the problems at the joints, the system has become open to secondary contamination and health risks. Since the system has no digital record, the pressure zone boundaries have been destroyed due to the intervenes performed by the staff.

The pressure boundaries formed in the existing system vary between 20-80 m, which creates dramatic pressure changes throughout the distribution network especially during the water cut-offs and resupplies. This also causes failures in the pipeline due to the material and construction techniques used in the system.

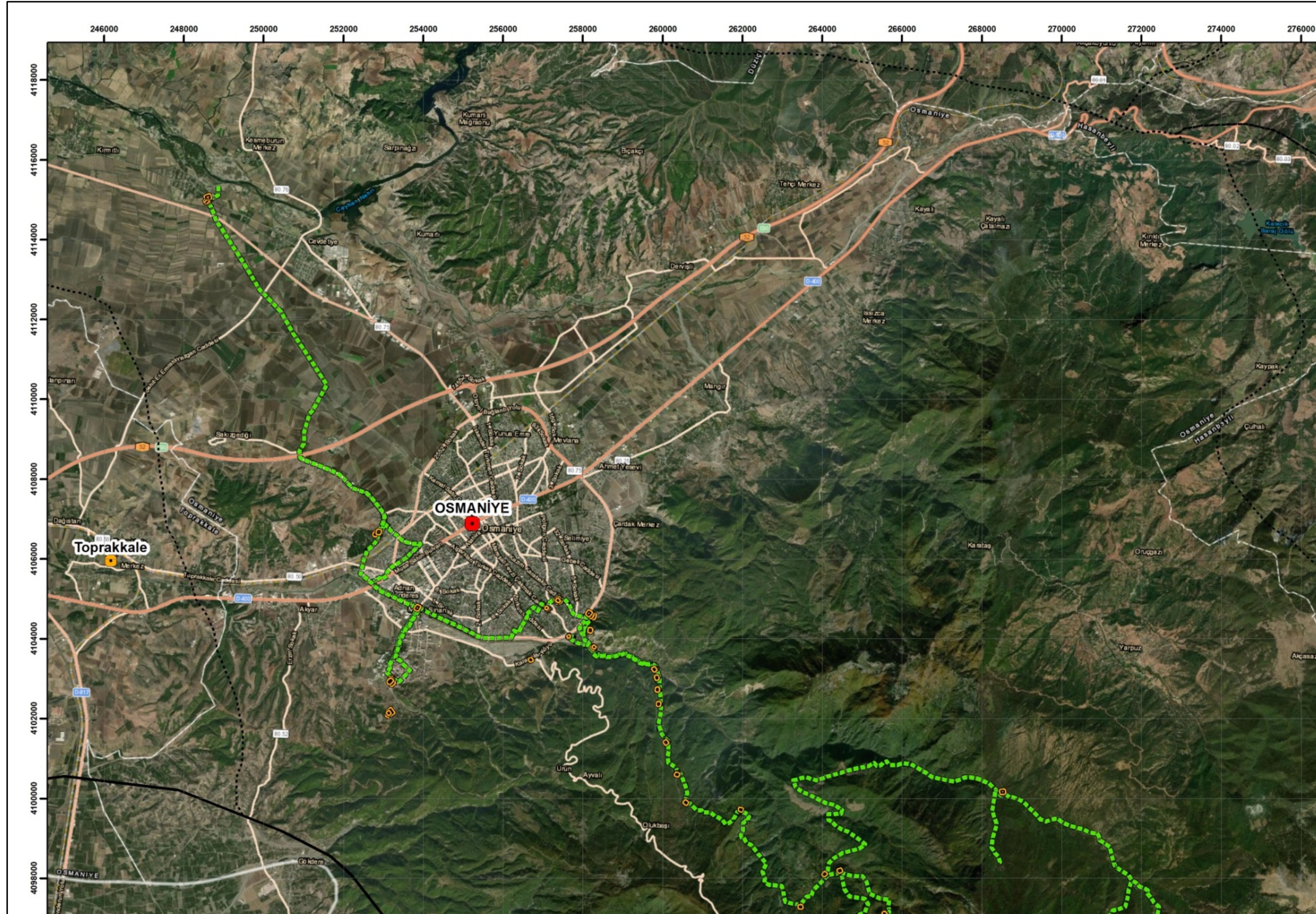
According to the water utility records, the number of calls for failures in the system is around 200 monthly and of which around 30% is related to the main network system, 60% is with customer connections and the rest is false or no need for action.

The water network system also suffers from a high level of water losses. According to the 2017 data, non-revenue water has reached 56%, of which 49% is real losses resulting from the system components.

Because of all above mentioned problems in the water network, the city has faced significant drinking water service challenges and high levels of non-functionality and inadequate service delivery. Figure II.14 shows the existing water supply system of Osmaniye city centre.



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II.4.2. Existing Wastewater System

The existing sewerage system of Osmaniye Centrum was constructed in 1985 and consists of 340 km of pipes, of which diameters vary between 200-1000 mm. The pipe materials used in the system are concrete and reinforced concrete (RC). The system works as combined system since there is no separate stormwater collection system in the city. Figure II.15 shows the existing sewerage system in Osmaniye Centrum.

There are three pumping stations with capacities of 150 l/s, 108 l/s and 30 l/s. The pumping stations were constructed within the last two years and are in good condition.

Due to the technology used in the construction, the existing concrete/RC pipes have problems at the connection points. Because of the soil characteristics, the pipes were damaged. Most of the pipes are full of groundwater and silts carried by groundwater due to the high groundwater level. This affects the effective operation of both the collection system and the WWTP. Because of these reasons, the system continuously needs maintenance and cleaning works. According to the data received from the Water Utility Department of the Municipality, annually 250 km of pipelines clogging with sediment due to excessive infiltration and inflow are being cleaned by vacuum trucks. The number of calls for failures in the system is around 250 monthly and of which around 50% is related to sediment caused clogging in the main sewerage system, 40% is caused by failures/collapses of the pipes in the sewerage system and the rest is false or no need for action. Because of all above mentioned problems, a new sewerage system needs to be constructed urgently in the city in order to provide proper wastewater services for the city.

The wastewater collected from the city by the sewerage system is transferred to the Osmaniye Wastewater Treatment Plant (WWTP) located in Nohuttepe village neighborhood, 5 km far from the city center. The WWTP was designed in two stages for the years of 2010 and 2030. The capacities of the plant are 45,000 for the first stage and 70,000 m³/day for the second stage. The trickling filter is used for the treatment in the plant. The treated effluent is discharged into Hamis Creek. The dewatered sludge is appropriate to use as a fertilizer according to the analysis results. However, there is no demand from the people to use it. Therefore, the sludge is currently being stored on an area allocated inside the WWTP boundaries.



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Figure II.15. The Existing Wastewater Network in Osmaniye Centrum





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III. DESCRIPTION OF THE PROPOSED PROJECT

III.1. Project Location

The project area is located in the central district of Osmaniye province. Having an area of 3,767 km², Osmaniye province is situated on eastern edge of Çukurova Plain in the east of Mediterranean Region of Turkey. It is surrounded by Gaziantep in the east, Hatay in the south, Adana in the west and Kahramanmaraş in the north. The province is divided into 7 districts. The Project area covers Osmaniye Centrum. Site location map of the Project is given in Figure III.1.

III.2. Design Horizon

In accordance with Turkey's physical planning guidelines for drinking water and wastewater infrastructure, both components of the Project is designed using a 35-years design horizon.

III.3. Population Projection

Population projection for Osmaniye was carried out using the census results performed by TurkStat between 1970 and 2000 with traditional census method (by physical counting of individuals living in houses) and the census results between 2007 and 2017 with Address Based Population Registration System (ABPRS) within the scope the PID study. The TurkStat census results used in this study are given in Table III.1.

Table III.1. Official TurkStat Census Results

TurkStat –Traditional Census Results								
Year	1965	1970	1975	1980	1985	1990	2000	
Capita	34,027	46,355	61,581	84,212	103,824	122,307	173,977	
TurkStat – Address Based Population Registration System Results								
Year	2007	2008	2009	2010	2011	2012	2013	2014
Capita	180,447	189,112	194,339	198,836	204,057	209,255	213,045	218,531
Year	2015	2016	2017					
Capita	223,987	229,406	233,242					

Source: TurkStat

Nine different methods including ILBANK, Arithmetic, Geometric, Compound, TurkStat statistics, UN Population Fund, 10th Development Plan Data, City Development Plan Data and Environmental Arrangement Plan data were used for the population projection study of Osmaniye. In order to estimate the future population of the city, ILBANK method was chosen. Population increase coefficient was taken as 2.5 while performing the population projections in accordance with the ILBANK specifications. The local residents' population of Osmaniye projected over the period from 2018 to 2053 is given in the Table III.2.



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Table III.2. Osmaniye Population Projections for Local Residents according to the ILBANK Method

Years	2018	2023	2028	2033	2038	2043	2048	2053
Population	239,073	270,489	306,034	346,249	391,749	443,228	501,472	567,369

Source: Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document

While performing the population projection, Syrian refugees were also taken into account. 2017 population figure of Syrian Refugees was used in the population projection study. According to the official data of 2017, the total number of Syrian guests in Osmaniye was 48,055. The population of both registered and unregistered Syrian refugee population was considered to increase due to a relatively high birth rate and due to new arrivals from Syria considering the fact that most of them will not return back to their country since they have started to own properties and found a job. On the other hand, more Syrians are expected to arrive in the city. Consequently, the refugee population in Osmaniye was assumed to increase with the same growth rate of the city until the end of the design horizon and the population for 2053 was projected as 116,896.

The projected population for Osmaniye over the design horizon is given in Table III.3.

Table III.3. Total Population (Local Residents and Syrian Refugees)

Years	2018	2023	2028	2033	2038	2043	2048	2053
Local Residents	239,073	270,489	306,034	346,249	391,749	443,228	501,472	567,369
Syrian Refugees	49,256	55,729	63,052	71,338	80,712	91,319	103,319	116,895
TOTAL	288,329	326,218	369,086	417,587	472,461	534,547	604,790	684,265

Source: Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document

III.4. Water Demand Forecast

Annual average totals for the water produced and consumed between the years 2012 and 2017 with the calculated non-revenue water (NRW) levels are given in Table III.4.

Table III.4. Water Production, Consumption and NRW Amounts between 2012 and 2017

Parameter	2012	2013	2014	2015	2016	2017
Total population	209,255	213,045	218,531	223,987	229,406	281,297
Water supply connection rate	95	95	95	95	95	95
Estimated connected population	198,792	202,393	207,604	212,788	217,936	267,232
Water produced, m ³	25,386,480	25,638,768	26,395,632	26,647,920	26,805,600	27,120,960
Billed total, m³	8,457,097	9,566,064	10,254,309	11,195,397	11,631,488	11,994,142
Billed domestic, m ³	7,281,642	8,258,960	8,893,249	9,797,032	10,201,780	10,521,165
Billed commercial, m ³	623,509	697,252	729,813	760,758	730,940	813,930
Billed institutional, m ³	551,946	609,852	631,247	637,607	698,768	659,047



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Billed industrial1, m ³	0	0	0	0	0	0
Non-revenue water, m³	16,929,383	16,072,704	16,141,323	15,452,523	15,174,112	15,126,818
Non-revenue water, %	67%	63%	61%	58%	57%	56%
Net per capita consumption*, l/person/day	117	129	135	144	146	123
Net domestic unit consumption** l/person/day	100	112	117	126	128	108

Source: *Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document*

*Total net consumption per capita is calculated based on the billed total flow

**Net domestic unit consumption is calculated based on the billed domestic flow

A water balance study for Osmaniye prepared using 2017 data was presented in the Project Identification Document of the Osmaniye Drinking Water and Wastewater Network Project. The results of this study are given in Table III.5. The detailed information regarding the water balance calculations and assumptions can be found in the Project Identification Document prepared by Vadi Project.

Table III.5. Osmaniye Water Balance, 2017

System Input 27,120,960 m ³ 100.0%	Authorized Consumption 13,247,092 m ³ 49%	Billed Authorized Consumption 11,994,142 m ³ 44%	Billed Metered Consumption 11,994,142 m ³ 44%	Revenue Water 11,994,142 m ³ 44%	
			Billed Unmetered Consumption 0 m ³ 0.0%		
	Water Losses 13,873,868 m ³ 51%	Unbilled Authorized Consumption 1,252,950 m ³ 5%		Unbilled Metered Consumption 0 m ³ 0.0%	Non-revenue Water 15,126,818 m ³ 56%
				Unbilled Unmetered Consumption 1,252,950 m ³ 5%	
		Apparent Losses 584,978 m ³ 2%		Unauthorized Consumption 345,095 m ³ 1%	
				Meter faults 239,883 m ³ 1%	
	Real Losses (II) 13,288,890 m ³ 49%				

Source: *Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document*



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Following assumptions were made while performing the water demand forecast for Osmaniye:

- It was assumed that the current household demand of 113 lcd will increase up to 130 lcd by 2053 and stabilize at this level onwards as a result of demand management and financial control measures to be applied;
- The connection rate of the consumers to the water supply system which is 95% in 2017 will reach to the level of 100% until 2021 and sustain 100% until 2053;
- Meter faults, which were around 2% of the total metered consumption in 2017, will remain 2% until 2053;
- Consumption of the illegal connections, which was 3.0% of the total metered consumption in 2017 for all the consumer groups, will decreased to as 1.2% until 2050;
- Meters will be installed to the unmetered unbilled connections until 2024 with the project above (places like park-garden watering, firefighting etc.) and these will become unbilled metered consumers; and
- Water losses in water supply and distribution system will be decreased to 28% in 2024 with the project and will remain 25% till 2053.

The water demand projection results for Osmaniye are given in Table III.6.



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Table III.6. Water Demand Projection

Parameter	Unit	2017	2018	2019	2020	2021	2025	2030	2035	2040	2045	2050	2053
Total population Osmaniye	persons	281,297	288,329	295,538	302,926	310,500	342,733	387,771	438,727	496,379	561,608	635,408	684,264
Connection rate	%	95	95	95	95	100	100	100	100	100	100	100	100
Connected population Osmaniye	persons	267,232	273,913	280,761	287,780	310,500	342,733	387,771	438,727	496,379	561,608	635,408	684,264
Domestic unit water consumption	l/person/day	108	115	116	116	116	117	119	120	123	127	130	130
Gross domestic unit water consumption	l/person/day	113	113	113	122	122	123	125	126	129	133	136	137
Total system input	m3/year	27,120,960	27,799,706	28,494,773	30,966,288	24,111,221	25,742,233	28,744,612	32,746,060	37,810,084	43,926,623	50,673,031	54,569,237
Total revenue water	m3/year	11,994,142	12,293,977	12,601,360	13,770,839	14,772,465	16,668,202	19,161,360	21,844,102	25,269,692	29,429,713	34,007,988	36,622,834
Total non-revenue water	m3/year	15,126,818	15,505,729	15,893,413	17,195,449	9,338,756	9,074,031	9,583,252	10,901,958	12,540,392	14,496,910	16,665,043	17,946,403
Non-revenue water	%	56%	56%	56%	56%	39%	35%	33%	33%	33%	33%	33%	33%
Billed authorized consumption (Revenue)	m3/year	11,994,142	12,293,977	12,601,360	13,770,839	14,772,465	16,668,202	19,161,360	21,844,102	25,269,692	29,429,713	34,007,988	36,622,834
Billed metered consumption	m3/year	11,994,142	12,293,977	12,601,360	13,770,839	14,772,465	16,668,202	19,161,360	21,844,102	25,269,692	29,429,713	34,007,988	36,622,834
Domestic	m3/year	10,521,165	10,784,178	11,053,812	12,184,605	13,146,570	14,873,523	17,130,845	19,546,762	22,670,464	26,488,922	30,680,752	33,039,770
Non-domestic	m3/year	1,472,977	1,509,799	1,547,548	1,586,234	1,625,895	1,794,679	2,030,515	2,297,340	2,599,228	2,940,791	3,327,236	3,583,064
Billed unmetered consumption	m3/year	0	0	0	0	0	0	0	0	0	0	0	0
Unbilled authorized consumption (Non-revenue)	m3/year	1,252,950	1,284,272	1,316,382	1,349,290	1,383,026	1,526,598	1,727,205	1,954,173	2,210,966	2,501,508	2,830,227	3,047,841
Unbilled metered consumption	m3/year	0	0	0	0	0	1,526,598	1,727,205	1,954,173	2,210,966	2,501,508	2,830,227	3,047,841
Unbilled unmetered consumption	m3/year	1,252,950	1,284,272	1,316,382	1,349,290	1,383,026	0	0	0	0	0	0	0
Apparent losses (Non-revenue)	m3/year	584,978	599,601	614,592	672,678	722,364	597,030	669,894	761,270	876,905	1,013,746	1,166,558	1,256,253
Unauthorized consumption	m3/year	345,095	353,721	362,565	397,262	426,915	237,876	257,883	291,915	335,003	384,233	440,406	474,268
Domestic illegal connections	m3/year	315,635	323,525	331,614	365,538	394,397	201,982	217,273	245,968	283,019	325,417	373,861	402,607



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Parameter	Unit	2017	2018	2019	2020	2021	2025	2030	2035	2040	2045	2050	2053
Non-domestic illegal connections	m3/year	29,460	30,196	30,951	31,724	32,518	35,894	40,610	45,947	51,984	58,816	66,545	71,661
Meter faults	m3/year	239,883	245,880	252,027	275,416	295,449	359,154	412,011	469,355	541,902	629,513	726,152	781,985
Domestic meter errors	m3/year	210,423	215,684	221,076	243,692	262,931	292,728	336,857	384,325	445,699	520,667	603,002	649,367
Non-domestic meter errors	m3/year	29,460	30,196	30,951	31,724	32,518	35,894	40,610	45,947	51,984	58,816	66,545	71,661
Unbilled meter errors	m3/year	0	0	0	0	0	30,532	34,544	39,083	44,219	50,030	56,605	60,957
Real physical losses (Non-revenue)	m3/year	13,288,890	13,621,856	13,962,439	15,173,481	7,233,366	6,950,403	7,186,153	8,186,515	9,452,521	10,981,656	12,668,258	13,642,309
Real losses as %age of system input	%	49	49	49	49	30	27	25	25	25	25	25	25
Water losses (Apparent losses + Real physical losses)	m3/year	13,873,868	14,221,457	14,577,031	15,846,159	7,955,730	7,547,433	7,856,047	8,947,785	10,329,426	11,995,402	13,834,816	14,898,562
Water losses as %age of system input	%	51	51	51	51	33	29	27	27	27	27	27	27

Source: *Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document*



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III.5. Wastewater Generation

The amount of wastewater generated in 2017 is given in the Table III.7.

Table III.7. Current Wastewater Generation

Wastewater Generation According to Sources	Wastewater Flowrate (m ³ /year)
Domestic	9,521,759
Commercial	672,307
Institutional	544,373
Industrial	0
Unbilled unmetered consumption	475,830
Total wastewater flow generation	11,214,269
Infiltration flow rate	8,830,080
Total wastewater flow rate to WWTP	20,044,349

Source: *Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document*

Following assumptions were made while performing the calculations of wastewater generation for Osmaniye:

- Domestic wastewater connection rate which was 97% in 2017 will increase to 100% in 2024 and will remain 100% until 2053;
- Domestic wastewater return rate will remain at 90% until 2053;
- Wastewater return rates of the commercial and public institutions will remain at 80% from now on until 2053;
- For the unauthorized connections, wastewater return rate will remain at 50% from now on until 2053;
- Wastewater return rates for the unbilled unmetered consumption (mosques and municipal usages) will remain at 90% until 2053;
- It is assumed that the water used for irrigation of the parks and the gardens and for the fire department, which are in the unbilled unmetered consumption group, will not reach the wastewater system; and
- There is no industrial wastewater generation now and will remain as none till 2053.

The wastewater flow estimations made by using above assumptions are given in Table III.8.



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Table III.8. Wastewater Flow Projection

Total water consumption	Unit	2017	2018	2019	2020	2021	2025	2030	2035	2040	2045	2050	2053
Domestic	m3	11,047,223	11,323,387	11,606,502	12,793,835	13,803,898	15,368,233	17,684,975	20,177,055	23,399,182	27,335,006	31,657,615	34,091,744
Villages	m3	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	m3	846,488	867,649	889,342	911,573	934,367	1,031,362	1,166,891	1,320,230	1,493,718	1,690,007	1,912,089	2,059,107
Institutional	m3	685,409	702,542	720,108	738,109	756,564	835,105	944,844	1,069,004	1,209,478	1,368,416	1,548,237	1,667,279
Industries using Municipal water supply	m3	0	0	0	0	0	0	0	0	0	0	0	0
Customers with own water sources	m3	0	0	0	0	0	0	0	0	0	0	0	0
Billed unmetered consumption	m3	0	0	0	0	0	0	0	0	0	0	0	0
Unbilled metered consumption	m3	0	0	0	0	0	1,557,130	1,761,749	1,993,256	2,255,185	2,551,538	2,886,832	3,108,798
Unbilled unmetered consumption	m3	1,252,950	1,284,272	1,316,382	1,349,290	1,383,026	0	0	0	0	0	0	0
Infiltration area	ha	2,800	2,660	2,520	2,380	2,240	1,680	980	0	0	0	0	0
Infiltration rate	l/sec/ha	0.100	0.100	0.100	0.100	0.050	0.048	0.038	0.029	0.019	0.010	0.000	0.000
Total wastewater generated	m3/year	11,214,269	11,504,363	11,792,002	12,860,082	13,776,500	15,729,525	18,060,624	20,583,333	23,795,253	27,687,191	31,974,675	34,433,180
Domestic	m3/year	9,521,759	9,759,789	10,003,810	11,027,189	11,897,777	13,655,773	15,714,364	17,928,755	20,791,845	24,289,105	28,130,052	30,292,950
Commercial	m3/year	672,307	689,113	706,343	723,999	742,103	819,139	926,781	1,048,567	1,186,357	1,342,256	1,518,640	1,635,406
Institutional	m3/year	544,373	557,981	571,932	586,229	600,887	663,266	750,424	849,036	960,605	1,086,838	1,229,657	1,324,204
Industrial	m3/year	0	0	0	0	0	0	0	0	0	0	0	0
Billed unmetered consumption	m3/year	0	0	0	0	0	0	0	0	0	0	0	0
Unbilled metered consumption	m3/year	0	0	0	0	0	591,347	669,055	756,975	856,446	968,992	1,096,326	1,180,620
Unbilled unmetered consumption	m3/year	475,830	497,480	509,917	522,665	535,733	0	0	0	0	0	0	0
Infiltration	m3/year	8,830,080	8,388,576	7,947,072	7,505,568	3,532,032	2,543,063	1,174,401	0	0	0	0	0
Total wastewater flow to WWTP	m3/year	20,044,349	19,892,939	19,739,074	20,365,650	17,308,532	18,272,588	19,235,025	20,583,333	23,795,253	27,687,191	31,974,675	34,433,180

Source: *Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document*



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III.6. Technical Characteristics of Component 1 – Drinking Water Network Project

Within the scope of “Component 1”, below works will be carried out:

- Construction of 598km water distribution network lines with four new pressure zones and 22 flowmeter regions;
- Construction of five potable water storage tanks (reservoirs) having capacities of 2,000, 3,000, 4,000 and 15,000 m³; and
- Construction of miscellaneous network structures (valves, customer connections, etc.).

The service area is divided into four independent zones and these main zones are divided into sub-zones being fed from separate reservoirs.

The network will consist of HDPE (PE100) pipes having diameters up to 140 mm and ductile iron pipes for bigger diameters. The system is divided into 22 DMA regions for effective leakage control and monitoring.

The lengths of the proposed drinking water network pipes are given in Table III.9.

Table III.9. Pipe Lengths of the Proposed Network Line

Diameter (mm)	Length (m)
900 DD	3,045
800 DD	2,412
700 DD	4,331
600 DD	8,066
500 DD	6,583
450 DD	3,464
400 DD	6,925
350 DD	13,823
300 DD	11,232
250 DD	18,398
200 DD	41,189
150 DD	31,635
140 PE	426,560
110 PE	20,730
90 PE	-
Total	598,393

Source: *Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document*

The quantities and volumes of the reservoirs which will be constructed in the scope of the Project are given in Table III.10.



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Table III.10. Characteristics of the Reservoirs

Volume of Reservoir (m ³)	Quantity	Type
2000	1	Prismatic Service
3000	1	Prismatic Service
4000	2	Prismatic Service
15000	1	Prismatic Service

Source: *Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document*

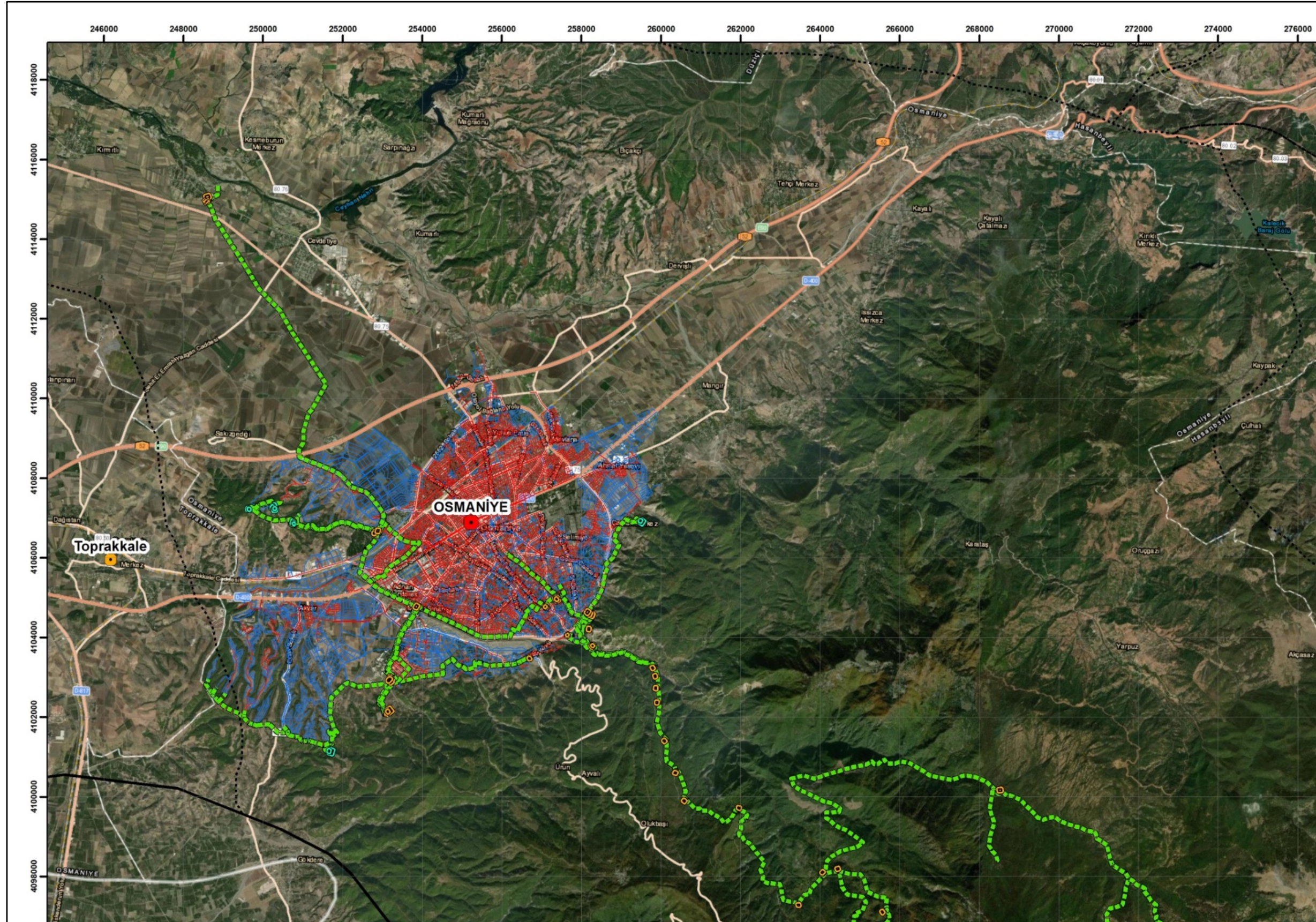
The method statement for construction works under the scope of the Component-1 of the Proposed Project will be carried out by the Contractor and submitted to the Municipality/PIU and ILBANK before commencement of the works. Without the approval from the Municipality/PIU and ILBANK no work will be performed 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.

The information on the ownership status of the construction areas are explained in section II.1.1 of this report.

The existing pipes and the proposed drinking water network pipes are shown in Figure III.1.



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III.7. Technical Characteristics of Component 2 – Wastewater Network

The design of the new wastewater network was approved by ILBANK in 2018. In the scope of Component 2, approximately 400 km of sewer network having pipe diameters between 200-1,000 mm will be renewed. The existing three pumping stations will continue to be used. Therefore, no additional pumping station is needed for the new sewerage system. The lengths and diameters of the pipes of the sewerage system are given in Table III.11.

Table III.11. Lengths and Diameters of the Sewerage Network Pipes

Pipe Diameter (mm)	Length (m)
Ø200	175,000
Ø300	90,000
Ø400	50,000
Ø500	30,000
Ø600	25,000
Ø800	15,000
Ø1000	17,500
TOTAL	402,500

Source: *Osmaniye Drinking Water and Wastewater Network Project, Project Identification Document*

The existing and proposed sewerage network pipes are shown in the Figure III.2.

The method statement for construction works under the scope of the Component-1 of the Proposed Project will be carried out by the Contractor and submitted to the Municipality/PIU and ILBANK before commencement of the works. Without the approval from the Municipality/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.

The information on the ownership status of the construction areas are explained in section II.1.1 of this report.



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IV. LEGAL FRAMEWORK

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

IV.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.

IV.1.1. Turkish Environmental, Health and Safety Legislations

Environmental Law, which is ratified in August 1983, 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 date November 25, 2014, number 29186) defines the administrative and technical procedures and principles to be followed throughout the EIA process. 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 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 Environmental Impact Assessment 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 Presentation File (PPF) is prepared in accordance with the outline given in the Regulation and the relevant process has to be conducted. As a result of the submission of PPF, if “EIA is required” decision is given, a full EIA 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 and Urbanization (MoEU). Then the MoEU, 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 consultation 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.

In addition, the Ministry 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



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the report is found to be appropriate, the review period starts and ends with either a positive or negative decision.

Ministry of Environment and Urbanization 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 MoEU 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.

Infrastructure projects such as sewerage networks, water supply networks and storm water systems are out of the scope of the Environmental Impact Assessment Regulation. Therefore, no EIA study is required for the sewerage network component of this Project.

The rest of the Turkish Environmental, Health and Safety (EHS) Legislation that the Project will comply with is presented in Table IV.1 below.

Table IV.1 Turkish EHS Legislation Related to the Project*

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Waste Management			
Waste Management Regulation	April 2, 2015	29314	Management of wastes generated by construction staff during the construction stage and by operation staff during the operation stage Hazardous wastes generated at construction and operation stages
Regulation on Landfill of Wastes	March 26, 2010	27533	Final sludge generated during operation stage.
Regulation on the Control of Waste Oil	July 30, 2008	26952	Waste oils generated at construction and operations stages.
Regulation on the Control of Waste Vegetable Oil	January 6, 2015	29378	Waste vegetable oils generated at construction and operation stages.
Regulation on the Control of Packaging Waste	December 27, 2017	30283	Packaging wastes generated at construction and operation stages.
Regulation on the Control of Medical Waste	January 25, 2017	29959	Medical wastes generated at construction and operation stages.
Regulation on the Control of Waste Tires	November 25, 2006	26357	Waste 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 the Control of Excavation Materials, Construction and Demolition Wastes	March 28, 2004	25406	Excavation materials, construction and demolition wastes generated during construction stage.
Regulation on the Control of Waste Vehicles	December 30, 2009	27448	Management of waste vehicles currently stored in the Project Area.
Regulation on the Use of Domestic and Urban Sewage Sludge on Soil	August 3, 2010	27661	Management of final sludge generated during operation stage.
Regulation on the Incineration of Wastes	October 6, 2010	27721	Management of final sludge generated during operation stage.



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Table IV.1 Turkish EHS Legislation Related to the Project*

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	Discharge of treated effluent during operation 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 Ground Waters 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	Discharge of treated effluent during operation stage. Monitoring of water quality at receiving body during operation stage.
Regulation on the Monitoring of Surface Waters and Groundwaters	February 11, 2014	28910	Monitoring of water quality at receiving body during operation stage.
Urban Wastewater Treatment Regulation	January 8, 2006	26047	Effluent quality and treatment efficiencies to be met during the operation of the existing WWTP of Osmaniye.
Air Quality Control and Management			
Regulation on the Control of Air Pollution from Heating	January 13, 2005	25699	Heating of the operational buildings during operation stage.
Regulation on the Assessment and Management of Air Quality	June 6, 2008	26898	Emissions during operation stage.
Industrial Air Pollution Control Regulation	July 3, 2009	27277	Dust emissions due to the construction activities performed at construction stage. Emissions during operation stage.
Regulation on the 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, 2018	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 the Assessment and Management of Environmental Noise	June 4, 2010	27601	Noise emissions at construction and operation stages
Soil Quality Control and Management			
Regulation on the Control of	June 8, 2010	27605	Risks of soil contamination at construction and operation stages.



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Table IV.1 Turkish EHS Legislation Related to the Project*

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Soil Pollution and Lands Contaminated by Point Sources			
Environmental Management, Permitting and Planning			
Environmental Impact Assessment Regulation	November 25, 2014	29186	Impacts during construction and operation stages.
Environmental Auditing Regulation	November 21, 2008	27061	Audits performed by either Project Owner or governmental authorities during construction and operation stages.
Environmental Permits and Licensing Regulation	September 10, 2014	29115	Required permits and licenses at all stages of the Project.
Regulation on Wastewater Collection and Disposal Systems	January 6, 2017	29940	At all stages of the Project.
Health and Safety			
Occupational Health and Safety Regulation	June 14, 2014	29030	Health and safety measures to be taken 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	November 29, 2006	26361	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 the Methods and Essentials of Occupational Health and Safety Trainings for Workers	May 15, 2013	28648	Health and safety trainings to be performed during construction and operation stages
Regulation on the Protection of Workers from Noise Related Risks	July 28, 2013	28721	Health and safety measures to be taken against the noise impacts during construction and operation stages.
Regulation on the Protection of Workers from Vibration Related Risks	August 22, 2013	28743	Health and safety measures to be taken against the vibration impacts during construction and operation stages.
Health and Safety Signs Regulation	September 11, 2013	28762	Health and safety signs to be placed during construction and operation stages.
Regulation on the Occupational Health and	August 23, 2013	28744	Health and safety measures to be taken for temporary workers during



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Table IV.1 Turkish EHS Legislation Related to the Project*

Legislation	Official Gazette Date	Official Gazette Number	Implications for the Project Stages
Safety for Temporary or Fixed Term Jobs			construction and operation stages.
Regulation on the Occupational Health and Safety in Construction	October 5, 2013	28786	Constructional health and safety measures to be taken during construction phase.
Communiqué on Occupational Health and Safety Hazard Classes List	December 26, 2012	28509	Determination of hazard classes during construction and operation phases.
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 the Road Transportation of Hazardous Goods	October 24, 2013	28801	Hazardous goods to be transported during operation phase.
Land Use			
Regulation on the Protection, Usage and Planning of Agricultural Lands	December 9, 2017	30265	Change in the land use
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
Regulation Concerning the Buildings to be built in Earthquake Zones	March 6, 2007	26454	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.

*Relevant amendments of the listed legislation will be applicable.

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



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

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

Table IV.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.
Law on Conservation of Cultural and Natural Assets	July 23, 1983	18113	• Measures to be taken during chance finds at the construction stage.
Land Hunting Law	July 11, 2003	25165	• Monitoring requirements regarding hunting and wildlife.
Law on Fisheries	April 4, 1971	13799	• Measures to be taken during the construction and operation stages.
Regulation on Fisheries	March 10, 1995	22223	• Measures to be taken during the construction and operation stages.

IV.1.3. Labor Law

The Turkish Labor Law (Law No: 4857) was enacted on 22.05.2003 and published in official gazette on 10.06.2003. 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 the 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.. 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.

IV.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 on 24.10.2003. The main objective of this law is to regulate the procedure and provide the basis of the right to information according to the principles of equality, impartiality, and openness that are the necessities of a democratic and transparent government. This law applies to the activities of the public institutions and the professional organizations, which qualify as public institutions. The Law which is divided into five parts in total explains the legal rights and obligations about information disclosure processes. The first part of the law defines the objective, scope, and definitions of terms that are used in law. The second part of the Law makes statements about the subjects of the Right to Information and the Obligation to Provide Information. According to Articles 4 and 5 of this Law found in this part, everyone has the right to information and the



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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.

IV.1.5. Permits

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

- Construction license
- Permits and licenses related to the road crossings and underground utilities during construction works (i.e. natural gas, telecommunications, etc.)
- Building license
- Operation license
- Temporary certificate of operation It is guaranteed that Class II Operation License for Non-sanitary Workplace and all required permits and licenses that are not listed here will be taken in compliance with the related legislations and the plant will be constructed and operated according to the related regulations.

IV.2. International Agreements and Standards

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

IV.2.1. International Environmental Conventions that Turkey 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 Turkey is a party which are 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 that Turkey 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),





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- Montreal Protocol on Substances Depleting the Ozone Layer (1990),
- Convention on Biological Diversity (Rio Convention) (1992),
- The International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (FUND 1992),
- International Convention on Civil Liability for Oil Pollution Damage (1992),
- UN Framework Convention on Climate Change (UNFCCC) (2004),
- Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (RAMSAR) (1994),
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes 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; Turkey also ratified three out of four governance conventions, 48 out of 177 technical conventions, Out of 59 Conventions ratified by Turkey, of which 55 are in force, three Conventions have been denounced; one instrument abrogated; none have been ratified in the past 12 months.



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IV.2.2. World Bank Policies and Standards

During all phases of the Project, together with the national legislation, World Bank Environmental and Social Framework (ESF) and Environmental, Health, and Safety (EHS) Guidelines will also be complied with.

The World Bank Environmental and Social Framework (ESF) is composed of ten Environmental and Social Standards (ESSs) which set out the requirements for Borrowers relating to the identification, assessment and mitigation of environmental and social risks and impacts associated with projects supported by the Bank. Table IV.3 reflects the ESSs which are applicable in this Project.

Table IV.3 Applicability of World Bank Environmental and Social Standards to the Project

Environmental and Social Standards (ESS)	Applicability
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	Yes
ESS2: Labor and Working Conditions	Yes
ESS3: Resource Efficiency and Pollution Prevention and Management	Yes
ESS4: Community Health and Safety	Yes
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	No
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	Yes
ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	No
ESS8: Cultural Heritage	Yes
ESS9: Financial Intermediaries	Yes
ESS10: Stakeholder Engagement and Information Disclosure	Yes

The Project shall develop an Environmental and Social Management System (ESMS) in consistency with the requirements of ESS1, which is applicable to all projects that may have environmental and social risks and impacts. The Project shall also meet the obligations set out by ESS2, ESS3, ESS4, ESS6, ESS8, ESS9 and ESS10.

ESS7 is not relevant for the projects in Turkey, because there are no indigenous groups in Turkey that meet the definition provided in ESS7.

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 the facilities using WBG's available technologies at reasonable cost. The relevant industry manual shall be used together with this manual.

General Environmental, Health and Safety Guidelines include the following main items;

- Environmental
 - Air Emissions and Ambient Air Quality
 - Energy Conservation
 - Wastewater and Ambient Water Quality



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- 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 General EHS Guidelines, WBG EHS Guidelines for Water and Sanitation is also applicable. Other relevant World Bank policies, and guidelines are:

- The World Bank Environmental and Social Policy for Investment Project Financing
- Bank Directive Addressing Risks and Impacts on Disadvantaged or Vulnerable Individuals or Groups
- World Bank Access to Information Policy
- (WBG General Environmental, Health and Safety Guidelines (EHSGs)
- WBG EHSGs for Water and Sanitation



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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 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. This 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 enhancing 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 effectiveness of the proposed mitigation measures are identified.

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

The first step in the ESIA (Environmental and Social Impact Assessment) comprised a 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 ESIA studies. The analysis of these potential interactions has been done using a color code (see Table V.1) in a modified Leopold matrix (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 (Aol).

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) (World Bank ESMAP, December 2012).

According to World Bank Group (WBG) International Finance Corporation (IFC) Performance Standard (PS) 1 Assessment and Management of Environmental and Social Risks and Impacts, the Aol 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.

In this respect, the Project together with all of its components (sewerage network and drinking water network) have been considered in the ESIA to the extent the level of information allowed.



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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 the ESIA report. 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	Geology, Soils and Contaminated Land	Groundwater	Surface Water Resources	Noise and Vibration	Biological Environment	Landscape and Visual Amenity (Aesthetics)	Sanitation (Soil and Liquid Wastes)	Climate Change
Construction									
Vegetation clearance, levelling works and construction activities in the project sites	Red	Red	Grey	Red	Red	Red	Red	Red	Grey
Excavation of surface material for laying down network pipes	Red	Red	Grey	Red	Red	Red	Red	Red	Grey
Provision of material, equipment, and service	Red	Red	Grey	White	Red	Grey	Red	Grey	Grey
Use of energy	Grey	White	White	White	White	White	White	White	Grey
Generation of waste	White	Red	Grey	Grey	White	Red	Red	Red	White
Operation									
Water supply and use (domestic)	Red	White	White	Grey	White	White	White	White	Red
Emissions and odor	Red	White	White	White	White	White	White	White	White
Generation and Discharge of wastewater	White	Red	Red	Red	White	White	Grey	Red	White



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Generation of solid waste														
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	Worker 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 sewerage system and water supply and distribution system										
Waste handling and disposal										
Emissions and odor										



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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) 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 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

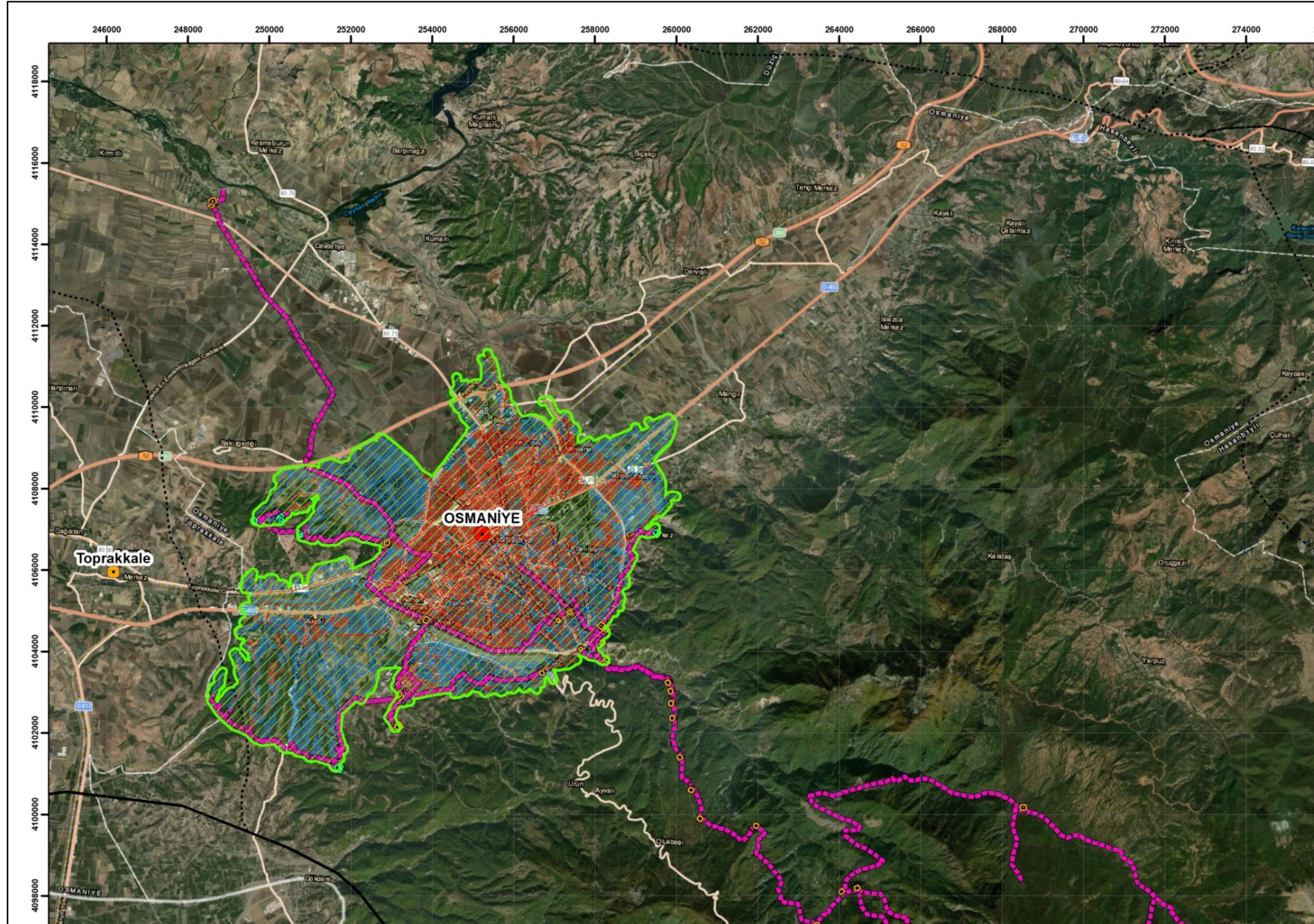
* Adapted from *Scottish Natural Heritage – A handbook on environmental impact assessment, 2013*

V.3. Potential Area of Influence

Project's location is presented in Figure V.1. As described before, the Project will have impacts especially on the vicinity of the Project sites. The potential area of influence for the Project includes the neighborhoods that are located in the sewerage network and water supply and distribution network service 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.

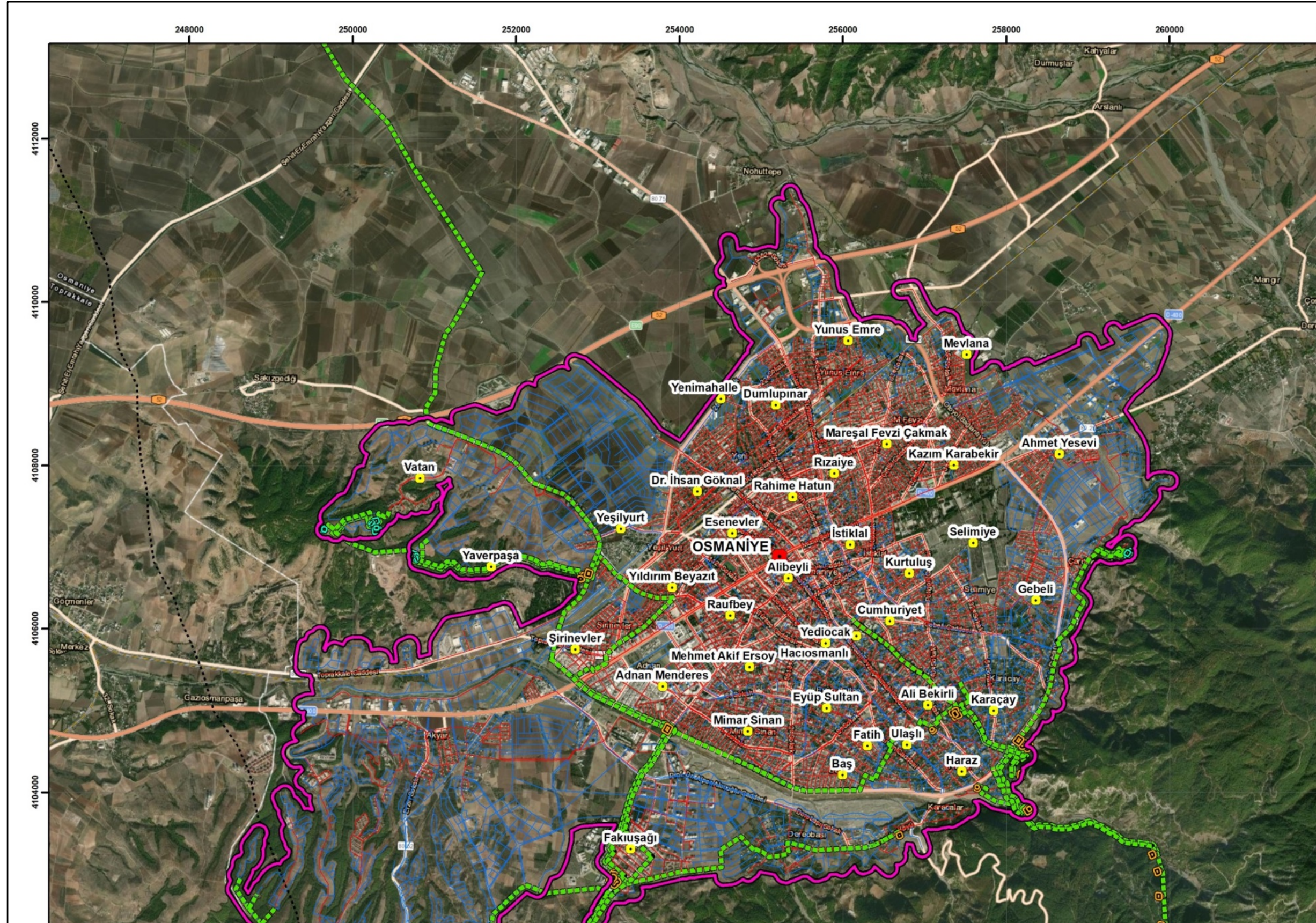


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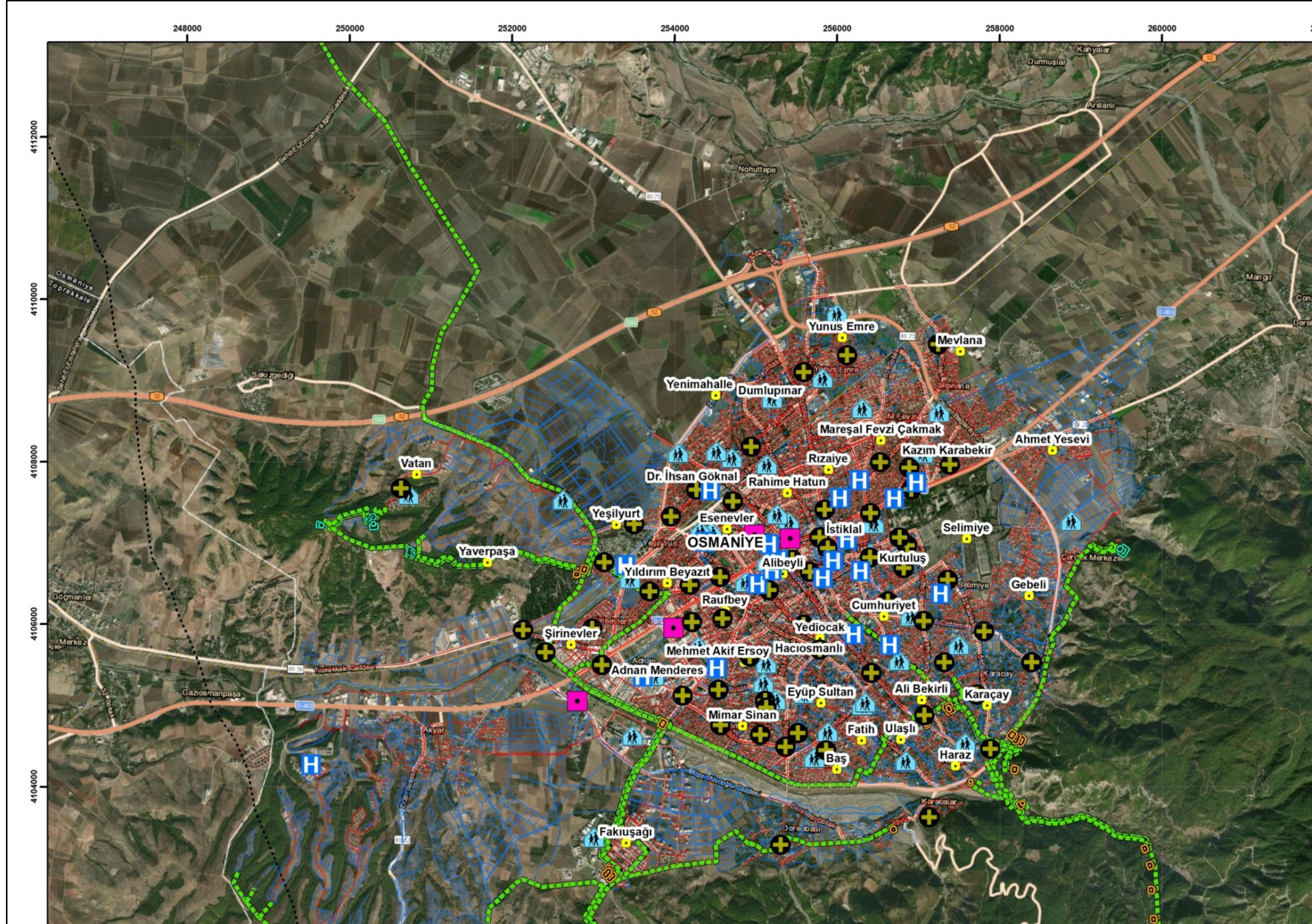


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V.4. Environmental Impacts (Physical and Biological Environment)

In Table V.5, identification of level of impact in terms of environmental resources (air, geology, water, etc.) for two project phases (construction and operation phases) are presented.

Project would have environmental impacts during construction and 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. The operation of both drinking water and wastewater network system might create noise odor, and soil contamination related impacts on sensitive receptors, which could be considered as significant if not properly managed. Maintenance and repair works of both sewerage network and water supply and network system 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.

The following 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.



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Table V.5 Matrix Table with Identification of Impact Level in Terms of Environmental Attributes

No	Environmental Attributes	Impact																Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without EMP	Impact Significance with EMP
		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	
A. CONSTRUCTION PHASE																					
1. Air Quality																					
1	Increase in dust concentration		✓	✓		✓				✓					✓		Medium	Low	Low	Low	
2	Increase in exhaust emissions		✓	✓		✓				✓					✓		Medium	Low	Low	Low	
3	Impact on human health		✓		✓				✓						✓		Medium	Negligible	Negligible	Negligible	
2. Geology, Soils and Contaminated Land																					
1	Contamination of soil		✓	✓		✓					✓				✓		Medium	Low	Low	Low	
2	Loss of topsoil		✓	✓		✓							✓		✓		Medium	Medium	Medium	Low	
3	Liquefaction and ground stability related risks																High	High	High	Low	
3. Surface Water Resources																					
1	Surface water quality		✓	✓			✓			✓						✓	Medium	Low	Low	Negligible	



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		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
4. Groundwater Resources																				
1	Groundwater quality		✓	✓			✓				✓				✓		Medium	Low	Low	Negligible
5. Noise and Vibration																				
1	Increase in Noise Level		✓	✓			✓			✓				✓			Medium	Medium	Medium	Low
2	Increase in Vibration Level		✓	✓		✓				✓				✓			Medium	Low	Low	Negligible
6. Biological Environment																				
-	No impacts on biological environment are expected		✓	✓		✓				✓					✓		Medium	Low	Low	Negligible
7. Landscape and Visual (Aesthetics)																				
1	Impairment of quality of life due to the overall presence of annoying construction works and activities		✓	✓			✓			✓				✓			Medium	Medium	Medium	Low
8. Sanitation (Soil and Liquid Wastes)																				



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		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				
1	Improper waste management		✓	✓			✓			✓					✓		Medium	Low	Low	Low	
9. Climate Change																					
1	Contribution to climate change through GHG* emissions		✓	✓				✓		✓				✓			Medium	Low	Low	Negligible	
B. OPERATION PHASE																					
1. Air Quality																					
1	Air and odorous gas emissions from PSs and broken pipes		✓	✓		✓				✓		✓		✓			Medium	Medium	Medium	Low	
2. Geology, Soils and Contaminated Land																					
1	Land		✓	✓		✓							✓		✓		Medium	Low	Low	Negligible	
2	Soil contamination		✓	✓			✓			✓				✓			Medium	Low	Low	Negligible	
3. Surface Water Resources																					
1	Change in surface water quality	✓		✓				✓			✓		✓				Medium	Medium	Positive	Positive	



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No	Environmental Attributes	Impact																Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without EMP	Impact Significance with EMP	
		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					
4. Groundwater Resources																		High	High	High	High	
1	Change in ground water quality		✓		✓				✓								✓	Medium	Low	Low	Negligible	
5. Noise and Vibration																						
1	Increase in Noise Level		✓	✓			✓				✓		✓			✓		Medium	Low	Low	Low	
6. Biological Environment																						
-	No impacts on biological environment are expected																	-	-	-	-	
7. Landscape and Visual (Aesthetics)																						
-	No impacts on landscape and visual environment are expected		✓	✓			✓				✓					✓		Medium	Low	Low	Low	
8. Resources and Wastes																						
1	Generation of different types of waste during maintenance and repair works		✓				✓					✓				✓		Medium	Low	Low	Low	



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Table V.5 Matrix Table with Identification of Impact Level in Terms of Environmental Attributes

No	Environmental Attributes	Impact														Sensitivity of the Receptor	Magnitude of the Impact	Impact Significance without EMP	Impact Significance with EMP	
		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
9. Climate Change																	High	High	High	High
																	Medium	Medium	Medium	Medium
																	Low	Low	Low	Low
																	Negligible/None	Negligible/None	Negligible/None	Negligible/None
1	GHG emissions		✓	✓				✓		✓						✓	Medium	Low	Low	Negligible

GHG:(Green House Gas)



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V.4.1. Air Quality

Construction Phase

The major impacts on air quality during the construction phase of this 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 Green House Gas (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 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 both the sewerage network and water supply and distribution network systems;
- 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
- Greenhouse gas emissions generated from the vehicles and construction machinery in small amounts.

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, both the sewerage network and water distribution network will 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. city center). Necessary mitigation measures described in the further sections of this report should be taken to not to have any negative impact on these receptors.

Standards for PM₁₀ (particles with aerodynamic diameter smaller than 10µm) are defined for particles which are respirable by humans and therefore, PM₁₀ is the accepted measure of particles in atmosphere. In this context, both the Regulation on Air Quality Assessment and Management, and Industrial Air Pollution Control Regulation define the standards for PM₁₀.

The construction activities will be carried out in compliance with both the national regulations and standards and WBG General EHS Guidelines given in the legal framework section of this report. 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 (Impact number C4) 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.



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Operation Phase

The operation phase of the Project is not expected to cause significant dust and exhaust emissions. Hydrogen sulphide and methane are known as odorous gases to be generated in the pumping stations and manholes of the sewerage system. Therefore, odor impacts will be observed during the operation phase of the Project. However, this impact will be low when the appropriate mitigation measures (Section VI.1) are taken.

V.4.2. Geology, Soils and Contaminated Land

Construction Phase

The excavation of trenches for the water and wastewater 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 will be used for the construction machinery and equipment;
- Soil contamination risk due to replacement activities of the sewerage pipes Soil erosion and contamination as a result of oil or fuel leaks or spillage that may result from incidents and unexpected events;
- Disturbance of the natural soil and land structure as a result of soil stripping, levelling excavation and filling activities, work of construction machinery,
- 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.

These impacts can be easily managed and mitigated to low in significance with the implementation of the mitigation measures given in Section VI.1 (C1, C2 and C3).

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 arise during repair and maintenance works, such as spillage/leakage of wastewater, oil, and chemicals to soil and the permanent land use change at pumping station and new reservoirs to be constructed in the scope of the Project. Therefore, the impact significance is determined as negligible.

V.4.3. Surface Water Resources

Water Supply during Construction and Operation Phases

During the construction phase, employees' needs and dust suppression will create water supply requirement. The drinking water needs of employees will be fulfilled by bottled water to be purchased from the local market. For dust suppression, water will be provided to the site by water trucks with sprinkler system. The quality of water that will be supplied to the Project shall be in



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compliance with the Regulation Concerning the Water Intended for Human Consumption together with the internationally accepted standards, such as WBG's General EHS Guidelines.

Impacts on Surface Water during Construction and Operation Phases

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.

In the construction phase of the project the impact on the surface water resources will be direct and negative with short - term duration, local and negligible in significance.

These impacts will be mitigated by the implementation of the mitigation measures given in Section VI.1 (C6).

Operation Phase

Although the proposed project will have positive impacts on the water resources, during the operation phase of the Project, the regular maintenance works to be performed on sewerage network might create impacts similar to the ones in construction phase. In operation phase, there will also be storage of some chemicals such as acids, bases, disinfectants, lubricants, etc. All storage tanks and drums will be placed on concrete areas with proper secondary containments. When necessary; spill kits, absorbent pads or materials and adsorbent sands will be provided near the chemical storage areas at all times. With these measures, potential releases to environment, an adverse impact to soil, surface water, and groundwater will be prevented.

To conclude, operation phase impacts of the Project is generally found to be positive on water resources. However, measures should be taken to prevent any unexpected deterioration on the receiving water quality. During the operation phase of the project the impact will be direct and positive with long term duration.

V.4.4. Groundwater Resources

Construction Phase

In construction phase, the major 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 can be said that the impacts will not be significant upon implementation of the mitigation measures and adherence to good engineering methods. It is assessed that in the construction phase of the Project, the impact significance will be negligible.



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Operation Phase

The impacts on groundwater resources in the operation phase will be similar to the ones of the construction phase. The impacts will be mostly related with the accidental spills/leakages and poor management of generated wastes and sludge. The impacts will be low negligible in significance upon adherence to good engineering methods.

V.4.5. Noise and Vibration

Environmental noise in Turkey is regulated by the Regulation on the Assessment and Management of Environmental Noise (RAMEN), which is published on 04.06.2010 in Official Gazette No: 27601. 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 environment. For construction activities, noise limit values set forth by RAMEN are provided in Table V.6.

Table V.6 Environmental Noise Standards for Construction

Type of Activity (Construction, Demolition and Repair)	L _{day} (dBA)
Building	70
Road	75
Other sources	70

In Article 23 of the RAMEN, it is stated that “construction activities within residential areas and at their surroundings cannot proceed during the evening and night after daytime intervals”. Therefore, it is important to make necessary notices regarding the project construction activities.

In addition to the national legislation, IFC Standards for noise are described under EHS Guidelines, General EHS Guidelines: Environmental Noise. The noise limit values are based on World Health Organization Guidelines for Community Noise. Noise limit levels defined by IFC are presented in Table V.7.

Table V.7 Noise Level Guidelines of IFC

Receptor	One Hour L _{Aeq} (dBA)	
	Daytime 7:00 – 22:00	Nighttime 22:00 – 07:00
Residential, institutional, educational	55	45
Industrial, commercial	70	70

IFC requires that noise impacts should not exceed the levels presented in Table V.7, or result in a maximum increase in background noise levels of 3 dB at the nearest receptor location off-site.



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Construction Phase

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

Construction of the sewerage and water distribution network will affect inhabitants living on the network route, but this impact will be short-term and low in magnitude.

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

Vibration that will affect humans or 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 such as engines, pumps and fans. The level of noise generated from the equipment is expected to be constant as all equipment will be in operation during the day. For the equipment generating noise, isolation will be provided in particular for the pumps.

The noise will also be generated from 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 of these works is not expected to be significant during the operation phase of the project.

The impact is assessed as direct and negative with long term duration, local and low in significance.

V.4.6. Biological Environment

In this section, potential impacts of the proposed construction activities for the Project on the biological environment are considered. These impacts could be in effect during both the construction and operation phases of the project. Potential impacts will affect terrestrial flora-fauna directly or indirectly. Therefore, impacts of the project activities can be further divided into the target group of biological elements as terrestrial.

The following subsections define the potential impacts of the project during construction and operation phases. The potential impacts are assessed for flora and fauna. Mitigation measures to be taken in order minimize these impacts presented in Section VI.1.

The impact of project activities on ecological components is related to the size of the impact and the vulnerability of the recipient. For terrestrial flora-fauna species, size and significance of the effects according to the matrices presented below have been determined in accordance with the criteria determined according to the ecological sensitivities of the species. It is known that the features of each step in the systematic classification of species are different from each other and accordingly the shapes and dimensions of the influence from the Project will vary within themselves. Sensitivities of terrestrial flora and fauna species determined within the Project Area are explained in detail in the report. Criteria for significance for ecological components are explained in following topic.



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Impact Assessment Criteria

The impact assessment criteria for the impacts on ecology and biodiversity were determined, as high, moderate or low, based on the evaluation of magnitude of impact and sensitivity/value of the receptors/resources. OP 4.04 definitions are used in habitat and species assessments. These definitions are explained step-by-step.

According to 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' bio-logical 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 value. Important natural habitats may occur in tropical humid, dry, and cloud forests; temperate and boreal forests; Mediterranean-type shrub lands; natural arid and semi-arid lands; mangrove swamps, coastal marshes, and other wetlands; estuaries; sea grass 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 environ-mental 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 bio-diversity 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 modification of a critical or other 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.8.



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Table V.8. Severity of Impacts on Resource/Receptor

Ecosystem Component	Severity of Impact		
	High	Medium	Low
Designed Areas	Internationally Recognized Areas (e.g. UNESCO Natural World Heritage Sites, UNESCO Man and the Biosphere Reserves, Key Biodiversity Areas, and wetlands designated under the Convention on Wetlands of International Importance (the Ramsar Convention))	Nationally designated areas.	N/A
Habitats	Habitats is natural or critical natural habitat under the OP 4.04 definitions and or Habitats that trigger critical habitat under the following IFC PS6 Criteria: <ul style="list-style-type: none"> • 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 Turkey 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 IFC PS6 Criteria: <ul style="list-style-type: none"> • 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

In the construction phase of the project, some direct or indirect impacts are expected to occur. The loss of habitat and biodiversity might a concern in the project area staying the boundaries of Amanos Mountains. However, the planned Project will be realized in an already modified area. There is not any critical natural vegetation which harbours wildlife, so it is not expected that there will be any sensitive habitat and vegetation loss during the Project construction activities.

Another direct impact of the construction phase will be the vehicle traffic for construction. The fauna species which have limited mobility will be prone to fauna mortality. The risk of crushing will increase as the animals cross the road.

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 the composition of soil and water quality, changes in air quality (dust generation, etc.), wastes to be generated due to project activities and noise pollution that might impact species' behaviour especially that of fauna elements.



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Biological Environment in Osmaniye

As mentioned in Section II.2 of this ESMP, the project area is situated within the Mediterranean Phytogeographical Region. Osmaniye is rich in flora and fauna species. Almost all Mediterranean plants are grown in district, where Mediterranean climate prevails.

The nearest national protected areas to the project area are Kabala Valley and Amanos Mountains, which is also declares as an IBA. The closest point of the Kastabala Valley KBA to the Project Area is approximately 6 km. A part of Amanos Mountain KBA stays within the boundaries of the Project Area.

The closest AZE to the Project area is Bolkar Mountains with a distance of approx. 150 km. Since Bolkar Mountains AZE is quite far away from the project area and it will not get affected from the Project activities.

In addition to the above mentioned IBAs, KBAs and AZEs, there is a bird Paradise, namely Kırmıtlı Bird Paradise located within the boundaries of Kastabala Valley KBA. Having a distance of 15 km to the project area, there are 250 bird species that have been identified so far in Kırmıtlı Bird Paradise.

Construction Phase Impacts on Ecology and Biodiversity

Terrestrial Flora

The most major impacts of the construction phase on the terrestrial environment would be habitat and vegetation loss or damage. However, the Project will be realized in an already modified area. On the part of the central district, where the foothills of Amanos are located, the residential area is built in a semi-natural area. Since, there is no sensitive habitat or flora specie found in the area, no significant impact is expected to occur.

The impacts of the construction activities on the terrestrial environment will include dust but this impact will be a short-term impact. When necessary measures are taken 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 OP 4.04 “Natural habitat” definition, land part of the project area does not have any sensitive natural habitat and wild life. The impacts on the biological environment during construction will be limited. Therefore, it is considered that all the impacts will be minimized or eliminated completely if necessary precautions are taken. The impact on the fauna species is assessed as direct and negative with long term duration, local and low in significance.

Terrestrial Fauna

There are poor vegetation and settlements in the immediate vicinity of the project area. This makes mammals and bird species not preferring these areas. However, some minor impacts resulting from the construction activities on fauna species can be seen. These effects will mostly consist of secondary effects. Due to the construction activities, mortalities may be observed due to disturbed fauna species and traffic congestion. 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.



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Aquatic Environment

Due to the construction activities, it is likely that destruction in the physical and chemical properties of water resources. Interventions are expected to occur during the construction of land preparation and construction activities such as excavation and backfilling. However, these impacts can be reduced to a low level with the relevant mitigation measures. The measures need to be taken against the impacts are presented in Section VI.1.

Operation Phase Impacts on Ecology and Biodiversity

The negative impact of the project's operational activities on terrestrial flora and fauna is not expected. When necessary, preventive measures are taken, natural life will continue in its former state after the construction activities are over.

In addition, during the operation, the receiving water body will be free from intense pollution, since new sewerage network lines will be constructed, and the wastewater generated from the areas having no sewerage network lines before the Project will be directed to the WWTP. This will be an important step towards conserving biodiversity and improving the water quality of the receiving bodies. This is considered as the most important positive impact of the project on the biological environment.

V.4.7. Landscape and Visual Amenity (Aesthetics)

Construction Phase

During construction phase of the Project, due to the nature and location of the works, there will be impairment of quality of life. All the sewerage network and water distribution network works will be performed in the city center and this will create nuisance for the people living or working nearby the sites. The landscape and visual impacts will be resulted 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, both drinking water and sewerage network 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 network 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 reduced to 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

In operational phase, the aesthetics impacts will be mostly related with repair and maintenance works which will be a short-term impact. Therefore, the landscape and visual impacts to be resulted during the operation phase will be negligible. In the long term, the physical presence of the reservoirs and pump station to be operated in the scope of the project will have a permanent impact. However, these structures will be small buildings and their visual impact can be mitigated by planting trees around them. Therefore, in order to decrease the impacts, it is recommended the Osmaniye Municipality to plant trees at the borders of the plant and paint the visible buildings to colors suits to the environment.



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V.4.8. Sanitation (Soil and Liquid Wastes)

Construction Phase

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.

Wastes 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). Contractor 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 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.

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

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 generation of packaging waste. Besides, personal protective equipment, clothes and rags used during maintenance and repair activities might result a limited amount of waste generation.

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

The impact resulting from the generation of the wastes is assessed as direct and negative with short-term duration, local and low in significance.

V.4.9. Climate Change

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





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- 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, 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 Tracking Greenhouse Gas Emissions (dated May 17, 2014, Official Gazette No: 29003), and any of the components of this Project are not listed in Annex-1 of the Regulation.

Construction Phase

The Project’s contribution to the 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 CO₂ 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 the climate change.

The project’s contribution to the 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.

Operation Phase

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

As a result, GHG emissions generated during land preparation, construction and operation phases of the project can be considered as relatively short-term emissions. With the realization of proper mitigation measures, GHG emissions can be minimized.

V.5. Impacts on Socio-Economic Environment

V.5.1. Traffic

The transportation of the construction materials to and from 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 traffic disruptions, disturbances for the local community and pose a risk to pedestrians.

In the operation phase of the Project, main traffic load contributions will be observed due to the sewage trucks of the nearby neighborhoods with no connection to sewerage network, and trucks of recycle and disposal companies. The traffic will also be affected during the repair and maintenance works on the drinking water and wastewater network lines.



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The project's impact on traffic during both the construction and operation phases is assessed as a negative and direct impact. The impact's extent will be local, and the 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.

V.5.2. Labor and Working Conditions

Although the number of personnel to be recruited is not yet decided, the priority will be given by Osmaniye Municipality to local people in the recruitment process.

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

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.

Labor Management Procedure of the Project is in place and the contractor is required to prepare his/her own Labor Management Plan by adopting it together with its specific Code of Conduct.

V.5.3. Protecting the Work Force

Osmaniye Municipality will ensure measures to prevent child labor and forced labor. In this respect, children under 18 years of age will not be employed during construction and operation stages.

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.

Turkey is party to a multitude of International Labor Organization (ILO) conventions, including but not limited to conventions on: equal treatment of employees, gender equality, child labor, forced labor, OHS, right of association and minimum wage. Accordingly, the current Turkish Labor Law (No.4857) is to large extent consistent with Environmental and Social Standard (ESS) 2 requirements.

V.5.4. Occupational and Community Health and Safety

Construction stage of the Project includes excavation, installation of pipes, backfilling and the use of heavy-duty vehicles. As described in the sectorial IFC EHS Guidelines Water and Sanitation; work at sanitation facilities is often physically demanding and may involve hazards such as open water, trenches, slippery walkways, working at heights, energized circuits, and heavy equipment. Vehicular movements can cause accidents resulting in injuries and death. Work at water and sanitation facilities may also involve entry into confined spaces, including manholes, sewers, trenches and pump stations which will expose workers to occupational safety risks and accidents.



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Occupational Health and Safety (OHS) risk might arise due to risk of pollution, emission of dust and production of noise during the site preparation and construction works.

During the operational phase, the anticipated impacts will include:

- Risks of sewers clogging by residents using the sewer line as place for solid waste disposal,
- Pollution of water and soil due to leaks and overflows, and
- Occupational accidents due to the repair and maintenance works.

These potential impacts need to be mitigated with the implementation of the measures given in Section VI.1.

V.5.5. Workers Engaged by Third Parties and the Supply Chain

Except local recruitment, the Project impacts on labor and working conditions are generally assessed as adverse but low in significance. These impacts are expected to be observed on workers such as children, migrant workers, workers engaged by third parties, and workers in the client's supply chain. Risks to worker safety can arise through work place incidents or fatalities during the site preparation and construction works and during the repair and maintenance works in the operational phase of the project. These possible impacts will be mitigated through the implementation of the Labor Management Plan which will be developed by the Contractors in line with the Labor Management Procedure of the Project which has been developed by İLBANK and also by abiding the provisions of the Labor Law. Additionally, it will be ensured that these measures will also be followed by the Third Parties.

The Project's limited personnel requirement makes the impacts on these issues easy to manage. By following the provisions given in Labor Management Procedure and Plan, as well as the provisions of the related Turkish national law and regulations, Osmaniye Municipality will prevent its workforce from possible adverse impacts.

V.5.6. Labor Influx

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 jobseekers 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 call this situation as 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. 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).

In order to avoid the negative impacts of the workforce influx, Osmaniye Municipality 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 sub-contractors in order to ensure this. In contract process, Osmaniye Municipality will request the contractor to plan the workforce and request from the contractor to prepare a Workforce Management Plan as a part of the LMP of the Project. The Municipality will evaluate and submit this plan to İLBANK for approval. In addition, there will be no provision of workers' accommodation within the scope of the Project. The Project is not expected to cause



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workforce influx, unless an unusual situation is triggered. Therefore, it is thought that the impacts of workforce influx will be insignificant.

The Municipality and the Contractor shall ensure that Code of Conduct (CoC) and public communication trainings are given to all employees as an orientation training to prevent a possible future dispute.



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VI. MITIGATION MANAGEMENT AND MONITORING PLAN

The purpose of the Mitigation Management and Monitoring Plan 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.

Neither Component 1 nor Component 2 of Osmaniye Drinking Water and Wastewater Network Project are among the activities listed in Annex I, which comprises activities requiring full EIA regardless of circumstances. Therefore, a full EIA study was not required for these two components of the Project according to Turkish EIA Regulation. Despite this, Osmaniye Municipality applied to the Governorship of Osmaniye Provincial Directorate of Environment and Urbanization for the evaluation of the Project whether the Project requires full EIA or not. As a result of the evaluation, the Provincial Directorate decided that no EIA is required for neither drinking water network nor wastewater network projects (Official letters of the Governorship of Osmaniye Provincial Directorate of Environment and Urbanization numbered 51765934-E-2016148 dated 26/08/2016 and numbered 51765934-E-201318M/5320 dated 27/12/2013 for drinking water network project and wastewater network project, respectively).

Overall, the proposed project is environmentally and socially beneficial. The provision of safe drinking water facilities and sufficient and properly working wastewater collection system in the city will have several significant positive impacts on the livelihoods and the environment in Osmaniye including followings:

- the construction of a new drinking water network lines will increase and sustain the provision of safe water and greater access to safe water for both locals and Syrian refugees;
- reduction in water losses will provide increase in water and energy efficiency and more effective use of water resources;
- replacing the pipes, of which materials are not suitable for the climatic and soil properties of the city, with the ones with suitable material will help to provide a sustainable drinking water system for the city;
- the construction of a new sewerage network will eliminate the environmental and sanitation risks resulting from the problems (infiltration, inflow and clogging) and insufficiency of the existing sewerage network of Osmaniye;
- it will ensure that adequate and effective municipal infrastructure services are provided to the public in compliance with the national/international standards;
- Wastewater and water system management and operational skills of the staff of Osmaniye Municipality will be developed; and
- The quality of life will be increased by providing the people safe access to a well-established drinking water and wastewater infrastructure services.

The construction of the sewerage and drinking water networks do not require expropriation of any private land. The routes of the proposed sewerage and drinking water lines will pass under the public roads, which under the responsibility of Osmaniye Municipality, and therefore neither land acquisition nor resettlement will be needed for the construction of either network lines. There are five reservoirs to be constructed in the scope of Component 1. For two of them, the lands, on which the existing reservoirs are located, will be used. However, the remaining three reservoirs will be constructed on the new lands, which are municipality-owned or state-owned. The permissions will be taken for these lands, in case needed. The selected lands are not used for agricultural or social purposes and these lands are free from squatters and any form of informal usage.



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The new network lines will be constructed within the urban area in the city and therefore no protected and sensitive ecosystems or species are foreseen to exist within the project area. There is no protected and sensitive ecosystems/species observed on the lands, on which three reservoirs will be constructed.

The project will not cause any economic displacement. The impact on local businesses during the construction of the sewerage and drinking water network will only be temporary and not significant. 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 photos of some streets/roads, on which the construction activities will be carried out, are given in Figure VI.1.





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Figure VI.1. Photos of Some of the Streets/Roads on which the Construction Activities will be carried out

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 Management 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. Impact mitigation management plan is presented in Table VI.1 and Table VI.2 for land preparation and construction, and operation phases, respectively.



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Table VI.1. Land Preparation and Construction Phase Impact Mitigation Plan

No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
Soil Environment					
C1	Soil Environment	Topsoil loss, damage to road cover	Adverse	Low	<ul style="list-style-type: none"> The new network lines will be constructed within the urban area in Osmaniye Central district and reservoirs will not be constructed on the agricultural lands. Therefore, no adverse impacts to the lands is expected during the construction; Public roads and streets will be backfilled, and road cover will be recovered by the Contractor; Amount of soil that could be subject to compaction will be minimized by ensuring the use of only designated worksites and routes for the construction machinery and equipment and field personnel; To avoid soil compaction, stripping operation will not be done when soil is wet. Average height of soil stacks will be 1.5 meters. Side slope of these stacks will not exceed 3:1 (h:v). The provisions of the Regulation on the Control of Excavation Soil, Construction and Demolition shall be complied during land preparation and construction phase of the Project. The contractor will take additional mitigation measures in case of a requirement revealed by the
C2	Soil Environment	Soil contamination	Adverse	Low	<ul style="list-style-type: none"> Amount of soil that could be subject to contamination will be minimized by ensuring the use of only 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, fuel to be stored at the site will be stored in the areas where necessary impermeability precautions are taken; Provisions of the Regulation on the Control of Soil Pollution and Sites Contaminated by Point Sources shall 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 relevant regulations and in line with the management practices described in this report. Thus, it will not be possible for the wastes and wastewater to be generated in the Project Area to interact with the environment and cause any impacts.



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
C3	Soil Environment	Erosion potential	Adverse	Low	<p>The Contractor will take necessary precautions to minimize the erosion risk as described here but will be limited to.</p> <ul style="list-style-type: none"> • Construction activities (especially excavation works) will be undertaken in dry weather conditions whenever possible; • Stripping of topsoil will not be conducted earlier than required to prevent the erosion of soil (wind and water); • Limit circulation of heavy machinery to minimal areas; • Works will be planned in a way to avoid opening up new parts before closing the parts completely as possible; • The disturbed areas and soil stockpiles will be kept moist to avoid wind erosion of soil and stockpiles of topsoil does not exceed 2m maximum; • Topography will be restored for slope stabilization immediately after the completion of construction at the location. • 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 topographic conditions of the site
Air Environment					
C4	Air Environment	Dust emissions, exhaust emissions	Adverse	Low	<ul style="list-style-type: none"> • Regular watering of the work area, particularly in spring and summer, to reduce the impacts of dust from 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 if necessary 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; • Covering inner roads with materials to prevent dust and keeping these roads 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; • Storage of daily backfilling, bedding and covering materials at temporary storage areas, moisture will be maintained by compacting the materials to prevent the materials moving with the help of wind; • Loading/unloading will be carried out carefully without scattering; • Regular controlling of the exhaust systems of the vehicles (daily and periodically). Daily maintenance will be carried out in each shift; and working time of each vehicle will be registered by the operator in order to determine the total working hours for periodic maintenances. Periodic maintenances will be conducted at 250, 500, 1000, 2000 working hours. Maintenance forms will be filled regularly;



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
Noise					
C5	Noise and Vibration	Increase in noise levels	Adverse	Low	<ul style="list-style-type: none"> The machinery and equipment to be used during the land preparation and construction activities operated at the same point/location but homogeneously distributed in the site; The project will be carried out in the residential area. Noise measurements will be performed at sites where machines work extensively near the populated areas; Within the scope of the project, attention is given to the selection of equipment with low noise level; The maintenance of the construction machinery and equipment will be carried out regularly and 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 maintenance 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 obey the speed limits set out in the Regulation on Highway Traffic; Construction works will be performed between 07:00 - 19:00 hours. Unless absolutely necessary, construction activities will be done at night. In case night operations are deemed necessary and noise levels would be high, public will be informed 1 week in advance; Since 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 possible in the areas, where the sensitive receptors are located; Establishment of a robust grievance mechanism (See Section VI.2.1) to manage noise related complaints; All construction activities will be carried out in compliance with the noise limits set out in the Regulation on the Assessment and Management of Environmental Noise (RAMEN) and the contractor will take necessary mitigation measures in case of a requirement revealed by the monitoring..
Water Resources					
					<ul style="list-style-type: none"> In case the excavated trenches are filled with surface water, ground water or rainfall, the muddy water in these channels will be discharged, and the water to be discharged will not be directly discharged into the receiving environment. These waters will be discharged to the receiving environment after eliminating sand and sludge; Discharge of wastewater, residues or other waste into groundwater or into surface water will be prevented. Portable toilets will be supplied for the workers at the construction sites. The wastewater generated at the construction sites will be connected to the existing sewage network or where the connection is not possible, it will be treated on-site and discharged to the receiving environment.



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
Waste					
C7	Wastewater	Domestic wastewater generation	Adverse	Low	<ul style="list-style-type: none"> The domestic wastewater generated at construction sites will be properly connected to the existing wastewater network. Portable toilets will be supplied for the workers at the construction sites. Where connection to the existing sewage network is not possible, the wastewater generated in the construction sites will be collected in the septic tanks and discharged into the nearest network line by the vacuum. In case needed, septic tanks will be constructed using concrete with appropriate cement ratio and depth to provide basement impermeability.
C8	Solid Waste	Solid wastes (from construction site staff and construction activities)	Adverse	Low	<ul style="list-style-type: none"> 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 clothing, 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 non-hazardous wastes. This area will have an impermeable base and will be protected from the surface flows and rain. Additionally, necessary drainage for the area will be provided. Hazardous or non-hazardous inscription, waste code, stored waste amount and storage date will be clearly indicated/labeled on wastes temporarily stored by classifying according to their properties. The residues of different wastes with each other will be prevented by the measures taken in the Temporary Storage Area. Domestic solid wastes generated on work sites will be stored in containers and collected daily by the Municipality and transported to the Osmaniye Landfill located in Yaverpaşa village in Karabahadır. Adequate waste disposal facilities will be provided. Collection of all solid waste from generation to safe transportation to a collection point will be ensured; Packaging materials (such as sacks, pallets, parcels, plastic coatings) from the products used in the office and work sites shall be collected separately according to the provisions of the "Regulation on the Management of Packaging and Packaging Wastes"; Incineration or burying of wastes by any means at site and/or dumping of wastes to nearby roads and water resources will not be in question; Provide training to the employees regarding waste management practices; 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; The contractor will take additional mitigation measures in case of a requirement revealed by the authorities; Personal hygiene material/equipment wastes (such as single use masks, gloves) will be collected separately, temporarily stored, transported and delivered to waste processing facilities in accordance with the regulations.



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
					and <ul style="list-style-type: none"> Disposal of excavation material will be carried out in compliance with the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes".
C10	Waste	Hazardous Waste Generation (waste oil from vehicles, batteries and accumulators, antifreeze and other chemical substances)	Adverse	Low	<ul style="list-style-type: none"> Waste oils originating from machinery and vehicles will be stored in impervious tanks and containers would be situated on impervious base in accordance with the "Regulation on Control of Waste Containers 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 labeled as "waste oil". Disposal of waste oils will be controlled by the Municipality and Supervision Consultant; Used 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 Used Batteries and Accumulators". Accordingly, used batteries will be collected separately (from municipal wastes) and transferred to the designated collection sites (for example, the collection site owned by Union of Industrial and Transportable Battery Manufacturers (TAP)), if there is one in the region; All other hazardous materials will be disposed of in accordance with the Waste Management Regulation; Hazardous wastes to be temporarily stored on site will be delivered by licensed transport vehicles and stored in appropriate to the type of waste for disposal. Information related to the operations in this context will be recorded and the records will be kept in the administrative building; Hazardous wastes will be stored at the construction site away from buildings in impermeable and leak-proof containers placed on concrete ground that are produced according to the Waste Management Regulation and Hazardous or non-hazardous inscription, waste code, stored waste amount and storage date will be clearly indicated/labeled on wastes temporary stored by classifying according to their properties. The records of wastes with each other will be prevented by the measures taken in the Temporary Storage Area and will be in compliance with IFC Guidance and national legislation.
Biodiversity					
C11	Terrestrial Biodiversity	Disturbance on flora and fauna species	Adverse	Low	<ul style="list-style-type: none"> Prior to the land preparation phase, definite working areas will be set up where activities (e.g. vegetation clearing, vegetation removal, leveling and construction) and permanent structures (units and roads) will be established; Vegetation clearing within the site boundary will be avoided unless it is absolutely necessary; Clearing mature trees will be avoided; If there is a nest of bird species, the nest should be marked with a safety strip about 3 meters wide 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 impacts.



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
					<ul style="list-style-type: none"> - 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 for pedestrians and vehicles, - temporary passages for people to provide safe access to get in and out, - traffic controls for each expected intervention, including illustrations of barriers, pa signalization plan, warning signs, etc., - requirements for special vehicles, for example, those of large dimensions, - accessible routes/paths for construction works (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, - instructions on the procedures regarding traffic control, including urgent situations. <ul style="list-style-type: none"> • The appropriate signage will be determined based on the Regulations on Traffic Signs dated 19/ numbered 18789. Prior to construction activities, the Contractor will install all signs, barriers and 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 disruption. When road closures, traffic diversions, are necessary, official permits will be obtained from Provincial Directorate of Traffic 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; • All vehicles to be used in transportation activities will obey the speed limits set out in the Regulation on Highway Traffic; • Safe driving by Project personnel will be ensured through trainings; • Organize buses for worker transportation where possible to avoid additional traffic pressure; • Prevent storage of construction materials, equipment and machineries on traffic lanes; and • Schedule traffic activities to avoid peak hours on local roads if feasible.
Cultural Heritage					
C13	Cultural Heritage	Chance Finds	Adverse	Low	<ul style="list-style-type: none"> • The water and sewerage network lines will be constructed within the urban area under the existing infrastructure. Therefore, it is not expected to have an adverse effect on the cultural and historical heritage of the area. However, when there is a reason to expect adverse impacts on cultural heritage, for example in the case of a chance find (e.g. graves, old ceramic, old building fragments), the Committee on Conservation of Cultural Assets will be informed immediately. Construction activities in the immediate neighborhood of a chance find will be stopped and the area will be fenced and instructions from the Committee will be awaited.



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					<p>retirement, and disciplinary practices) will not be made on the basis of personal characteristics u job requirements. Wages, work hours and other benefits will be per the Turkish Labor Law; and</p> <ul style="list-style-type: none"> • A grievance mechanism for workers (see Section VI.2.1) will be provided to raise workplace con workers will be informed about the grievance mechanism at the time of recruitment and it will be easily accessible to them.
C15	Labor Force	Child labor, forced labor and unregistered employment	Adverse	Low	<ul style="list-style-type: none"> • The rising risk of child labor and unregistered employment became an issue in the settlements a Syrian Refugee influx. Unregistered employment, child labor and forced labor will be prevented. subcontracting of the construction activities, the Contractor will establish procedures for managin monitoring the performance of subcontractors in relation to the requirements to prevent child labo unregistered employment and forced labor. The Contractor will require such subcontractors to in requirements related to this issue and non-compliance remedies in their contractual agreements
C16	Community and Occupational Health and Safety	Inadequate workers health and safety conditions	Adverse	Low	<ul style="list-style-type: none"> • The Contractor formally agrees that all work will be carried out in a safe and disciplined manner a designed to minimize risks on neighboring residents and environment • The access of local people and other living things in the construction sites will be controlled by fe working area. The entry of personnel and third parties into the facility will be carried out in a cont manner; • If workers are accommodated on site require them to minimize contact with people outside the construction/refurbishment site or prohibit them from leaving the site for the duration of their cont • Temperatures of workers and other people entering the site will be checked and recorded or req reporting prior to or on entering. • A brochure will be prepared by the Contractor and it will contain the sketch of the site, authorized information to communicate in case of emergency, start date and targeted end date. The brochu distributed to all buildings in the vicinity of the construction sites; • The occupational health and safety trainings for the workers will be performed in accordance with following points: <ul style="list-style-type: none"> - Trainings will be performed in accordance with the Regulations on the Procedures Principles of Occupational Health and Safety Trainings of Employees, - The contractor will inform and train its personnel about the occupational health and issues (including Covid-19 symptoms, how to be protected and what to do when s appear, etc.) in general and in particular about the requirements of the Health and Management Plan to be prepared by the Contractor. To achieve this objective, the could use its own resources or consult private companies or related departments o universities. - A basic training (including Covid-19 symptoms, how to be protected and what to d symptoms appear, etc.) will be provided during the commencement of works and trainings will be performed on monthly basis in line with the above-mentioned regu



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
					<ul style="list-style-type: none"> • All equipment will be operated in proper working order; • In the trench excavation areas performed by excavators, bulldozers and similar machines, no one will be present within the movement area of these machines, and only authorized personnel will operate these machines; • 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; • Equipment that meets international standards in terms of performance and safety will be used at all construction sites; • Railings will be installed around all tanks, pits and excavation trenches; • Sufficient number of personal gas detection equipment will be provided for the employees; • An adequate OHS organizational structure will be defined, as defined by the local legislation and the number of OHS officers should be assigned to be at the site; • A risk assessment (including Covid-19 risks and other communicable disease risks) will be done before commencing the works and personnel will be trained regarding the risks; • Assigned OHS specialist will daily inspect the site and if any additional risk is observed relevant trainings will be renewed; • The compliance of all the activities with the related regulations of Labor Law numbered 4857 such as "Regulation on Occupational Health and Safety", "Regulation on Noise", "Regulation on Health and Safety in Construction Works" and "Regulation on Using of Personal Protective Equipment at Work Places" and EHS Guidelines will be ensured; • The Contractor will develop a site-specific Occupational Health and Safety (OHS) Management Plan based on construction site OHS risk assessment in line with Turkish legislation and WBG OHS Guidelines. The plan will as a minimum incorporate the measures, described here but will not be limited to these measures; • Daily briefings will be provided to workers prior to commencing work, focusing on Covid-19 specific considerations including cough etiquette, hand hygiene and distancing measures; • The workers will be required to self-monitor for possible symptoms (fever, cough) and to report to their supervisor if they have symptoms or are feeling unwell; • A worker will be prevented from an affected area or who has been in contact with an infected person from entering the site for 14 days; • A sick worker will be prevented from entering the site, referring them to local health facilities if necessary and requiring them to isolate at home for 14 days; • In case a epidemic/communicable disease risk, the Contractor can also implement a screening protocol at the workplace. Screening can include providing free testing to workers and other employees who are exhibiting symptoms of the disease or requiring employees returning from high-risk areas to stay at the site for a predetermined amount of time to ensure that disease symptoms do not develop. • Guidance, directives and recommendations of Ministry of Health, Ministry of Labor and Social Security will be followed.



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
C18	Physical Environment	Impact on underground service utilities and services relocation	Adverse	Low	<ul style="list-style-type: none"> Plans from the Municipality showing the location of underground service utilities (power, telecom) be obtained and residents and/or landowners will be consulted on the relocation of utilities prior commencing excavation operation; The relevant permits, protocols will be granted for other 3rd party crossings such as underground cables etc. during construction stage. A team/teams to accompany the excavation team will be provided from the related utility authorities; The construction activities will be performed in a way not to give any damage to the utilities located in the working area.
C19	Stakeholder Engagement	Communication issues with the stakeholders	Adverse	Low	<ul style="list-style-type: none"> Disclosure of ESMP and other relevant project documents and information; Advance notification of public regarding traffic route changes, potable water cut, etc.; Preparation of information materials (brochures, leaflets, etc.); Platforms/meetings for disclosure of information and consultation; Ensure regular consultations with the local authorities and communities regarding the management of construction. Establishment of a grievance mechanism and its proper functioning; Ensure that all stakeholders concerns are addressed; The public will be notified of the works, including the Covid-19 measures taken on sites, through notification in the media and/or at publicly accessible sites (including the site of the works). The country Covid-19 spread in the project area will be reviewed, and the restrictions will be put in place; Stakeholder engagement events will be preceded with the procedure of articulating hygienic practices; All details of the Gender-Based Violence (GBV) and Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) survivors will be kept strictly confidential in the Grievance Register Database; and The GM Officer will not ask for, or record, information on more than the following related to the GBV/SEA/SH allegation: <ul style="list-style-type: none"> The nature of the complaint (what the complainant says in her/his own words without leading questioning); If, to the best of the survivor's knowledge, the perpetrator was associated with the project; If possible, the age and sex of the survivor.
C20	Labor influx and supply/procurement of materials	Temporary labor influx Risk of social conflict Impacts on	Adverse	Low	<ul style="list-style-type: none"> In case personnel or material or services required for the works to be carried out in a construction site cannot be sourced from local sources; technical personnel with adequate capacity or materials to 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 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); In contract process, Osmaniye Municipality will request the contractor to plan the workforce and



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
C21	Loss of Land	Loss of Land and structures	No Impact		<ul style="list-style-type: none"> In case any unanticipated damage occurs on the neighboring lands, assets, crops and structures during construction works, the losses will be compensated as per guidelines in Resettlement Framework; Full compensation of loss of land shall be provided according to asset types and location; Assistance to affected people shall be provided by the project to enable them to improve their living standard. In any case, if a land acquisition process is triggered, the full compensation payments will be made to landowners. No land owners will be victimized In case land acquisition is not avoidable, a sub-project specific Resettlement Plan in line with Resettlement Framework of the Project will be developed and implemented before the start of any physical works.
C22	Climate Change	Green gas emissions	Adverse	Low	<ul style="list-style-type: none"> Optimal utilization of the available construction equipment and materials in such a way that reduce 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.

C: Construction



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Table VI.2. Operation Phase Impact Mitigation Plan

No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
O1	Odor	Odor	Adverse	Low	<ul style="list-style-type: none"> Maintaining pipelines and ensuring effective management and operation of the sewerage system including effective maintenance of all elements of the sewerage system and rapid response to emergencies; Broken sewerage pipes and other repairs will be undertaken without delay; Outdoor odor levels within pumping station boundary will be monitored regularly; and Monitoring through continuous supervision and grievance mechanism will be provided.
O2	Noise	Increase in noise levels	Adverse	Low	<ul style="list-style-type: none"> 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 an 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; During the procurement of equipment and machinery, in particular pumps, sound levels given in the specifications/datasheet will be taken into consideration; 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; The noise level within 100 meters to the pumping stations will not exceed 60 dBA. Accordingly, noise insulation shall be ensured in the pumping stations; There are no sensitive receptors (hospitals, schools, elderly housing etc.) in the vicinity of the pumping stations that could be impacted by an increased noise level; Isolation will be provided for the equipment that generates excessive noise, in particular for the pumps; Relevant provisions and limit values of national legislations and World Bank Group General EHS Guidelines and Sectoral Guidelines will be complied with during the operation phase.
O3	Soil Environment	Soil Contamination	Adverse	Low	<ul style="list-style-type: none"> The staff will be trained for proper management of liquid wastes to avoid soil contamination during maintenance and repair works; 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 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; 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 during maintenance and repair works will be stored and disposed of in a controlled manner in accordance with the relevant regulations.



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
					<p>containers and collected daily by the Municipality and transported to the Osmaniye Landfill;</p> <ul style="list-style-type: none"> • 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 for backfilling. The remaining waste excavation material will be stored in temporary storage containers. Containers filled with excavation waste will be disposed of in the Landfill designated for the excavation material by the Municipality. Excavation materials will be disposed of in accordance with the Regulation on the Control of Excavation Soil, Construction and Demolition Wastes; • Used batteries from the operational facilities and accumulators from vehicles will be disposed in accordance 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 (for example; the site owned by the Union of Transport and Battery Manufacturers (TAP)); and • Hazardous waste (paint, waste oil etc.) will be stored temporarily in an area to be designated by the Municipality. 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 filled till the designated level mark. Tanks and containers will have a red color and must be labeled "oil". Disposal of waste oils will be controlled by the Municipality. After the temporary storage, those wastes will be sent to licensed disposal facilities in containers by licensed companies.
O6	Labor Force	Working Conditions	Adverse	Low	<ul style="list-style-type: none"> • Labor Management Procedure of the Project is in place and the contractor is required to prepare the Labor Management Plan by adopting it together with its specific Code of Conduct. • Workers will be provided with documented information that is clear and understandable, 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 change occurs; • 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, 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; and • A grievance mechanism for workers will be provided to raise workplace concerns. The workers will be informed about the grievance mechanism at the time of recruitment and make it easily accessible to them.



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
O9	Labor Force	Community Health and Safety Occupational Health and Safety	Adverse	Medium	<ul style="list-style-type: none"> A risk assessment will be done, and personnel will be trained regarding the risks; The Municipality will prepare an Occupational Health and Safety Management Plan based on OHS risk assessment and adherence to all requirements of the Plan will be ensured; An adequate OHS organizational structure will be defined, as defined by the local legislation and number of OHS officers should be assigned; Periodic monitoring of the operation of the whole water and sewerage network system will be performed, required maintenance and repair, in case of any failure in the system (blockage, pipe damage, etc.), performed on time; Private security officers will be hired in order to provide the security of the working area. The special applications within the scope of the project and the competent authorities will be in compliance with the provisions of the Law on Private Security Services and the Implementation of the Law on Private Security Services; The workers will be trained in accordance with Regulations on the Procedures and Principles of Occupational Health and Safety Trainings of Employees; Personal Protective Equipment will be provided for the workers according to the nature of work to be performed. The necessary trainings will be carried out for their use; Smoking will be prohibited where the risks of fire is high. All the workers will be informed about the actions in a case of fire; All equipment will be operated in proper working order; Procedures approved by the Municipality in the maintenance and repair activities and the requirements and technical specifications of the supplier companies will be complied with. The necessary health and safety signs and traffic signs will be placed around the facilities and the sites where maintenance and repair works need to be carried out. 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; Entrance of operation and maintenance personnel and third parties will be carried out in a controlled manner from the doors of the security personnel; Equipment that meets international standards in terms of performance and safety will be used at the sites; Appropriate ventilation systems should be installed at where methane accumulation is expected; Railings will be installed around all tanks and pits; Osmaniye Municipality will ensure that the Emergency Preparedness and Response Plan covers the sites and plans in case of disinfectant emission/spillage; Osmaniye Municipality will distribute sufficient number of personal gas detection equipment to its employees.



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No.	Topic	Definition of Potential Impact	Type of Impact	Impact Significance Before Mitigation	Measures to be Taken
O11	Climate Change	Green gas emissions	Adverse	Low	<ul style="list-style-type: none"> 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.
O12	Stakeholder Engagement	Communication issues with the stakeholders	Adverse	Low	<ul style="list-style-type: none"> Proper functioning of grievance mechanism; Ensure that all stakeholders concerns are addressed; All details of the Gender-Based Violence (GBV) and Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) survivors will be kept strictly confidential in the Grievance Register Database; The GM Officer will not ask for, or record, information on more than the following related to the GBV allegation: <ul style="list-style-type: none"> The nature of the complaint (what the complainant says in her/his own words without questioning); If, to the best of the survivor's knowledge, the perpetrator was associated with the project; If possible, the age and sex of the survivor.

O: Operation



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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 the evaluation of the impacts of the Project.

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.



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Table VI.3. Land Preparation and Construction Phase Monitoring Plan

No.	Potential impact	Which parameters shall be monitored?	Where the parameters shall be monitored?	How the parameters shall be monitored?	Why parameters should be monitored?	When the parameters shall be monitored?	Cost	Responsibility
C1	Job creation and impacts on local businesses	Number of employed persons from the local community Business growth/increase in income for local communities	Osmaniye and its vicinity	Employment records Inspection Economic growth rate of the area Survey studies	To observe the impact of the project on employment	Prior to construction and during construction	No costs involved	Contractor Osmaniye Municipality/PIU
C2	Access restriction, disruption of business activities	Number of affected business owner Loss of income from access restrictions	In the vicinity of the work sites	Face-to-face meetings with business owners and field surveying Grievance Registration	To observe the impact of the project on surrounding businesses	Once in a month starting from the initialization of land preparation and construction phase Upon grievance	Included in construction cost	Contractor Osmaniye Municipality/PIU
C3	Environmental hygiene	Quantity and conditions of cleaning tools First aid box Number of infectious and contamination cases	Within and around the work sites	Visual observation Health records of workers Grievance Registration	To prevent any health problems and to intervene in case of a health problem	Once in a week starting from the initialization of land preparation and construction phase Upon grievance	Included in construction cost	Contractor Osmaniye Municipality/PIU



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No.	Potential impact	Which parameters shall be monitored?	Where the parameters shall be monitored?	How the parameters shall be monitored?	Why parameters should be monitored?	When the parameters shall be monitored?	Cost	Responsibility
C4	Soil contamination	Soil quality (spill-related pollutant parameters) Number of leakages/spills of oil and fuels	Work sites and storage areas	Sampling and in situ / Laboratory Measurement	To prevent soil contamination, erosion potential and top soil loss	Upon an accident	Included in construction cost	Contractor Osmaniye Municipality/PIU
				Visual observation Environmental incident registry		Once in a week starting from the initialization of land preparation and construction phase		
C5	Damage to existing underground public utility cables and pipes	Complaints to Utility Service Providers Number of damages	Work sites (excavated areas)	Grievance Registration	In order to detect damages in existing underground utility cables and pipes and make necessary improvements	Upon grievance	Included in construction cost	Contractor Osmaniye Municipality/PIU Other relevant utility providers
				Visual Observation Damage Records		During excavation		
C6	Waste generation	Amount of waste generated per types and waste disposal activities conducted	Work sites, storage areas, and administration office	Visual observation	To observe the environmental impact of the Project in terms of waste, to determine whether space required for the landfill of waste and to monitor hazardous	Daily	Included in construction cost	Contractor Osmaniye Municipality/PIU
				Waste Records		Once in a week starting from the initialization of land preparation and construction phase		
				Site inspections		Once in a week starting from the		



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No.	Potential impact	Which parameters shall be monitored?	Where the parameters shall be monitored?	How the parameters shall be monitored?	Why parameters should be monitored?	When the parameters shall be monitored?	Cost	Responsibility
				Controlling the number and fullness ratio of temporary collection tanks for excavated material	wastes	initialization of land preparation and construction phase Daily		
C7	Air quality	Settled dust and PM ₁₀ Records of maintenance for all machineries and equipment Number of complaints	Nearest sensitive receptors Work sites	Sampling/ In-situ Measurement Records of maintenance for all machineries and equipment Visual Observation Grievance Registration	To prevent air pollution and to intervene in case of pollution	Upon grievance Once in a week starting from the initialization of land preparation and construction phase Daily Upon grievance	Included in construction cost	Contractor Osmaniye Municipality/PIU



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No.	Potential impact	Which parameters shall be monitored?	Where the parameters shall be monitored?	How the parameters shall be monitored?	Why parameters should be monitored?	When the parameters shall be monitored?	Cost	Responsibility
C8	Noise and vibration	Noise Levels Number of complaints	Nearest sensitive receptors Work sites	Noise measurements Observations Grievance Registration	To determine the noise level and to take mitigation measures in case the limit is exceeded	Upon grievance Daily Daily	Included in construction cost	Contractor Osmaniye Municipality/PIU
C9	Water Resources	Groundwater level The discharge from hydrotesting / pressure testing.	Work sites	Visually observation if the groundwater is being evacuated from the working area Laboratory analysis to determine the qualities.	To observe whether the groundwater is being evacuated from the working area or not	Upon events starting from the initialization of the Project	Included in construction cost	Contractor
C10	Accidental situations (spills, leakage etc.)	Evidence of leakages of oil and fuels	Work site and its vicinity	Visual observation Grievance Registration	To detect and respond to accidents	Daily Upon grievance	Included in construction cost	Contractor
C11	Traffic congestion and increased risk of road traffic	Traffic flow and patterns	Access roads, and work site and its vicinity	Visual observation	To prevent disturbance due to the road	Daily during works especially at dense traffic hours	Included in construction cost	Contractor Osmaniye



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No.	Potential impact	Which parameters shall be monitored?	Where the parameters shall be monitored?	How the parameters shall be monitored?	Why parameters should be monitored?	When the parameters shall be monitored?	Cost	Responsibility
	accidents and injuries as a result of movement of equipment	Number of complaints Number of Road Traffic Accidents Number of drivers trained		Accident records Training records Grievance Registration	closure, traffic jam due to the construction vehicles, etc.	Upon grievances and events starting from the initialization of the Project Upon grievance		Municipality/PIU
C12	Cultural heritage	Chance finds	On the work sites	Visual observation Records about chance finds	To identify cultural heritage and prevent damage to them	Daily basis starting from the initialization of land preparation and construction phase	Included in construction cost	Contractor Osmaniye Municipality/PIU
C13	Community conflicts	Number of conflicts	Municipality/PIU Office	Grievance registration Conflicts with security personnel and workers of the Project	For the detection and prevention of disputes	Upon grievances and events starting from the initialization of the Project	Included in construction cost	Contractor Osmaniye Municipality/PIU
C14	Occupational Health and Safety	Number of accidents/Injuries Period of disease occurrence Number of personnel who are infected with an infectious disease Use of PPE	Work sites	Visual observation Site inspection Incident Records Training Records Work Permits	Detecting, preventing and intervening diseases and accidents,	Daily basis starting from the initialization of land preparation and construction phase	Included in construction cost	Contractor Osmaniye Municipality/PIU



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No.	Potential impact	Which parameters shall be monitored?	Where the parameters shall be monitored?	How the parameters shall be monitored?	Why parameters should be monitored?	When the parameters shall be monitored?	Cost	Responsibility
C15	Impact on the labor force	Labor Force	Municipality/PIU Office	Employment records	To monitor improper working conditions, child labor, forced labor and unregistered employment	Quarterly starting from the initialization of the Project	Included in construction cost	Contractor Osmaniye Municipality/PIU
				Grievance registration		Upon grievance		
C16	Community Health and Safety	Health and safety signs and traffic signs placed in appropriate locations	Project area	Visual observation Site inspection	Checking health and safety signs and traffic signs to protect the health and safety of the community	Daily basis Upon grievance	Included in construction cost	Contractor Osmaniye Municipality/PIU



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Table VI.4. Operation Phase Monitoring Plan

No.	Potential impact	Which parameters shall be monitored?	Where the parameters shall be monitored?	How the parameters shall be monitored?	Why parameters should be monitored?	When the parameters shall be monitored?	Responsibility
O1	Soil Contamination	Soil quality (spill-related pollutant parameters) Number of leakages/spills of oil and fuels	Storage areas Work sites (excavated areas for maintenance and repair)	Sampling and in situ / Laboratory Measurement Visual observation Environmental incident registry	To prevent soil contamination	Upon an accident Daily basis starting from the initialization of the operation phase of the Project	Osmaniye Municipality/PIU
O2	Waste generation	Type and amount of waste generated	Facilities Maintenance and repair sites	Visual observation Waste Records Site inspections	To observe the environmental impact of the project in terms of waste, to determine whether space is required for the landfill of waste and to monitor hazardous wastes	Daily Once in a week starting from the initialization of the operation phase of the Project Once in a week starting from the initialization of the operation phase of the Project	Osmaniye Municipality/PIU
O3	Odor	Odor Level	At pumping stations Manholes Nearest sensitive	Sampling/analysis/measurement Site Inspection	To detect odor and to detect broken sewerage pipes	Upon grievance Weekly Inspection	Osmaniye Municipality/PIU



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No.	Potential impact	Which parameters shall be monitored?	Where the parameters shall be monitored?	How the parameters shall be monitored?	Why parameters should be monitored?	When the parameters shall be monitored?	Responsibility
			receptor	Grievance registration		Upon grievance	
O4	Noise and vibration	Noise Level	Nearest sensitive receptor At pumping stations	Noise measurement Grievance registration	To determine the noise level and to take mitigation measures in case the limit is exceeded	Regular (proposed to be 1 in a month) Upon grievance Upon grievance	Osmaniye Municipality/PIU
O5	Grievances	The grievances received through the website, by phone and in written to the attention of Osmaniye Municipality	A grievance redress register in the Municipality	Grievance registration	To monitor the collection and resolution of grievances	Upon grievance	Osmaniye Municipality/PIU
O6	Community conflicts	Number of conflicts	Municipality/PIU Office	Grievance registration Conflicts with security personnel and workers of the Project	For the detection and prevention of disputes	Upon grievance and/or incident	Osmaniye Municipality/PIU
O7	Communication issues with the stakeholders	Stakeholder engagement	Municipality/PIU Office	Engagement records	Communication issues with the stakeholders	Biannually starting from the initialization of the operation phase of the Project	Osmaniye Municipality/PIU



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No.	Potential impact	Which parameters shall be monitored?	Where the parameters shall be monitored?	How the parameters shall be monitored?	Why parameters should be monitored?	When the parameters shall be monitored?	Responsibility
O8	Occupational health and safety	Number of accidents/Injuries Period of disease occurrence Number of personnel who are infected with an infectious disease Use of PPE	On site Localities	Visual observation Site inspection Incident Records Training Records Work Permits	Detecting and preventing diseases and accidents, intervening	Daily basis starting from the initialization of land preparation and construction phase	Osmaniye Municipality/PIU
O9	Impact on the labor force	Labor Force	Municipality/PIU Office	Employment records Grievance registration	To monitor improper working conditions, child labor, forced labor and unregistered employment	Quarterly starting from the operation phase of the Project	Osmaniye Municipality/PIU
O10	Water quality	Residual chlorine Potable water quality parameters	Water Supply and Distribution System	Measuring and periodically checking the dose and functionality of the system Analysis of water quality	To prevent discharge of wastewater, residues or other waste into groundwater or into surface water and to monitor water quality in water	Daily basis	Osmaniye Municipality/PIU



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No.	Potential impact	Which parameters shall be monitored?	Where the parameters shall be monitored?	How the parameters shall be monitored?	Why parameters should be monitored?	When the parameters shall be monitored?	Responsibility
					supply and distribution system		
O11	Community health and safety	Community safety measures (signage and boards, etc.)	Work sites Municipality/PIU Office	Visual observation Site inspection	Checking health and safety signs and traffic signs to protect the health and safety of the community	Daily basis	Osmaniye Municipality/PIU
O12	Chlorine storage and use	Control of chlorine dosing system Leaks and spills	All locations where chlorine is stored	Visual observation Site inspection	To control the correct use and storage of chlorine	Daily basis	Osmaniye Municipality/PIU



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VI.2.1. Grievance Mechanism

Managing grievances, including avoiding and minimizing them as well as their timely and effective resolution, 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 Grievance Mechanism is beneficial in addressing community and individual concerns and complaints before they escalate beyond control.

In accordance with WB policies, a project-specific grievance mechanism will be established for all stakeholders to enable them to communicate their requests (i.e. grievances, suggestions, inquires for information, etc.) during the life of the Project (including planning, construction or operation phases) for consideration and, if required, resolution.

Osmaniye Municipality will establish a Grievance Mechanism (GM) for use by both external and internal stakeholders, in line with the project Stakeholder Engagement Framework (SEF) and Stakeholder Engagement Plan (SEP) of Osmaniye Municipality. The GM will enable receiving comments/grievances both in Arabic and Turkish to be able to serve to all potential stakeholders of the Project and will also allow submission of anonymous grievances.

Currently, Osmaniye Municipality uses a hotline “ALO 185” which is accessible 24/7 for any emergencies, and the communication tab on the Municipality’s official website⁴ . Any grievance related to this Project will be evaluated and responded via Project’s GM.

Osmaniye Municipality will also ensure that a formal internal GM for the project employees is in place covering issues related to labor conditions. This GM will be available to both direct and contracted workers to allow them to raise their workplace related concerns and grievances. The workers’ GM will be developed and established in line with the existing Labor Management Procedures (LMP) and the SEF prepared for the MSIP. Osmaniye Municipality will also assess grievance(s) and suggest solutions for employees of contractors and sub-contractors to establish an internal grievance mechanism which is easily accessible for all project workers.

The formal grievance mechanism to be developed by Osmaniye Municipality will address grievances from stakeholders and the general public and will assign designated staff for its management. Once the system is established it will be made public and introduced to all stakeholders providing equal and easy access to all. According to the SEP of Osmaniye Municipality and Stakeholder Engagement Framework of MSIP, all complaints received through various means (forms, phone, through staff, etc.) employed by the municipality will be recorded to a grievance database allowing for timely response and action to be taken by the responsible party assigned for resolution of the grievance. The GM Officer, communicates with the applicant to confirm that their request has been received and will be addressed within seven (7) days by the feedback channel indicated during request submission. telephone or e-mail. After that, GM Officer prepares the draft response and submits it to the Project Management’s approval. Following the response, the database and the Complaint Register and Close-Out Forms will be updated in line with the outcome of the assessment process and the applicant will be informed about the result within five days. In case the request requires additional actions to be taken, it will be resolved within 15 days. The request assessment and close-out process will also be recorded in the monitoring and evaluation system. Within the scope of the regular reporting to be made to ILBANK, Osmaniye Municipality shall report on all of the requests

⁴ <https://osmaniye-bld.gov.tr/iletisim>



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received, resolved and unresolved together with its supporting documents. The process starting with receipt of the request and ending with resolution will be completed within 30 days.

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 GM will also have a reporting line on such cases in regard to SEA/SH issues and will be handled under full confidentiality. The GM 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 GM Procedure of ILBANK. All details of the complainant of the sensitive case will be kept strictly confidential.

All stakeholders and the workers of the project also have the opportunity to benefit from other grievance mechanisms such as Presidency's Communication Center (CIMER) that is used nationwide and which is accessible for every citizen.



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VII. INSTITUTIONAL ARRANGEMENTS

Main responsible organization for implementation of this ESMP is Osmaniye Municipality. Besides, on different phases of the Project, various parties (contractors, Construction Supervision Team, ILBANK, etc.) will take responsibility on various works in the scope of the ESMP. All mentioned works will be coordinated by the Osmaniye Municipality. Mitigation management and monitoring tables, which are given in this ESMP, summarize 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 Management Plan
- Monitoring Plan
- Monitoring Report

Graphical representation of the environmental and social management structure is given in the figure below.



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Figure VII.1. Environmental and Social Management Structure

VII.2. Roles and Responsibilities

ILBANK Project Management Unit (PMU) will include an environmental specialist to supervise the implementation of the ESMP. The specialist will supervise the implementation of the ESMP by Osmaniye Municipality and document performance, recommendations and any further actions required. He/she will provide guidance to municipality officials on World Bank procedures, consultation and disclosure requirements.

Osmaniye Municipality 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 will consist of at least 6 people, the head of the PIU, two financial experts and three technical experts. The PIU staff will be the municipality's own staff.

The Municipality's environmental engineer, who will act as the Environmental Manager of this Project, will oversee the implementation of the ESMP and monitoring progress. The environmental engineer/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 site implementation of it.

The Supervision Consultant will have at least one Environmental Expert, one Social Expert and one Occupational Health and Safety Expert in its team. Number of experts will be increased, if necessary. 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 OHS related risks and will ensure initiation corrective actions where necessary. The experts will also monitor and evaluate the performance of the services provided by the Contractor. In addition, the Supervision Consultant will be responsible for the preparation and submission of the regular monthly reports on the environmental, social and OHS issues of the Project during the construction phase.



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Repair and maintenance will be the responsibility of the Contractor throughout the one-year DLP. After that, the maintenance, repair and operational activities will be performed by the municipalities.

In addition, Municipality's social expert will act as the Social Affairs Manager of this Project and will manage the social issues determined in the ESIA Report, this ESMP, and their monitoring progress. The social expert will also manage the grievance mechanism and stakeholder engagement.

The World Bank 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, per the Bank's request, a report on the incident or accident and propose any measures to prevent its recurrence will be prepared.

Therefore, Osmaniye Municipality will report details of any significant environmental or social incidents (e.g. fatalities, lost time incidents, environmental spills etc.) within three 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 World Bank immediately upon receipt from Osmaniye Municipality. Prompt notification of accident and incidents will remain inclusive under the contractor's ESMP.

VII.3. 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.

Training of staff will be done at a number of levels. 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 the World Bank. In the long-term training, special environmental and social issues will be examined, and likely solutions provided to the PIU. The PIU is also responsible for the monitoring of the Contractor's actions on training.

Table VII.1 provides examples of the basic trainings for the ESMP implementation. The training programs will be developed and delivered by the PIU.

Table VII.1. Proposed Training Programme

Module 1	
Training course	Environmental supervision, monitoring and reporting
Participants	Environmental staff, technical staff and administrative staff of the PIU



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Time	Soon after the project effectiveness but at least 1 month before the construction of the contract. The follow-up training will be scheduled as needed.
Duration	Four 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 monitoring Monitoring and implementation of mitigation measures Guide and supervise contractor in implementation of the ESMP Documentation and reporting 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	Three 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 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 Technical Assistance team

VII.4. Environmental and Social Monitoring Report

Environmental and Social Monitoring Report is an important tool to record the monitoring activities.

Results of technical assessments of relevant issues given in Table VI.3 and Table VI.4 will be presented in the monitoring report. The results shall be compared with the national legislative requirements and WBG EHS Guidelines. The results of the visual observations together with the key



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issues observed will be submitted in written form. The report should focus on the negative findings as well as the good practices. The negative findings should be supported with the photographic evidence. For each negative observation, a corrective action should be suggested with a reasonable due date. Any analysis/sampling/measurement report should be given as an annex of the report together with the relevant assessment and necessary remediation activities. The findings of the Environmental and Social Monitoring Reports will keep this ESMP as a living document; thus, the ESMP should be reviewed and revised by the environmental and social unit of the Municipality according to these findings, if necessary, to do so.

In that scope, Municipalities' Project Implementation Unit should produce quarterly progress reports for all sub-project sites and monitor quality of reporting throughout the duration of works and reporting requirements should be included in bidding documents of the contractors. Also, ILBANK should prepare and submit regular monitoring reports (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 mechanism(s) to the Bank. The reports will be prepared in Turkish and English.



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VIII. PUBLIC PARTICIPATION

The Public Consultation Meeting (PCM) of the Project was held on June 29, 2021. Ahmet Şekip Ersoy Cultural Center was selected by Osmaniye Municipality as a meeting venue, which is located at the Center District of Osmaniye. The meeting venue had enough capacity and facilities, hence, comfortable and efficient communication would be ensured. However, due to the fire caused by the sound system in the designated venue a few hours before the meeting time, the meeting was moved to the Osmaniye Municipality Wedding Hall to be held at the same time. The distance between the pre-planned venue and the Wedding Hall was approximately 750 m. Osmaniye Municipality arranged the new venue location and directed the participants to the new location and the meeting was held in a proper way. The incident report on the subject is presented in ANNEX 1.

Prior to PCM, several notification channels were used to inform the related public authorities (including provincial governorates, district governorates, municipality mayors, etc.), muhtars and local people, national and local media agencies and wider public including Non-Governmental Organizations (NGOs), etc. The list summarizing the notification channels used to inform each party is provided in Table VIII.2.

Table VIII.1.Stakeholder Notification Methods for Public Participation Meetings

Stakeholder Group	Shared Project Documents	Means of Notification
Governorship of Osmaniye Osmaniye Municipality Provincial Directorate of Environment and Urbanization Provincial Directorate of Immigration Administration Political Party Representatives	Program of the Meeting	Official Letter
Adnan Menderes Neighborhood Ahmet Yesevi Neighborhood Alibekirli Neighborhood Muhtarlar Dernek Baskani Alibeyli Neighborhood Bas Neighborhood Cumhuriyet Neighborhood Dr.İhsan Goknel Neighborhood Dumlupinar Neighborhood Esenevler Neighborhood Fatih Neighborhood Fakiusağı Neighborhood Gebeli Neighborhood Haciosmanli Neighborhood Haraz Neighborhood İstiklal Neighborhood Eyup Sultan Neighborhood Karacay Neighborhood Kazım Neighborhood Kurtulus Neighborhood Mehmet Akif Ersoy Neighborhood M.F.Cakmak Neighborhood M.Sinan Neighborhood Mevlana Neighborhood Rahime Hatun Neighborhood Raufbey Neighborhood Rızaiye Neighborhood Selimiye Neighborhood Sirinevler Neighborhood	Project Information Brochure Grievance Form Announcements of Public Participation Meeting	Official Letter/Phone call/Meeting



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Stakeholder Group	Shared Project Documents	Means of Notification
Ulařlı Neighborhood Yaverpařa Neighborhood Yediocak Neighborhood Yeni Neighborhood Yeřilyurt Neighborhood Yıldırım Beyazıt Neighborhood Yunus Emre Neighborhood Vatan Neighborhood		
Wider Public and Interested Parties	Program of the Meeting and Organizational Details	Newspaper announcements/Website of Osmaniye Municipality

During the information dissemination process in advance of the PCM, initially the announcements were published in a local newspaper (Hasret Newspaper, 23 June 2021) , national newspaper (BirGün Newspaper, 21 June 2021) and on the website of Osmaniye Municipality (23 June 2021). The newspaper and online announcements made are given in ANNEX 2. In addition, relevant provincial and district governorates were informed of the program by means of official letters. Muhtars of the neighbourhoods were individually contacted through face-to-face meetings/phone calls due the time constraints and project brochures (see ANNEX 3) and official invitation letters were also distributed as necessary. Following the information dissemination/announcement process, PCM for the Project was conducted on June 29, 2021 at 15:00 in Osmaniye Province.

The meeting was held with the participation of representatives of Osmaniye Municipality (Project Beneficiary) and Encon Çevre Danıřmanlık Ltd. řti. (Encon, the Consultancy Company) and lasted for about 2 hours.

The meeting started with an introduction and explanation of the purpose and scope of the meeting and followed by a presentation (see ANNEX 4) given by Encon and a discussion session where questions, concerns and suggestions of the participants were received. 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 Financial Provider of the Project?
- What are the anticipated benefits of the project?
- What is the scope of the Environmental and Social Impact Assessment Studies?
- Stakeholder Engagement: How to Participate into the Process?
- Discussion (Questions and Answers) Session

During the meeting, large-scale (in A1 format) maps showing the Project areas were provided for the participants.

A total of 61 people participated to the meeting. The list of participants is presented in ANNEX 5. The majority of the participants were composed of the muhtars and there were limited participation of women. Please see ANNEX 6 for the photos from the PCM.

The questions, issues, concerns and suggestions raised by the participants during the PCM were categorized and a summary of the PCM findings is provided in Table VIII.3.



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Table VIII.2. Summary of the PCM Findings

Party who Raised the Question/ Issue/Concern/ Suggestion	Question/Issue/Concern/ Suggestion Raised	Response of Municipality/ Environmental Consultant
Tarık Sesli Esenevler Neighborhood Mukhtar	Can you give information about the construction process of the project? We also want to know from which neighborhood the project will start?	The construction activities of the Project will last approximately 2 years. Starting neighborhood of the project and technical issues will be determined by the technical planning to be made with the contractor after the tendering process.
Mustafa Ates Rahime Hatun Neighborhood Muhkhtar	Will the drinking water lines to be built within the scope of the project start to work before the end of the project or will they be activated after 2 years?	If the network connection can be provided properly, the wastewater and drinking water lines can be put into service directly.
İsmail Coskun Mevlana Neighborhood Mukhtar	In infrastructure projects, we are experiencing traffic and similar problems due to road digging in general. I hope that such problems will not occur in this project.	Within the scope of Environmental and Social Management Plans mitigation measures have been developed for traffic and similar potential impacts/risks. In addition, it is aimed to complete the project with minimum impacts through the grievance mechanisms to be established.

The comments and questions were majorly concentrated on issues that are not related to scope of the Project and management structure and implementation arrangements of Osmaniye Municipality. The Osmaniye Municipality was represented at mayorship level and the communication between the residents of Osmaniye and the municipality is of good quality.



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REFERENCES

- Canalp Engineering,2019. Osmaniye Drinking Water Detailed Design Report
- Canalp Engineering,2019. Preliminary Report for the Osmaniye Drinking Water Detailed Design
- Assoc. Prof. Mehmet TIRAŞ, 2008. Environmental Problems Resulting from the Use of Urban Land in Osmaniye, Sütçüimam University
- İLBANK, 2020. The Stakeholder Engagement Plan (SEP) for Osmaniye Municipality
- Ministry of Forestry and Water Affairs (Nature Conservation and National Parks) VII. Regional Directorate, 2013-2023. Osmaniye Nature Tourism Master Plan
- Ministry of Environment and Urbanization, 2019-2023. Osmaniye Province Development Plan
- Ministry of Health, 2017. Health Statistics Yearbook
- Ministry of Industry and Technology, General Directorate of Development Agencies Socio-Economic Development Ranking Survey of Provinces and Regions (SEGE-2017) Ankara
- Ministry of Environment and Urbanization, 2018. Osmaniye Province 1/100.000 scale Environmental Revision Plan
- Vadi Project, 2019. Environmental Impact Screening Report
- Vadi Project, 2019. Project Identification Document (PID)
- World Bank, 2020, ESF/Safeguards Interim Note: Covid-19 Considerations in Construction/Civil Works Projects
- <https://www.mgm.gov.tr>
- <https://korumakurullari.ktb.gov.tr>
- <https://www.tarimorman.gov.tr>
- <http://kve.ulakbim.gov.tr>
- <https://sim.csb.gov.tr>
- <http://www.tubives.com>
- <https://osmaniyeism.saglik.gov.tr>
- <https://osmaniyedh.saglik.gov.tr>
- <https://www.kgm.gov.tr>



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ANNEXES



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ANNEX 1. Incident Report (for Venue Change)

29.06.2021

TUTANAK

Osmaniye Belediyesi tarafından, Türkiye'deki Mültecilere Yönelik Mali Yardım Programı (FRIT-11) - Belediye Hizmetlerinin iyileştirilmesi Projesi kapsamında, Osmaniye ili Merkez ilçesinde yapılması planlanan Osmaniye (Merkez) içme suyu ve kanalizasyon Projesi için 29.06.2021 tarihinde Ahmet Şekip Ersoy Kültür Merkezi'nde yapılacak Halkın Katılımı Toplantısı ilan edilen lokasyonda ortaya çıkan teknik sıkıntılardan dolayı, toplantı lokasyonu gerekli tedbirler alınarak Osmaniye Belediyesi Nikah Salonu'na alınmıştır.

A. Melih LOŞ
Belediye Başkan Yard.

H. İbrahim EYNALLI
Su ve Kanalizasyon Mcd.

Turgut ASLAN
İnşaat İşleri

Serkan KÜÇÜNSAL
ENCON - Çevre Mühendisi

Mustafa AKSU
ENCON - Sosyolog



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ANNEX 2. Newspaper and Online Announcements (Local and National Newspapers)

OSMANIYE (MERKEZ) İÇME SUYU VE KANALİZASYON PROJESİ HALKIN KATILIMI TOPLANTISINA DAVET

Osmaniye Belediyesi tarafından, Türkiye'deki Mültecilere Yönelik Mali Yardım Programı (FRIT-II) - Belediye Hizmetlerinin iyileştirilmesi Projesi kapsamında, Osmaniye ili Merkez ilçesinde yapılması planlanan Osmaniye (Merkez) İçme Suyu ve Kanalizasyon 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 idare tarafından planlanan ve aşağıda detayları verilen "Halkın Katılımı Toplantısı" düzenlenecektir.

Halkımıza saygı ile duyurulur.

Toplantı Tarihi, Saati ve Yeri

29.06.2021 Salı; saat 15:00
Ahmet Şekip Ersoy Kültür Merkezi
Adres: İstiklal Mah. Dr. Sadık Ahmet Cad.
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Local Newspaper Announcement (Hasret Newspaper, 23 June 2021)



T.C. ÇEVRE VE
ŞEHİRCİLİK BAKANLIĞI



ILBANK
TÜRKİYE'NİN YAPICI GÜCÜ



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6/23/2021

OSMANIYE (MERKEZ) İÇME SUYU VE KANALİZASYON PROJESİ HALKIN KATILIMI TOPLANTISINA DAVET :T.C. Osmaniye Bel...

Anasayfa	Site Haritası	Bizimle İlgilerimiz	Faydali Linkler	Çağrı M. Numaralı 0 328 440 00 80	
BAŞKAN	KURUMSAL	PLANLAR VE RAPORLAR	KENTİMİZ	PROJELER	İletişim

Reklam Tanıtım Yönetmeliği

OSMANIYE (MERKEZ) İÇME SUYU VE KANALİZASYON PROJESİ HALKIN KATILIMI TOPLANTISINA DAVET



Osmaniye Belediyesi tarafından, Türkiye'deki Mültecilere Yönelik Mali Yardım Programı (FRIT-II) - Belediye Hizmetlerinin iyileştirilmesi Projesi kapsamında, Osmaniye ili merkez ilçesinde yapılması planlanan Osmaniye (Merkez) İçme Suyu ve Kanalizasyon 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 idare tarafından planlanan ve aşağıda detayları verilen "Halkın Katılımı Toplantısı" düzenlenecektir.

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Halkımıza saygı ile duyurulur.

Kadir KARA
Belediye Başkanı

Tarih : 29 Haziran 2021
Saat : 15.00
Yer : Ahmet Şekip Ersoy Kültür Merkezi
İstiklal Mah. Dr. Sadık Ahmet Cad. Osmaniye Merkez (Çarşı Polis Karakolu Yanı)



OSMANIYE (MERKEZ) İÇME SUYU VE KANALİZASYON PROJESİ HALKIN KATILIMI TOPLANTISINA DAVET

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Osmaniye Municipality Website, 23 June 2021



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ANNEX 3. Project Brochure (in Turkish and Arabic)

Turkish Version (2 pages)

<p>Türkiye, geçici koruma altındaki Suriyelilerden en çok etkilenen ülkelerden biridir. Geçici koruma altındaki Suriyeli nüfus, başta Güneydoğu bölgesi olmak üzere Türkiye genelinde birçok belediyenin nüfusunda önemli bir artışa neden olmuştur. Bunlar arasında Osmaniye, toplam nüfusunun %8,60'ını oluşturan geçici koruma altındaki Suriyeli nüfusa ev sahipliği yapmaktadır. Ancak, Osmaniye'de mevcut altyapı sistemleri standart nüfus artışına göre tasarlanmıştır. Bu sebeple, nüfusun ani ve önemli ölçüde artması, içme suyu ve atıksu sistemi tesislerinin beklenenden daha erken tam kapasiteye ulaşmasına neden olmakta ve kamu için yüksek düzeyde yetersiz hizmete yol açmaktadır.</p> <p>Artan nüfus, Osmaniye'deki mevcut belediye sistemleri üzerinde önemli bir baskı oluşturmaktadır. Bu sebeple, şebeke sistemlerini genişletmek ve mevcut olanları geliştirmek için belediye altyapısına acil müdahaleler gerekmektedir.</p> <p>Osmaniye (Merkez) İçme Suyu ve Kanalizasyon Projesi, AB'nin Türkiye'deki Mültecilere Yönelik Mali Yardım Programı (FRIT-II) Belediye Hizmetlerinin İyileştirilmesi Projesi kapsamındaki alt projelerden biridir. FRIT, AB Üye Devletlerinin Türkiye'deki mültecileri desteklemek için ek finansman ihtiyacına cevap vermek amacıyla yapılan bir finansman kaynağıdır.</p> <p>Proje, Uluslararası İmar ve Kalkınma Bankası ve AB FRIT-II Programı tarafından finanse edilecektir. Türk tarafında İller Bankası A.Ş. (İLBANK), Projenin ana yürütme organıdır. Osmaniye Belediyesi, Projenin hem faydalanıcısı hem de yürütücü kuruluşudur.</p> <p>Projenin amacı, hem yerel halka hem de geçici koruma altındaki Suriyeli nüfusa hizmet etmek için yeterli kapasiteye sahip, uluslararası ve Türk su kalite standartlarını karşılayan güvenli ve sağlıklı bir içme suyu ve kanalizasyon sistemi geliştirmektir.</p>	<p>Proje kapsamı, Osmaniye ilinin merkez ilçesinde inşa edilecek iki bileşenden oluşmaktadır.</p> <ul style="list-style-type: none">Birinci bileşen, Osmaniye il merkezinde, 598 km su dağıtım borularının ve 5 depolama tankının inşaatını;İkinci bileşen ise kanalizasyon bağlantıları ve menhollerini içeren 402 km atıksu şebeke hattının inşaatını kapsamaktadır. <p>Projenin beklenen sonuçları aşağıdaki gibidir:</p> <ul style="list-style-type: none">Artan kapasiteyi karşılayan bir atıksu şebekesi sistemi sağlanacak ve böylelikle halk sağlığına, çevreye ve doğal kaynaklara yönelik riskin azaltılmasına olanak sağlanacaktır;Şehre güvenli ve yeterli içme suyu temin edilmesi sağlanacak, su kayıpları azaltılacak ve içme suyu sisteminin sürekli ve düzgün çalışması sağlanacaktır;Osmaniye'deki kanalizasyon ve içme suyu yönetim sisteminin genel etkililiği ve verimliliği artırılabilecektir;Geçici koruma altındaki Suriyeli nüfus da dahil olmak üzere şehirde yaşayan insanların iyileştirilmiş su ve atıksu hizmetlerine erişimi sağlanacaktır. <p>Projenin inşaat faaliyetlerinin 2021 yılının son çeyreğinde başlaması öngörülmektedir.</p> <p>Projenin personel ihtiyaçları henüz belirlenmemiş olmakla beraber işe alımlarda öncelik yerel halka verilecektir.</p>	 <p>Projenin inşaat ve işletme aşamalarında çevresel etkileri olacaktır. Projenin muhtemel etkileri genellikle yerel ölçekte, düşük ila orta büyüklükte fakat kısa vadeli olacaktır. Projenin inşaat ve işletme aşamalarındaki en önemli etkilerden biri hava ortamı üzerinde olacaktır. Hava ortamı üzerindeki olumsuz etkileri en aza düşürmek için bir Hava Kalitesi Yönetim Planı hazırlanacaktır ve bu plana göre gerekli önlemler alınacaktır.</p> <p>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.</p> <p>Ayrıca ÇSYP kapsamında uygulanacak izleme ve denetim faaliyetleri de tanımlanmıştır. ÇSYP çalışmaları kapsamında toprak ve hava ortamları, gürültü, koku, su kaynakları, atıklar, trafik üzerinde oluşabilecek etkiler belirlenmiş ve ilgili etki azaltma önlemleri belirlenmiştir.</p>
2	3	4



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<p>izleme gereklilikleri de ÇSYP kapsamındaki izleme tablolarında tanımlanmış ve sunulmuştur. Buna göre projenin inşaat aşamasında, üst toprak kaybı, toprak kirliliği, toz emisyonları, gürültü, sızıntı, su kirliliği, atık üretimi ve iş sağlığı ve güvenliği, işletme aşamasında ise kimyasalların depolanması ve kullanımı, atıklar, gürültü, geçim kaynakları, şikayetler, topluluk çatışmaları, paydaş katılımı, iş sağlığı ve güvenliği ve işgücü parametreleri ÇSYP'de belirlenen şartlara uygun olarak izlenecektir.</p> <p>Bu ÇSYP'nin uygulanmasından sorumlu ana kurum, projenin inşaatından ve işletme aşamalarından da sorumlu olan Osmaniye Belediyesi'dir. Ayrıca, Proje'nin farklı aşamalarında çeşitli taraflar (Yükleniciler, Proje Uygulama Birimi, İLBANK, vb.) ÇSYP kapsamında çeşitli konularda sorumluluk alacaklardır. Sözü edilen tüm çalışmalar Osmaniye Belediyesi tarafından koordine edilecektir.</p> <p>Proje dokümanları ayrıca Osmaniye Belediyesi'nin internet sitesi üzerinden yayınlanacaktır ve talep edilmesi halinde bu dokümanlar Osmaniye Belediyesi tarafından paylaşılacaktır.</p> <p>Osmaniye halkının hem inşaat hem de işletme aşamasında Proje ile ilgili endişelerini, görüşlerini, şikayetlerini ve önerilerini almak adına bir Şikâyet Mekanizması kurulacaktır. Bu mekanizma aracılığıyla iletilen şikâyetler, hızlı ve hassas bir şekilde ele alınacaktır.</p> <p>Şikâyet Mekanizmasının kurulmasından ve uygulanmasından sorumlu kurum Osmaniye Belediyesi olacaktır. Bu kapsamda proje ile ilgili beklenti, görüş, öneri ve şikâyetlerin paylaşılması için aşağıda verilen iletişim kanalları da ayrıca kullanılabilir:</p> <p>Paydaş Katılım Toplantıları</p> <p>Alo 153 Beyaz Masa</p> <p>Alo 185 Osmaniye Belediyesi Acil Yardım Hattı</p> <p>E-mail: osmaniyebelediyesi@osmaniye-bld.gov.tr</p>	<p></p> <p>This project is funded by the European Union. Bu proje Avrupa Birliği tarafından finanse edilmektedir. هذا المشروع تم تمويله من قبل الاتحاد الأوروبي</p> <hr/> <p></p>	<p></p> <p>This project is funded by the European Union. Bu proje Avrupa Birliği tarafından finanse edilmektedir. هذا المشروع تم تمويله من قبل الاتحاد الأوروبي</p> <hr/> <p>OSMANİYE (MERKEZ) İÇME SUYU VE KANALİZASYON PROJESİ</p> <p>BİLGİLENDİRME BROŞÜRÜ</p> <p>HAZİRAN 2021</p> <hr/> <p></p>
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Arabic Version (2 pages)



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تعتبر تركيا من أكثر الدول تأثراً بالسوريين تحت الحماية المؤقتة. تسبب السكان السوريون تحت الحماية المؤقتة في زيادة كبيرة في عدد سكان العديد من البلديات في جميع أنحاء تركيا ، وخاصة في المنطقة الجنوبية الشرقية. من بين هؤلاء ، تستضيف عثمانيه لاجئين سوريين تحت الحماية المؤقتة يشكلون 8.60٪ من إجمالي سكانها. ومع ذلك ، تم تصميم أنظمة البنية التحتية الحالية في عثمانيه وفقاً لمعيار النمو السكاني. لذلك ، تؤدي الزيادة المفاجئة والكبيرة في عدد السكان إلى وصول مرافق مياه الشرب وشبكات الصرف الصحي إلى طاقتها الكاملة في وقت أقرب مما هو متوقع ، مما يؤدي إلى مستوى عالٍ من الخدمة غير الملائمة للجمهور.

يشكل تزايد عدد السكان ضغطاً كبيراً على النظم البلدية القائمة في عثمانيه. لذلك ، فإن الاستجابات المعجلة للبنية التحتية البلدية مطلوبة لتوسيع أنظمة الشبكة وتحسين الأنظمة القائمة.

مشروع عثمانيه (المركزي) لمياه الشرب والصرف الصحي هو أحد المشاريع الفرعية ضمن نطاق مشروع الاتحاد الأوروبي "برنامج المساعدة المالية للاجئين في تركيا (FRIT-II)" لتحسين الخدمات البلدية. FRIT هو مصدر تمويل للدول الأعضاء في الاتحاد الأوروبي للاستجابة للاحتياجات التمويلية الإضافية لدعم اللاجئين في تركيا.

سيتم تمويل المشروع من قبل البنك الدولي لإنشاء والتعمير من قبل برنامج FRIT-II في الاتحاد الأوروبي. على الجانب التركي ، تعتبر الشركة المساهمة بنك إيبلر (ILBANK) الهيئة التنفيذية الرئيسية للمشروع.

بلدية عثمانيه هي الجهة المستفيدة والمؤسسة المنفذة للمشروع.

الهدف من المشروع هو تطوير نظام مياه الشرب والصرف الصحي الآمن والصحي الذي يلبي المعايير الدولية والتركية لجودة المياه ، مع قدرة كافية لخدمة المجتمع المحلي والسكان المحمي تحت الحماية المؤقتة.

يتكون نطاق المشروع من مكونين سيتم بناؤهما في المنطقة المركز لمحاطة عثمانيه.

• المكون الأول هو إنشاء 598 كم من أنابيب توزيع المياه و 5 خزانات في مركز مدينة عثمانيه.
• يغطي المكون الثاني إنشاء خط شبكة مياه الصرف الصحي بطول 402 كم ، والذي يتضمن وصلات الصرف الصحي وغرف التفتيش.

2

النتائج المتوقعة للمشروع هي كما يلي :

• سيتم توفير نظام شبكة مياه الصرف الصحي الذي يلبي السعة المتزايدة ، وبالتالي تمكن الحد من المخاطر على الصحة العامة والبيئة والموارد الطبيعية.

• سيتم ضمان الإمداد الآمن والكافي لمياه الشرب للمدينة ، وسيتم تقليل الفاقد من المياه وضمان التشغيل المستمر والسلس لنظام مياه الشرب ؛

سيتم زيادة الفعالية والكفاءة العامة لنظام إدارة مياه الصرف الصحي ومياه الشرب في عثمانيه.

سيتم توفير إمكانية الوصول إلى خدمات المياه والصرف الصحي المحسنة للأشخاص الذين يعيشون في المدينة ، بما في ذلك السكان السوريين تحت الحماية المؤقتة.

من المتوقع أن تبدأ الأنشطة الإنشائية للمشروع في الربع الأخير من عام 2021.

على الرغم من أن احتياجات الموظفين للمشروع لم يتم تحديدها بعد ، إلا أنه سيتم إعطاء الأولوية للسكان المحليين في التوظيف.



3

سيكون للمشروع آثار بيئية خلال مرحلتي الإنشاء والتشغيل. ستكون الآثار المحتملة للمشروع بشكل عام على نطاق محلي ، من الحجم المنخفض إلى المتوسط ولكن على المدى القصير. سيكون أحد أهم التأثيرات خلال مرحلتي الإنشاء والتشغيل للمشروع على البيئة الجوية سيتم إعداد خطة إدارة جودة الهواء لتقليل الآثار الضارة على بيئة الهواء وسيتم اتخاذ التدابير اللازمة وفقاً لهذه الخطة.

تم تطوير خطة الإدارة البيئية والاجتماعية (CSPY) لإدارة الآثار المتوقعة. تم إعداد خطة الإدارة البيئية والاجتماعية لتحديد الآثار والمخاطر البيئية والاجتماعية المحتملة الناشئة عن تطوير المشروع واقتراح تدابير التخفيف من الآثار البيئية السلبية الكبيرة.

بالإضافة إلى ذلك ، يتم أيضاً تحديد أنشطة المراقبة والتفتيش التي سيتم تنفيذها في نطاق خطة الإدارة البيئية والاجتماعية في نطاق دراسات خطة الإدارة البيئية والاجتماعية ، تم تحديد الآثار التي قد تحدث على بيئة التربة والهواء والضوضاء والراحة وموارد المياه والتفريغ وحركة المرور وتم تحديد تدابير التخفيف ذات الصلة.

كما تم تحديد متطلبات المراقبة وعرضها في جداول المراقبة ضمن خطة الإدارة البيئية والاجتماعية. وفقاً لذلك ، في مرحلة البناء للمشروع ، فقدان التربة السطحية ، وتلوث التربة ، وانبعاثات الغبار ، والضوضاء ، والتلوث ، وتلوث المياه ، وتوليد النفايات ، والصحة والسلامة المهنية ، في مرحلة التشغيل ، وتخزين واستخدام المواد الكيميائية والنفايات والضوضاء وسيل العيش والشكاوى والضراعات المجتمعية وإشراك أصحاب المصلحة والصحة المهنية والسلامة ومعايير القوى العاملة سيتم رصدها وفقاً للمتطلبات المنصوص عليها في خطة الإدارة البيئية والاجتماعية.

المؤسسة الرئيسية المسؤولة عن تنفيذ خطة الإدارة البيئية والاجتماعية هي بلدية عثمانيه ، وهي مسؤولة أيضاً عن مراحل البناء والتشغيل في المشروع.

بالإضافة إلى ذلك ، ستولي الأطراف المختلفة (المقاولون ، وحدة تنفيذ المشروع ، ILBANK ، إلخ (في مراحل مختلفة من المشروع المسؤولة عن الأعمال المختلفة ضمن نطاق خطة الإدارة البيئية والاجتماعية. سيتم تنسيق جميع الأعمال المذكورة من قبل بلدية عثمانيه.

سيتم أيضاً نشر وثائق المشروع على موقع بلدية عثمانيه وستتم مشاركة هذه الوثائق من قبل بلدية عثمانيه عند الطلب.

4

سيتم إنشاء آلية للتظلم لتلقي الشواغل والآراء والشكاوى والاقتراحات من سكان عثمانيه فيما يتعلق بالمشروع أثناء مرحلتي الإنشاء والتشغيل. سيتم التعامل مع الشكاوى المقدمة من خلال هذه الآلية على وجه السرعة وبحساسية.

ستكون المؤسسة المسؤولة عن إنشاء وتنفيذ آلية للتظلم في بلدية عثمانيه. في هذا السياق ، يمكن أيضاً استخدام قنوات الاتصال التالية لمشاركة التوقعات والآراء والاقتراحات والشكاوى حول المشروع.

اجتماعات إشراك أصحاب المصلحة

أو 153 طاولة بيضاء

أو 185 خط المساعدة لظواهر التابع لبلدية عثمانيه

البريد الإلكتروني
osmaniyebelediyesi@osmani-bld.gov.tr

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مشروع عثمانيه (المركزي) لمياه الشرب
والصرف الصحي

كراسة المعلومات

يونيو 2021



1



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ANNEX 4. Project Presentation (in Turkish), 29 June 2021


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**TÜRKİYE'DEKİ MÜLTEÇLERE YÖNELİK MALİ YARDIM PROGRAMI (FRIT-II)
BELEDİYE HİZMETLERİNİN İYİLEŞTİRİLMESİ PROJESİ**

Osmaniye (Merkez) İçme Suyu ve Kanalizasyon Projesi

BİLGİLENDİRME SUNUMU

HAZİRAN 2021




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BİLGİLENDİRME SUNUMU'NUN AMACI NEDİR?

Osmaniye (Merkez) İçme Suyu ve Kanalizasyon Projesi nedir?

- Proje yürütücüsü kimdir? Proje uygulayıcısı kimdir? Proje finansörü 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)




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**PROJE YÜRÜTÜCÜSÜ KİMDİR?
PROJE UYGULAYICISI KİMDİR?
PROJE FINANSÖRÜ KİMDİR?**

 **PROJE YÜRÜTÜCÜSÜ - İLLER BANKASI ANONİM ŞİRKETİ
GENEL MÜDÜRLÜĞÜ**

 **PROJE UYGULAYICISI: OSMANİYE BELEDİYESİ**

 **PROJE FINANSÖRÜ:
AVRUPA BİRLİĞİ
ULUSLARARASI İMAR VE KALKINMA BANKASI (IBRD)** 

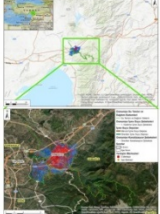



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PROJENİN YERİ

Proje alanı, Osmaniye ilinin merkez ilçesinde yer almaktadır. 3.767 km² yüzölçümüne sahip olan Osmaniye ili, Türkiye'nin Akdeniz Bölgesi'nin doğusunda Çukurova Ovası'nın doğu ucunda yer almaktadır.

Proje alanı Osmaniye Merkez'i kapsamaktadır.



Şekil 1. Yer Bulduru Haritası




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<div data-bbox="435 383 547 443" data-label="Image"></div> <div data-bbox="376 474 604 497" data-label="Section-Header"><h3>PROJENİN AMACI ve FAYDALARI</h3></div> <div data-bbox="245 533 766 669" data-label="List-Group"><ul style="list-style-type: none">Osmaniye Belediyesi'nin hem yerel nüfusa hem de geçici koruma altındaki Suriyeli nüfusa hizmet edecek kapasiteye sahip, ulusal ve uluslararası standartlarda, güvenli ve sağlıklı bir içme suyu ve kanalizasyon sistemi sağlanmasına yardımcı olacaktır.İldeki tüm su yönetimi sisteminin genel etkililiğini ve verimliliğini artıracaktır.Gelecekte meydana gelebilecek akıntı yönündeki taşkınları önleyecektir veHalkın sağlık standartları iyileştirilecektir.</div> <div data-bbox="314 725 654 757" data-label="Image"></div>	<div data-bbox="1037 383 1149 443" data-label="Image"></div> <div data-bbox="1019 474 1171 497" data-label="Section-Header"><h3>PROJE ÖZELLİKLERİ</h3></div> <div data-bbox="826 537 1377 593" data-label="Text"><p>Osmaniye İçme Suyu Şebekesi: Osmaniye il merkezinde yeni basınç bölgeleri ve debimetre bölgeleri dahil 598 km su dağıtım şebekesi boru hattı ve beş adet depolama tankı inşaatı yapılacaktır.</p></div> <div data-bbox="826 602 1377 640" data-label="Text"><p>Osmaniye Atıksu Şebekesi: Kanalizasyon bağlantıları ve menholler dahil 402 km² atık su şebeke hattının inşaatı yapılacaktır.</p></div> <div data-bbox="916 725 1256 757" data-label="Image"></div>		
<div data-bbox="435 844 547 904" data-label="Image"></div> <div data-bbox="416 916 564 938" data-label="Section-Header"><h3>PROJE ÖZELLİKLERİ</h3></div> <div data-bbox="217 945 762 981" data-label="Text"><p>Proje: 598 km içme suyu hattı, 5 depolama tankı, 402 km atıksu şebekesi ve menhollerin inşaatını kapsamaktadır.</p></div> <div data-bbox="373 983 604 1178" data-label="Figure"></div> <div data-bbox="314 1191 654 1223" data-label="Image"></div>	<div data-bbox="1037 844 1149 904" data-label="Image"></div> <div data-bbox="987 949 1198 974" data-label="Section-Header"><h3>PROJE ÖZELLİKLERİ</h3></div> <div data-bbox="805 1016 1390 1111" data-label="Text"><p>FRIT tarafından finanse edilecek kanalizasyon ve içme suyu şebekelerinin yapımı herhangi bir özel arazinin kamulaştırılmasını gerektirmemektedir. Önerilen kanalizasyon ve içme suyu hatlarının güzergâhları Osmaniye Belediyesi'nin sorumluluğunda olan kamu yollarının altından geçecek ve bu nedenle şebeke hatlarının inşası için arazi edinimi veya yeniden yerleşim gerekmemektedir.</p></div> <div data-bbox="904 1191 1259 1223" data-label="Image"></div>		
<div data-bbox="435 1296 547 1357" data-label="Image"></div> <div data-bbox="331 1364 654 1386" data-label="Section-Header"><h3>ÇEVRESEL VE SOSYAL ÇALIŞMALARIN KAPSAMI</h3></div> <div data-bbox="416 1393 564 1476" data-label="Diagram"></div> <div data-bbox="245 1476 740 1610" data-label="List-Group"><table border="1"><tr><td>Eski Kaynaklı Faaliyetler/Durumlar<ul style="list-style-type: none">Büki Önlüsü ve Büküsel Toprak TemizliğiTıvayın Kazı ve DolguMalzeme Temini ve TaşınmasıAzaltılmaAkık Oluşumuİstihdamİşletme sırasında oluşabilecek teknik hatalar</td><td>İlgili Çevresel ve Sosyal Unsurlar<ul style="list-style-type: none">Toprak OrtamıBu KaynaklarıBiyolojik OrtamHava KalitesiGüçlüKokuTrafikAkık YönelimiKültürel MirasSosyo-ekonomik ÇevreToplum Sağlığı ve Güvenliğiİş ve Çalışma Koşulları</td></tr></table></div> <div data-bbox="314 1626 654 1657" data-label="Image"></div>	Eski Kaynaklı Faaliyetler/Durumlar <ul style="list-style-type: none">Büki Önlüsü ve Büküsel Toprak TemizliğiTıvayın Kazı ve DolguMalzeme Temini ve TaşınmasıAzaltılmaAkık Oluşumuİstihdamİşletme sırasında oluşabilecek teknik hatalar	İlgili Çevresel ve Sosyal Unsurlar <ul style="list-style-type: none">Toprak OrtamıBu KaynaklarıBiyolojik OrtamHava KalitesiGüçlüKokuTrafikAkık YönelimiKültürel MirasSosyo-ekonomik ÇevreToplum Sağlığı ve Güvenliğiİş ve Çalışma Koşulları	<div data-bbox="1037 1296 1149 1357" data-label="Image"></div> <div data-bbox="1037 1370 1155 1393" data-label="Section-Header"><h3>TOPRAK ORTAMI</h3></div> <div data-bbox="831 1400 1018 1480" data-label="List-Group"><p>Olası Etkiler</p><ul style="list-style-type: none">Üst toprak kaybı, toprak yapısının bozulması.Toprak kirliliği,Erozyon.</div> <div data-bbox="1190 1400 1315 1451" data-label="Image"></div> <div data-bbox="855 1496 1002 1630" data-label="Image"></div> <div data-bbox="1024 1458 1361 1641" data-label="List-Group"><p>Alınacak Önlemler</p><ul style="list-style-type: none">Karıyıcı açık yollar ve sokaklar yeniden döşenilecek ve yol örtüsü kullanılacaktır.Makine ve teçhizat, yağ ve yakıt sızıntısı açısından düzenli olarak kontrol edilecektir.Faaliyetler, ilgili yönetmeliklere ve standartlara uygun şekilde yapılacaktır veİnşaat faaliyetleri (özellikle hatların inşaatı) ve inşaat alanlarında hava kokuyla dikkate alınacaktır.Eğer bir arazi edinim süreci oluşursa, gerekli arazi sahiplerine tam tazminat ödemesi yapılacaktır. Diğer arazi sahipleri ödenecek değildir.Arazi ediniminin gerçekleştirilmesi durumunda, herhangi bir teknik çalışma başlamadan önce Proje'nin Yeniden Yerleşim Çerçevesine uygun bir Yeniden Yerleşim Planı geliştirilecek ve uygulanacaktır.İnşaat çalışmaları sırasında toprak analizleri, verilerde, mahallelerde ve yapılarca beklenmeyen bir hasar meydana gelmesi durumunda, kayıplar Yeniden Yerleşim Çerçevesinde belirlenen eşsahibi görevi olacaktır.</div> <div data-bbox="904 1653 1259 1684" data-label="Image"></div>
Eski Kaynaklı Faaliyetler/Durumlar <ul style="list-style-type: none">Büki Önlüsü ve Büküsel Toprak TemizliğiTıvayın Kazı ve DolguMalzeme Temini ve TaşınmasıAzaltılmaAkık Oluşumuİstihdamİşletme sırasında oluşabilecek teknik hatalar	İlgili Çevresel ve Sosyal Unsurlar <ul style="list-style-type: none">Toprak OrtamıBu KaynaklarıBiyolojik OrtamHava KalitesiGüçlüKokuTrafikAkık YönelimiKültürel MirasSosyo-ekonomik ÇevreToplum Sağlığı ve Güvenliğiİş ve Çalışma Koşulları		



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<div data-bbox="432 383 549 450"></div> <div data-bbox="432 472 553 495">SU KAYNAKLARI</div> <div data-bbox="210 521 292 544">Olası Etkiler</div> <div data-bbox="210 548 549 571"><ul style="list-style-type: none">Su kullanımı ve evsel atık su oluşumu kaynaklı etkiler oluşabilir.</div> <div data-bbox="210 582 314 604">Alınacak Önlemler</div> <div data-bbox="210 607 772 701"><ul style="list-style-type: none">Kazılan hendeklerin yüzey suyu, yeraltı suyu veya yağış ile dolması durumunda bu kanallardaki olası çamurlu su deşarj edilecek ve deşarj edilecek su doğrudan alıcı su ortamına deşarj edilmeyecektir.Toz bastırma faaliyetleri için sulamaya bağlı yüzey akışı önlenecektir.Araçların ve iş makinelerinin temizlemesinden veya yıkamasından kaynaklanan atıksular tanklarda toplanacak ve fosseptik kamyonlarla bertaraf edilecektir.</div> <div data-bbox="308 728 659 768"></div>	<div data-bbox="1034 383 1150 450"></div> <div data-bbox="1000 454 1192 479">KARASAL BİYOÇEŞİTLİLİK</div> <div data-bbox="823 506 893 528">Olası Etkiler</div> <div data-bbox="823 530 1021 553"><ul style="list-style-type: none">Flora-fauna türleri üzerindeki olası riskler</div> <div data-bbox="823 564 925 586">Alınacak Önlemler</div> <div data-bbox="823 589 1372 685"><ul style="list-style-type: none">Su ve atıksu hattarı çoğunlukla kentel alanlarda yapılacaktır. Bu nedenle, proje alanı içerisinde korunan ve hassas ekosistemler veya türlerin olması öngörülmektedir.Çalışma alanı sınırları içerisinde gerekli görülmedikçe bitki örtüsü temizliği yapılmayacaktır.Ağaç kesimleri mümkün olduğunca önleneyecektir.Bitki örtüsü temizliği yapılan yerlerde tekrar bitkilendirme yapılacaktır.</div> <div data-bbox="914 719 1257 757"></div>
<div data-bbox="432 831 549 898"></div> <div data-bbox="391 911 593 934">HAVA KALİTESİ VE GÜRÜLTÜ</div> <div data-bbox="210 954 296 976">Olası Etkiler</div> <div data-bbox="210 978 766 1008"><ul style="list-style-type: none">İnşaat aşamasında inşaat makineleri, nakliye, malzeme teslimi, kazı-dolgu faaliyetleri kaynaklı toz ve gürültü etkisi</div> <div data-bbox="210 1012 331 1034">Alınacak Önlemler</div> <div data-bbox="210 1037 627 1151"><ul style="list-style-type: none">İnşaat sahaları tozlanmaya karşı düzenli olarak sulanacaktır.Kullanılacak tüm araçların egzoz emisyon ölçümlerinin yapılması sağlanacaktır.Proje kapsamında gürültü seviyesi düşük ekipman seçimine özen gösterilecektir.İnşaat faaliyetleri mümkün olduğunca gündüz saatlerinde yapılacaktır.Hassas lokasyonlarda gerekli önlemler alınacaktır.</div> <div data-bbox="308 1173 654 1211"></div>	<div data-bbox="1034 831 1150 898"></div> <div data-bbox="1061 927 1128 949">TRAFİK</div> <div data-bbox="805 976 890 999">Olası Etkiler</div> <div data-bbox="805 1001 1308 1023"><ul style="list-style-type: none">Şehir içinde ve tesis çevresinde gerçekleştirilecek inşaat faaliyetleri dolayısıyla trafiğin aksaması</div> <div data-bbox="805 1032 927 1055">Alınacak Önlemler</div> <div data-bbox="805 1057 1340 1151"><ul style="list-style-type: none">Trafik Yönetim Planı hazırlanacak ve trafiği etkileyebilecek tüm faaliyetler bu plana göre yapılacaktır.İnşaat malzemelerinin, ekipmanlarının ve makinelerinin trafik şerhlerinde depolanması önleneyecektir.Gerekli trafik levhaları ve bariyerler yüklenici tarafından konulacaktır.Alternatif yollar trafik yoğunluğuna göre belirlenecektir.Şikayet mekanizmasının kurulması ve işletilecektir.</div> <div data-bbox="904 1193 1267 1232"></div>
<div data-bbox="432 1294 549 1361"></div> <div data-bbox="435 1373 549 1395">ATIK OLUŞUMU</div> <div data-bbox="256 1400 427 1509"></div> <div data-bbox="481 1408 553 1431">Olası Etkiler</div> <div data-bbox="481 1433 732 1498"><ul style="list-style-type: none">Evsel atıksu oluşumuİnşaatta çalışacak personel kaynaklı katı atık oluşumuKazı faaliyetlerinden kaynaklı atık oluşumuTehlikeli atık oluşumu</div> <div data-bbox="244 1518 347 1541">Alınacak Önlemler</div> <div data-bbox="244 1543 481 1612"><ul style="list-style-type: none">Proje kapsamında oluşturulacak atıklar atık yönetimi hiyerarjisine göre yönetilecektir.Atıklar çok beklentiden bertaraf edilecektir.Atık oluşumu, depolanması ve bertarafı ile ilgili kayıtlar tutulacaktır.</div> <div data-bbox="491 1509 737 1615"></div> <div data-bbox="308 1639 654 1677"></div>	<div data-bbox="1034 1294 1150 1361"></div> <div data-bbox="1029 1377 1160 1400">SOSYO-EKONOMİ</div> <div data-bbox="823 1420 898 1442">Olası Etkiler</div> <div data-bbox="823 1444 1372 1473"><ul style="list-style-type: none">Proje kapsamında çalıştırılacak iş gücünün; çalışma şartları, haklarının korunması, iş sağlığı ve güvenliği gibi konular üzerindeki olası etkiler</div> <div data-bbox="823 1482 927 1505">Alınacak Önlemler</div> <div data-bbox="823 1507 1267 1612"><ul style="list-style-type: none">Çalışanların ulusal iş hukuku kapsamındaki haklarıyla ilgili açık ve anlaşılır bir şekilde bilgilendirilmesi,İş Sağlığı ve Güvenliği kapsamında çalışanlara ve operasyon ve bakım personeline eğitimler verilmesi,Çalışanların ve üçüncü kişilerin, proje ile ilgili alanlara girişinin kontrollü bir şekilde sağlanması,Tüm ekipmanın uygun çalışma düzeninde çalıştırılması,Şikayet mekanizmasının kurulması ve işletilmesi.</div> <div data-bbox="914 1630 1257 1668"></div>



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PAYDAŞ KATILIMI: SÜRECE NASIL DAHİL OLABİLİRSİNİZ?

Görüş ve Şikayet Bildirme Mekanizması

Proje kapsamında bir Şikayet Mekanizması kurulacak ve herkesçe erişilebilir olacaktır.

Proje ile ilgili beklentilerinizi, görüşlerinizi, önerilerinizi ve şikayetlerinizi;

- Paydaş Katılım Toplantıları sırasında,
- Kurulacak Şikayet Mekanizmasını kullanarak,
- Alo 153 Beyaz Masa aracılığıyla,
- Alo 183 Osmaniye Belediyesi Acil Yardım Hatrı aracılığıyla iletişebilirsiniz.
- Telefon : 0 328 440 00 90
- Faks : 0 328 614 11 55
- Adres: Rahime Hatun Mahallesi Musa Şahin Bulvarı No:303 Osmaniye / Türkiye
- E-mail: osmaniyebelediyesi@osmaniye-bld.gov.tr

Bu toplantıda sunacağınız görüş, öneri ve şikayetleriniz kayıt altına alınarak nihai raporda ilgili paydaşların (Osmaniye Belediyesi, İLBANK, IBRD) bilgisine sunulacaktır.
Proje dokümanları Osmaniye Belediyesi'nin internet sitesi üzerinden yayınlanacaktır ve talep edilmesi halinde bu dokümanlar Osmaniye Belediyesi tarafından paylaşılacaktır.





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**TÜRKİYE'DEKİ MÜLTECİLERE YÖNELİK MALİ YARDIM PROGRAMI (FRIT-II)
Belediye Hizmetlerinin iyileştirilmesi Projesi**

Osmaniye (Merkez) İçme Suyu ve Kanalizasyon Projesi

KATILIMINIZ VE İLGİNİZ İÇİN TEŞEKKÜR EDERİZ!

SORULAR, YORUMLAR VE GÖRÜŞLER ?





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ANNEX 5. List of Participants



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TOPLANTI KATILIM FORMU / MEETING PARTICIPATION FORM

KONU / TOPIC: Osmaniye (Merkez) İřme Suyu ve Kanalizasyon Şebekesi / Halkın Katılımı Toplantısı
YER / PLACE: Osmaniye

TARİH / DATE: 25.06.2021
SAAT / TIME: 15.00

NO	ADI SOYADI / NAME SURNAME	KURUMU / AGENCY	GÖREVİ / POSITION	ADRES/E-POSTA / ADDRESS/E-MAIL	TEL/FAX NO	İMZA / SIGNATURE
1	Osman SAKLIK	İlçen. Mecl. M.H.P. Göz. Bk. Şeh. Bk.	Meclis Üyesi.			
2	Ferhan ARBİYİK	M.H.P. Belediye Meclis Üyesi	İmaratın Sorumlu			
3	Murat ALKAN	MHO Belediye Meclis Üyesi	İncelene Akad. Kant. Bşk.			
4	Hüseyin GILMAN	İl. Ton. Kr.	İl Yö. n.			
5	Elvane GARAĞ		Muhtar			
6	Aysel Akyüz		Muhtar			
7	Mustafa ATES		Aza			
8	Harun Uzun		B. meclis üyesi			
9	Ali Altıntaş		B. meclis üyesi			
10	Ahmet Loş	Alibeyli mah. muhtar				



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TOPLANTI KATILIM FORMU / MEETING PARTICIPATION FORM

KONU / TOPIC: Osmaniye (Merkez) İriame Suyu ve Kanalizasyon Şebekesi / Halkın Katılımı Toplantısı TARİH / DATE: 29/06/2021
YER / PLACE: Osmaniye SAAT / TIME: 15:00

NO	ADI SOYADI / NAME SURNAME	KURUMU / AGENCY	GÖREVİ / POSITION	ADRES/E-POSTA / ADDRESS/E-MAIL	TEL/FAX NO	İMZA / SIGNATURE
11	Ayhan Demir	belediye	Başkan Yardımcısı			
12	Burak Can SANCAN	EGM	P. M			
13	UGUR YASSI					
14	Burak AKALIN					
15	Simeona Ceylan	Şehir Plancısı				
16	Aam Güntekin					
17	Mehmet İLKAY	BABAÖZLÜ Ziraat Mühendisi				
18	Bilal Genet	Petrol İstasyonu İletimcisi	Merkez İst. Baş. Yardımcısı			
19	Fatih SARI	İLLEL BANKASI A.Ş. ADANA B. MER.	Yapı İşleri Müdürü			
20	Emrehan CAN	İLLEL BANKASI A.Ş.	Ulaştırıcı			



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TOPLANTI KATILIM FORMU / MEETING PARTICIPATION FORM

KONU / TOPIC: Osmaniye (Herkes) içme suyu ve kanalizasyon Şebekesi/Halkın Katılımı Toplantısı TARİH / DATE: 29/06/2021
YER / PLACE: Osmaniye SAAT / TIME: 15.00

NO	ADI SOYADI / NAME SURNAME	KURUMU / AGENCY	GÖREVİ / POSITION	ADRES/E-POSTA / ADDRESS/E-MAIL	TEL/FAX NO	İMZA / SIGNATURE
21	Muh Kaygısız		Muhtar			
22	Yunus Cardak		Belediye Personeli			
23	Kutlams Göktar Güler		Belediye Personeli			
24	İsrafil Avcı		Çarrafeci			
25	Medih Las		Başkan Yardımcı			
26	Muhammed Karlar		Yönetime Kurul Başkanı			
27	Khalil Avcı		Firma Yöneticisi			
28	Ahmet Çevik		Muhtar			
29	İsmail Ataman		Belediye Personeli			
30	Bekir Seddik Karayigit		Başkan Yardımcısı			



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TOPLANTI KATILIM FORMU / MEETING PARTICIPATION FORM

KONU / TOPIC: Osmaniye (Merkez) iğme Sığı ve Karındađıđı Sebekesi/Halkın Katılımı Toplantısı TARİH / DATE: 29/06/2021

YER / PLACE: Osmaniye

SAAT / TIME: 15.00

NO	ADI SOYADI / NAME SURNAME	KURUMU / AGENCY	GÖREVİ / POSITION	ADRES/E-POSTA / ADDRESS/E-MAIL	TEL/FAX NO	İMZA / SIGNATURE
31	Aşkan Demir		Belediye Başkan Yardımcısı			
32	İlyas Aracıođlu		Bilgi İşler			
33	Mustafa Sener Öztürk		Gen. İşleri			
34	Mukisi Akbaş		Su Arama Amiri			
35	Haldun Özkan İTMEK		Su ve Kar. İşleri			
36	2.Ş. Bayram Sımsık		İl. Yönl. B.Ş.			
37	İsmet Akbaş		İl. Yönl. B.Ş. Üyesi			
38	Alihan Akbaş		Muhtar			
39	İbrahim Çamurcu		Muhtar			
40	M. Telli İsmet		Muhtar			



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TOPLANTI KATILIM FORMU / MEETING PARTICIPATION FORM

KONU / TOPIC: Osmaniye (Merkez) İriame Suyu ve Koordinasyon Şebekesi / Halkın Katılımı Toplantısı TARİH / DATE: 29.06/2021
YER / PLACE: Osmaniye SAAT / TIME: 15.00

NO	ADI SOYADI / NAME SURNAME	KURUMU / AGENCY	GÖREVİ / POSITION	ADRES/E-POSTA / ADDRESS/E-MAIL	TEL/FAX NO	İMZA / SIGNATURE /
41	Muctaza GÜZEL	MUHİTAR				
42	Cihan Turpüt	Muhhtar				
43	Hüseyin Korkmaz	Muhhtar				
44	Torik Sali	Muhhtar				
45	Abdullah Özyücel		il yönetim Müdürlüğü			
46	Mahmut Oturan		MHP member Halk Temsilcisi			
47	Mustafa Atas		A.B.A			
48	İsmail Çarık		Muhhtar			
49	Mehmet Akkoc	Belediye				
50	Mustafa Balkaya	Belediye				



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TOPLANTI KATILIM FORMU / MEETING PARTICIPATION FORM

KONU / TOPIC: Osmaniyel(Mekke7) iame Suyu ve Kondirayon Sebatesi/Hatin Katilimi Toplantisi TARİH / DATE: 29/08/2021
YER / PLACE: Osmaniyel SAAT / TIME: 15.00

NO	ADI SOYADI / NAME SURNAME	KURUMU / AGENCY	GÖREVİ / POSITION	ADRES/E-POSTA / ADDRESS/E-MAIL	TEL/FAX NO	İMZA / SIGNATURE
51	Mehmet İLGER	Beldiye meclis üyesi				
52	M. Ali Coşođu	CHP il				
53	Süroyo İskan	Beldiye Meclisi				
54	Aykub Kaplan	Meclis üyesi				
55	Mehmet Yalan	İYİ Parti il				
56	Semih Dilek	İYİ Parti				
57	Sedat ÖZTÜRK	M.H.P. OSMANIYE İLDİS. KRL. BAŞKANI				
58	Serif Başođu	MHP il yereci				
59	Binay Edendişli	MHP İLBAŞI				
60	Zekariye Adıgüzel	MHP				



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TOPLANTI KATILIM FORMU / MEETING PARTICIPATION FORM

KONU / TOPIC: Osmanlıe (Merkez) İame Sıy ve Kandıazazın Sebatesi/Halkın Katılımı Toplantısı TARİH / DATE: 29/06/2021
YER / PLACE: Osmanlıe SAAT / TIME: 15.00

NO	ADI SOYADI / NAME SURNAME	KURUMU / AGENCY	GÖREVİ / POSITION	ADRES/E-POSTA / ADDRESS/E-MAIL	TEL/FAX NO	İMZA / SIGNATURE
61	Parkı Sahn	Osmanlıe Belediyesi	İfşarçeldi			



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ANNEX 6. Photos from the Public Consultation Meeting



Introduction of the Meeting



Presentation



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